U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
CENTRAL REGION

FINDING OF NO SIGNIFICANT IMPACT AND RECORD OF DECISION

Proposed Consolidated Terminal Program

St. Louis Lambert International Airport
St. Louis, St. Louis County, Missouri

CEQ Unique ID: EAXX-021-12-ARP-1726844592

October 2024

GENERAL INFORMATION ABOUT THIS DOCUMENT

WHAT'S IN THIS DOCUMENT? This document is the Federal Aviation Administration's (FAA) Finding of No Significant Impact (FONSI) and Record of Decision (ROD) for the proposed Consolidated Terminal Program at St. Louis Lambert International Airport (STL) located in St. Louis, Missouri. This document includes the agency determinations and approvals for those proposed Federal actions described in the Final Environmental Assessment and Section 4(f) Statement (Final EA) dated October 2024. This document discusses all alternatives considered by FAA in reaching its decision, summarizes the analysis used to evaluate the alternatives, and briefly summarizes the potential environmental consequences of the Proposed Action Alternative and the No Action Alternative, which are evaluated in this FONSI and ROD. This document also identifies the environmentally preferred alternative and the agency preferred alternative. This document identifies applicable and required mitigation.

BACKGROUND. In December 2023, the FAA made a determination to prepare an EA through the St. Louis Airport Authority (STLAA). The EA addresses the potential environmental effects of the proposed project including various reasonable alternatives to that proposal. The EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA)[Public Law 91-190, 42 USC 4321-4347], the implementing regulations of the Council on Environmental Quality (CEQ) [40 CFR Parts 1500-1508), and FAA Orders 1050.1F. *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA), Implementing Instructions for Airport Actions*. The STLAA published the Notice of Availability for the Draft EA and the Draft Section 4(f) Statement on July 3, 2024. A public open house was conducted on August 6, 2024. The FAA and STLAA received written comments on the Draft EA and Draft Section 4(f) Statement July 3, 2024 through August 16, 2024. The FAA approved the Final EA and Section 4(f) Statement on October 18, 2024.

WHAT SHOULD YOU DO? Read the FONSI and ROD to understand the actions that FAA intends to take relative to the proposed Consolidated Terminal Program at St. Louis Lambert International Airport.

WHAT HAPPENS AFTER THIS? The St. Louis Airport Authority may begin to implement the Proposed Action Alternative.

U. S. DEPARTMENT OF TRANSPORTATION
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FINDING OF NO SIGNIFICANT IMPACT/RECORD OF DECISION

For the Proposed

CONSOLIDATED TERMINAL PROGRAM

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

CEQ Unique ID: EAXX-021-12-ARP-1726844592

This Finding of No Significant Impact (FONSI) and Record of Decision (ROD) (FONSI/ROD) was prepared for the proposed Consolidated Terminal Program (CTP) at the St. Louis Lambert International Airport (STL) in St. Louis, Missouri. The St. Louis Airport Authority (STLAA) is responsible for the operation of STL. The Federal Aviation Administration (FAA) must comply with the National Environmental Policy Act of 1969 (NEPA) and other applicable statutes before taking any actions that are necessary prior to implementation of the project. NEPA requires that after preparing an Environmental Assessment (EA), federal agencies must decide whether to issue a FONSI and approve the proposed project or prepare an environmental impact statement prior to rendering a final decision on approval of a proposed project. The FAA has completed the EA, considered its analysis, and determined that no further environmental review is required. Therefore, the FAA is issuing the FONSI/ROD accompanied and supported by the FAA's Final EA and Section 4(f) Statement (Final EA), completing environmental review requirements for the project.

The attached Final EA, dated October 2024, was prepared in accordance with the guidelines and requirements set forth by NEPA, Council on Environmental Quality (CEQ) regulations, and FAA orders. Presented is a description of the Purpose and Need, the Proposed Action, Alternatives Considered, and Assessment and Mitigation as discussed in the attached Final EA with Federal Findings regarding the Proposed Action.

PURPOSE AND NEED FOR THE PROPOSED ACTION:

Chapter 1 of the Final EA describes the Purpose and Need. The STLAA identified deficiencies within the existing passenger terminals, roadways, and parking facilities at STL. These deficiencies are detailed in the 2023 STL Master Plan. The existing terminals lack

adequate passenger holdrooms, corridors, restrooms, concessions, security screening facilities, roadways, and parking. The Master Plan also identified inefficiencies, including duplication of services and excessive operating and maintenance costs associated with operating two terminal facilities, as well as lost revenue opportunities associated with parking and concessions.

The purpose of the Proposed Action is to enhance the passenger experience, increase airport revenue, eliminate duplication of services, eliminate aging and redundant building systems, and ensure continued safe, secure, and efficient operations at STL by providing sufficient space and facilities for current and forecast passenger demand and aircraft operations, as well as an improved access from the highway.

The need for this project is evidenced by current deficiencies within the existing terminals, roadways, and parking facilities which must be improved to enhance the passenger experience, enhance passenger processing efficiency, eliminate redundancy, increase airport revenue, and continue safe and efficient operations.

PROPOSED ACTION AND REQUESTED FEDERAL ACTIONS:

The Proposed Action includes several individual development components that collectively comprise the Consolidated Terminal Program (CTP). The following CTP development is shown on the January 30, 2024 conditionally approved Airport Layout Plan (ALP) and is described in detail in Section 1.5 of the Final EA:

- Replace Terminals 1 and 2 with a single consolidated terminal centered on the location of the existing Terminal 1 with space for up to 62 gates including,
    - Reconfigure the check-in lobby (passenger processor) that incorporates the existing terminal domes,
    - Consolidate security screening centered between the check-in lobby and the concourse,
    - Incorporate Federal Inspection Service (customs) accessible to all carriers,
    - Provide a new baggage claim area on the lower level,
    - Provide a two-level passenger drop-off and pick-up curb with departures on the upper level and arrivals on the lower level; and
- Reconfigure the aircraft apron and taxilanes around the consolidated terminal to facilitate efficient aircraft operations,
- Construct a new parking garage and ground transportation center directly across from the terminal,
- Reconfigure the terminal access road to improve driver wayfinding and decision making in the terminal roadway system and airport access,
- Close Terminal 2 until a potential reuse of the building is identified.

The FAA will take the following actions to authorize implementation of the proposed projects:

- Unconditional approval of the Airport Layout Plan (ALP) to depict the proposed improvements pursuant to 49 USC §§ 40103(b) and 47107(a)(16).
- Determinations under 49 USC 47106 and 47107, relating to the eligibility of the Proposed Action for federal funding including but not limited to the Airport Improvement Program (AIP) and other Federal funding programs, and/or determinations under 49 USC 40117, as implemented by 14 CFR 158.25, to impose and use passenger facility charges (PFCs).
- Determination under 49 USC § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interests of national defense.
- Approval of changes to the airport certification manual pursuant to 14 CFR Part 139 (49 USC § 44706).

ALTERNATIVES CONSIDERED:

Chapter 2 of the Final EA describes the alternative evaluation process. The STL Master Plan reviewed fifteen terminal plans and over fifty individual terminal alternatives to define the preferred terminal alternative. Two alternatives advanced for detailed environmental evaluation in the Final EA:

Alternative 5-P1 (Proposed Action): This alternative replaces the existing Terminals 1 and 2 with a single consolidated terminal centered on the location of the current Terminal 1 and closing Terminal 2. This alternative best meets the project's purpose and need to provide a better customer experience for passengers and ensure continued safe, secure, and efficient airport operations by providing space for current and potential future demand.

The No Action Alternative: Under the No Action Alternative, STL would maintain its existing infrastructure and terminal configuration, and would not address the current deficiencies within the existing terminals, roadways, access from the highway, and parking facilities. The No Action Alternative would continue operations as they are today. The No Action alternative does not meet the project's purpose and need. However, in addition to being a NEPA/CEQ requirement, it does serve as a baseline for a comparison of impacts to the preferred alternative and is therefore retained for analysis.

ASSESSMENT AND MITIGATION:

The Final EA addresses the effect of the proposed project on the human and natural environment. Chapter 3 of the attached Final EA provides a detailed description of existing conditions and the environmental consequences of the Proposed Action on resources in accordance with FAA Orders 1050.1F and 5050.4B and analyzes the potential for significant impacts. Statements of consistency with community planning from state and local governments are highlighted in the Final EA.

The FAA has assessed the Proposed Action as the preferred alternative. The Final EA and associated correspondence were reviewed by the FAA to determine whether each of the affected resources exceeded an established threshold of significance. The FAA determined that the Final EA adequately described the potential impacts of the Proposed Action.

The Proposed Action will not change flight patterns, altitudes, or aircraft traffic volumes at the Airport. The STL's Proposed Action will not significantly affect environmental resources as discussed and analyzed in the attached Final EA.

The FAA examined the following environmental impact categories: Air Quality; Biological Resources; Climate; Department of Transportation Act, Section 4(f) and Land and Water Conservation Fund (LWCF) Act, Section 6(f) Resources; Hazardous Materials, Solid Waste, and Pollution Prevention; Historic, Architectural, Archeological or Cultural Resources; Land Use; Natural Resources and Energy Supply; Noise and Compatible Land Use; Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks; Surface Transportation Noise; Visual Effects; Water Resources; and Cumulative Impacts. The most important environmental issues related to the Proposed Action are detailed in Chapter 3 of the Final EA and summarized below.

Mitigation measures that would be a condition of FAA's approval of the Proposed Action are specifically identified below. STLAA should comply with any applicable Federal, state, or local requirements during implementation of the Proposed Action.

Resources Not Affected: As described in Section 3.2 of the Final EA, these resources were considered but not analyzed in detail because the resources do not occur in the study area. Based on the results of site visits and research, the No Action and Proposed Action would not have direct or indirect impacts on the following resources: Coastal Resources; Farmlands; and Wild and Scenic Rivers.

Air Quality: Section 3.5 of the Final EA. STL is located in St. Louis County, Missouri, an area designated by the EPA as maintenance for the 8-hour 2008 O3 standard, moderate nonattainment for the 2015 O3 standard, and attainment for all the other NAAQS. Emission inventories were prepared to disclose project-related emissions of all criteria air pollutants and precursor pollutants. None of the Proposed Action's emission levels exceed the *de minimis* thresholds; therefore, State Implementation Plan (SIP) conformity requirements are not applicable.

Neither the No Action Alternative nor the Proposed Action would result in significant air quality impacts and no mitigation is required. Construction activities associated with the Proposed Action would result in temporary emissions from construction equipment, trucks, and fugitive dust emissions from site demolition and earthwork. The impacts would occur only within the immediate vicinity of the construction sites and would be minimized through best management practices (BMP) to reduce emissions, particularly fugitive particle emissions, during construction.

Biological Resources: Section 3.6 of the Final EA. Lists of protected species of flora and fauna were analyzed. Although the Proposed Action is located in a highly developed area, suitable habitat (sixteen trees) for the federally listed Indiana Bat, Northern Long-Eared Bat, and the Tricolored Bat is present within the project area. The FAA determined, and the U.S. Fish and Wildlife service (USFWS) concurred, that the Proposed Action may affect, but is not likely to adversely affect the Indiana Bat, Northern Long-Eared Bat, and Tricolored Bat. Neither the No Action nor the Proposed Action would result in significant impacts to biological resources.

The project sponsor commits to clear the identified suitable bat roost trees during the inactive season, between November 1 and March 31. Since some structures may also provide habitat for listed bats, the sponsor will also inspect any structures that are open (such as the parking garage) or in poor condition and that may allow for bat roosting for the signs of bat presence prior to demolition.

Additionally, bird species protected by the Migratory Bird Treaty Act (MBTA) are not expected to be impacted by this project. Prior to tree removal and demolition of structures, including buildings, bridges, and/or culverts, nesting surveys would be conducted to avoid injury to eggs or nestlings.

Climate: Section 3.7 of the Final EA. Construction and operational emissions were prepared for the Proposed Action. Since there are no federal standards and the FAA does not have a threshold of significance for climate, emissions of greenhouse gases (GHG) are provided in Table 3.7-1 of the Final EA for disclosure purposes. In accordance with CEQ's GHG NEPA guidance, Table 3.7-2 of the Final EA presents the social cost associated with the construction and operation of the Proposed Action. Of note, GHG emissions are anticipated to decline after the implementation of the Proposed Action.

Department of Transportation Act, Section 4(f) and Land and Water Conservation Fund (LWCF) Act, Section 6(f) Resources: Section 3.8 of the Final EA. The FAA determined that the existing Lambert Field Historic District (former Missouri Air National Guard Facility) is eligible for inclusion in the National Register of Historic Places (NRHP) and therefore, would be considered a Section 4(f) resource.

With the demolition of the NRHP-eligible Lambert Field Historic District, the FAA determined that the Proposed Action would constitute a physical "use" of the Section 4(f) resource. The FAA also determined that the Proposed Action would not result in a constructive use of any Section 4(f) resources.

Where an action would involve the use of a Section 4(f) property, Section 4(f) requires that prior to approving the action, the FAA must determine that there is no feasible or prudent alternative that would avoid the use of the Section 4(f) property and that the project includes all possible planning to minimize harm resulting from the use. As defined in 23 CFR §

774.17,[1] "all possible planning" means that all reasonable measures to minimize harm or mitigate adverse impacts must be included in the project. With regard to historic sites, this means the measures as agreed to by the FAA and the State Historic Preservation Officer (SHPO) in accordance with the consultation process under the regulations implementing Section 106 of the National Historic Preservation Act (NHPA). As the Proposed Action would involve a use, a separate Section 4(f) Statement was prepared.

The FAA determined that there are no alternatives that address the purpose and need of the project and are both prudent and feasible. The FAA consulted with the SHPO under Section 106 to develop a Memorandum of Agreement (MOA). The MOA outlines the mitigation measures needed to resolve adverse effects of the Proposed Action on the NRHP-eligible Lambert Field Historic District. Execution of the MOA and implementation of its terms would fulfill the Section 4(f) requirement that the project include all possible planning to minimize harm and reduce the effects of the use of the Section 4(f) resource below the threshold of significance. Execution of the MOA and implementation of its terms is a requirement of the Proposed Action. The U.S. Department of the Interior concurred with the FAA's determination. Neither the No Action nor the Proposed Action would result in significant impacts to 4(f) resources.

The FAA prepared a Draft Section 4(f) Statement that was made available for public comment at the same time as the Draft EA. The Final 4(f) Statement is included in Appendix F of the Final EA.

Hazardous Materials, Solid Waste, and Pollution Prevention: Section 3.9 of the Final EA describes the impacts to this resource category.

Hazardous Materials:
The Proposed Action includes demolition of facilities in the existing terminal area, including the former Missouri Air National Guard (MoANG) Campus, the fuel consortium facilities (Swissport) and the removal and/or the relocation of existing fuel tanks. During the removal or relocation, it is possible that unknown fuel spills, hazardous soil, asbestos-containing materials (ACM) or lead-based paint (LBP) may be encountered. Additional surveying and testing would occur prior to demolition to ensure all hazardous materials are identified.

These materials are not considered to be uncommon and disposal practices exist to handle and dispose of these materials safely; therefore, no significant impact is anticipated. It would be the responsibility of STL to ensure that the contractor would arrange for the transportation and disposal of all hazardous materials that would be created from the demolition in accordance with all applicable regulations.

Under the Proposed Action, STL would continue to store and use aviation fuels in the reconstructed terminal area. STL would comply with federal, state, and local laws that control the use, generation, disposal, and monitoring of hazardous materials and would

[1] These regulations, issued by the Federal Highway Administration, Federal Transit Administration, and Federal Railroad Administration, are not binding on the FAA but may be used as guidance to the extent relevant.

obtain and comply with applicable permits. Therefore, no significant impacts for the No Action nor the Proposed Action related to hazardous materials would be expected from construction and operation of the Proposed Action.

Solid Waste:
Neither the No Action Alternative nor the Proposed Action would result in significant solid waste impacts and no mitigation is required. The Sponsor would seek to recycle as much material as practicable, from the demolition of the existing facilities and existing pavement areas. Material that is not suitable for recycling would be disposed of using existing disposal measures, including sending solid waste to a permitted landfill.

Pollution Prevention:
The Proposed Action would result in a net increase of approximately six (6) acres of impervious surfaces. However, the Proposed Action includes various stormwater collection system improvements. A Construction Storm Water Pollution Prevention Plan (SWPPP) and a Land Disturbance Permit from the Missouri Department of Natural Resources (MDNR) would be required for construction of the Proposed Action. Best Management Practices (BMPs) would be implemented during construction to limit runoff and erosion and to avoid or minimize accidental spills or releases. No changes to Metropolitan Sewer District permitting requirements are anticipated.

The proposed stormwater and glycol collection facilities will be designed and permitted in coordination with federal, state, and local agencies, as required, and in accordance with the requirements of the National Pollution Discharge Elimination System (NPDES) permits issued by MDNR. STL would update its SWPPP and spill prevention, control, and countermeasures (SPCC) plan to reflect facility changes and maintain compliance with applicable regulatory requirements. Neither the No Action Alternative nor the Proposed Action would result in significant impacts.

Historic, Architectural, Archeological or Cultural Resources: Section 3.10 of the Final EA describe FAA's evaluation of the direct and indirect impacts from federal actions on historic, architectural, archaeological, and other cultural resources under Section 106, the principal statute concerning such resources. Section 106 requires federal agencies to take into account the effects of their undertakings on properties that are listed in or determined eligible for inclusion in the National Register of Historic Places (NRHP), and to consult with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO), and other parties to develop and evaluate alternatives or modifications to the undertaking where necessary to avoid, minimize, or mitigate adverse effects on historic properties. The independent federal agency overseeing federal historic preservation and tribal programs, the Advisory Council on Historic Preservation (ACHP), must be afforded a reasonable opportunity to comment on such undertakings subject to Section 106.

The FAA, after review of the architectural and historic properties survey and input from the SHPO, determined that the Lambert Field Historic District as well as the Terminal Domes are eligible for the NRHP. The SHPO concurred with this determination. Under the Proposed Action, with the proposed demolition of the Lambert Field Historic District and construction

of the consolidated terminal with associated development, the undertaking would constitute an adverse effect to the Lambert Field Historic District. The SHPO concurred with this adverse effect determination.

The City of Bridgeton, City of Berkeley, City of Florissant, Florissant Valley History Society and St. Louis County Landmarks were contacted as potentially interested consulting parties, but they declined the invitation to consult on the undertaking.

Twelve (12) Tribes were invited to participate as consulting parties. The Osage Nation requested archaeological monitoring during construction. The Eastern Shawnee Tribe of Oklahoma responded that the proposed project will not adversely affect any known archeological, historical, or sacred sites and/or properties of cultural significance. Ten (10) tribes did not respond.

To mitigate the adverse effect to the Lambert Field Historic District, prevent any adverse effect on the Terminal Domes, and provide archaeological monitoring, the FAA, STL, the Osage Nation, and the SHPO, engaged in consultation and developed a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA). A copy of the MOA detailing the mitigation measures can be found in the Appendix of the Final EA.

The mitigation measures (stipulations) in the MOA include:

A. Photographic Record
B. Physical Display
C. Website History
D. Design Review
E. Archaeological Monitoring

The mitigation measures of the MOA are a requirement of the Proposed Action. As stated in the MOA, execution of the MOA and implementation of its terms evidences that the FAA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

Although the Proposed Action will result in an adverse effect, mitigation measures in the MOA are intended to resolve adverse effects. Through implementation of these measures, impacts will be mitigated below the level of significance and therefore the Proposed Action would not result in a significant impact to this category of resources under NEPA.

Land Use: Section 3.11 of the Final EA. The existing land uses within the project study area are made up of developed land used for Airport operations and roadways. There are no residences, schools, churches, hospitals, publicly owned parks, recreational areas, or wildlife or waterfowl refuges within the project study area. The Proposed Action would occur entirely on STL property and within existing MoDOT right-of-way (ROW) and would not change the current land use designations in the project area. The Proposed Action would be compatible with existing and expected zoning and surrounding area land use plans.

The Sponsor Land Use Letter provided in the EA states that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including the landing and takeoff of aircraft. This applies to both existing and planned land uses. For these reasons, the Proposed Action would be compatible with existing and expected zoning and surrounding area land use plans. Neither the No Action nor the Proposed Action would result in significant land use impacts.

Natural Resources and Energy Supply: As evaluated in Section 3.12 of the Final EA, the Proposed Action would not consume a notable quantity of natural resources, nor would it exceed local supplies for fuel and energy. In addition, many of the proposed new facilities and utilities would replace older, less efficient facilities, which would achieve a reduction in energy use and potentially even water usage. Proposed construction activities would require the use of typical construction materials such as wood, metal, sand, gravel, concrete, dirt for fill material, glass, water, and asphalt. These materials are not in short supply in the St. Louis area and construction of the Proposed Action would not exceed the available supply of these materials. Therefore, neither the No Action nor the Proposed Action will have a significant impact on natural resources or the local energy supply.

Noise and Compatible Land Use: As described in Section 3.13 of the Final EA, a noise analysis was conducted on the impact of airport-related noise levels upon surrounding noise-sensitive land uses located within the noise contours for the No Action Alternative and the Proposed Action. The operational impact analysis was prepared for the year of anticipated project implementation (2032) and five years after implementation (2037).

The FAA uses 14 CFR Part 150, Airport Noise Compatibility Planning, land use compatibility guidelines to determine compatibility with most land uses. Generally, all land uses exposed to noise levels below the DNL 65 db noise contour are considered compatible. All the existing residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Existing Condition 65 DNL or higher contours have been previously mitigated as part of STL's Part 150 sound insulation program and are considered compatible.

As stated in Section 3.13, there are no new unmitigated residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Future 2032 and 2037 No Action Alternative contours. Additionally, there are no new unmitigated noise sensitive land uses within any of the Future 2032 and 2037 Proposed Action contours. Therefore, there are no new non-compatible land uses due to the Proposed Action.

No new noise sensitive land uses would be subject to noise levels of DNL 65 dB or greater due to an increase in noise of DNL 1.5dB or greater when compared to the No Action alternative for the same timeframe. Further, no existing noise sensitive land uses within the DNL 65 dB would be subject to an increase in noise of DNL 1.5 dB or greater. Therefore, no significant aircraft noise impacts would occur as a result of the Proposed Action.

Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks: Section 3.14 of the Final EA describes the impacts to this resource category.

Socioeconomic:
The Proposed Action would occur entirely on airport property or within existing MoDOT ROW. No residences or businesses would be relocated as a result of the project. No disruption or division of an established community would occur. The Proposed Action would result in changes in traffic patterns which are intended to improve the safety and increase efficiency of the airport access roadways. The planned roadway reconfigurations could have an adverse impact on the local economy and could alter the foot traffic to and from the neighboring communities trying to access the airport.

Access to the Airport would change for multiple businesses and residential neighborhoods located in the area of the Pear Tree Drive and Airflight Drive intersection. Traffic predicted for the Proposed Action decreases some turning movements along Pear Tree Drive when compared to the No Action while the overall traffic in the I-70 corridor adjacent to the Airport and adjacent to these businesses increases. Furthermore, the majority of the businesses in this area are airport user-based businesses, such as hotels, rental car facilities airport parking lots, gas stations and restaurants, which will continue to serve airport users under the Proposed Action.

The Proposed Action is expected to result in a short-term economic benefit due to the increase in employment in the construction sector proportionate to the construction projects. This increased employment would result in a boost to local merchants and could result in positive growth and a short-term increase in the community tax base. The induced economic and employment effects likely to result from the Proposed Action are positive and consistent with local plans. No substantial shifts in business or economic activity adversely impacting the local economy are expected. Therefore, while the Proposed Action would slightly alter travel time and distance and could be an adverse economic impact on Pear Tree Drive/Natural Bridge Road area businesses and residences, the impact is not anticipated to be significant as compared to the No Action alternative.

Environmental Justice:
Minority and low-income populations are present within the affected area. The Proposed Action would not increase air emissions beyond *de minimis* levels for any evaluated pollutant, nor would it create aviation noise impacts at or above 65 dB. While the roadway access improvements connected to the Proposed Action do not result in a substantial increase in noise for noise sensitive resources south of I-70 in the project area, noise generated by I-70 traffic does result in impacts for noise sensitive resources south of I-70 along the project area, requiring evaluation of noise abatement under FHWA rules. See additional discussion below under **Surface Transportation Noise**. No significant impacts are anticipated for other resources evaluated. Therefore, the focus for evaluating potential disproportionately high and adverse impacts to populations of EJ concern was for areas that would experience a change in traffic patterns.

The existing airport entrance is located within a community that is identified as a low-income and minority population and is used by the surrounding community. The Proposed Action would move the main entrance to the Airport diverting traffic away from the existing Airfield

Drive intersection and limiting the amount of foot traffic which could affect the economy in the area for business and residential neighborhoods located near the Pear Tree Drive and Airflight Drive intersection. The Proposed Action would slightly alter the travel time and distance and could be an adverse economic impact on Pear Tree Drive/Natural Bridge Road area businesses and residences. However, the impact is not anticipated to be significant as compared to the No Action alternative. Since the affected area includes EJ populations in all but 3 census tracts within the entire affected community, disproportionate effects would not be expected. Therefore, the Proposed Action would not be expected to cause disproportionate high and adverse human health or environmental effects on minority or low-income populations.

Children's Environmental Health and Safety Risks:
The Proposed Action would not result in an elevated risk related to health or safety concerns for children within the affected community. Air quality and release of soil or groundwater contamination are the primary children's health concerns. As indicated previously, the air quality analysis indicated no increase in air emissions beyond *de minimis* levels under the Proposed Action and would not result in the release of soil or groundwater contaminants. Therefore, there would be no adverse effects on children's health and safety under the Proposed Action.

Recognizing the economic impact the Airport has on the surrounding communities and region, STL will continue collaborating with stakeholders for continued input during landside access improvement design efforts.

Surface Transportation Noise: As described in Section 4.8 of the Final EA, a noise analysis using the Traffic Noise Model (TNM) for surface transportation was completed for proposed improvements within the I-70 right-of-way (ROW). I-70 is the primary traffic noise source in the traffic noise study area.

Existing sound levels exceeding the Noise Abatement Criteria (NAC) do not constitute an impact under Federal Highway Administration (FHWA) regulations and Missouri Department of Transportation (MoDOT) policies. FHWA considers only the future build condition when determining traffic noise impacts.

Modeling of the Proposed Action's future build traffic noise indicates the Pear Tree Apartments will experience traffic noise impacts approaching, meeting, or exceeding the NAC. FHWA requires abatement measures to be considered, but only requires implementation if the abatement measures are found to be both feasible and reasonable as defined by the regulations.

A noise abatement barrier for the Pear Tree Apartments is projected to provide at least 7 dB(A) of noise reduction for all first-row, first-floor receptors in accordance with Missouri's Noise Reduction Design Goal. As a result, this barrier meets the preliminary feasibility and reasonableness requirements of MoDOT's Engineering Policy Guide.

However, roadway design has not advanced sufficiently to perform surface noise public involvement, which is the remaining reasonableness requirement under MoDOT's policy. The final decision on the implementation of noise barriers will be made by MoDOT during project design. When design is advanced sufficiently, MoDOT will solicit the viewpoints of those benefitted by the noise barrier as part of the evaluation of reasonableness. If desired by the public and constructed, the recommended noise barrier along the limited access right of way is expected to mitigate traffic noise to the standards required by MoDOT and FHWA. Only barriers determined to be both reasonable and feasible will be constructed.

Visual Effects: Section 3.15 of the Final EA describes the analysis of the potential visual effects (i.e., light emissions and visual character).

Light Emissions: It is anticipated that the Proposed Action would have the same basic types of lighting currently used on the airport. Therefore, lighting from the Proposed Action when compared to the No Action Alternative would not significantly increase the overall light emissions due to their type, intensity, and distance from residential areas.

Visual Character: The design of the proposed new terminal building is anticipated to be relatively low profile as to not obstruct the view from the existing Air Traffic Control Tower (ATCT). Since the proposed terminal building would be designed so as to not obstruct the view from the ATCT, the Proposed Action would not include any significant vertical development compared to the No Action Alternative. Additionally, the Proposed Action will avoid adverse effects on the terminal building's domes. The views of the domes from off-Airport would be similar to the existing views. Therefore, no noticeable change to the visual resources and visual character would occur that would significantly alter, contrast, or obstruct the existing views from residential areas due to the distance and the obstacles in the way.

For these reasons, neither the No Action nor the Proposed Action would result in significant impacts to either light emissions or visual character.

Water Resources:
Wetlands: As discussed in detail in Section 3.16 of the Final EA, the project study area was investigated for the presence of wetlands and regulated surface water resources. One wetland and eight streams were identified within the study area: Coldwater Creek, and seven unnamed tributaries to Coldwater Creek. Coordination with the U.S. Corps of Engineers (USACE) determined that Coldwater Creek and four (4) streams are jurisdictional while three (3) streams and the one (1) wetland are non-jurisdictional. The Proposed Action may impact up to 0.01 acre of wetland and 4,018-feet of streams. Impacts are primarily associated with construction of the Consolidated Terminal, road infrastructure improvements, placement of fill for installation of culverts, as well as channel improvements and bank stabilization along impacted streams.

There is no practicable alternative to construction in wetlands. The Proposed Action includes all practicable measures to minimize harm to wetlands which may result from such construction. The full extent of the impacts will be determined during the design and permitting phase of the project. A Section 404 permit from the USACE will be necessary to

comply with the Clean Water Act for proposed impacts to waters of the U.S. It is anticipated that the project would require a Section 404 Individual Permit due to the length of potential stream impacts as well as an individual 401 Water Quality Certification. It is anticipated that impacts could be offset through the purchase of credits at a USACE approved mitigation bank or as part of an In Lieu Fee (ILF) Mitigation Program.

Floodplains: As discussed in detail in Section 3.17 of the Final EA, the Missouri State Emergency Management Agency (SEMA), in cooperation with the Federal Emergency Management Agency (FEMA), is currently in the process of updating the floodplain maps. The revised floodplain maps in the vicinity of the Airport are anticipated to become effective in 2024. Based on these new floodplain limits, approximately 39 acres of the project study limits are located within the 100-year floodplain and approximately 55 acres are within the 500-year floodplain.

Under the Proposed Action, up to 3 acres of encroachment, associated with enclosing a portion of Coldwater Creek, would occur within the new 100-year floodplain and up to 5 acres of encroachment would occur within the 500-year floodplain. The proposed Consolidated Terminal, including all new structures, would be located outside of the new 100-year and 500-year floodplain limits. The proposed section of Coldwater Creek to be enclosed and any proposed fill in the floodplain proposed as part of the Proposed Action will require compensatory excavation within the floodplain to avoid a rise in the base flood elevation.

There is no practicable alternative to avoiding development in the floodplain and all practical measures to minimize harm will be included in the project. The action conforms to applicable state and/or local floodplain protection standards. The Proposed Action would not have a significant adverse impact on floodplains.

The Proposed Action would require a floodplain development permit associated with the proposed Coldwater Creek enclosure, from the St. Louis County floodplain administrator. Since the airport is also located within the Metropolitan St. Louis Sewer District (MSD) service boundaries, alteration of any storm drainage channels, site drainage or floodplain encroachments would need to be designed and approved by the MSD.

Surface and Ground Water: As discussed in Sections 3.18 and 3.19 of the Final EA, the Airport currently controls stormwater pollution in accordance with its Missouri State Operating Permit. This permit contains specific operational and facility management actions to prevent and control the potential for discharge of pollutants into surface and groundwater within existing operational areas of the airport. MoDOT manages stormwater runoff through its Transportation Separate Storm Sewer System (TS4) Permit issued by MDNR.

The Proposed Action would result in a net increase of approximately six (6) acres of impervious surfaces. The proposed stormwater infrastructure improvements included in the Proposed Action will be designed in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Permits. Post-construction BMPs would

also be implemented to address stormwater runoff from the project within MoDOT right-of-way in accordance with the TS4 Permit, as required. Neither the No Action nor the Proposed Action would result in significant impacts to surface and ground waters.

STL should use best management practices to minimize impacts to water quality during construction. Since construction activities will disturb more than 1 acre, a NPDES permit would be required from MDNR prior to construction.

Cumulative Impacts: The past, present, and reasonably foreseeable future actions were evaluated for cumulative impacts from these actions that could result in environmental impacts from implementation of the Proposed Action.

With implementation of the Proposed Action, the level of cumulative impacts anticipated to occur within these environmental resource categories is not significant due to: the types of past, present, and reasonably foreseeable future projects; the extent of the built environment in which they would occur; the lack of certain environmental resources in the area; and the mitigation measures identified for the Proposed Action. Therefore, as stated in Section 3.20 of the Final EA, implementation of the Proposed Action would not result in significant cumulative environmental impacts.

FAA and MoDOT/FHWA Environmental Mitigation and Commitments:
Chapter 3, Table 3.21-1 summarizes the environmental impacts associated with the implementation of the Proposed Action compared with the No Action Alternative on the resources analyzed in the Final EA and identifies proposed environmental mitigation to be implemented, as required, as a condition of FAA's approval of the Proposed Action.

The Proposed Action will also impact the ROW controlled by MoDOT. Since FHWA is a cooperating agency under NEPA, Chapter 4 of the Final EA summarizes the environmental impacts of the Proposed Action on the ROW along with proposed environmental commitments applicable within the existing ROW. Although these proposed commitments are a condition of FAA's approval of the Proposed Action, these commitments are also subject to approval by MoDOT/FHWA in accordance with FHWA NEPA requirements.

ENVIRONMENTALLY PREFERRED ALTERNATIVE AND FAA PREFERRED ALTERNATIVE:

Based on the analysis of environmental impact in the Final EA, the No Action Alternative has fewer environmental effects than the Proposed Action Alternative and thus would be the environmentally preferred alternative. In addition to identifying the environmentally preferred alternative, the FAA also identifies the FAA preferred alternative. In selecting the agency's preferred alternative, the FAA considers a variety of factors, including the ability of the alternatives to satisfy the Purpose and Need of the project as well as environmental impacts of the alternatives examined in the EA. Although the No Action Alternative entails fewer environmental impacts, the Proposed Action Alternative incorporates design elements and construction practices to reduce environmental impacts. Furthermore, after mitigation,

there are no significant impacts associated with the Proposed Action Alternative. Finally, the Proposed Action Alternative fully satisfies the Purpose and Need for the project. Because the No Action Alternative does not meet the Purpose and Need for the proposed project, and because the Proposed Action Alternative is designed to minimize environmental effects, the FAA's preferred alternative is the Proposed Action Alternative.

AGENCY COORDINATION AND PUBLIC OUTREACH:

Agency and Public Scoping: Section 5.2 of the Final EA discusses the agency and public scoping for the environmental assessment. On December 15, 2022, a governmental agency meeting and a public scoping meeting were completed to determine the range of issues to be analyzed and to what magnitude they were to be treated. Key governmental agencies were invited to attend the virtual Agency Scoping Meeting and to provide any information they wished to be considered in the EA. 17 representatives of state and local agencies participated in the agency scoping meeting.

In addition to the agency scoping meeting, a public scoping meeting was held that same day to introduce the environmental review process and solicit feedback on issues or concerns to be evaluated during the NEPA processes. Several methods were used to notify the public of the public scoping meeting. Postcards announcing the meeting date, time, location and purpose were mailed to 14,110 residences and businesses within a one-mile radius of the airport. Email invitations were sent to 49 project stakeholders who were part of the Airport's Master Planning process and to 101 individuals who registered for updates. Airport officials placed six (6) social media posts and advertised on their FlySTL website. Both a media advisory and press release were distributed to local media outlets.

A more detailed discussion of agency and public scoping is included in Chapter 5 of the Final EA. A copy of the agency and public scoping meeting notices, lists of attendees, materials presented at the meetings, and comments received during the scoping process are provided in Appendix A of the Final EA.

Public Comment Period and Public Open House: A 30-day Notice of Availability (NOA) announcing the availability of the Draft EA and Public Open House was published in the St. Louis Post Dispatch, a newspaper of general circulation.

The draft document was made available to the public for review online on the FlySTL website at http://www.flystl.com/civil-rights/public-notices-and-reports. In addition, paper copies of the Draft EA were available for public review at three local libraries, the STL Aviation Department, and the FAA Regional Office. The Draft EA was also sent to governmental agencies and communities in and adjacent to the project study area. The comment period for the draft EA was open from July 3, 2024 to August 16, 2024. More information can be found in Chapter 5 of the Final EA.

An open house was conducted on August 6, 2024 to offer the public the opportunity to learn more about the project, ask questions, and provide comments on the information contained in

the Draft EA. A copy of the workshop and hearing newspaper notices, lists of attendees, and materials presented are provided in Appendix A of the Final EA.

All comments received and the responses to the comments on the Draft EA are found in Appendix A of the Final EA. FAA did not receive any comments specifically on the Draft Section 4(f) Statement or the Draft Section 106 Memorandum of Agreement (MOA).

INTER-AGENCY COORDINATION:

In accordance with 49 USC§ 47101 (h), the FAA has determined that no further coordination with the U.S. Department of Interior or the U.S. Environmental Protection Agency is necessary because the Proposed Action does not involve construction of a new airport, new runway or major runway extension that has a significant impact on natural resources including fish and wildlife; natural, scenic, and recreational assets; water and air quality; or another factor affecting the environment.

REASONS FOR DETERMINATION THAT THE PROPOSED ACTION ALTERNATIVE WILL HAVE NO SIGNIFICANT IMPACTS:

The Final EA examines each of the various environmental resources that were deemed present at the project location or had the potential to be impacted by the Proposed Action. As described within this FONSI and in the Final EA, the proposed consolidated terminal program at STL would not involve any environmental impacts, after mitigation, that would exceed a threshold of significance as defined by FAA Orders 1050.1F and 5050.4B. The mitigation necessary to support a finding of no significant impact is contained in the Memorandum of Agreement (MOA) executed by FAA, STLAA[2], the SHPO, and The Osage Nation to address adverse effects to the Lambert Field Historic District. The MOA is located in Appendix G of the Final EA.

AGENCY FINDINGS:

The FAA makes the following determinations for this project based on information and analysis set forth in the Final EA and other portions of the project/administrative file.

- **The project is reasonably consistent with existing plans of public agencies for development of the area [49 U.S.C. 47106(a)].** The FAA is satisfied that the Proposed Action is reasonably consistent with the plans, goals, and policies for the area surrounding the airport based on coordination efforts with public agencies as described in Chapter 5 of the Final EA. The Proposed Action is also consistent with the applicable regulations and policies of federal, State, and local agencies.

[2]STLAA's signature on the MOA reflects its agreement and commitment to implement the terms of the MOA. Execution of the MOA and implementation of its terms is a requirement of the Proposed Action.

- **Independent and Objective Evaluation.** As required by the Council on Environmental Quality (40 CFR § 1506.5), the FAA has independently and objectively evaluated this proposed project. As described in the Final EA, the Proposed Action and the No Action Alternative were studied extensively to determine the potential impacts and appropriate mitigation for those impacts. The FAA provided input, advice, and expertise throughout the analysis, along with administrative and legal review of the project.

- **Community Interests Considered [49 U.S.C. 47106(b)(2)].** The FAA is satisfied that the interests of the communities in or near where the project may be located were given fair consideration. The planning process for the Proposed Action is described in Chapter 2 of the Final EA. Nearby communities and their residents have had the opportunity to express their views during the scoping process, during the Draft EA and the Draft Section 4(f) Statement public comment periods, and at a public open house. The consideration of those views is included in Appendix A of the Final EA.

- **Land Use Restrictions [49 U.S.C. § 47107].** The FAA has received satisfactory assurances from the airport sponsor, included in Appendix H of the Final EA, that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with airport normal operations, including landing and takeoff of aircraft.

- **National Historic Preservation Act, Section 106.** The FAA has determined, and the SHPO has concurred, that the Lambert Field Historic District and Terminal Domes are eligible for the National Register of Historic Places. With the proposed demolition of the historic district and construction of a new terminal building with associated development, the undertaking (Proposed Action) would constitute an adverse effect to the historic district. FAA conducted the required consultation with the SHPO and other parties pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended. FAA also afforded ACHP a reasonable opportunity to comment on the undertaking. A Memorandum of Agreement (MOA) was executed by the FAA, STLAA, SHPO, and The Osage Nation and is included in Appendix G of the Final EA. The MOA describes the measures needed to mitigate the adverse effect of the Proposed Action on the historic district. Execution of the MOA and implementation of its terms evidences that the FAA has taken into account the effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment. STLAA's adherence to the stipulations in the MOA is a condition of approval of this FONSI/ROD.

- **Department of Transportation Act, Section 4(f) [49 U.S.C. § 303].** The Proposed Action would result in a physical "use" of the National Register-eligible Lambert Field Historic District, which is a Section 4(f) resource. FAA has determined that there are no alternatives that address the Purpose and Need of the project and are both

prudent and feasible. A MOA outlines the mitigation measures needed to resolve the adverse effects of the Proposed Action on the historic district. The mitigation measures in the MOA are a condition of approval of this FONSI/ROD and address the Section 4(f) requirement that the project include all possible planning to minimize harm to the historic district resulting from the use.

- **Avoidance and Minimization.** Based on the information contained in the Final EA, the FAA has determined that all practicable means to avoid or minimize environmental harm from the Proposed Action have been adopted. The proposed Action avoids and minimizes environmental harm in a variety of ways, including: reducing air quality emissions and GHG emissions along with energy and water usage after project construction is complete; recycling as much material as practicable; following all state and local regulations, as well as best management practices during construction activities relating to hazardous materials, solid waste, pollution prevention, fugitive dust, and storm water impacts; and other examples provided throughout the Final EA. Additionally, as stated above, the MOA documents that all practicable means to avoid or minimize adverse effects to the historic district, as well as minimize harm due to the use of the historic district, have been adopted.

DECISION AND ORDER:

Based on the information in this FONSI/ROD and supported by detailed discussion in the Final EA, the Proposed Action has been identified as the FAA's selected alternative and the FAA must either:

- Approve agency actions necessary to implement the Proposed Action, or
- Disapprove agency actions to implement the Proposed Action.

Approval signifies that applicable federal requirements relating to the proposed airport development have been met. Approval permits STLAA to proceed with implementation of the Proposed Action and associated mitigation measures. Disapproval would prevent STLAA from implementing the Proposed Action elements within STL.

Under the authority delegated to me by the Administrator of the Federal Aviation Administration, I find that the project is reasonably supported. I, therefore, direct that action be taken to carry out the agency actions discussed more fully in the "PROPOSED ACTION AND REQUESTED FEDERAL ACTIONS" section of this FONSI/ROD.

This order is issued under applicable statutory authorities, including 49 U.S.C. §§ 40101(d), 40103(b), 40113(a), 44701, 44706, 44718(b), and 47101 et seq.

APPROVING FAA OFFICIAL'S STATEMENT OF ENVIRONMENTAL FINDING:

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies

and objectives as set forth in Section 101 of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA. As a result, FAA is issuing this FONSI and will not prepare an Environmental Impact Statement (EIS) for this action.

APPROVED: RODNEY N JOEL Digitally signed by RODNEY N JOEL Date: 2024.10.18 16:34:13 -05'00'

Director, Airports Division — Date
FAA Central Region

DISAPPROVED: _____

Director, Airports Division — Date
FAA Central Region

CONCUR: DEBRA G SANNING Digitally signed by DEBRA G SANNING Date: 2024.10.21 08:58:06 -05'00'

Regional Administrator — Date
FAA Central Region

RIGHT OF APPEAL:

This decision document (FONSI/ROD) is a final order of the FAA Administrator and is subject to exclusive judicial review under 49 U.S.C. § 46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision lives or has a principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate U.S. Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 U.S.C. § 46110.

FINAL ENVIRONMENTAL ASSESSMENT and Section 4(f) Statement Proposed Consolidated Terminal Program

St. Louis Lambert International Airport

St. Louis, St. Louis County, Missouri

October 2024

Prepared by: Crawford, Murphy & Tilly, Inc. and WSP

Prepared For: ***U.S. DEPARTMENT OF TRANSPORTATION***
FEDERAL AVIATION ADMINISTRATION
CENTRAL REGION

This Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible Federal Aviation Administration (FAA) Official.

SCOTT D TENER

Digitally signed by SCOTT D TENER
Date: 2024.10.18 13:57:44 -05'00'

Responsible FAA Official

Date

CEQ Unique ID: EAXX-021-12-ARP-1726844592

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Appendices

Chapter One
Purpose and Need

1.1 Introduction

The St. Louis Airport Authority (STLAA), as the Sponsor of the St. Louis Lambert International Airport (STL or the Airport), is proposing to construct terminal, roadway and parking improvements to enhance the passenger experience and ensure continued safe, secure and efficient operations at STL. A complete description of the Proposed Action, referred to as the Consolidated Terminal Program (CTP), is provided in Section 1.5.

The Proposed Action requires approval from the Federal Aviation Administration (FAA) for the changes to the STL Airport Layout Plan (ALP). In addition, to construct eligible portions of the Proposed Action, STLAA plans to apply for federal financial assistance under the Airport Improvement Program. Unconditional approval of the ALP and federal funding approval are both federal actions that require the FAA to comply with the National Environmental Policy Act (NEPA).[1] To comply with NEPA, FAA is, with the assistance of STLAA, preparing this Environmental Assessment (EA) in conformance with the applicable sections of FAA Order 5050.4B[2] and FAA Order 1050.1F.[3]

This EA provides information on the Proposed Action; evaluates reasonable and feasible alternatives; identifies, analyzes, and discloses potential environmental consequences associated with the proposed development; and, if required, identifies mitigation for environmental impacts.

1.2 Airport Location

STL is located approximately 13 air miles northwest of downtown St. Louis as depicted on Figure 1.2-1, Location Map. The proposed CTP project limits are shown on Figure 1.2-2, Vicinity Map.

1.3 Purpose of the Proposed Action

The purpose of the Proposed Action is to:

- Enhance the passenger experience,
- Increase airport revenue,
- Eliminate duplication of services,
- Eliminate aging and redundant building systems, and
- Ensure continued safe, secure and efficient operations at STL.

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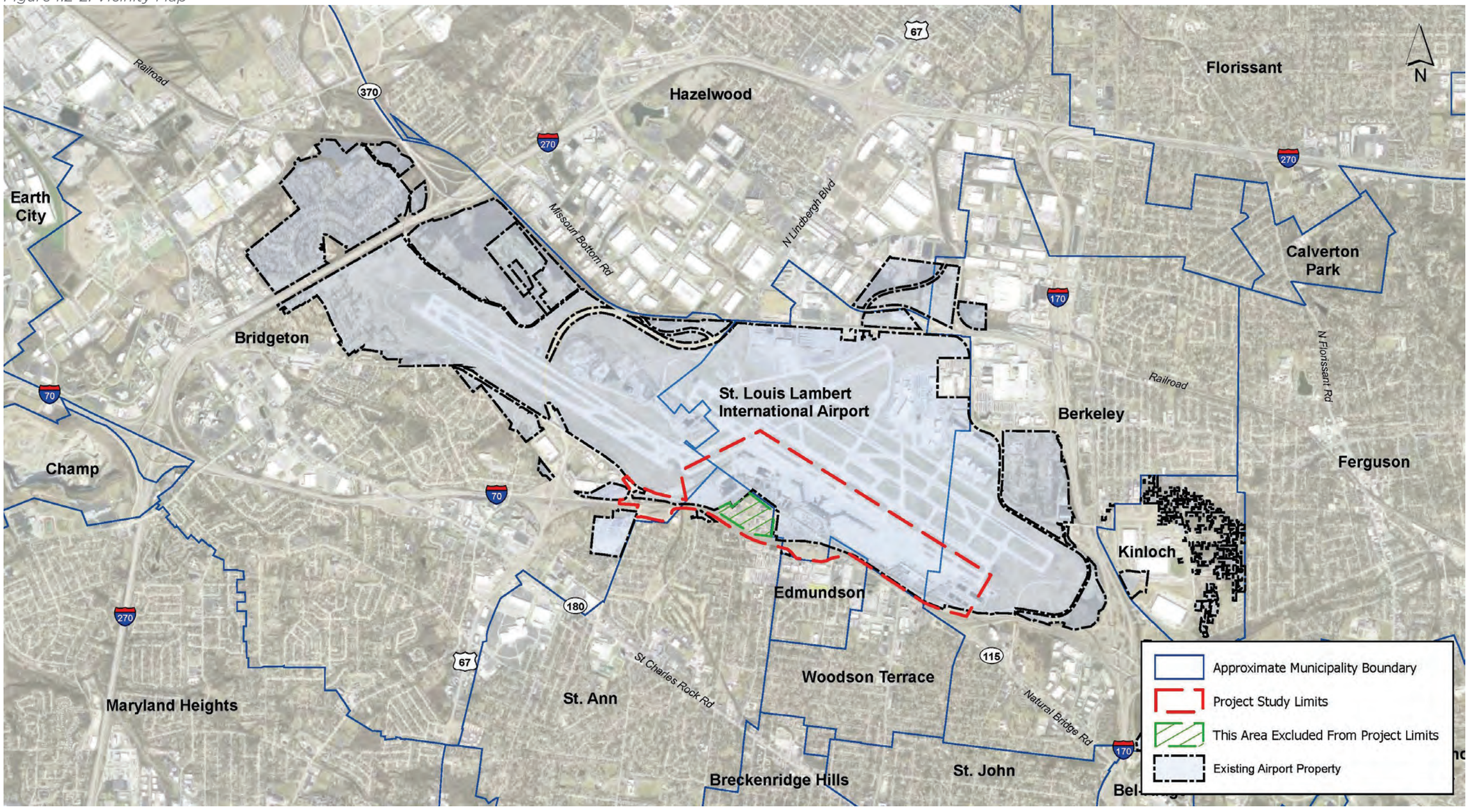
1 42 U.S.C. 4321 *et seq.,* National Environmental Policy Act, as amended.
2 FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, April 28, 2006.
3 FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, July 16, 2015.

Figure 1.2-1: Location Map

Sources: Background Map, ESRI World Street Map, CMT, 2023.

Figure 1.2-2: Vicinity Map



Sources: Background Image; ESRI World Imagery, CMT, 2024.

1.4 Need for the Proposed Action

STLAA has identified deficiencies within the existing terminals, roadways, and parking facilities that must be improved to meet the Project's Purpose of an enhanced passenger experience, increased airport revenue, and continued safe and efficient operations. These deficiencies are detailed in the 2023 STL Master Plan[4] (Master Plan) and summarized in this section.

- Existing facilities: The size and the operational and functional characteristics of individual facilities (e.g., passenger holdrooms, corridors, restrooms, concessions, security screening facilities, roadways, and parking) are the baseline against which the facility requirements for meeting current and forecast future demand are measured to determine deficiencies.
- Current and forecast demand: The assessment of needed facilities is based on the forecast, which was reviewed and approved by the FAA on August 21, 2020.[5] A subsequent forecast review in 2022 documented that passenger enplanements are forecast to increase from nearly 7.9 million in 2019 to 10.1 million in 2037.[6, 7] Commercial aircraft operations (passenger and cargo) are forecast to increase over the same period from nearly 175,000 operations to 195,000 operations. This growth is anticipated to occur with or without the Proposed Action and therefore, the Proposed Action would not induce or cause growth in the number of passengers or aircraft operations at STL.
- Industry standards for an optimum level of passenger service: STL proposes to provide an "optimum"[8] level of passenger service. Metrics for an "optimum" level of service are detailed in Master Plan.

The Master Plan identified deficiencies in the terminal facilities based on the forecast, where the "optimum" level of service is not currently provided or would not be met in the future. The Master Plan also identified inefficiencies, including duplication of services and excessive operating and maintenance costs associated with operating two terminal facilities, as well as lost revenue opportunities associated with parking and concessions. The detailed data, analysis methodologies, and results of these analyses can be found in the Master Plan as referenced.

1.4.1 Passenger Terminals

Terminal 1 and Terminal 2 provide a sub-optimum level of passenger service when compared to industry standards.

Terminal 1 opened in 1956 and was expanded in 1965 with the addition of a fourth dome. The concourses were rebuilt and expanded over the next two decades to accommodate more and

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[4] The STL Final Draft Master Plan (February 2023) can be viewed at: https://www.flystl.com/about-us/stl-airport-layout-plan/airport-layout-plan-study-highlights, Accessed March 1, 2024.
[5] Aviation Demand Forecast and Critical Design Aircraft Approval Letter, FAA, August 21, 2020.
[6] WSP, Memorandum from John van Woensel of WSP to Jerry Beckman and Dana Ryan of St. Louis Airport Authority: STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments, September 30, 2022.
[7] St. Louis Airport Authority's fiscal year ends each year on June 30th and 2022 passenger and operation numbers are actual from FY 2022.
[8] "Optimum" is discussed on page 4-77 in Chapter 4 – Facilities Requirements of the Master Plan, noted in footnote 4 of this document.

larger aircraft. By 1985, the terminal included four concourses (A though D) with 73 gates, and served as a major connecting hub for Trans World Airlines (TWA).[9] As a result of airline mergers and the closure of the TWA hub, there are currently 26 active gates in Concourses A and C, with only four meeting modern holdroom (gate seating areas) standards.[10] Based on the size of most aircraft and the continuing trend of larger aircraft with more seats, all of the STL concourses are undersized and functionally deficient, including the holdrooms, restrooms, concession space, corridor widths, ticket lobby and security screening. Additionally, airline ticket offices are also undersized and the checked baggage screening systems are often overloaded during peak periods. There are insufficient retail options for passengers after the security screening, and no space to add concessions, which results in low customer experience and lost revenue to the Airport. The mechanical systems throughout Terminal 1 are aged and inefficient, increasing operating and maintenance costs. In addition, the unused space in the terminal is heated, air conditioned, secured, and maintained, adding unnecessary operating costs. At more than 60 years old, Terminal 1 is beyond its useful life.

Terminal 2 (Concourse E) was completed in 1998 to accommodate Southwest Airlines; it has a total of 18 gates, including four that were originally part of Concourse D. While Terminal 2 is not as old as Terminal 1, aircraft sizes serving it have also increased since it was constructed, resulting in undersized terminal areas, many of which are operating beyond capacity (holdrooms, restrooms, concession space, corridor widths, ticket lobby, security screening, baggage claim and baggage make-up area). Additionally, there is no baggage recheck counter for connecting international passengers. The use of Concourse E results in excessive walking for connecting passengers because it has gates on only one side of the concourse and insufficient room to add a moving walkway. Terminal 2 concessions are undersized overall, resulting in low customer experience and lost revenue to the Airport.

Terminal 2 currently needs additional gates, and this need is projected to increase to 22 gates in 2040. While Concourse D gates could be reactivated to meet gate demand, these facilities are undersized for the current size of aircraft, and doing so would continue a sub-optimum passenger level of service, add excessive walking distances for connecting passengers, and increase congestion in the ticketing, baggage and security areas, corridors, and concessions. By the end of the planning period in 2040, Terminal 2 would be 42 years old and will have reached the end of its useful life.

1.4.2 Airport Roadways and Parking

The existing airport access from I-70 provides less than 1 mile from Interstate 70 to Terminal 1 and 2. This results in short decision distances that do not provide enough time for drivers to safely and efficiently move from the highway to either the terminal curbside or parking facilities. In addition, there are limited sight lines to identify and avoid stopped traffic; and the dense roadway infrastructure limits the ability to provide adequate wayfinding signage. Existing airport roadway geometry, intersections, terminal curbsides and parking all display deficiencies and inefficiencies that would be exacerbated by increased traffic associated with the forecast future passenger

[9] STL Website, accessed 11/8/2023, https://www.flystl.com/about-us/history#:~:text=History-,St.,reaching%20the%20rank%20of%20Major

[10] Concourse B is used for special functions and some of its apron level space is used for airport operations. Four Concourse D gates closest to Terminal 2 were reactivated and renamed as E gates.

levels. Intersections and access/egress points immediately in front of each terminal are insufficiently spaced for safe operations. The arriving public vehicle curb length is undersized at Terminal 1 for current levels of activity; at Terminal 2, it would become undersized by 2040 without improvements. At both terminals, there is currently an insufficient number of lanes to allow efficient public and commercial vehicle maneuvering to use the curb length to its full capacity. Additionally, shuttles, for-hire vehicles, and personal vehicles all use the same roads and mostly the same lanes, increasing congestion. Overall, the on-airport roadways at both terminals provide inadequate space to make decisions about turns and weaving and have inadequate curbside access.

Passengers and employees (Airport, TSA, airline, tenant) all use the same parking facilities, which include the Terminal 1 Garage, the Terminal 2 Garage, and several surface parking lots. The Terminal 1 Garage, constructed in 1971, is functionally obsolete and nearing the end of its useful life. The total airport-operated parking demand is anticipated to exceed existing capacity in 2027. Some parking facilities are already operating over capacity, including the Terminal 2 Garage, Lot B, and Lot E, which results in redistribution of this demand to the other on-airport parking facilities, leading to long user walks or shuttle rides. The Terminal 1 Garage and Lot A are forecast to reach capacity by 2029, and Lot C is expected to reach capacity by 2032. By 2040, total airport-operated parking demand is expected to exceed the existing supply by 25 percent. While some of the increase could be addressed by private entities off-airport, the lack of sufficient parking represents a significant lost revenue opportunity for STL.

1.4.3 Summary of Need for the Proposed Action

Nearly all the passenger processing areas of Terminals 1 and 2 are undersized and congested. In addition, mechanical systems, holdrooms, restrooms and concession space in Terminal 1 are in poor condition and functionally obsolete. Additional gates are required in Terminal 2, and while there are unused gates in the adjacent Concourse D, they are undersized, functionally obsolete, and would result in unacceptably long walks for passengers. Post-security concessions are undersized in both terminals, restricting both passenger choices and airport revenue. Therefore, both terminals provide a sub-optimum level of passenger service and do not support increasing airport revenue.

The roadway geometry, intersections, and curbsides have several existing safety deficiencies and inefficiencies that would be made worse with the forecast increase in passengers. There is a need to extend the distance between the interstate and the terminal to provide ample decision-making time/distance, improve sight lines, minimize conflict points and to allow for wayfinding signage. Some on-airport parking facilities are routinely operating over capacity, and total parking demand is anticipated to exceed existing capacity in 2027. By 2040, total on-airport parking demand is expected to exceed the existing supply by 25 percent. Capturing this demand would provide a significant revenue opportunity for STL.

1.5 Description of the Proposed Action and Implementation Timeframe

The Proposed Action includes the following major components and connected actions[11] as summarized in Table 1.5-1 and depicted in Figures 1.5-1, 1.5-2 and 1.5-3. Construction of the Proposed Action is planned to span from 2026 to 2031. Additional information on the anticipated phasing of the individual project components and connected actions is included in Appendix B, Consolidated Terminal Program Phasing.

Table 1.5-1: Proposed Action

Major Project Components and Connected Actions
Enabling Projects: ▪ Demolish various structures to accommodate a new consolidated terminal, including the former Missouri Air National Guard (MoANG) Campus, South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities (Swissport), phased demolition of existing Concourses A, B, C and D, and other support facilities as depicted in Figure 1.5-1. ▪ Construct a temporary Consolidated Receiving & Distribution Facility (CRDF), Building Maintenance Facility, and Airport Administration & Police Space.
Consolidated Terminal/Airside Components: ▪ Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2, as depicted in Figures 1.5-2 and 1.5-3, including: o Reconfigure terminal passenger ticketing and baggage claim areas within the existing historic terminal dome area, o Construct new consolidated security screening centered between the check-in lobby and the terminal concourse, o Construct new Federal Inspection Services (FIS)/Customs accessible to all airlines, o Construct new baggage claim area on lower level of the new consolidated terminal, and o Relocate and upgrade utilities (electric, natural gas, telecommunications, water, sanitary and storm sewers, glycol and hydrant fueling, etc.). ▪ Construct replacement airline support facilities to accommodate Ground Support Equipment (GSE), fuel consortium services, triturator,[12] and other airline/airport support services. ▪ Construct Consolidated Receiving and Distribution Facility (CRDF) ▪ Construct various stormwater collection system improvements, including east deicing pad spent aircraft deicing fluid (SADF) collection infrastructure. ▪ Construct terminal apron infill around the west terminal concourse, including proposed Coldwater Creek enclosure.

[11] Connected actions are closely related actions that: (a) automatically trigger other actions; (b) cannot or will not proceed unless other actions are taken previously or simultaneously; or (c) are interdependent parts of a larger action and depend on the larger action for their justification (see 40 CFR § 1508.25 (a) (1), CEQ Regulations).

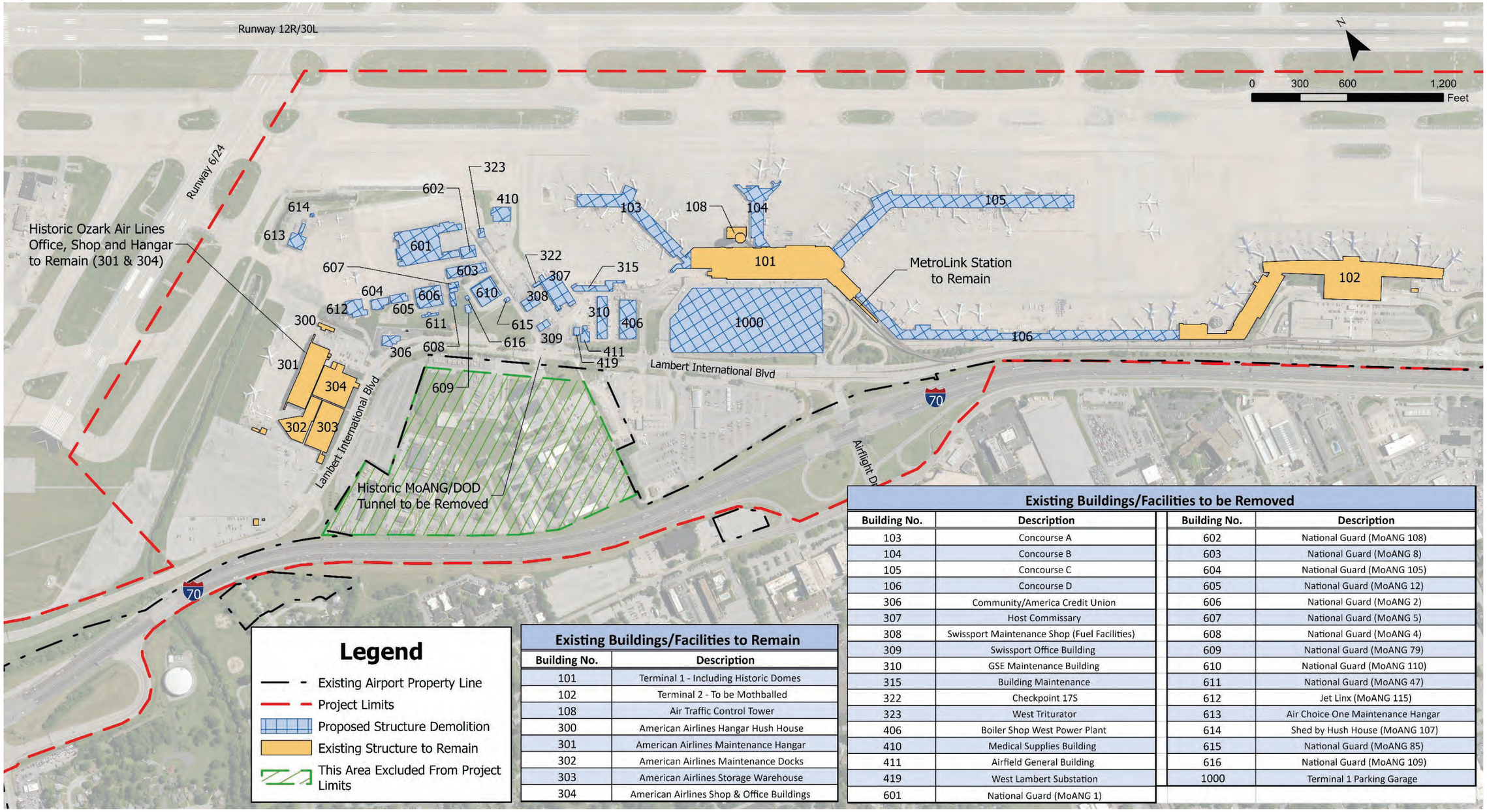
[12] An airport triturator is a specialized system used for waste disposal at airports, particularly for managing waste from aircraft lavatories.

Major Project Components and Connected Actions
▪ Reconstruct the aprons and taxilanes in the vicinity of the new consolidated terminal. ▪ Convert Taxilane C to Taxiway C. ▪ Close Terminal 2 and mothball until a potential reuse is identified.
On-Airport Roadway and Landside Components: ▪ Realign terminal roadway system with improved driver wayfinding. ▪ Construct replacement two-level passenger drop-off and pick-up curb. ▪ Construct Ground Transportation Center (GTC). ▪ Construct replacement terminal parking garage, surface parking and employee parking facilities. ▪ Construct Transportation Network Companies & Taxi Staging Area.
Connected Actions – Other Roadway Access Improvements: ▪ Construct roadway and intersection improvements in coordination with the Federal Highway Administration (FHWA), and the Missouri Department of Transportation (MoDOT),[13] including: o Auxiliary lane and shoulder improvements along westbound I-70 between the Airflight Drive and Natural Bridge Road interchanges, o Airflight Drive intersection improvements, including removing direct access from northbound Airflight to the proposed Consolidated Terminal, o Remove ramp from Lambert International Boulevard onto westbound I-70, and o Intersection improvements at the I-70 and Cypress Road/Natural Bridge Interchange, which may include widening or restriping pavement for additional turning lanes at the various ramp terminal intersections. ▪ Construct potential additional access improvements as identified and refined during the detailed design phase of the project.

Source: CMT, 2024.

[13] During the conceptual design phase of the CTP, it was determined that some off-airport roadway capacity improvements would be needed to better accommodate vehicular traffic demand that currently accesses two terminals at STL but would access a single terminal under the Proposed Action. Therefore, these proposed off-airport roadway improvements have been included as part of the Proposed Action being evaluated in this EA and are being coordinated with MoDOT and FHWA. Further information regarding the proposed off-airport roadway improvements is presented in Appendix K: Surface Transportation Assessment.

Figure 1.5-1: Proposed Action – Consolidated Terminal Program (Structure Removals)



Legend

- Existing Airport Property Line
- Project Limits
- Proposed Structure Demolition
- Existing Structure to Remain
- This Area Excluded From Project Limits

Existing Buildings/Facilities to Remain

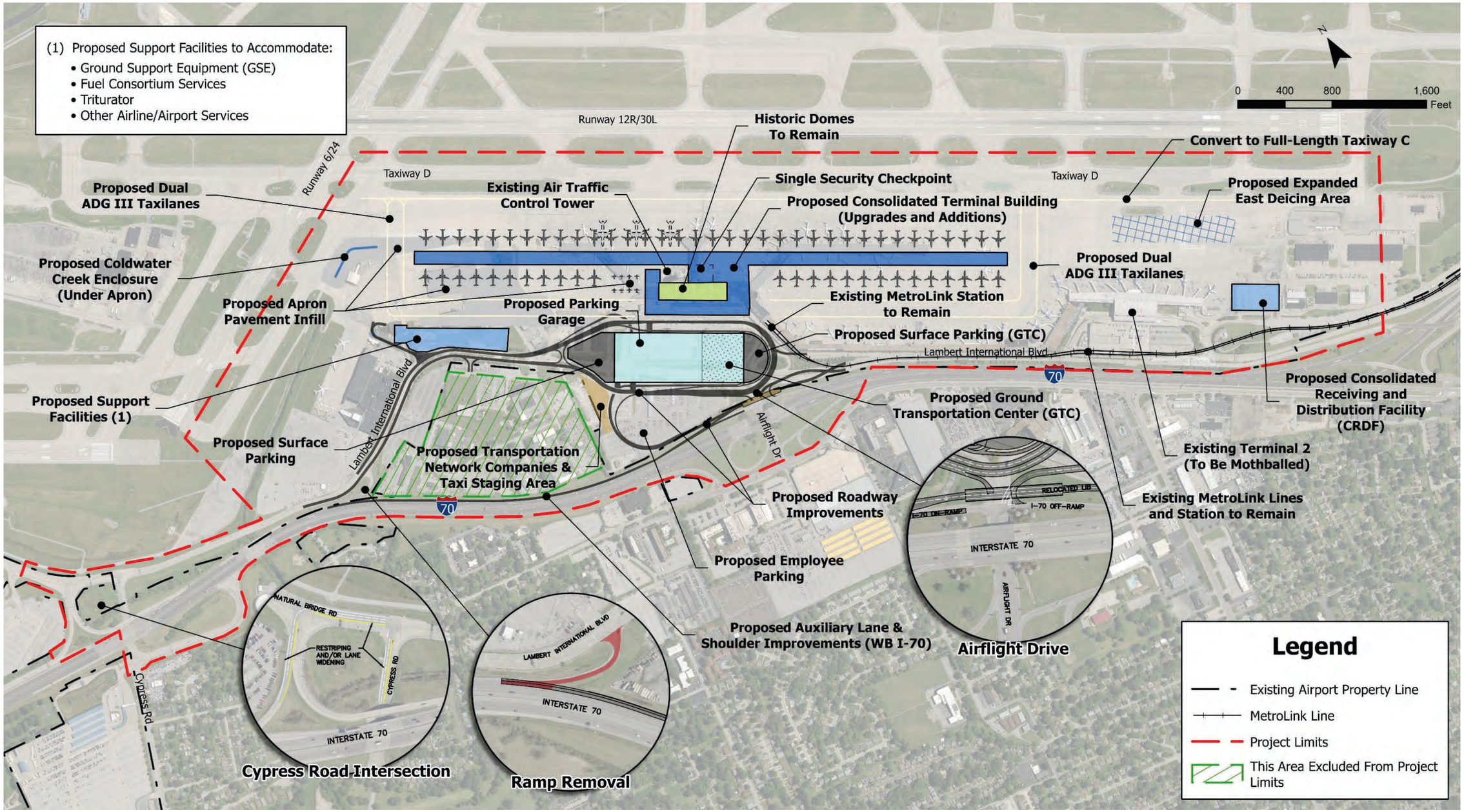
Building No.	Description
101	Terminal 1 - Including Historic Domes
102	Terminal 2 - To be Mothballed
108	Air Traffic Control Tower
300	American Airlines Hangar Hush House
301	American Airlines Maintenance Hangar
302	American Airlines Maintenance Docks
303	American Airlines Storage Warehouse
304	American Airlines Shop & Office Buildings

Existing Buildings/Facilities to be Removed

Building No.	Description	Building No.	Description
103	Concourse A	602	National Guard (MoANG 108)
104	Concourse B	603	National Guard (MoANG 8)
105	Concourse C	604	National Guard (MoANG 105)
106	Concourse D	605	National Guard (MoANG 12)
306	Community/America Credit Union	606	National Guard (MoANG 2)
307	Host Commissary	607	National Guard (MoANG 5)
308	Swissport Maintenance Shop (Fuel Facilities)	608	National Guard (MoANG 4)
309	Swissport Office Building	609	National Guard (MoANG 79)
310	GSE Maintenance Building	610	National Guard (MoANG 110)
315	Building Maintenance	611	National Guard (MoANG 47)
322	Checkpoint 17S	612	Jet Linx (MoANG 115)
323	West Triturator	613	Air Choice One Maintenance Hangar
406	Boiler Shop West Power Plant	614	Shed by Hush House (MoANG 107)
410	Medical Supplies Building	615	National Guard (MoANG 85)
411	Airfield General Building	616	National Guard (MoANG 109)
419	West Lambert Substation	1000	Terminal 1 Parking Garage
601	National Guard (MoANG 1)		

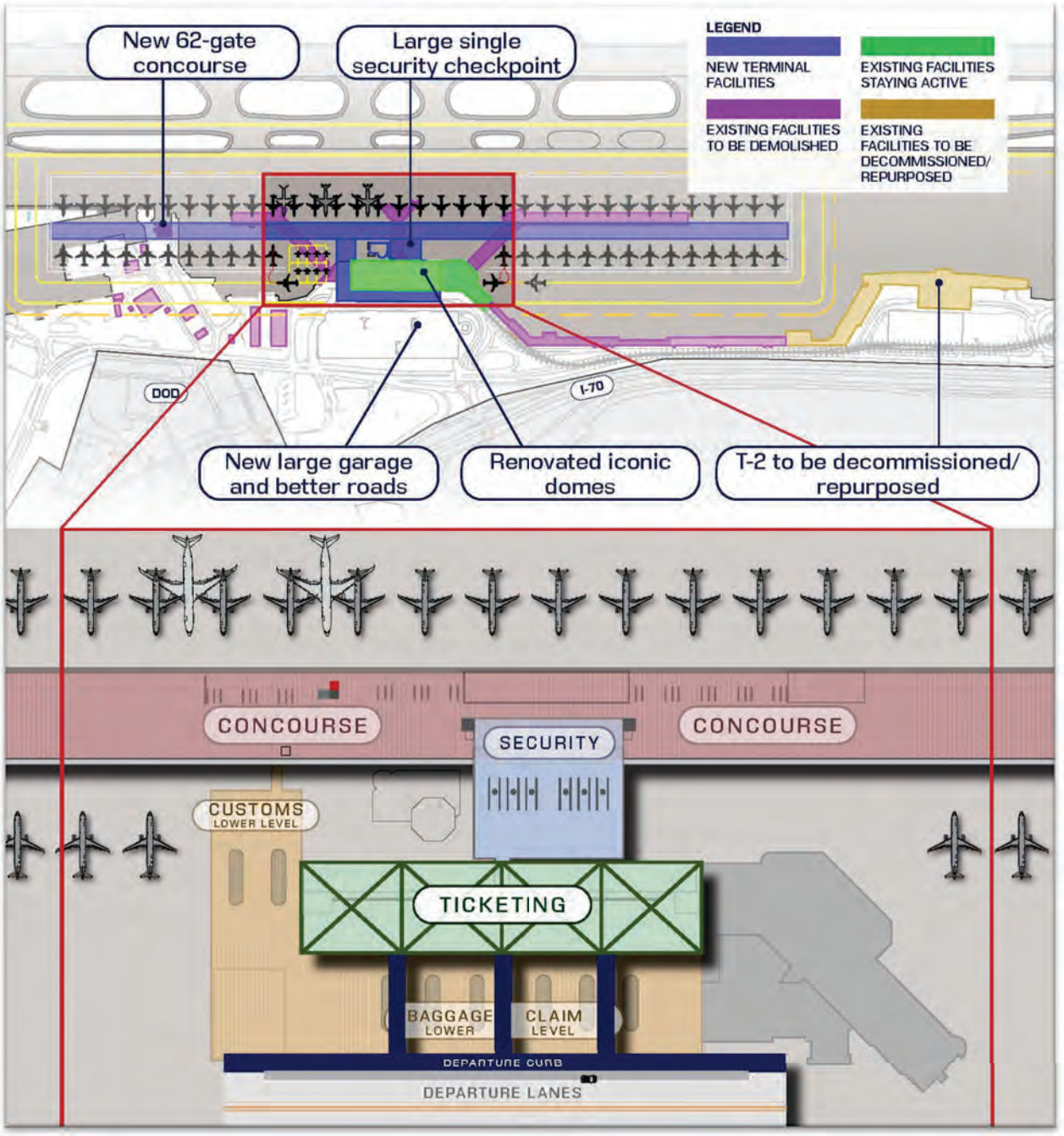
Source: CMT, 2024.

Figure 1.5-2: Proposed Action - Consolidated Terminal Program



Source: CMT, 2024.

Figure 1.5-3: Proposed Action - Consolidated Terminal Conceptual Layout



Source: WSP USA, 2024.

1.6 Requested Federal Actions

FAA is the lead federal agency and is responsible for ensuring compliance under NEPA for the Proposed Action. Listed below are additional actions by FAA necessary to develop the Proposed Action.

- Unconditional approval of the ALP to depict the proposed improvements pursuant to 49 USC §§ 40103(b) and 47107(a)(16).
- Determination under 49 USC § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interest of national defense.
- Approval of changes to the airport certification manual pursuant to 14 CFR Part 139 (49 USC §44706).
- Determinations under 49 USC 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP), Bipartisan Infrastructure Law (BIL), Airport Infrastructure Grant Program (AIG), and other FAA administered federal funding programs, and/or determinations under 49 USC 40117, as implemented by 14 CFR 158.25, to impose and use passenger facility charges (PFCs) collected at the airport to assist with construction of potentially eligible development items shown on the ALP including the proposed construction of the consolidated terminal and associated actions that may directly or indirectly impact FAA facilities including but not limited to utility relocations.

Chapter Two Alternatives

2.1 Introduction

This chapter describes reasonable alternatives to the Proposed Action and evaluates the ability of the alternatives to meet the purpose and need as described in Chapter One. Federal guidelines concerning the environmental review process describe reasonable alternatives as those that are feasible and are practical from a technical and economic standpoint and using common sense.[14]

This chapter also describes the process by which alternatives were developed and evaluated, resulting in the selection of the proposed CTP as the STLAA's Preferred Alternative and the Proposed Action. This evaluation of alternatives was conducted as part of the recent 2023 Master Plan process and meets the requirements of NEPA to rigorously explore and objectively evaluate all reasonable alternatives.

The goal of the alternatives development and evaluation process was to identify a range of alternatives that could achieve the purpose and need and are reasonable. An alternative is not feasible if it cannot be built as a matter of sound engineering judgment. Only feasible alternatives were developed and included in the Master Plan process.

2.2 Preliminary Alternatives Development

Once a range of preliminary alternatives was established, a multi-step alternatives evaluation process was applied. These steps were referred to in the Master Plan as "rounds." The initial analysis considered relocating the terminal(s) and identified 15 potential sites on the airport property. This exercise revealed that relocating the terminals away from the existing site would require the relocation of I-70, the relocation or decommissioning of runways, and/or construction of new landside access from a highway. All of these factors were considered cost prohibitive and therefore, not practical. Thus, relocation of the terminal(s) was not advanced and only preliminary alternatives in the general area of the existing terminals between the airfield to the north and I-70 to the south were considered.

Preliminary alternatives in the area of the existing terminals (referred to as "concepts" in the Master Plan) were developed to achieve the project purpose and need and to avoid impacts to the airfield, I-70,[15] and Coldwater Creek, as well as to accommodate the types of aircraft in the forecast and to maintain MetroLink transit access at STL. To the greatest extent possible, the alternatives avoid impacts to the National Register of Historic Places (NRHP) eligible Lambert Field Historic District, the NRHP-eligible iconic 1956 domes of the existing main terminal ticket

[14] Council on Environmental Quality, Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, Answer to Questions 1a and 2A, March 23, 1981.

[15] While MoDOT is studying improvements to I-70 in the vicinity of the airport, it is likely that only minor shifts to I-70 would occur as a result of MoDOT improvements.

lobby, the NRHP-eligible Ozark Air Lines Office, Shop, and Hangar, and the 34-acre Department of Defense (DoD) property between Lambert International Boulevard and I-70.[16, 17]

Two "families" of preliminary alternatives were developed: consolidating the two existing terminals into one terminal and maintaining two separate terminals. Although the initial focus was on the concourse (gate) areas, the Master Plan also identified and evaluated three preliminary alternatives for passenger processing (referred to as "processors"), which contain functions such as ticketing, baggage claim, and security screening, and which would be paired later in the screening process with a concourse alternative. The Master Plan identified 22 preliminary alternatives: 11 one-terminal concepts, 8 two-terminal concepts, and 3 processor concepts. The 22 preliminary alternatives developed are illustrated in Figure 2.2-1.

2.2.1 Preliminary Alternatives Evaluation Process and Results

In the Master Plan, the preliminary alternatives were screened in a five-step process as shown in Figure 2.3-1. A set of screening criteria were applied at each step to narrow the range of preliminary alternatives to be evaluated in more detail in the subsequent step. These steps were referred to in the Master Plan as "rounds." In each round, the screening criteria address, in different ways, whether each preliminary alternative achieves the project purpose and need and whether it is practical. [18]

Figure 2.3-2 illustrates the results of the preliminary alternatives screening process. Table 2.3-1 lists the screening criteria applied in each round and summarizes the results of applying the criteria to each of the preliminary alternatives. As summarized in Table 2.3-1, Rounds 1, 2 and 3 focused on broad-scale terminal configurations. Round 4 focused on whether each remaining preliminary alternative could, in the limited envelope available between the terminal area and I-70, accommodate the roadway safety and efficiency improvements and parking capacity enhancements required to achieve the purpose and need. The optimum location of the parking garage is within walking distance from the terminal, both for passenger convenience, and to reduce roadway congestion from parking shuttles; therefore, the garage was maintained in its existing location for the Round 4 analysis.

During the alternatives evaluation process, some of the preliminary alternatives were refined to address particular issues, as reflected in Table 2.3-1. For example, during Round 2, two variants with an aboveground Automated People Mover (APM) (Alternatives 8A and 8B) were introduced to mitigate the high cost of Alternative 8's underground APM, and Alternative 14 was refined to retain the iconic terminal domes (Alternative 14A). After Round 3, complete alternatives were formed by paring Alternative 5 (consolidated terminal) with each of the two remaining processors and pairing Alternative 18 with each of two scaled-down single terminal alternatives to form two-

[16] The Lambert Field Historic District is comprised of a part of the former MoANG campus northwest of Terminal 1, and it is eligible for listing on the National Register of Historic Places (NRHP). The terminal domes were designed by an important architect, are NRHP eligible, and are architecturally symbolic of STL. Under Section 4(f) of the U.S. Department of Transportation Act, FAA may approve a transportation project requiring the use of Section 4(f) resources if there is no feasible and prudent alternative and the project includes all possible planning to minimize harm; thus, the Master Plan ensured at least some of the preliminary alternatives avoided these properties.

[17] The Master Plan evaluated preliminary alternatives that did not require acquisition of the DoD property because acquiring the property and relocating the military uses on the site would be costly, complex, and time-consuming.

[18] Figure 2.2-1 does not depict Alternatives 21 and 22, which alter the internal use of existing structures.

Figure 2.2-1: Initial Preliminary Alternatives

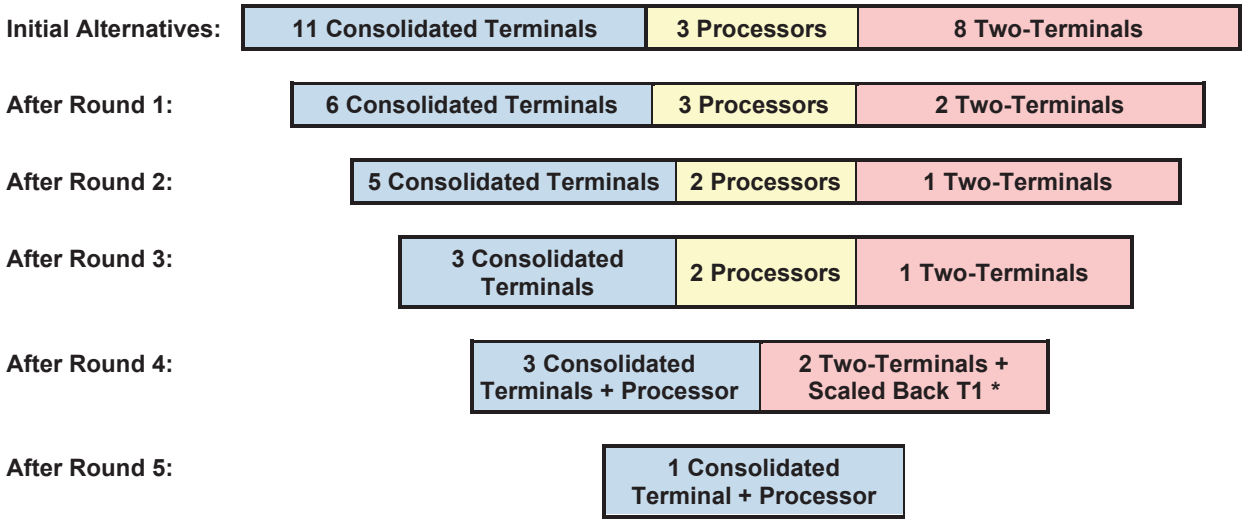
Notes: Alternatives 10, 11 and 12 are processor alternatives that were paired with concourse alternatives later in the screening process.
Alternative 21 (Swap Airline Locations in Existing Terminals) and Alternative 22 (Reopen Entire Concourse D to Connect Terminals 1 and 2), which only alter the internal use of existing structures, are not depicted here.

Sources: WSP USA, STL Master Plan, 2023.

terminal alternatives. These four paired alternatives, shown in Figure 2.3-2, and Alternative 8A, were advances from Round 4 to the final round of alternatives screening. In Round 5, Alternative 5-P1 was selected as the Preferred Alternative, because it is practical and would achieve the project purpose and need. The other remaining alternatives have one or more of the following limitations: they would be less convenient for some passengers; be more costly to construct, operate and maintain; provide less flexibility for addressing landside needs; be more costly to expand the number of gates in the future; and could result in fewer concession choices for passengers and less non-aeronautical revenue to STL.

Further information regarding the alternatives evaluation and the screening process, including an evaluation of airport access roadway alternatives, from the Master Plan are included in Appendix C.

Figure 2.3-1: Alternatives Screening Process



* The one remaining two-terminal alternative was paired with two different scaled-back one-terminal options.

Source: WSP USA, 2023.

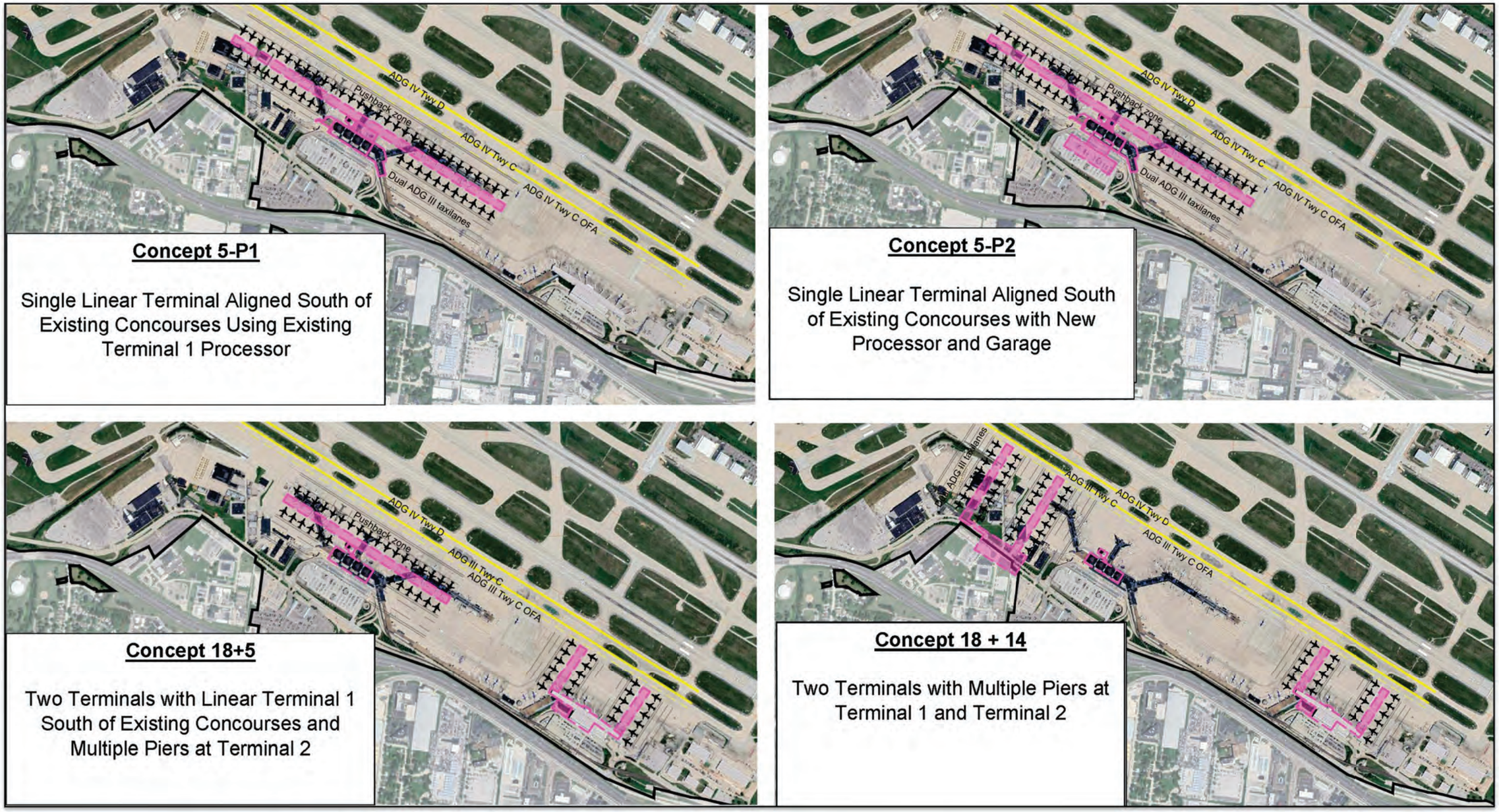
2.2.2 No Action Alternative

Under the No Action Alternative, STL would maintain its existing passenger terminals and roadway infrastructure and would not address the deficiencies as described in Chapter One. This alternative would not meet the purpose and need.

While a No Action Alternatives does not meet the project purpose and need, it is required by NEPA and the regulations of the Council on Environmental Quality (CEQ)[19] to be carried forward for analysis of environmental consequences and to serve as a baseline against which to evaluate the impacts of the Proposed Action. With the No Action Alternative, the Proposed Action would not be constructed with the following consequences:

[19] 40 CFR 1502.14, available at https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A/part-1502.

Figure 2.3-2: Paired Preliminary Alternatives Evaluated in Round 5



Note: Alternative 8B, which did not require pairing, was also considered in Round 5.

Sources: WSP USA, STL Master Plan, 2023.

Table 2.3-1: Summary Results of Alternatives Screening

Rounds and Criteria	**Alternatives**																							
	One Linear Terminal										**Processor Only**			**One Pier or Satellite Terminal**			**Two Terminals**							
Round 1	1	2	3	4	5	6	7	8		9	10	11	12	13	14		15	16	17	18	19	20	21	22
Provides sufficient gate/aircraft parking positions to meet forecast need through 2040																		X					X	
Meets industry standards for walking distance, has balanced walking distance to all gates	X	X				X											X						X	X
Provides dual ADG III taxilanes around concourses	X																					X		
Provides workable landside access to curb front																					X			
Avoids Navaid impacts							X																	
Results	**X**	**X**	**X[1]**	**A**	**A**	**X**	**X**	**A**		**A**	**A**	**A**	**A**	**A**	**A**		**X**	**X**	**A**	**A**	**X**	**X**	**X**	**X**
Round 2				4	5			8	8A[2]	8B[2]	9	10	11	12	13	14			17[3]	18				
Construction Period																								
Reasonable duration for enabling projects																								
Maintains reasonable passenger experience				X																				
Ease of phasing and constructability				X										X										
Maintains safe and efficient operations (terminal, airside, landside)																								
Maintains flexibility to respond to demand																								
End State																								
Provides optimum passenger experience									X															
Relative cost compared to other alternatives									X															
Creates safe and efficient operations (terminal, airside, landside)																			X					
Avoids unacceptable impacts to other facilities																								
Provides flexibility and future expansion potential (beyond 2040)														X										
Results				**X**	**A**			**A**	**X**	**A**	**A**	**A**	**A**	**X**	**X**	**A**			**X**	**A**				
Round 3					5			8		8B	9	P1[4]	P2[4]			14	14A[5]			18				
Relative cost compared to other alternatives								X			X													
Acceptable walking distance																								
Acceptable level of Passenger Convenience																								
Maintains STL's image (keep domes)																X								
Results					**A**			**X**		**A**	**X**	**A**	**A**			**X**	**A**			**A**				

Rounds and Criteria	**Alternatives**																															
	One Linear Terminal											**Processor Only**			**One Pier or Satellite Terminal**			**Two Terminals**														
Round 4					5[6]					8B			P-1	P-2				14A						18[7]								
Fluid, independent roadway traffic flows (separate terminal traffic from non-terminal uses)																																
Adequate roadway distance for decision-making and signage																																
Prioritizes inbound over outbound roadway improvements (getting to terminal quickly)																																
Reserves space for potential future Consolidated Rent-A-Car (ConRAC)																																
Keep roads and auto parking out of Runway Protection Zone																																
Results					**A**					**A**			**A**	**A**				**X**[8]						**A**								
Round 5					5					8B			P-1	P-2										18								
Adequate space to address landside issues and for future facilities (e.g., ConRAC)														X										X								
Relative cost compared to other alternatives										X				X										X								
Passenger experience and convenience																								X								
Results					**PA**					**X**			**PA**	**X**										**X**								

Notes:

A Alternative advanced to next round.

X Alternative does not achieve the criteria or is not advanced to next round.

PA Advanced for detailed analysis of environmental impacts as the Proposed Action.

1 Alternative 3 is not advanced because it is very similar to Alternative 5.

2 Two variants of Alternative 8 were introduced to reduce the cost of the Automated People Mover (APM): Alternative 8A moves the APM aboveground on the MetroLink track and Alternative 8B moves the APM aboveground along Lambert International Boulevard.

3 Alternative 17 is not advanced because it is similar to Alternative 18, and in its end state, would have substantial operational issues that Alternative 18 would not have.

4 In Round 3, the two remaining processor alternatives (10 and 11) are renamed P1 and P2, respectively.

5 A variant of Alternative 14 was introduced (14A) to retain the unused domes and repurpose them for non-terminal functions.

6 Alternative 5 can be paired with either P1 or P2 to make a complete alternative.

7 Alternative 18 can be paired with scaled back version of Alternatives 5 or 14 to make a complete alternative.

8 Alternative 14A was not advanced due to landside access and other problems that cumulatively cause unique problems and impacts of substantial magnitude.

Source: WSP USA, STL Master Plan, 2023.

- Terminals 1 and 2 would remain in their current location and configuration, resulting in worsening congestion in the holdrooms, corridors, concession areas, baggage claim areas, security screening and ticketing areas and other public spaces as passenger demand continues to grow. Additionally, there would be insufficient space to provide additional concession options, resulting in a low customer experience, and lost airport revenue opportunity. Operating and maintenance costs would also continue to escalate due to the aging and inefficient mechanical systems in Terminal 1.
- The existing on-airport roadways, curbsides and parking facilities would remain in their current location and configuration resulting in safety and capacity deficiencies that would be worsened by increased traffic associated with the forecasted future passenger levels. Demand for on-airport parking would also continue to exceed the existing supply resulting in a significant lost revenue opportunity for STL.

2.3 Alternatives Advanced for Environmental Evaluation

Two alternatives advanced for detailed evaluation of environmental consequences, the No Action Alternative and the Preferred Alternative, as described below.

2.3.1 No Action Alternative

The No Action Alternative, as previously described in Section 2.4, would not meet the project purpose and need. However, CEQ guidance and the FAA Order 5050.4B prescribe the need to analyze and compare the No Action Alternative to the Proposed Action and for the No Action Alternative to serve as the baseline against which to measure the impacts of the Proposed Action. Therefore, the No Action Alternative will be carried forward for further analysis.

2.3.2 Preferred Alternative (Alternative 5-P1)

Alternative 5-P1 is the preferred alternative because it is practical and achieves the purpose and need because it would:

- Enhance the passenger experience by providing an “optimum” level of passenger service.
- Enhance the passenger experience and airport revenue by increasing space for concessions, and therefore the variety of concessions, on the post-security screening side.
- Reduce operating and maintenance costs by eliminating aging and redundant building systems and duplication of services in two terminals.
- Ensure continued safe, secure, and efficient operations by providing sufficient space and facilities for current and forecast passenger demand and aircraft operations.

Additional benefits of the Preferred Alternative include:

- Improved airfield operations because it accommodates a full-length Taxiway C, Airplane Design Group (ADG) III dual taxilanes[20] around the concourse, and it avoids aircraft pushing back onto Taxiway C.
- The ability to accommodate future incremental concourse expansion.
- Preservation and use of the terminal domes, which are architecturally symbolic of STL and eligible for listing on the National Register of Historic Places.
- The opportunity to provide a new airport entrance.

The Preferred Alternative, hereafter referred to as the Proposed Action, replaces the existing Terminals 1 and 2 with a consolidated terminal centered on the location of the existing Terminal 1 and includes:

- A 110-foot-wide linear concourse, with space for up to 62 gates in 2040 and a maximum walking distance of 2,500 feet from the security checkpoint to the farthest gate. A full-length Taxiway C, and ADG III dual taxilanes around the concourse.
- A reconfigured check-in lobby (passenger processor) that incorporates the terminal domes.
- New consolidated security screening centered between the check-in lobby and the concourse.
- A Federal Inspection Service (customs) accessible to all carriers.
- A new baggage claim area on the lower level.
- A two-level passenger drop-off and pick-up curb with departures on the upper level and arrivals on the lower level.
- A new parking garage and ground transportation center directly across from the terminal.
- Space on the landside to improve driver wayfinding and decision making in the terminal roadway system and airport access.
- Closing Terminal 2 and mothballing until a potential reuse of Terminal 2 is identified.

A detailed description of the Proposed Action, including connected actions, is provided in Chapter One, Section 1.5.

[20] Airplane Design Group: A grouping of aircraft related to aircraft wingspan or tail height (physical characteristics), whichever is most restrictive. See AC 150/5300-13B: Airport Design, page 1-13, Table 4-1 and Figure 4-7, Federal Aviation Administration, March 31, 2022.

Chapter Three
Affected Environment and Environmental Consequences

3.1 Introduction

In accordance with FAA's environmental orders 5050.4B, NEPA Implementing Instructions for Airport Actions and 1050.1F, Environmental Impacts: Policies and Procedures, this chapter describes the existing environmental conditions of the potentially affected geographic areas for the construction of the Proposed Action at STL. This chapter also presents the potential environmental effects resulting from implementation of the Proposed Action and the No Action Alternative, and where applicable, a discussion of proposed mitigation measures to avoid or minimize environmental impacts of the Proposed Action.

3.2 Resource Categories Not Affected

Based on proximity of the proposed projects included in the CTP, results of online research and early agency coordination, the Proposed Action would not affect the following resource categories.

- Coastal Resources: There are no coastal zones in the state of Missouri.
- Farmlands: The Proposed Action would occur entirely on existing airport property and on MoDOT right-of-way and would not require the conversion of farmlands to non-agricultural use.
- Wild and scenic rivers: A review of the Wild and Scenic Rivers System list[21] indicated that there are no designated State or National Scenic Rivers within or immediately adjacent to airport property.

Therefore, these resources were considered but not analyzed in detail in this environmental assessment.

3.3 Environmental Resources Potentially Affected

This Chapter describes the existing conditions and discloses the potential environmental impacts resulting from the No Action and Proposed Action for the following resource categories:

- Air Quality
- Biological Resources
- Climate
- Department of Transportation Act, Section 4(f)

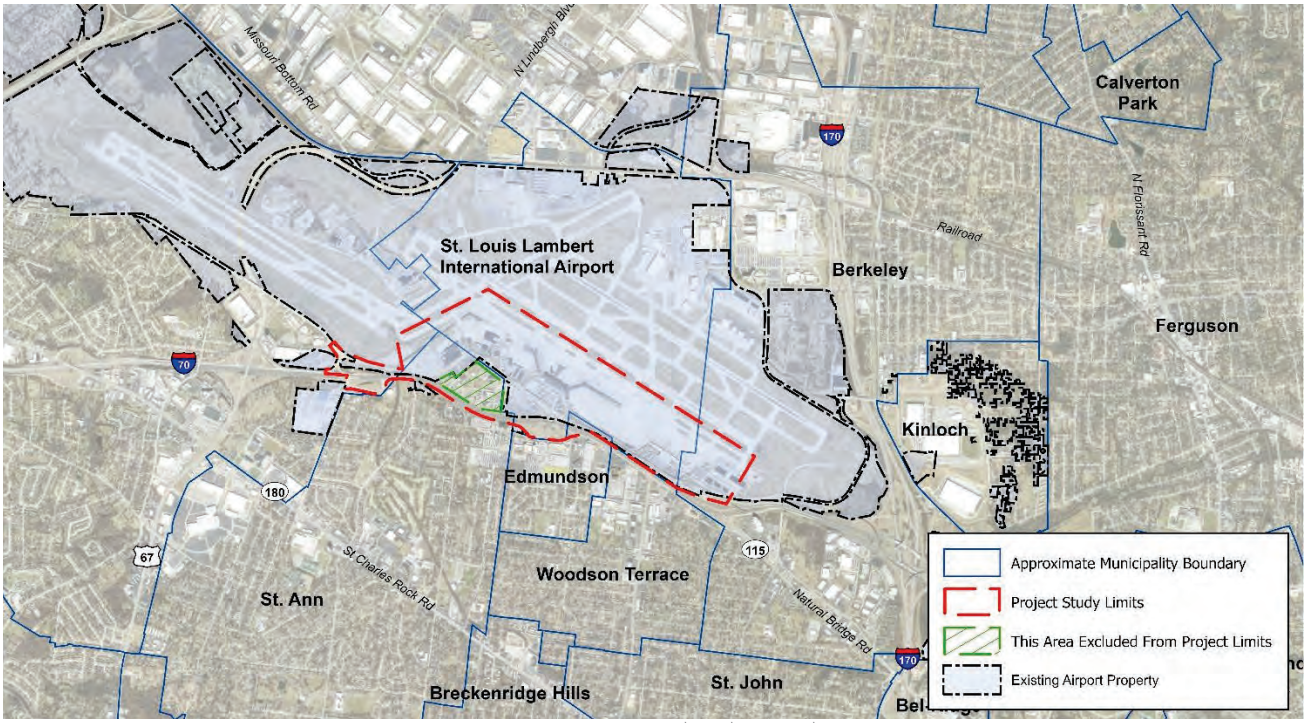
[21] Department of the Interior, 2023, National Wild and Scenic Rivers System. Available online at: https://www.rivers.gov/missouri.php, Accessed March 5, 2024.

- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archaeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Noise-Compatible Land Use
- Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks
- Surface Transportation
- Visual Effects
- Water Resources, including Wetlands and Waters of the U.S., Floodplains, Other Surface Waters, and Ground Water
- Cumulative Effects

3.4 Identification of the Study Area and Analysis Years

The detailed project study area encompasses approximately 521 acres located in the southeastern portion of the Airport as depicted in Figure 3.4-1. This includes areas that may be physically disturbed by construction of the projects included in the Proposed Action. This construction could also include grading and demolition activities, site preparation, potential compensatory stormwater storage areas, construction haul routes and staging/stockpile areas.

Figure 3.4-1: Project Study Area



Sources: CMT, 2023; Municipal Boundaries: ESRI_2021_DataMaps\usa\census\placeply.gdb.

Additional study areas specific to potential environmental resources that may be affected by the Proposed Action (e.g., air quality, noise and noise compatible land use, socioeconomic/ environmental justice, etc.) are presented in later sections of this chapter, as applicable.

The existing conditions for the affected environment are based on calendar year 2023 or the most recent year when baseline data was available for each of the resource categories evaluated. Construction of the Proposed Action is anticipated to be initiated in 2026 with completion in 2031. Therefore, the environmental consequences analysis discloses the impacts for the projected future condition in 2032, the implementation year when the proposed projects would be completed and operational. In addition, 2037 is used as the basis for analyzing noise and operational emissions for air quality and climate (greenhouse gases), because it represents a condition five years beyond the opening year. The years 2026, 2027, 2028, 2029, 2030 and 2031 are also used as a basis to evaluate potential air quality impacts associated with construction of the proposed projects.

3.5 Air Quality

At the federal level, under the Clean Air Act (CAA), the United States Environmental Protection Agency (EPA) establishes the guiding principles and policies for protecting air quality conditions in the study area (and throughout the nation). The EPA's primary responsibility is to promulgate and update National Ambient Air Quality Standards (NAAQS) which define outdoor levels of air pollutants that are considered safe for the health and welfare of the public. The EPA's other responsibilities include the approval of State Implementation Plans (SIPs), which are plans that detail how a State will comply with the CAA. The FAA is the primary agency involved in, and responsible for, ensuring that air quality impacts associated with proposed airport projects adhere to the reporting and disclosure requirements of NEPA and the SIP conformity rules of the CAA.

There are NAAQS for six "criteria" air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO^2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM). There are standards for two sizes of PM, $PM_{2.5}$ which are particles with a diameter of 2.5 microns or less and PM_{10} which are particles with a diameter of 10 microns or less. There are two sets of standards for each criteria air pollutant: "primary standards" provide protection for the health of the public and "secondary standards" provide public welfare protection. The NAAQS and their averaging periods are provided in Appendix D.

The EPA designates areas as having air pollutant levels that are either lower than or meeting the NAAQS or higher than the NAAQS. An area with measured pollutant concentrations which are lower/meeting the NAAQS is designated as an attainment area and an area with pollutant concentrations that exceed the NAAQS is designated as a nonattainment area. After air pollutant concentrations in a nonattainment area are reduced to levels that meet or are below the NAAQS, the EPA re-designates the area to be a maintenance area for a period of 20 years.

The General Conformity Rule of the CAA prohibits federal agencies from permitting or funding non-highway projects that do not conform to a SIP. Because STL is located in St. Louis County, Missouri, an area designated by the EPA as maintenance for the 8-hour 2008 O_3 standard, moderate nonattainment for the 2015 O_3 standard, and attainment for all the other NAAQS, a General Conformity Applicability Analysis is required. An applicability analysis is a comparison of project-related emissions of the pollutant for which an area is designated maintenance and/or

nonattainment to *de minimis* threshold levels. If project-related emissions exceed the *de minimis* thresholds, a formal Conformity Determination is required to demonstrate that the project conforms to the applicable SIP. Conversely, if project-related emissions are below *de minimis* thresholds, the project is assumed to conform to the SIP. O_3 is a secondary pollutant meaning it is not directly emitted by any source of pollutants. Instead, nitrogen oxides (NO_x) and volatile organic compounds (VOC) combine in the presence of sunlight to form O_3. Therefore, NO_x and VOCs are considered precursor pollutants for which emissions must be compared to applicable *de minimis* thresholds.

The CAA also contains a Transportation Conformity Rule that restricts federal funding to highway or transportation projects that do not conform to a SIP. As with General Conformity, Transportation Conformity regulations apply only to federal actions located within a nonattainment or maintenance area. The landside elements of the proposed development at STL require approval by the Federal Highway Administration (FHWA), therefore, the Transportation Conformity regulations of the CAA apply to the Proposed Action. Because the Proposed Action's emissions (i.e., from vehicles on airport property) are not included in the state's conforming Transportation Improvement Plan (TIP) or Regional Transportation Plan (RTP), they have been included in the General Conformity evaluation.[22], [23]

Finally, Section 102(2) of NEPA also requires environmental review of federally funded projects that have the potential to affect the environment irrespective of location (i.e., maintenance or nonattainment areas). Therefore, emission inventories were prepared to disclose project-related emissions of all criteria air pollutants and precursor pollutants.

As stated in FAA Order 1050.1F, Exhibit 4-1, the FAA's significance threshold for air quality is whether the action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the Environmental Protection Agency under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.

3.5.1 Affected Environment

As previously stated, based on measured levels of the air pollutants for which there are NAAQS, the EPA designated St. Louis County to be a maintenance area for the 8-hour 2008 O_3 standard, and a moderate nonattainment area for the 2015 O_3 standard. Therefore, a General Conformity Applicability Analysis was evaluated for the Proposed Action using the de minimis level of 100 tons for NOx and VOCs.

3.5.2 Environmental Consequences

This section presents and discusses the potential air quality impacts associated with the Proposed Action. Both the short-term criteria air pollutant and precursor pollutant emissions that would result

[22] 40 CFR 93.158(a)(5)(ii) available at https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-93/subpart-B. The website was accessed on April 15, 2024.

[23] FAA and EPA, General Conformity Guidance for Airports Questions and Answers, September 25, 2002, available at https://www.epa.gov/sites/default/files/2016-03/documents/airport_qa.pdf

from construction activities to implement the Proposed Action as well as the long-term operational emissions with the Proposed Action, compared against the No Action Alternative, were estimated.

NO ACTION ALTERNATIVE

No construction activities would occur under the No Action Alternative. Further, no changes in aircraft operations would occur under the No Action Alternative. The operational emissions under the No Action Alternative are discussed later in this section under "Operational Emissions" for comparison against the Proposed Action.

PROPOSED ACTION

Construction Activities

Air pollutant emissions associated with construction activities are temporary and variable depending on project location, duration, and level of activity. These emissions occur predominantly in engine exhaust from operating construction equipment and vehicles at the site (scrapers, dozers, delivery trucks, etc.), from transporting material and supplies to and from the site, and from construction worker vehicles commuting to and from the site. Additionally, fugitive dust emissions (PM_{10}/$PM_{2.5}$) result from site preparation, land clearing, material handling, equipment movement on unpaved areas; and fugitive evaporative emissions (VOCs) occur during the application of asphalt from paving activities.

The construction equipment typically utilized in airport projects is comprised both of on-road licensed vehicles and off-road construction equipment. The former category of vehicles is used for the transport and delivery of supplies, material, and equipment to and from the site and includes construction worker vehicles. The latter category of equipment is operated on-site for activities such as, but not limited to, soil/material handling, site clearing and grubbing.

Project-specific details (i.e., construction schedule and list of projects) were used in the Airport Construction Emissions Inventory Tool (ACEIT)[24] to estimate construction activities and equipment/vehicle activity data (e.g., equipment mixes/operating times). Emission factors for equipment and vehicles were developed from EPA's MOtor Vehicle Emission Simulator (i.e., MOVES, Version 4)[25] model. This data is further detailed in Appendix D. Construction is assumed to begin in the winter of 2026 and be completed by the winter of 2031. Additionally, a mobile source emissions inventory was completed for the construction years to account for the additional vehicle-mile-travelled (VMT) due to the temporary relocation of parking areas caused by the construction of the projects. Fugitive dust emissions were calculated using emission factors within EPA's Compilation of Air construction projects, their schedule and Pollutant Emission Factors (AP-42)[26] and evaporative emissions were developed using EPA guidance[27] on asphalt paving.

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[24] TRB, ACRP Report 102, Guidance for Estimating Airport Construction Emissions (2014), https://www.trb.org/ACRP/Blurbs/170234.aspx.

[25] At the time of the analysis, EPA's MOVES4 was the latest version of MOVES. Additional information on MOVES is available at https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves. The website was accessed on March 20, 2024.

[26] EPA, Emissions Factors & AP-42, Compilation of Air Pollutant Emission Factors, https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors. The website was accessed on March 21, 2024.

[27] EPA, Emission Inventory Improvement Program, Asphalt Paving, Chapter 17, Volume III, April 2001.

Estimates of CO, NO_x, VOC, PM_{10}, $PM_{2.5}$, sulfur oxides (SO_x), and Pb that would occur to construct the Proposed Action are provided in Table 3.5-1. In addition to being a precursor to O_3, the emission estimates of NOx and SOx conservatively estimate emission levels of NAAQS "criteria" air pollutants NO_2 and SO_2. As shown, the highest construction emissions of NO_x are 31.5 tons and would occur in 2027, and the highest construction emissions of VOCs are 3.2 and would occur in 2029. Neither of these levels exceed the *de minimis* threshold of 100 tons. Therefore, the air pollutant emissions that would result from the construction of the Proposed Action are exempt from the General Conformity Rule/SIP conformance requirements of the CAA.

*Table 3.*5-1: Construction Emissions (Tons) - Proposed Action

Year	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SOx	Pb
2026	5.9	5.1	0.5	13.0	1.5	<0.1	Neg.
2027	27.6	31.5	2.3	15.5	2.5	0.1	Neg.
2028	20.6	27.4	1.8	15.1	2.2	0.1	Neg.
2029	44.5	26.1	3.2	15.5	2.2	0.1	Neg.
2030	39.5	25.5	2.6	15.3	2.1	0.1	Neg.
2031	25.6	7.6	1.9	14.7	1.6	<0.1	Neg.
De Minimis Thresholds	***NA***	***100***	***100***	***NA***	***NA***	***NA***	***NA***
Exceeds De Minimis?	***NA***	***No***	***No***	***NA***	***NA***	***NA***	***NA***

Notes: Totals may reflect rounding. Neg. = negligible. NA = Not applicable.

Source: CMT, April 2024.

Operational Emissions

Aircraft, motor vehicles, and stationary sources are the airport-related sources of air emissions that would potentially change as a result of the Proposed Action. For aircraft, the only operational mode that would be affected by the Proposed Action would be taxiing. The number of aircraft operations and fleet mix would not change between the No Action Alternative and Proposed Action. This data was obtained from the FAA Approved Forecast that was developed as part of the STL Master Plan. Estimates of future year aircraft-related emissions were obtained using the FAA's Aviation Environmental Design Tool (AEDT, Version 3f).[28]

Aircraft emissions were calculated for two future years (2032 and 2037) for the No Action Alternative and Proposed Action to determine the difference in emissions caused by the change in taxiing time as a result of the proposed CTP construction. For the Proposed Action Alternative, aircraft were assumed to taxi a distance based on a central location representative of the proposed new terminal location and for the No Action Alternative, aircraft were assumed to taxi a distance based on a central location representative of the existing terminal location. Conservatively assuming an aircraft taxi speed of 20 miles per hour, the taxi times for the two future years for the No Action Alternative and Proposed Action are presented in Table 3.5-2. To account for aircraft delay times, FAA Aviation System Performance Metrics (ASPM)[29] data was adjusted based on the derived No Action Alternative and Proposed Action taxi times. The future

[28] Additional information on AEDT is available at https://aedt.faa.gov/. The website was accessed on March 21,2024.
[29] FAA ASPM data is available at https://aspm.faa.gov/. The website was accessed on March 18, 2024.

aircraft fleet mix and number of annual aircraft operations modeled in AEDT are detailed in Appendix D.

*Table 3.*5-2: Aircraft Taxi Times – Future No Action Alternative and Proposed Action

Year/Alternative	Taxi-In (Minutes)	Taxi-Out (Minutes)	Total (Minutes)
2032 Proposed Action	6.96	14.65	21.61
2032 No Action Alternative	7.60	15.59	23.20
2037 Proposed Action	7.52	15.85	23.37
2037 No Action Alternative	8.23	16.87	25.10

Source: FAA ASPM and CMT, April 2024.

Due to the changes in on-airport surface transportation (i.e., motor vehicle traffic), a mobile source emissions inventory was developed for the two future years for the No Action Alternative and the Proposed Action. Emissions from project-related mobile sources were estimated using VMT data derived from the traffic analysis developed for the EA and are presented in Table 3.5-3. Emission rates were developed from the latest version of EPA's MOVES model.

*Table 3.*5-3: Vehicle-Mile-Travelled – Future No Action Alternative and Proposed Action

Year	Proposed Action	No Action Alternative	Net Change
2032	171,952,111	162,982,194	8,969,916
2037	175,076,076	165,367,281	9,708,796

Source: WSP and CMT, April 2024.

Because there are no additional stationary sources associated with the Proposed Action, and any new stationary source would be a replacement with in-kind or with more efficient units, a stationary sources emission inventory was not developed as there would be no changes in emissions.

Estimates of the operational emissions of CO, NO_x, VOC, PM_{10}, $PM_{2.5}$, and SO_x for the two future years (2032 and 2037), with the No Action Alternative and Proposed Action are provided in Table 3.5-4. Estimates of Pb were not prepared because the Proposed Action would not affect general aviation aircraft powered by fuel containing Pb. As shown, project-related emissions are *below de minimis* thresholds, therefore the SIP conformity requirements of the CAA are not applicable to the Proposed Action. Notably, the decrease in total emissions is primarily attributable to the decrease in aircraft taxi times with the future Proposed Action.

3.5.3 Proposed Mitigation

Neither the No Action Alternative nor the Proposed Action would result in significant air quality impacts and no mitigation is required. Construction activities associated with the Proposed Action would result in temporary emissions from construction equipment, trucks, and fugitive dust emissions from site demolition and earthwork. The impacts would occur only within the immediate vicinity of the construction sites and would be minimized through best management practices to reduce emissions, particularly fugitive particle emissions, during construction.

Possible best management practices should be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisory Circular (AC), Standards for Specifying

Construction of Airports[30]. Methods of controlling dust and other airborne particles could include, but may not be limited to, the following:

- Exposing the minimum area of erodible earth
- Applying temporary mulch with or without seeding
- Using water sprinkler trucks
- Using covered haul trucks
- Using dust palliatives or penetration asphalt on haul roads
- Using plastic sheet coverings

Table 3.5-4: Aircraft Operational Emissions (Tons) – Future No Action Alternative and Proposed Action

Year/Alternative	CO	NO_x	VOC	PM_{10}	$PM_{2.5}$	SO_x
2032 Proposed Action	830.8	759.2	99.7	8.7	4.3	57.4
2032 No Action Alternative	850.3	763.8	102.8	8.5	4.3	59.0
Net Emissions (Proposed Action - No Action)	***-19.5***	***-4.6***	***-3.1***	***0.2***	***No***	***-1.6***
De Minimis Thresholds	***NA***	***100***	***100***	***NA***	***NA***	***NA***
Exceeds De Minimis?	***NA***	***No***	***No***	***NA***	***NA***	***NA***
2037 Proposed Action	801.5	862.3	94.0	8.6	4.2	63.0
2037 No Action Alternative	825.8	868.2	96.7	8.4	4.2	64.9
Net Emissions (Proposed Action - No Action)	***-24.3***	***-5.9***	***-2.7***	***0.2***	***No***	***-1.8***
De Minimis Thresholds	***NA***	***100***	***100***	***NA***	***NA***	***NA***
Exceeds De Minimis?	***NA***	***No***	***No***	***NA***	***NA***	***NA***

Notes: Operational emissions include emissions from aircraft and motor vehicles. Totals may reflect rounding. NA = Not applicable.

Source: CMT, April 2024.

3.6 Biological Resources

For purposes of this EA, the term, biological resources, refers to various types of flora and fauna, as well as habitat types that would support these species. This section also addresses federally listed and state listed threatened or endangered species and their habitats.

The term “endangered species” means any member of the animal kingdom (mammal, fish, or bird) or plant kingdom (seeds, roots, etc.) that is in danger of extinction throughout all or a significant portion of its range. “Threatened species” refers to those members of the animal kingdom or plant kingdom, which are likely to become endangered within the foreseeable future. Section 7 of the Endangered Species Act of 1973 requires each federal agency that carries out, permits, licenses, funds, or otherwise authorizes activities that may affect a listed species must consult with the U.S. Fish and Wildlife Service to ensure that its actions are not likely to jeopardize the continued existence of any listed species.[31]

Additional federal laws that may be applicable to the project include the Migratory Bird Treaty Act (MBTA), which prohibits the taking, killing, possession, transportation, and importation of

[30] FAA Advisory Circular (AC)150/5370-10H, Standards for Specifying Construction of Airports, December 21, 2018.
[31] Section 7(a)(2) of the Endangered Species Act of 1973.

migratory birds, their eggs, parts, and nests, except when specifically authorized by the Secretary of the Interior; and the Bald and Golden Eagle Protection Act, which protects bald and golden eagles from the unauthorized capture, purchase, or transportation of the birds, their nests, or their eggs.

As stated in FAA Order 1050.1F, Figure 4-1, a significant impact in this category would result if the U.S. Fish and Wildlife Service or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat. The FAA has not established a significance threshold for non-listed species.

3.6.1 Affected Environment

According to the U.S. Fish and Wildlife Service (USFWS) IPaC Official Species list generated February 21, 2024, the project is located within the known or historic range of the following federally endangered, threatened and candidate species:

- Gray bat (*Myotis grisescens*), endangered
- Indiana bat (*Myotis sodalis*), endangered
- Northern Long-eared bat (*Myotis septentrionalis*), endangered
- Tricolored bat (*Perimyotis subflavus*), proposed endangered
- Monarch butterfly (*Danaus plexippus*), candidate
- Decurrent False Aster (*Boltonia decurrens*), threatened

The project is not located within any designated critical habitat areas. Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act.

According to the Missouri Department of Conservation (MDC) Natural Heritage Database search, accomplished on February 21, 2024, there are records of three state endangered plants or animals that may occur within the project area or within a one-mile radius of the project area. The state-listed species are the: decurrent false aster, gray bat, and pallid sturgeon.

The project study area was observed for suitable threatened and endangered species habitat. The habitats present were searched for suitability and the presence of species during on-site evaluations conducted on May 23 and 24, 2023, January 31, 2024, and March 20, 2024.

Sixteen (16) trees were identified as suitable bat roost trees for the Indiana bat and Northern long-eared bat. Suitable habitat for the tricolored bat was identified as live and dead leaf clusters of live or recently dead deciduous hardwood trees. No large rivers, caves or suitable habitat for the gray bat, decurrent false aster, or pallid sturgeon are within the project area. The Monarch butterfly, which is not yet listed or proposed for listing, does not have Section 7 requirements, as it is a candidate species.

3.6.2 Environmental Consequences

NO ACTION ALTERNATIVE

No physical development would occur for the No Action Alternative. Therefore, no impacts to federally listed species, state listed species or migratory birds would occur.

PROPOSED ACTION

The proposed project is located in a highly developed area. However, suitable habitat for the federally listed Indiana bat, Northern long-eared bat, and tricolored bat is present within the project area. Up to 3.9 acres of trees may be removed. The trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property and road right-of-way, and the majority of trees are saplings. Sixteen (16) trees were identified as suitable bat roost trees for the Indiana bat and Northern long-eared bat. The project sponsor commits to clear the identified suitable bat roost trees during the inactive season, between November 1 and March 31. Since some structures may also provide habitat for listed bats, the sponsor will also inspect any structures that are open (such as the parking garage) or in poor condition and may allow for bat roosting for the signs of bat presence prior to demolition. Therefore, the Proposed Action may affect, but is not likely to adversely affect the Indiana, Northern long-eared and tricolored bats.

No large rivers or suitable habitat for the gray bat, decurrent false aster, or pallid sturgeon are within the project area; therefore, the project is expected to have no effect on these species near the project site. There are no Section 7 requirements for the Monarch butterfly as it is a candidate species.

Prior to tree removal and demolition of structures, including buildings, bridges, and/or culverts, nesting surveys would be conducted to avoid injury to eggs or nestlings. Therefore, bird species protected by the Migratory Bird Treaty Act (MBTA) are not expected to be impacted by this project.

The FAA has determined that the proposed project is not likely to adversely affect the Indiana bat, Northern long-eared bat and tricolored bat. The FAA determined that there would be no effect on the gray bat and decurrent false aster since no suitable habitat is present. A request for concurrence on the effect determinations was submitted to the USFWS on April 11, 2024. The USFWS concurred with the FAA's effects determinations noted above on April 19, 2024. A copy of the Aquatic and Ecological Resources Report and associated MDC and USFWS correspondence is included in Appendix E.

3.6.3 Proposed Mitigation

The following avoidance and minimization measures will be implemented with the Proposed Action:

- The project sponsor commits to clear the identified suitable bat roost trees during the inactive season, between November 1 and March 31.
- Nesting bird surveys would also be conducted prior to tree removal and demolition of structures.

- Any structures that are open (such as the parking garage) or in poor condition and may allow for bat roosting, will be inspected prior to demolition to evaluate for signs of bat presence.

3.7 Climate

Although there are currently no federal standards for aviation related greenhouse gas (GHG) emissions, it is well-established that GHG emissions can affect climate.[32, 33, 34] Following procedures detailed in FAA's 1050.1F Desk Reference, GHG emissions should be quantified in a NEPA document when there is a reason to quantify emissions for air quality purposes or when changes in the amount of aircraft fuel used are computed/reported. The FAA does not have a threshold of significance for climate, and thus, the information presented in this section is for informational purposes only.

Furthermore, consistent with Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, the CEQ issued the interim NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change.[35] CEQ's interim NEPA guidance recommends that "agencies provide additional context for GHG emissions, including through the use of the best available social cost of GHG (SC-GHG) estimates, to translate climate impacts into the more accessible metric of dollars." The estimation of SC-GHG allows the monetization of climate change effects expected from a proposed project.

3.7.1 Affected Environment

St. Louis County acknowledges that addressing the problems created by climate change is a challenge for all St. Louis County communities.[36] Additionally, the City of St. Louis, located just south-southeast of STL, includes GHG emissions due to operations at STL in their GHG emissions inventories.[37]

3.7.2 Environmental Consequences

For disclosure purposes, project-related construction and operational emissions were prepared for the three of the primary atmospheric GHGs—carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). The sources of GHG emissions analyzed are aircraft, motor vehicles and construction equipment/vehicles using the same data and modeling methodology used for the air quality analysis. Total GHG emissions are presented in metric tons of CO_2 equivalent (CO_2e)

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[32] Global Change Research Act of 1990, Pub. L. 101–606, Sec. 103 (November 16, 1990).

[33] Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (December 15, 2009).

[34] EPA finalized findings that GHG emissions from certain classes of engines used in aircraft contribute to the air pollution that causes climate change endangering public health and welfare under section 231(a) of the Clean Air Act, https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-finding-greenhouse-gas-emissions-aircraft.The website was accessed on August 3, 2023.

[35] Guidance on Consideration of Greenhouse Gases, CEQ, https://ceq.doe.gov/guidance/ceq_guidance_nepa-ghg.html. The website was accessed on August 28, 2023.

[36] St. Louis County Climate Action & Adaptation Plan at https://www.stlouis-mo.gov/government/departments/planning/sustainability/documents/upload/v1-1-CAP_FINAL.pdf. The website was accessed on April 15, 2023.

[37] City of St. Louis, Climate and Air, https://www.stlouis-mo.gov/government/departments/planning/sustainability/air.cfm. The website was accessed on April 15, 2024.

using Global Warming Potentials (GWPs) of 1 for CO_2, 28 for CH_4, and 265 for N_2O (based on a 100-year period).[38] GWPs are used to derive CO_2e for the purpose of comparing the relative climate effects of the other GHGs to that of CO_2.

NO ACTION ALTERNATIVE

The total CO_2e emissions associated with the operational emissions for the No Action Alternative for both forecast years are presented in Table 3.7-1. As previously stated, there are no standards by which the emissions of GHG can be evaluated. Therefore, the emission estimates are provided for disclosure purposes only.

PROPOSED ACTION

The total metric tons of CO_2e emissions, associated with the construction and operation of the Proposed Action, are presented in Table 3.7-1. As previously stated, there are no standards by which the emissions of GHG can be evaluated. Therefore, the emission estimates are provided for disclosure purposes only.

In accordance with CEQ's interim GHG NEPA guidance, the social cost associated with the project-related GHG emissions were developed using EPA's 2023 guidance and reflects the best available data to date.[39] The social cost estimates are based on year 2020 dollars and a 2 percent near-term discount rate which reflects expert consensus and current guidance from the Office of Management and Budget (OMB).[40, 41, 42]

[38] GWPs were based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5).

[39] EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, November 2023, [EPA-HQ-OAR-2021-0317], available at https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf. The website was accessed on April 15, 2024.

[40] Specifically, in its Circular A-4 guidance for regulatory impact analysis, OMB expressly endorses a 2% discount rate that declines over long-time horizons, noting that this rate reflects the average real return on U.S. Treasury yields.

[41] OMB, Circular No. A-4, November 9, 2023, available at https://www.whitehouse.gov/wp-content/uploads/2023/11/CircularA-4.pdf. The website was accessed on April 15, 2024.

[42] The term "discount rate" refers to the reduction or discount in value per year as a future cost or benefit is adjusted to be comparable with a current cost or benefit from a proposed project.

Table 3.7-1: Construction and Aircraft Operational GHG Emissions (Metric Tons of CO_2e)

Year/Alternative	CO_2	CH_4	N_2O	Total
2026 Proposed Action (Construction)	2,598	1	29	2,628
2027 Proposed Action (Construction)	16,500	5	192	16,696
2028 Proposed Action (Construction)	15,276	4	155	15,436
2029 Proposed Action (Construction)	17,046	5	184	17,236
2030 Proposed Action (Construction)	16,616	5	189	16,810
2031 Proposed Action (Construction)	6,201	2	67	6,270
2032 Proposed Action (Operation)	181,934	168	1,530	183,633
2032 No Action Alternative (Operation)	183,361	169	1,538	185,067
2032 Net Emissions (Proposed Action - No Action)	***-1,427***	***-1***	***-8***	***-1,434***
2037 Proposed Action (Operation)	191,466	174	1,632	193,272
2037 No Action Alternative (Operation)	193,642	175	1,643	195,460
2037 Net Emissions (Proposed Action - No Action)	***-2,176***	***-1***	***-11***	***-2,188***

Note: Construction emissions evaluated using ACEIT and MOVES*4 modeling tools; and operational emissions modelled using AEDT3f. Values may reflect rounding.*

Source: CMT, April 2024.

Table 3.7-2 presents the social cost associated with the construction and operation of the Proposed Action. As shown, the calculated social cost in the year 2030 would be the greatest. Notably, after the implementation of the Proposed Action, due to the reductions in GHG emissions, project-related social costs decrease.

Table 3.7-2: Social Cost of Project-Related GHG Emissions (2020 Dollars)

Year of Emissions	CO_2	CH_4	N_2O	Total
2026 Proposed Action (Construction)	$555,972	$2,080	$1,774,800	$2,332,852
2027 Proposed Action (Construction)	$3,597,000	$10,800	$11,980,800	$15,588,600
2028 Proposed Action (Construction)	$3,391,272	$8,960	$9,858,000	$13,258,232
2029 Proposed Action (Construction)	$3,838,759	$11,520	$11,879,040	$15,729,319
2030 Proposed Action (Construction)	$3,821,680	$12,000	$12,474,000	$16,307,680
2031 Proposed Action (Construction)	$1,451,034	$4,980	$4,509,100	$5,965,114
2032 Proposed Action (Operation)	$43,300,338	$434,714	$104,969,278	$148,704,329
2032 No Action Alternative (Operation)	$43,639,853	$435,000	$105,480,845	$149,555,697
2032 Net Emissions (Proposed Action - No	***-$339,515***	***-$286***	***-$511,567***	***-$851,368***
2037 Proposed Action (Operation)	$49,398,289	$526,410	$122,535,456	$172,460,156
2037 No Action Alternative (Operation)	$49,959,572	$528,814	$123,421,316	$173,909,702
2037 Net Emissions (Proposed Action - No	***-$561,283***	***-$2,404***	***-$885,859***	***-$1,449,546***

Note: *The social cost estimates are based on a 2 percent near-term discount rate and year 2020 dollars.*

Source: EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances, November 2023.

3.7.3 Proposed Mitigation

The FAA has not identified specific factors to consider in making a significance determination for GHG emissions; therefore, no mitigation measures are required.

3.8 Department of Transportation, Section 4(f)

Section 4(f) of the Department of Transportation (DOT) Act of 1966 protects significant publicly owned parks, recreation areas, or wildlife and waterfowl refuges and public and private historic sites. The Secretary of Transportation may approve a transportation project requiring the use of such land if, after a full evaluation, there is no feasible and prudent alternative to using that land and the project includes all possible planning to minimize harm resulting from the use. Section 4(f) of the DOT Act of 1966 is currently codified as 49 U.S.C. Section 303. This EA will refer to 49 U.S.C. Section 303 as Section 4(f).

Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land off a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land of ahistoric site of national, state, or local significance, only if there is no feasible and prudent alternative to the using that land and the program or project includes all possible planning to minimize harm resulting from the use. Appendix F includes the full individual Section 4(f) Statement.

Parks may also be protected under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act (16 5 U.S.C., Section 4601 et. Seq.); 36 CFR Part 59. Section 6(f) provides funds for buying or developing public use recreational lands through grants to local and state governments. Section 6(f)(3) prevents conversion of lands purchased or developed with LWCF funds to non-recreation uses, unless the Secretary of the Department of the Interior, through the National Park Service, approves the conversion.

As stated in Exhibit 4-1 of FAA Order 1050.1F and Paragraph 5.3.7 of the FAA Order 1050.1F Desk Reference (FAA 2020), a significant impact would occur when the action involves more than a minimal physical use of a Section 4(f) resource or a “constructive use” based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. A significant impact under NEPA would not occur if mitigation measures eliminate or reduce the effects of a use less than the threshold of significance.

3.8.1 Affected Environment

There are no publicly owned parks, recreational areas, or wildlife and waterfowl refuges within the Proposed Action. Additionally, there are no LWCF Section 6(f) resources on these parcels. As identified in Section 3.10, there are historic properties within the Proposed Action.

FAA has determined and Missouri State Historic Preservation Officer (SHPO) has concurred that the identified Area of Potential Effect (APE) for the Proposed Action contains historic resources that are listed in or considered eligible for listing on the National Register of Historic Places

(NRHP). Therefore, these historic resources are considered Section 4(f) resources. Section 3.10 of this EA provides a detailed description of the NRHP-listed and NRHP-eligible resources.

3.8.2 Environmental Consequences

NO ACTION ALTERNATIVE

No new construction or development activities are proposed under the No Action Alternative. Therefore, no physical or constructive use of any Section 4(f) resources would occur, and no impacts to Section 6(f) resources would be anticipated.

PROPOSED ACTION

The Proposed Action would result in a physical use of a Section 4(f) resource due to the demolition of buildings and a tunnel within the Lambert Field Historic District. The demolition of these historic properties would constitute an adverse effect to eligible or listed historic properties under Section 106 and a Section 4(f) use.

Before approving an action, Section 4(f) requires a determination that there is no feasible or prudent alternative that would avoid the use of the Section 4(f) properties and that the project includes all possible planning to minimize harm resulting from the use. As defined in 23 CFR 774.17, “all possible planning” means that all reasonable measures to minimize harm or mitigate adverse impacts must be included in the project. With regard to historic sites, this means the measures as agreed by the FAA and SHPO in accordance with the consultation process under the regulations implementing Section 106 of the NHPA. Because the Proposed Action would involve a use, a separate individual Section 4(f) Statement has been prepared and is included in Appendix F.

There are no alternatives that meet the purpose and need, are both prudent and feasible, and completely avoid the use of Section 4(f) resources. The Proposed Action has been identified as the alternative that causes the least overall harm. The FAA has consulted with the Airport, the Osage Nation Historic Preservation Office (ONHPO), and the Missouri SHPO to develop an MOA under Section 106 of the NHPA. The MOA stipulates the mitigation measures required to address and resolve the adverse effects of the Proposed Action on historic properties.

The mitigation measures are a requirement of the Proposed Action and would address the Section 4(f) requirement that the project minimize adverse impacts when there is a use of a Section 4(f) resource. FAA has determined that there is not a feasible and prudent alternative to the use of Section 4(f) resources, and the Proposed Action includes all possible planning to minimize harm to the Section 4(f) resources resulting from the use.

The MOA outlines the mitigation measures needed to resolve the adverse effects under Section 106 of the Proposed Action. Execution of the MOA and implementation of its terms also would fulfill the Section 4(f) requirement that the project include all possible planning to minimize harm and reduce the effects of the use of the Section 4(f) resource below the threshold of significance. Execution of the MOA and implementation of its terms is a requirement of the Proposed Action. Therefore, the Proposed Action will not result in a significant impact.

3.8.3 Proposed Mitigation

The MOA outlines the steps needed to mitigate the adverse effect for this project. Mitigation measures in the MOA were determined in consultation with the FAA, SHPO, the ONHPO and are provided in Section 3.10.

3.9 Hazardous Materials, Solid Waste, and Pollution Prevention

HAZARDOUS MATERIALS

Hazardous Waste is a general term relating to spills, dumping, and releases of substances that could threaten human and animal life. To identify these materials and protect the environment from harmful interaction with hazardous wastes, federal laws and regulations have been enacted, including the following: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). CERCLA prescribes a specific process for the investigation and cleanup of sites listed on the National Priorities List (NPL), also referred to as Superfund sites. RCRA is the public law that creates the framework for the proper management of hazardous and non-hazardous solid waste.

Hazardous waste impacts are typically associated with the current or future use, transfer, or generation of hazardous material within the limits of the proposed improvements or the acquisition of properties that contain hazardous materials.

SOLID WASTE

Environmental concerns related to solid waste disposal range from adequate landfills for normal urban trash and garbage to the safe disposal of industrial waste.

POLLUTION PREVENTION

Pollution prevention describes methods used to avoid, prevent, or reduce pollutant discharges or emissions.

As stated in Exhibit 4-1 of FAA Order 1050.1F, the FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. However, factors to consider include whether the action would have the potential to:

- Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management.
- Involve a contaminated site (including but not limited to a site listed on the National Priorities List);
- Produce an appreciably different quantity or type of hazardous waste;
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- Adversely affect human health and the environment.

3.9.1 Affected Environment

HAZARDOUS MATERIALS

STL currently uses a variety of hazardous materials, such as aviation fuels stored in the existing terminal area. A review of the on-line environmental database, the Missouri Department of Natural Resources (MDNR) environmental site tracking and research tool (E-START), was conducted to identify sites and facilities located in the proposed project areas that may be of environmental concern from both a site contamination and a NEPA perspective. The online database contains information about the following types of sites in Missouri:

- Superfund[43] (National Priorities List (NPL))
- Hazardous Waste Treatment, Storage and Disposal Facilities[44]
- Brownfields/Voluntary Cleanup Program (BVCP)[45]
- Brownfield Assessments[46]
- Petroleum and Hazardous Substance Storage Tank Facilities[47]

The E-START database[48] was reviewed to identity any of the above listed facilities in the proposed project area. From the database, the following sites were present:

- Two active hazardous substance investigation/cleanup sites, both on the former St. Louis Naval Air Station (later the MoANG) Campus.
- Four former underground storage tank (UST) facilities, all with no further action (NFA) letters issued with restrictions. The restrictions include no residential use or construction of a drinking water well on the property prior to further investigation.
- One petroleum-based facility was administratively closed by MDNR.
- Nine petroleum-based UST facilities were closed and/or removed and the MDNR issued "no additional investigation or remedial action is required" letters. All nine sites were closed

[43] Superfund is a United States federal environmental remediation program established by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. The program is administered by the Environmental Protection Agency.

[44] Hazardous waste management facilities receive hazardous wastes for treatment, storage or disposal. These facilities are often referred to as treatment, storage and disposal facilities, or TSDFs.

[45] A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The Brownfields/Voluntary Cleanup Program (BVCP) addresses and oversees brownfield cleanups and promotes redeveloping brownfields for the department. This is done through three different programs: Brownfield Assessments, Voluntary Cleanup and Long-Term Stewardship.

[46] Assessment Grants provide funding for a grant recipient to inventory, characterize, assess, conduct a range of planning activities, develop site-specific cleanup plans, and conduct community engagement related to brownfield sites.

[47] Petroleum is any petroleum in any form, including but not limited to crude oil, fuel oil., mineral oil, sludge, oil refuse, and refined products. Hazardous Substances: The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) defines "hazardous substance" by reference to the following authorities: Clean Water Act (CWA) section 311 ("CWA Hazardous Substances"); CWA section 307(a) ("CWA Toxic Pollutants"); Clean Air Act (CAA) section 112 ("CAA Hazardous Air Pollutants (HAPs)"); Resource Conservation and Recovery Act (RCRA) section 3001 ("RCRA Hazardous Wastes"), and Toxic Substance Control Act (TSCA) section 7 (currently no substances are designated under this authority). CERCLA section 102(a) also gives EPA authority to designate additional hazardous substances not listed under the statutory provisions cited above.

[48] E-Start: Accessed at https://apps5.mo.gov/ESTARTMAP/map/init_map.action, February 22, 2024.

prior to the implementation of 2004 Missouri Risk-Based Corrective Action (RBCA) Process for Petroleum Storage Tanks policy.[49]

- One heating oil tank was closed and/or removed and the MDNR issued a "no additional investigation or remedial action is required" letter. Additionally, this facility was closed prior to the implementation of 2004 Missouri Risk-Based Corrective Action (RBCA) Process for Petroleum Storage Tanks policy.

In 2004, revised in 2005 and 2013, MDNR developed a risk-based corrective action process guidance that provides the framework for remediation, or cleanup, and decisions at contaminated sites. The Missouri Risk-Based Corrective Action (MRBCA) Process rule, found in Code of State Regulations 10 CSR 25-18.010, became effective on Oct. 31, 2009. The rule is used to guide the investigation, risk assessment and cleanup of contaminated sites. MDNR will not require that sites previously granted a NFA letter be reevaluated under this revised guidance unless new information related to previously addressed releases becomes available, or a new hydrocarbon release occurs at the site.

SOLID WASTE

Solid waste in the project area is generated by activities associated with the operations of the Airport. The Airport collects this solid waste and evaluates it to determine where it is to be disposed of. Solid and semi-solid waste, such as garbage and other rubbish is transported to a permitted landfill. The Airport also has a recycling program that includes construction material and food waste composting. International solid waste is collected and taken to the international trash yard, on the Airport, and removed by an international trash contractor, who then autoclaves the trash for safe disposal. The Airport has two triturators, one on the east side of the terminal area and one on the west side of the terminal area. The triturators process waste from aircraft lavatories to ensure efficient disposal without causing clogs or environmental hazards. After processing the aircraft lavatory waste is sent to Metropolitan St. Louis Sewer District (MSD) through the existing sanitary sewer system.

POLLUTION PREVENTION

The Airport and its tenants implement pollution prevention measures specific to their operations and material storage areas in accordance with the requirements of their respective Stormwater Pollution Prevention Plans (SWPPPs) and Spill Prevention, Control, and Countermeasure (SPCC) Plans. The SWPPP requires routine inspections and monitoring/reporting of stormwater discharges from the Airport in accordance with the National Pollutant Discharge Elimination System (NPDES) permit No. MO-0111210 issued by the MDNR.[50]

MoDOT operates under a Transportation Separate Storm Sewer System (TS4) permit.[51] MoDOT has developed a Stormwater Management Program (SWMP) to comply with the permit

[49] Missouri Department of Natural Resources, Missouri Risk-Based Corrective Action (MRBCA) Process for Petroleum Storage Tanks, January 2004.
[50] Missouri State Operating Permit (NPDES) Permit No. MO-0111210, Effective January 1, 2022, Expiration March 31, 2026, Issued by MDNR.
[51] Missouri State Operating Permit No. (TS4) MO-0137910, Effective November 1, 2021, Expiration October 31, 2026, Issued by MDNR.

requirements and address stormwater pollution related to highway planning, design, construction, and maintenance activities throughout the state.

The MSD maintains and operates the wastewater collection and treatment systems provided to STL. A glycol drainage system catches deicing runoff fluid from several deice locations within the Airport's terminal apron, then pumps and directs the glycol/water runoff to an aboveground storage tank located east of I-170. The runoff is then pumped to the MSD for treatment in accordance with the approved release rates. This existing glycol collection system is manually activated during the winter months when deicing is required.

3.9.2 Environmental Consequences

NO ACTION ALTERNATIVE

With the No Action Alternative, the existing conditions at STL would remain in place. There would be no construction of any facilities at the Airport to address the purpose and need. Existing deicing operations would continue to occur as described in the previous section. Potential stormwater discharges would continue to be managed in accordance with the NPDES Permits under the No Action Alternative.

PROPOSED ACTION

Hazardous Materials

The Proposed Action includes demolition of facilities in the existing terminal area, including the former MoANG Campus, the fuel consortium facilities (Swissport) and the removal and/or the relocation of existing fuel tanks. During the removal or relocation, it is possible that unknown fuel spills and hazardous soil may be encountered. These materials are not considered to be uncommon and disposal practices exist to handle and dispose of the materials safely; therefore, no significant impact is anticipated. It would be the responsibility of STL to ensure that the contractor would arrange for the transportation and disposal of all hazardous materials that would be created from the demolition in accordance with all applicable regulations. Additional surveying and testing would occur prior to demolition to ensure all hazardous materials are identified and properly disposed of to prevent contamination. Sites of potential soil contamination would be tested to determine if contaminated soils exist. Any hazardous materials encountered in site soils will be managed in accordance with EPA and/or MDNR risk-based corrective action requirements with an emphasis on on-site re-use of impacted materials to limit risks associated with the off-site movement of contaminated materials.

Some of the areas within the limits of the Proposed Action may have been sites of airport activities which involved hazardous materials. Airport activities which typically involved the use of hazardous materials included aircraft fueling, fuel storage, and deicing. Consequently, prior to any land surface disturbance (i.e., cut and fill work during site preparations, foundation and utility installations, etc.), soil and near surface groundwater would be evaluated, as required, for the presence of hazardous materials to assure proper management, if encountered.

During demolition activities, there is also a potential for asbestos-containing materials (ACM) or lead-based paint (LBP) to be encountered. Contractors shall follow all federal, state and local

laws, regulations and ordinances regarding the demolition, removal, handling, and disposal of ACM and material containing LBP.

Under the Proposed Action, STL would continue to store and use aviation fuels in the reconstructed terminal area. STL would comply with federal, state and local laws that control the use, generation, disposal, and monitoring of hazardous materials and would obtain and comply with applicable permits. Therefore, no significant impacts related to hazardous materials would be expected from construction and operation of the Proposed Action.

Solid Waste

Under the Proposed Action, there would be an increase in construction and demolition debris. Solid waste generated from the proposed construction and demolition activities would consist of typical building materials, such as solid pieces of concrete, metal, glass, and lumber. Contractors would be required to recycle construction and demolition debris to the extent practicable, thereby diverting if from landfills. Solid waste generated during construction, demolition, and operation of the Proposed Action would be disposed of at local, permitted landfills and would not exceed landfill capacity in St. Louis County.

There would be no change in forecast activity at STL as a result of the Proposed Action; therefore, there would be no substantial change in solid waste generated by the proposed consolidated terminal when compared to the No Action Alternative. The solid waste produced by the Proposed Action would not exceed the capability of the existing waste management facilities. The west triturator and international trash yard will be relocated into the proposed support facility location on the west end of the proposed project area and would continue to send processed waste to MSD.

Neither the No Action Alternative nor the Proposed Action would result in significant solid waste impacts and no mitigation is required.

Pollution Prevention

A Construction SWPPP and a Land Disturbance Permit from MDNR would be required for construction of the Proposed Action. Best Management Practices (BMPs) would be implemented during construction to limit runoff and erosion and to avoid or minimize accidental spills or releases and so that any spills or releases do not result in contamination. The Proposed Action would result in a net increase of approximately six (6) acres of impervious surfaces, which considers existing pavements/structures proposed for removal and new proposed pavements and structures. However, the Proposed Action includes various stormwater collection system improvements, including east deicing pad spent aircraft deicing fluid (SADF) (glycol) collection infrastructure. The SADF collection process includes a connection to the existing MSD glycol collection system. No changes to Metropolitan Sewer District permitting requirements are anticipated.

The proposed stormwater and glycol collection facilities will be designed and permitted in coordination with federal, state and local agencies, as required, and in accordance with the requirements of the NPDES permits issued by MDNR. STL would update its SWPPP and SPCC plan to reflect facility changes and maintain compliance with applicable regulatory requirements.

Neither the No Action Alternative nor the Proposed Action would result in significant impacts.

3.9.3 Proposed Mitigation

Mitigation could be required for any unknown fuel spills and hazardous soil that are discovered during construction. However, all federal, state, and local laws and regulations that control the use, generation, disposal, and monitoring of hazardous materials would be followed and applicable permits would be obtained, as required.

The Sponsor would seek to recycle as much material as practicable, from the demolition of the existing facilities and existing pavement areas. Material that is not suitable for recycling would be disposed of using existing disposal measures, including sending solid waste to a permitted landfill. The following will be implemented, as required.

- Proposed stormwater and glycol collection facilities will be designed and permitted in coordination with federal, state and local agencies, as required. An update to the Airport's SWPPP and SPCC plan will be prepared to reflect these facility changes.
- BMPs will be implemented during construction to limit runoff and erosion and to avoid or minimize accidental spills or releases. During design, there would be a construction specific SWPPP that would be completed and approved prior to construction.

3.10 Historic, Architectural, Archaeological & Cultural Resources

This section documents compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (NHPA). Section 106 regulations require that federal agencies identify historic properties, assess effects to historic properties, and identify and evaluate alternatives that could avoid, minimize, and/or mitigate any adverse effects on historic properties. The FAA, as the lead federal agency, also consults with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPO), and other parties throughout the Section 106 process, as appropriate.

FAA Order 1050.1F Exhibit 4-1 indicates that FAA has not established a significance threshold for Historical, Architectural, and Cultural Resources. A factor to consider is whether the action would result in a finding of adverse effect through the Section 106 process; however, an adverse effect finding is not automatically a significant impact triggering preparation of an EIS.

3.10.1 Affected Environment

AREA OF POTENTIAL EFFECTS

The FAA, in consultation with the SHPO/THPO, is responsible for identifying the Area of Potential Effects (APE). The APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."[52]

The APE was determined to reflect the nature, scale, and location of Project activities. It consists of the area where the Project has the potential to cause effects on historic properties, if present,

[52] 36 CFR Part 800.16(d), available at https://www.ecfr.gov/current/title-36/chapter-VIII/part-800.

and considers both direct and indirect Project effects. The APE, depicted in Figure 3.10-1, encompasses a large area centered around Terminal 1, where the majority of project activities would occur. Both Interstate 70, which has a variable height with bridges, ramps, and flyovers near the Airport, and Lambert International Boulevard, which is on a berm and elevated above the airfield side of the Airport, act as visual and noise buffers to areas located south of the Airport. Further, the American Airlines facilities on the Airport's west end and the warehouses and hangars on the Airport's east end, which will not be physically affected by Project implementation, would provide additional visual and noise buffers in those areas of the Airport.

Views across the airfield toward Project activities are limited due to distance; facilities northeast of the terminal and across the airfield, which were extensively altered and expanded in the mid-1980s and early 2000s, are over 3,000 feet away. All Project activities on the airfield side would occur in areas where similar airport infrastructure and facilities currently exist. Current airport operations would continue throughout Project construction, limiting discernable changes to existing noise and other atmospheric effects. No changes are proposed to the runway layout, which has been continuously altered and expanded over multiple decades.

On the landside, south of the airfield side of the Airport, proposed demolition and reconstruction of the parking garage would occur substantially within the same footprint as the current parking garage. Roadway circulation improvements, including connections to Interstate 70, would be consistent with existing roadway infrastructure near and within the airport property.

Ground-disturbing activities required for Project implementation would occur in areas previously disturbed through decades of airport improvements. Prior archaeological field investigations were conducted as part of a 1997 Environmental Impact Statement (EIS), and no archaeological sites were identified within the Project APE as a result of those prior investigations. Thus, a vertical or archaeological APE was not delineated for this Project and no further archaeological investigations were recommended.

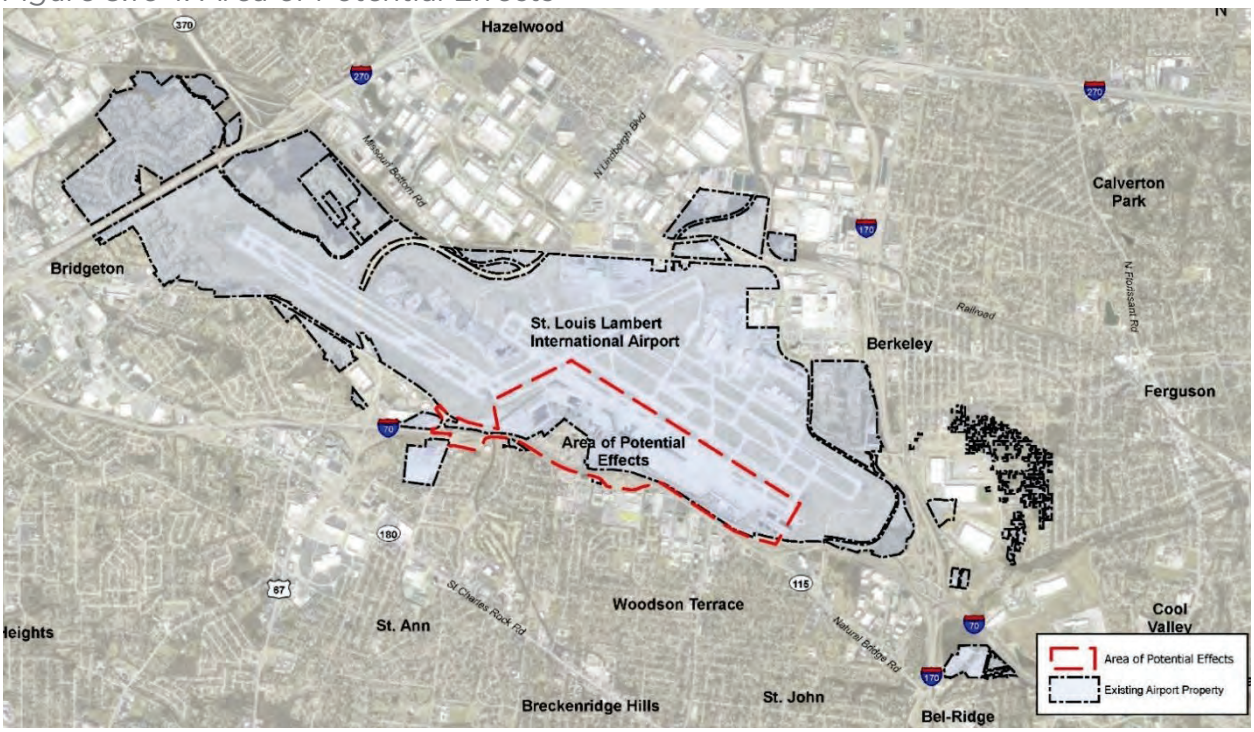
Pursuant to 36 C.F.R. § 800.4(a), FAA submitted the APE to the SHPO for review and comment on November 11, 2022. SHPO responded on December 13, 2022, and concurred with the proposed APE (See Appendix G).

On February 6, 2024, FAA notified the SHPO that the APE had been revised to include proposed work within the Missouri Department of Transportation (MoDOT) right-of-way. The Proposed Action was modified to include a new terminal roadway with an optimal length from interstate to terminal while minimizing changes needed to existing interstate highway facilities. SHPO concurred with the revised APE on April 8, 2024.

IDENTIFICATION OF HISTORIC PROPERTIES

To identify historic properties in the APE, a qualified historian reviewed available information, including data provided by STL; NRHP listings; available historic maps and images (e.g., Sanborn fire insurance maps, historic aerials, historic topographic quadrangles, plat maps); and information derived from in-person and online research at various repositories, historical societies and other sources.

Figure 3.10-1: Area of Potential Effects



Source: CMT, 2023.

A field survey was conducted on October 3-4, 2022, to evaluate all built resources within the APE and completed NRHP determinations of eligibility on properties constructed in 1981 or earlier. The survey documented three historic properties, eligible for listing on the NRHP, within the then established APE including: Ozark Air Lines Office, Shop and Hangar; Lambert Field Historic District; and the Terminal Building (Domes). All other evaluated built resources were determined not eligible for listing in the NRHP or were not evaluated because they were constructed after 1981. A copy of the Section 106 Survey Report is included in Appendix G.

3.10.2 Environmental Consequences

NO ACTION ALTERNATIVE

With the No Action Alternative, no changes would be made to the existing conditions and the terminals would remain as they are today. Therefore, no impacts to historical, architectural, archeological, or cultural resources would occur.

PROPOSED ACTION

Consultation was initiated with the SHPO to inform them of the scope of the undertaking and to seek concurrence on project effects to the identified historic properties. Documentation submitted to the SHPO included a description of the proposed undertaking, identification of the APE and the Section 106 Survey Report, completed by qualified architectural historians. A copy of this documentation was also provided to the City of Bridgeton, City of Berkeley, City of Florissant, Florissant Valley History Society and St. Louis County Landmarks as potentially interested consulting parties.

Section 106 Findings

The MDNR SHPO reviewed the information, as noted above, and provided its concurrence in letter dated August 8, 2023, finding that the proposed project will have an adverse effect on historic properties due to the demolition of the buildings located within the Lambert Field Historic District. SHPO also concurred that to mitigate for the adverse effect and to prevent any adverse effects on the Terminal Domes, a Memorandum of Agreement (MOA) will need to be drafted. A copy of the SHPO correspondence is included in Appendix G.

On April 8, 2024, after the revised APE was provided, SHPO indicated that they continue to concur that the project will have an adverse effect. They also stated that the revised APE does not add any new buildings for mitigation. A copy of the SHPO correspondence is included in Appendix G.

FAA has prepared an MOA to mitigate the adverse effect on the Lambert Field Historic District and to avoid an adverse effect on the Terminal Building. A copy of the MOA is included in Appendix G.

Tribal Coordination

The FAA also initiated consultation with federally recognized tribes with potential interest in the Proposed Action at STL. On December 2, 2022, the FAA sent letters to the identified contacts for these federally recognized tribes describing the proposed undertaking. A copy of the letter and tribal contacts who received correspondence are included in Appendix G. The following two responses were received and are also included in Appendix G.

- The Eastern Shawnee Tribe of Oklahoma responded that the project proposes no adverse effect or endangerment to known sites of interest to the Eastern Shawnee Tribe of Oklahoma.
- The Osage Nation Historic Preservation Office requested previous Phase I archaeological survey documentation conducted within the APE. After review and consideration of this documentation, the ONHPO requested to be a signatory on the MOA, and that stipulations for archaeological monitoring during construction be included as part of the MOA.

Coordination with SHPO and ONHPO will continue throughout the development of the MOA.

3.10.3 Proposed Mitigation

The MOA identifies the measures to mitigate the adverse effect for this project. Mitigation measures have been identified through the Section 106 consultation process which included SHPO and ONHPO. The following is a summary of the mitigation measures that have been identified in the Section 106 MOA that will be incorporated into the project. The MOA, included in Appendix G, provides additional information regarding these measures.

- A photographic record (photographs & drone video) of the Lambert Field Historic District will be completed in accordance with National Register Photo Policy Standards for archival purposes. Photographs and video shall provide an accurate visual representation of the property and its significant features. They must illustrate the qualities discussed in the description and NRHP statement of significance.
- A physical display will be created as part of the Consolidated Terminal Program that will illustrate the military history of the Airport and the buildings comprising the Lambert Field

Historic District including any salvaged items, original photos and plans, or other appropriate information.

- A webpage will be created within the St. Louis Lambert International Airport website that provides information, photos, cultural resource reports, NRHP listings, etc. relating to the military history at the Airport and the Lambert Field Historic District.
- In order to avoid an adverse effect on the Terminal Building, project plans will be provided to SHPO for review and comment. All improvements to the Terminal Building will follow the Secretary of the Interior's Standards for the Treatment of Historic Properties in order to avoiding diminish the historic integrity of the building while also considering accessibility, operational, security, economic, and technical feasibility.
- The Airport will provide archaeological monitoring for all ground-disturbing activities within the APE provided by a Project Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (36 C.F.R. Part 61), with a minimum of two years' experience working in the State of Missouri.

3.11 Land Use

Special guidance relevant to land use is given in the NEPA implementing regulations, which require consideration of "Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned."[53] The impacts on land use may include indirect impacts such as the disruption of communities, relocation, induced socioeconomic impacts, and impacts to land uses protected under Department of Transportation Act Section 4(f). The CEQ regulations (40 CFR 1506.2(c)) recognize that certain inconsistencies may exist between the proposed federal action and any approved state or local plan or law, however where an inconsistency exists, the NEPA document should reconcile its action with the plan or law.

FAA Order 1050.1F Exhibit 4-1 indicates that FAA has not established a significance threshold for land use, and the FAA has not provided specific factors to consider in making a significance determination.

3.11.1 Affected Environment

The existing land uses within the project study area are made up of developed land used for airport operations and roadways. There are no residences, schools, churches, or hospitals in the project study area. Additionally, there are no publicly owned parks, recreational areas, or wildlife or waterfowl refuges within the project study area. Potential changes to land uses within the airport area, not on airport property and not under the control of STL, may occur and are under the jurisdiction of the local municipalities.

STL is aware of the Woodson Road Airport Connection/Corridor Study.[54] This study recommends a connection from Woodson Road to the Airport across I-70, which includes a side path for walking and biking on the west side of the crossing, and a roundabout intersection for Woodson Road at Natural Bridge Road. Additionally, STL is aware that St. Louis County recently initiated a new

[53] Council on Environmental Quality (CEQ) NEPA Implementing Regulations. 40 CFR 1502.16(c)
[54] Alta Planning + Design and Engineering Design Service, Inc., Woodson Road Airport Connection/Corridor Study, http://www.wrairportconnection.org/. Accessed 4/29/2024.

comprehensive plan, St. Louis County 2050: An Equitable and Sustainable Comprehensive Plan (STLCO 2050).[55] STLCO 2050 will provide a long-term vision for the County and guide the development of a sustainable, equitable, and fiscally responsible community and will weave together major County influence areas, such as land use and transportation, into an integrated vision for the future.[56]

3.11.2 Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative assumes that there would be no construction of any facilities at the Airport to address the purpose and need and no changes in land use would occur. No impacts to land use would be expected under the No Action Alternative.

PROPOSED ACTION

The Proposed Action would occur entirely on STL property and within existing MoDOT right-of-way (ROW) and would not change the current land use designations in the project area. The landside access improvements associated with the Proposed Action would not preclude a future connection to STL by Woodson Terrace as depicted in the Woodson Road Airport Connection/Corridor Study.[57] Therefore, the Proposed Action would be compatible with existing and expected zoning and surrounding area land use plans.

STL provided assurance by letter found in Appendix H that appropriate action, including the adoption of zoning laws, has been or will be taken to the extent reasonable to restrict the use of land adjacent to, or in the immediate vicinity of the Airport to activities and purposes compatible with normal airport operations. In addition, STL would encourage and support other jurisdictions in the area in their efforts to do the same.

Neither the No Action nor the Proposed Action would result in significant land use impacts.

3.11.3 Proposed Mitigation

No mitigation is required.

3.12 Natural Resources and Energy Supply

This section presents the analysis of potential impacts to natural resources and energy supplies of the Proposed Action in comparison to the No Action Alternative. Natural resources may be impacted by a construction project and may require dirt, rock, or gravel that could diminish or deplete a supply of those and other natural resources. In addition, the operation of an airport requires energy supplies in the form of electricity, natural gas, aviation fuel, diesel fuel, and gasoline. There are two primary sources of energy consumption at an airport – stationary facilities

[55] St. Louis County, Missouri, https://st-louis-county-planning-stlco2050-stlcogis.hub.arcgis.com/. Accessed 4/29/2024.
[56] St. Louis County, Missouri, https://st-louis-county-planning-stlco2050-stlcogis.hub.arcgis.com/pages/about-stlco2050. Accessed 4/29/2024.
[57] Alta Planning + Design and Engineering Design Service, Inc., Woodson Road Airport Connection/Corridor Study, page 67, http://www.wrairportconnection.org/. Accessed 4/29/2024.

and aircraft operations. Stationary facilities use utility energy (electricity and natural gas) to provide lighting, cooling, heat, and hot water to buildings, the airfield, and parking areas. Aircraft operations and ground support equipment (GSE) consume fuel energy including jet fuel (Jet A), low-lead aviation gasoline (AvGas), unleaded gasoline, and diesel fuel to operate the aircraft and power GSE. FAA Order 1050.1F Exhibit 4-1 shows that FAA has not established a significance threshold for this impact category. However, a factor to consider is if the action would have the potential to cause demand to exceed available or future supplies of these resources.

3.12.1 Affected Environment

Current forecasts project growth in aircraft operations at STL and additional aircraft movements would likely increase fuel consumption with or without the Proposed Action. In addition, as aircraft operations are projected to increase in the future so is fuel usage for GSE.

STL is served by utilities that include potable water distribution, wastewater collection, stormwater drainage, natural gas, aviation fuel (via pipeline and truck shipment), communications, glycol and electric/power. The primary sources of electrical and natural gas energy consumption in the study area include the existing terminal buildings, airfield lighting, roadway lighting, lighting of the Terminal 1 parking garage, and numerous other airfield buildings. Electrical power is provided to STL by Ameren UE and natural gas service is provided by Spire Inc. The Missouri American Water Company owns and maintains the potable water lines that serve the Airport. Wastewater treatment is provided by MSD.

STL intends to replace its existing Climate Control West Facilities with a Central Utility Plant (CUP) and replace the existing Lambert Substation, constructed in 1995, by 2028. Parts of the existing Climate Control West Facilities date back to the original construction of the Airport, circa 1956. Many systems in the facility are aged, antiquated, and obsolete. The CUP would serve chilled water and steam for the HVAC needs of Terminal 1. The replacement substation would be upsized and would distribute power from the service provider (Ameren) to Terminal 1. The existing substation is outdated and obsolete, at capacity, and nearing the end of its useful life. These facilities are necessary for replacement now to continue meeting the needs of the Airport and Terminal 1.

3.12.2 Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative assumes that there would be no construction of any facilities at the Airport to address the purpose and need and no changes in operations would occur. No impacts to energy supply and natural resources would be expected under the No Action Alternative.

PROPOSED ACTION

The objective of the assessment is to determine whether the Proposed Action would have the potential to exceed the local resources or energy supply as compared to the No Action Alternative. The replacement consolidated terminal, replacement airline support facilities, CRDF, GTC, replacement terminal parking garage, surface and employee parking facilities, taxi/vehicle staging areas and associated support infrastructure would require electricity and natural gas for heating,

cooling, and interior and exterior lighting of the new facilities. In addition, the Proposed Action would require new water, wastewater, natural gas, communication and electrical utility lines. The proposed replacement and new facilities and utilities would replace older, less efficient facilities, which is anticipated to achieve a reduction in energy use. The consumption of potable water would not differ from the No Action Alternative. With the construction of the CUP and the replacement substation prior to the completion of the CTP, no impacts to the electricity supply are anticipated. Preliminary coordination has occurred with the utility providers. The Proposed Action would not consume a notable quantity of natural resources, nor would it exceed local supplies for fuel and energy. Therefore, no significant impacts to natural resources or the local energy supply would occur as a result of the Proposed Action.

During the construction of the Proposed Action, items such as concrete, asphalt, crushed stone, fuel oil, and gasoline would be used. All materials needed for construction may be purchased from area firms or manufacturers who specialize in these materials. The proposed project would not involve the use of any unusual materials or of those in short supply. The construction activities associated with the project would also require the use of fuels for construction equipment, asphalt pavements, and the excavation/import of any fill material required. However, the additional fuel consumption associated with construction activities would not result in demands for fuel that would exceed available or future supply capacity.

Neither the No Action Alternative nor the Proposed Action would result in significant impacts to energy generation or availability of natural resources.

3.12.3 Proposed Mitigation

No mitigation is required.

3.13 Noise and Noise Compatible Land Use (Aircraft)

This section presents the analysis of aircraft noise exposure to surrounding communities as a result of the No Action Alternative and the Proposed Action. The impact of airport-related noise levels upon the surrounding areas is presented in terms of the number and type of noise-sensitive land uses located within the noise contours for the No Action Alternative and the Proposed Action for 2032 and 2037. This is in accordance with FAA Order 1050.1F guidance, which specifies that an operational impact analysis should be prepared for the year of anticipated project implementation and five to ten years after implementation.[58]

For aviation noise analyses, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of DNL, the FAA's primary noise metric. To evaluate aircraft noise, the FAA has an approved computer model, the AEDT, that simulates aircraft activity at an airport, as the tool for environmental modeling of FAA actions to determine if significant noise impacts would result. AEDT 3f, released in December 2023is the latest version.[59]

[58] FAA, 2023, 1050.1F Desk Reference (v3), Environmental Impacts: Policies and Procedures, 11. Noise and Noise-Compatible Land Use, 11.3 Environmental Consequences.
[59] FAA, 2023, Aviation Environmental Design Tool, Version 3f. Available at: https://aedt.faa.gov/3f_information.aspx.

The FAA uses the 14 CFR Part 150, Airport Noise Compatibility Planning, land use compatibility guidelines to determine compatibility with most land uses. These guidelines are consistent with land use compatibility guidelines developed by other federal agencies such as EPA and the Department of Housing and Urban Development.[60] [61] The DNL 65 decibels (dB) is the noise level where noise-sensitive land uses (residences, churches, schools, libraries, and nursing homes) become non-compatible. Below 65 DNL, all land uses are generally determined to be compatible with airport noise.

According to FAA Order 1050.1F, Exhibit 4-1, a significant noise impact would occur if the analysis shows that the Proposed Action would result in noise-sensitive areas experiencing an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase when compared to the No Action alternative for the same timeframe. Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties where the land use compatibility guidelines in 14 CFR part 150 are not relevant to the value, significance, and enjoyment of the area in questions.

3.13.1 Affected Environment (Existing Conditions)

Noise Model

The noise contour calculated by the AEDT for an airport is a function of several factors, including the number of aircraft operations during the period evaluated, the types of aircraft flown, the time of day when they are flown, the way they are flown, how frequently each runway is used for landing and takeoff, and the routes of flight used to and from the runways. Substantial variations in any one of these factors may, when extended over a long period of time, cause marked changes to the noise contours. The specific assumptions used in the AEDT model for this analysis are provided in Appendix I.

Aircraft Activity Levels and Fleet Mix

In order to calculate DNL noise exposure levels for the Airport, the average number of daily arrivals and departures by specific aircraft types were prepared for input into the AEDT. Information concerning aircraft operations was collected from the Airport's Noise and Operations Monitoring System (NOMS), Boeing, STLAA, and STL Air Traffic Control Tower (ATCT) staff for the 12-month period from August 1, 2021 – July 31, 2022. During the existing conditions period, 160,486 annual operations occurred at STL. No changes to standard aircraft were made in the modeling.

The average daily number of aircraft arrivals and departures for the Existing Conditions Noise Contour was calculated by determining the total annual operations and dividing by 365 (days in a year). The 2022 annual average day included 439.69 total operations, 13% of which occurred during the nighttime hours of 10:00 p.m. to 6:59 a.m. The specific number and type of aircraft modeled are provided in Appendix I.

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[60] Federal Interagency Committee on Urban Noise (FICUN), 1980, Guidelines for Considering Noise in Land Use Planning and Control.

[61] Federal Interagency Committee on Noise (FICON), August 1992, Federal Agency Review of Selected Airport Noise Analysis Issues.

Runway Definition

STL has four runways, three northwest/southeast parallel runways (11/29, 12L/30R, and 12R/30L), and Runway 6/24, a northeast/southwest crosswind runway. Runway 12R/30L is the longest runway on the airfield at 11,020 feet.

Runway End Utilization

Runway end utilization refers to the percentage of time that a particular runway end is used for departures or arrivals. It is a principal element in the definition of the noise exposure contour. The proportional use of a runway is based largely on conditions of wind direction and velocity and the length of the runway.

To consider the changes in runway operational philosophies by different ATCT managers and to exclude runway construction-related closures, composite runway use data was extracted from the NOMS for the period January 1, 2016, through July 31, 2022. Based on the data collected for the existing conditions, the Airport is operated primarily in one of two configurations – northwest flow (55% of the time) or southeast flow (45% of the time). Runway use percentages modeled for the Existing Conditions Noise Contour are provided in Appendix I.

Flight Tracks

A flight track is the path over the ground as aircraft fly to or from the Airport. Departure corridors are defined by a series of individual flight tracks located across the width of the corridor. Generally, aircraft approaching a runway end are located within a smaller corridor due to using navigational instruments.

For this EA, the existing flight tracks from the 2010 Part 150 Noise Compatibility Study were evaluated to ensure that the flight tracks used in the modeling of aircraft noise are representative of where aircraft fly at STL currently. NOMS radar data gathered for the 12-month period, August 1, 2021 – July 31, 2022, was compared to the previous Part 150 study flight tracks to determine if arrival and departure operations at STL continue to utilize the previously modeled flight corridors. In instances where flight corridors were no longer utilized, those flight tracks were not assigned operations. The radar data was also analyzed to verify the percentage of operations on each flight track. The flight tracks modeled for the Existing Conditions Noise Contour are provided in Appendix I.

Aircraft Trip Length and Operational Profiles

Aircraft weight during departure is a significant factor in the propagation of aircraft noise because it impacts the climb rate of an airplane and, consequently, the dispersion of aircraft noise over land under the aircraft's flight path. Generally, the heavier an aircraft is, the slower the rate of climb and the wider the dispersion of noise along its route of flight.

The AEDT includes standard flight procedure data for each aircraft that represents each phase of flight to or from the Airport. Information related to aircraft speed, altitude, thrust and flap settings, and distance are used by AEDT to calculate noise levels on the ground.

Standard aircraft departure profiles are supplied from the runway (field elevation) up to 10,000 feet above field elevation (AFE). Aircraft arrival profiles are supplied from 6,000 feet AFE down to the runway, including the application of reverse thrust and rollout. The FAA requires that these

standard arrival and departure profiles be used unless there is evidence that they are not applicable. No changes to the standard profiles were made in the modeling.

Existing Conditions Noise Exposure Contour

Noise contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from STL's annual average daily aircraft operations is distributed over the surrounding area. Figure 3.13-1 reflects the average annual noise exposure pattern at STL during 2022.

Noise Compatible Land Use

The FAA has created guidelines regarding the compatibility of land uses with various aircraft noise levels measured using the DNL metric. These guidelines are defined in Appendix A to 14 CFR Part 150.[62] These guidelines show the compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, and libraries), commercial, institutional, and recreational land uses. All land uses exposed to noise levels below the DNL 65 dB noise contour are generally considered compatible. All the existing residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Existing Condition 65 DNL or higher contours have been previously mitigated as part of the Airport's Part 150 sound insulation program and are considered compatible.

3.13.2 Environmental Consequences

This section discusses the methodology and the potential noise impacts for the 2032 and 2037 No Action Alternative.

NO ACTION ALTERNATIVE

Aircraft Activity Levels and Fleet Mix

The total number of annual aircraft operations for the 2032 and 2037 No Action Alternative are presented in Appendix I. The average daily number of aircraft arrivals and departures for the 2032 and 2037 No Action Alternative noise contours were calculated by determining the total annual operations and dividing by 365 (days in a year).

Runway Definition

Under the Future 2032 No Action Alternative and the Future 2037 No Action Alternative, no runway relocation or other airfield changes would occur. Therefore, the runway definition discussed for the existing conditions would remain the same for the 2032 and 2037 No Action Alternative.

Runway End Utilization

Under the Future 2032 No Action Alternative and the Future 2037 No Action Alternative, no replacement terminal would be constructed. Therefore, the runway utilization discussed for the existing conditions would remain the same for the 2032 and the 2037 No Action Alternative.

[62] FAA, 2023, 1050.1F Desk Reference (v3), Environmental Impacts: Policies and Procedures, 11. Noise and Noise-Compatible Land Use, 11.6 Mitigation.

Flight Tracks

Flight Track locations for the 2032 No Action Alternative and the Future 2037 No Action Alternative are expected to be the same as the existing conditions.

Future 2032 and 2037 No Action Alternative Noise Exposure Contour

Noise Contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from STL's annual average daily aircraft operations is distributed over the surrounding area. Figure 3.13-2 and Figure 3.13-3 reflect the potential average-annual noise exposure contours at STL for the Future 2032 and 2037 No Action Alternative.

Noise and Noise-Compatible Land Use

There are no new unmitigated residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Future 2032 and 2037 No Action Alternative contours.

Noise Compatible Land Use - No Action Alternative

There are no new unmitigated residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Future 2032 and 2037 No Action Alternative contours.

PROPOSED ACTION

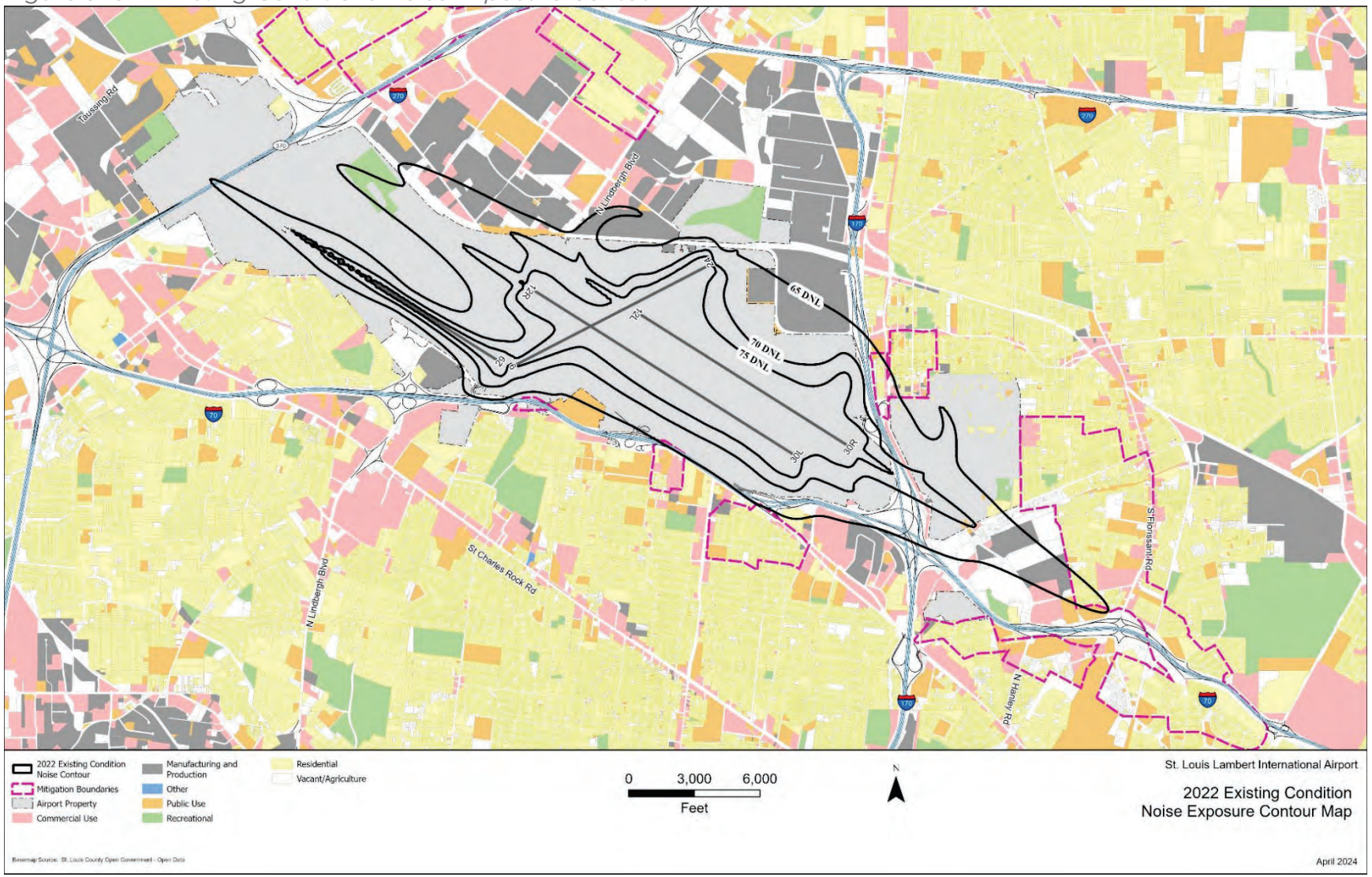
Aircraft Activity Levels and Fleet Mix

As explained in Section 1.4 Purpose and Need, the Proposed Action would not induce or cause un-forecasted growth in aircraft operations. No additional airlines are expected to start service at the Airport as a result of the implementation of the Proposed Action. The number and type of aircraft would be the same for the No Action Alternative as the Proposed Action for both future years. The total number of annual aircraft operations for the 2032 and 2037 future years is presented in Appendix I. The average daily number of aircraft arrivals and departures for the 2032 and 2037 noise contours is calculated by determining the total annual operations and dividing by 365 (days in a year).

Runway Definition

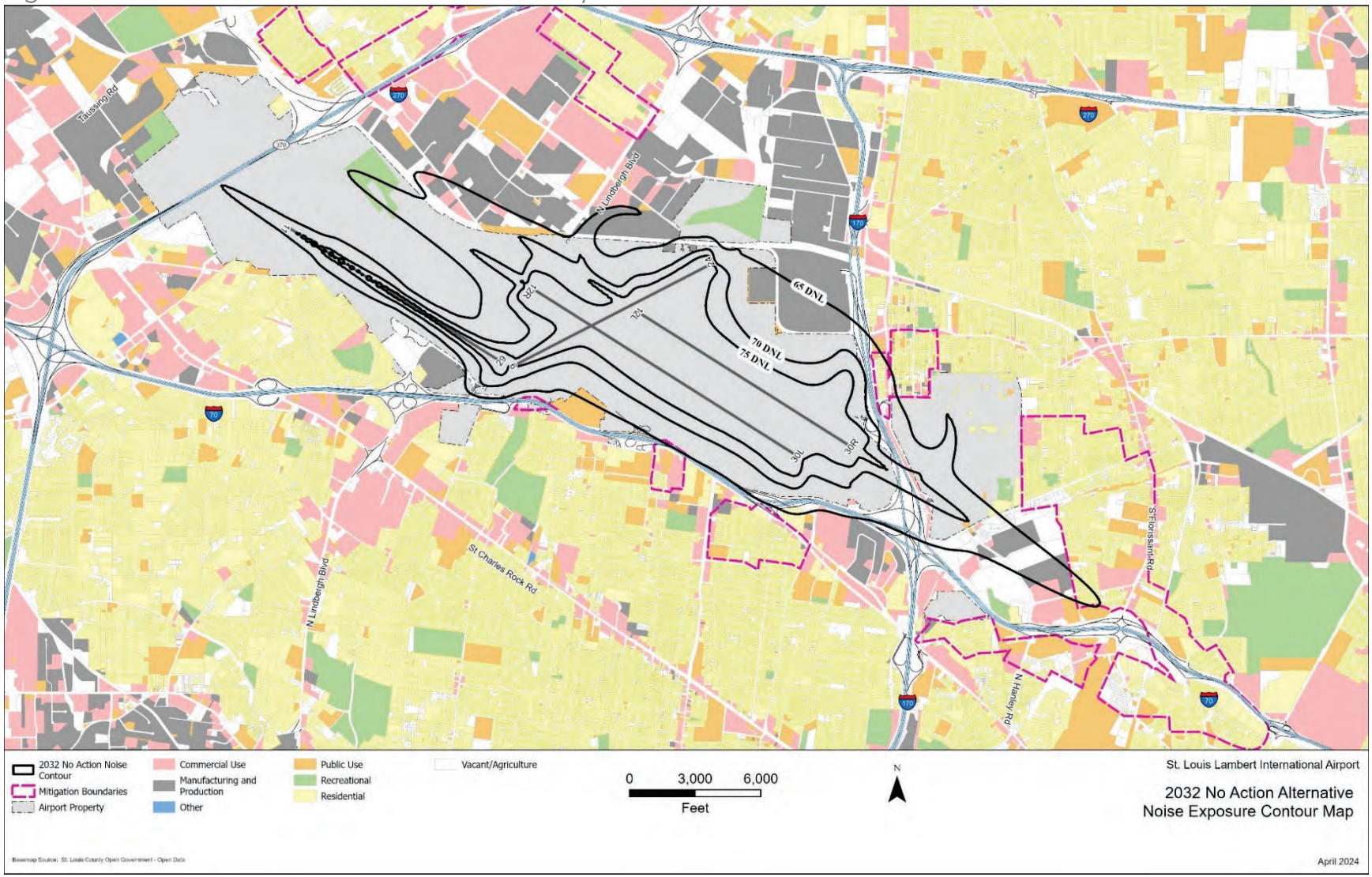
Under the Future 2032 Proposed Action and the Future 2037 Proposed Action, no runway relocation or other airfield changes would occur. Therefore, the runway definition discussed for the existing conditions would remain the same for the 2032 and the 2037 Proposed Action.

Figure 3.13-1: Existing Conditions Noise Exposure Contour



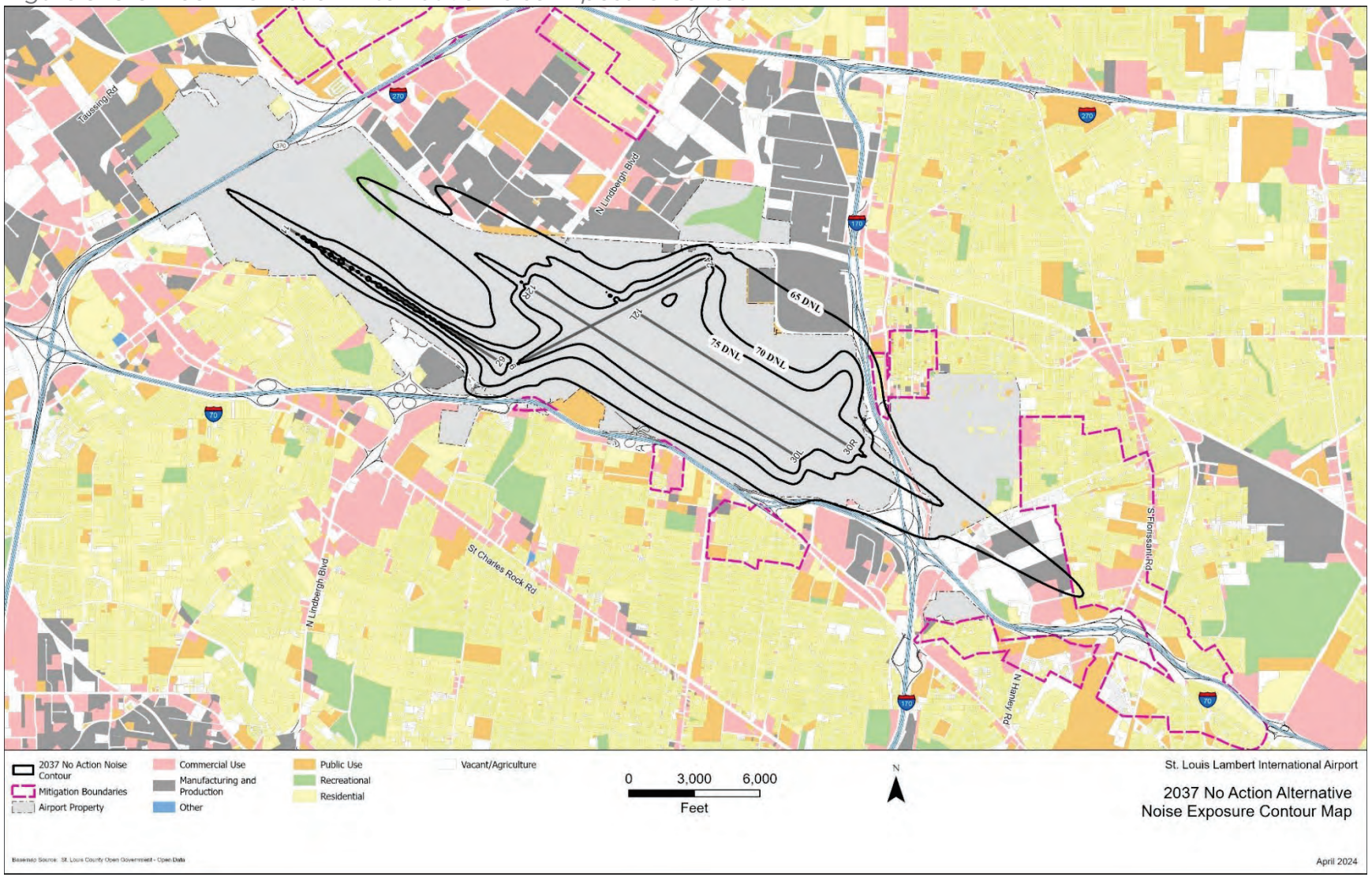
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-2: 2032 No Action Alternative Noise Exposure Contour



Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-3: 2037 No Action Alternative Noise Exposure Contour



Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Runway End Utilization

According to the airlines operating at the Airport and STL (ATCT) staff, the Proposed Action would most likely shift some aircraft operations to STL's Runway 11-29 and result in a rebalancing of departures from Runway 30L and Runway 29 when the FAA operates STL in a northwest flow. With the Proposed Action, arrivals under both the northwest and southeast flows would presumably also change as follows:

- Northwest flow – Aircraft using west gates at STL would arrive on Runway 29, and aircraft using east gates would arrive on Runway 30R.
- Southeast flow – Aircraft using west gates would arrive on Runway 11, and aircraft using east gates would arrive on Runway 12L.
- When possible, outside of peak traffic periods, the FAA will emphasize the use of Runway 12L/30R for arrivals.

Runway use percentages modeled for the Proposed Action Noise Contours are shown in Appendix I.

Flight Tracks

Flight Track locations for the 2032 Proposed Action and the Future 2037 Proposed Action are expected to be the same as the 2032 No Action Alternative and the Future 2037 No Action Alternative.

Future 2032 and 2037 Proposed Action Noise Exposure Contour

Noise contours are presented for the 65, 70, and 75 DNL. DNL contours are a graphic representation of how the noise from STL's annual average daily aircraft operations is distributed over the surrounding area. Figure 3.13-4 and Figure 3.13-5 reflect the potential average-annual noise exposure contour at STL for the Future 2032 and 2037 Proposed Action. Figure 3.13-6 provides a comparison of the 2032 No Action Alternative and the 2032 Proposed Action. Figure 3.13-7 provides a comparison of the 2037 No Action Alternative and the 2037 Proposed Action.

Noise Compatible Land Use - Proposed Action

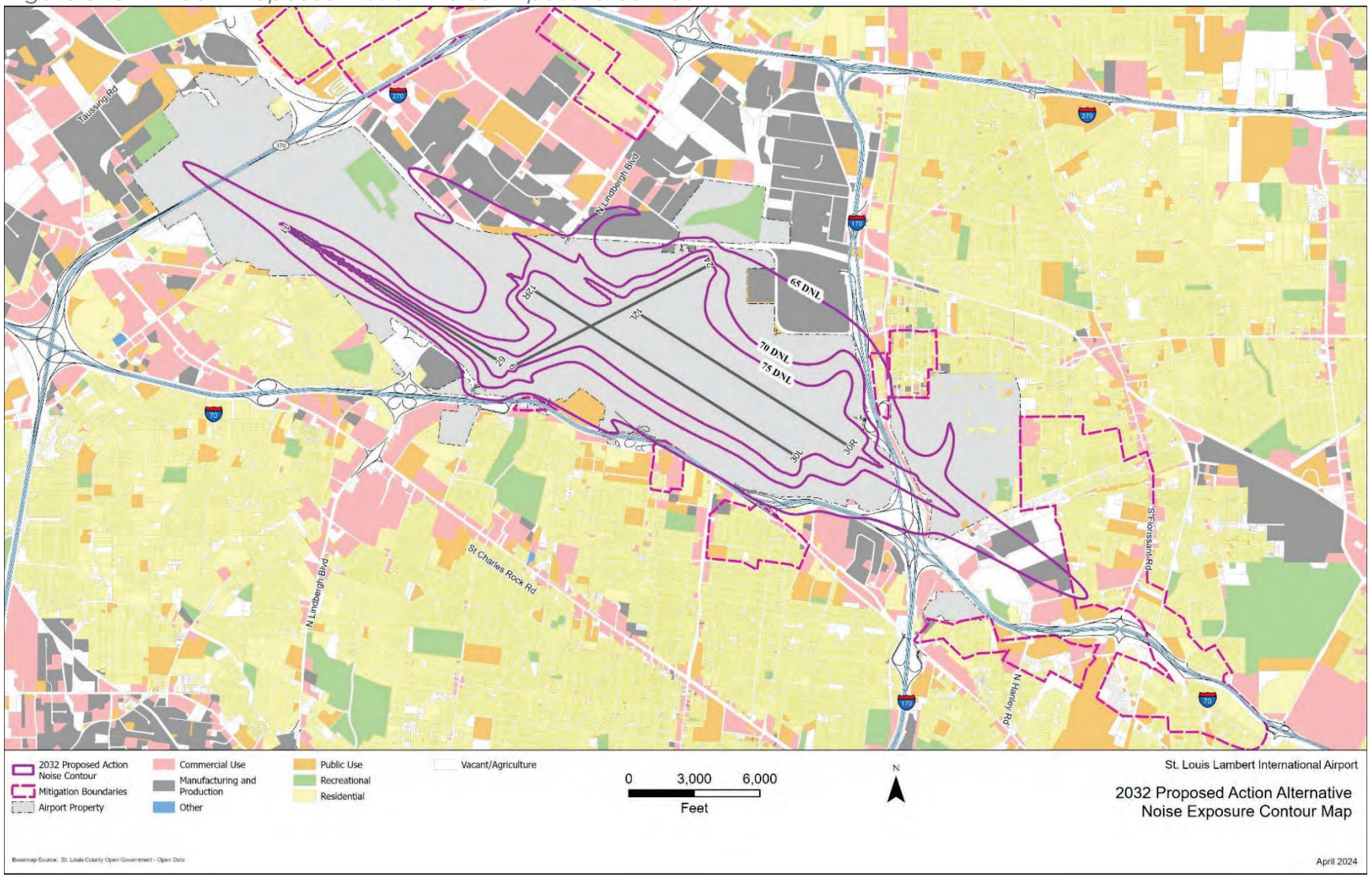
There are no new unmitigated residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Future 2032 and 2037 Proposed Action contours. Therefore, there are no new non-compatible land uses due to the Proposed Action.

According to FAA Order 1050.1F, Exhibit 4-1, a significant noise impact would occur if the analysis shows that the Proposed Action would result in noise-sensitive areas experiencing an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase when compared to the No Action Alternative for the same timeframe. No new noise-sensitive land uses would be subject to noise levels of DNL 65 dB or greater due to an increase in noise of DNL 1.5 dB or greater. Further, no existing noise sensitive land uses within the DNL 65 dB would be subject to an increase in noise of DNL 1.5 dB or greater. Therefore, no significant aircraft noise impacts would occur as a result of the Proposed Action.

3.13.3 Proposed Mitigation

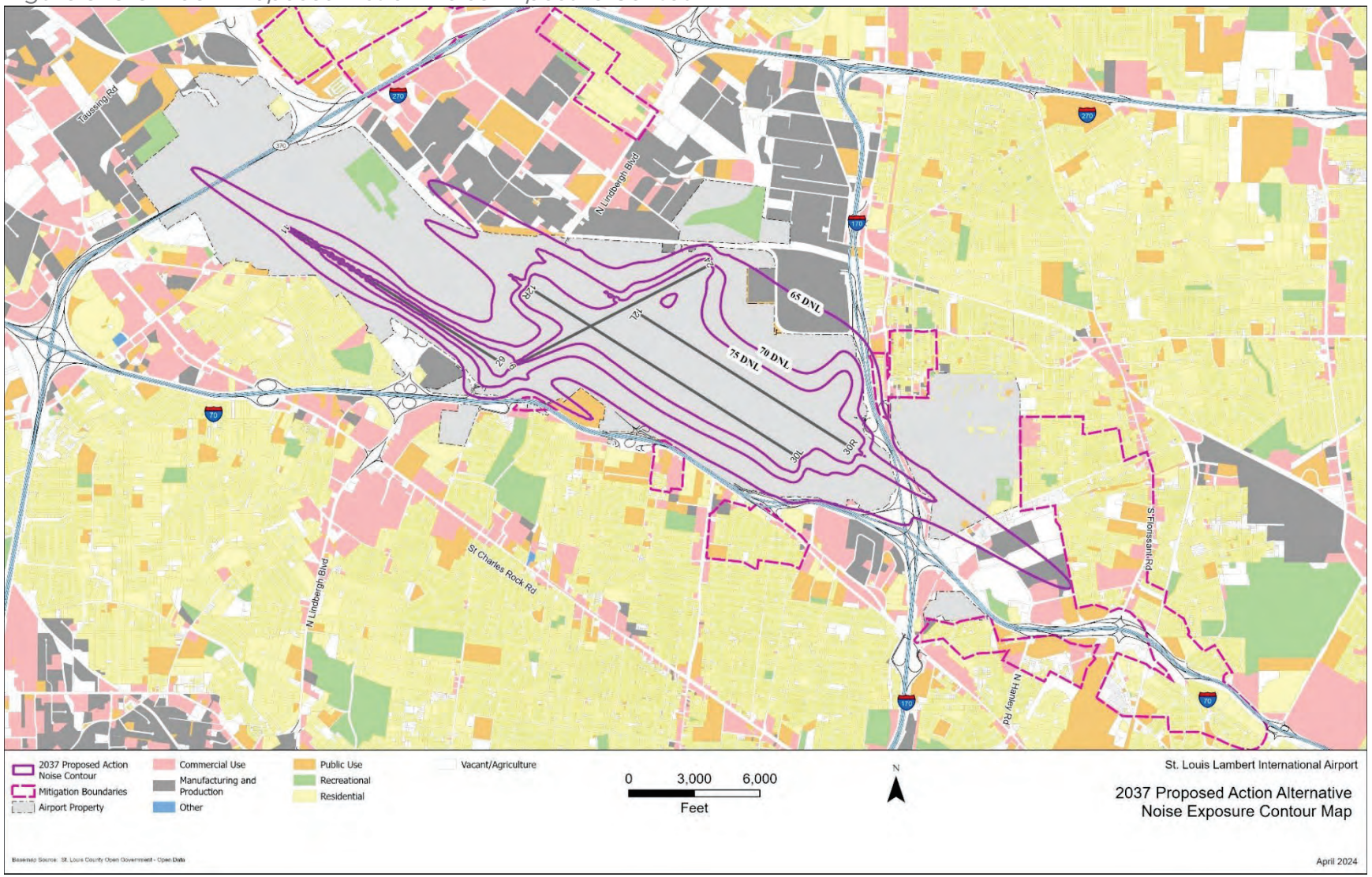
No mitigation is required.

Figure 3.13-4: 2032 Proposed Action Noise Exposure Contour



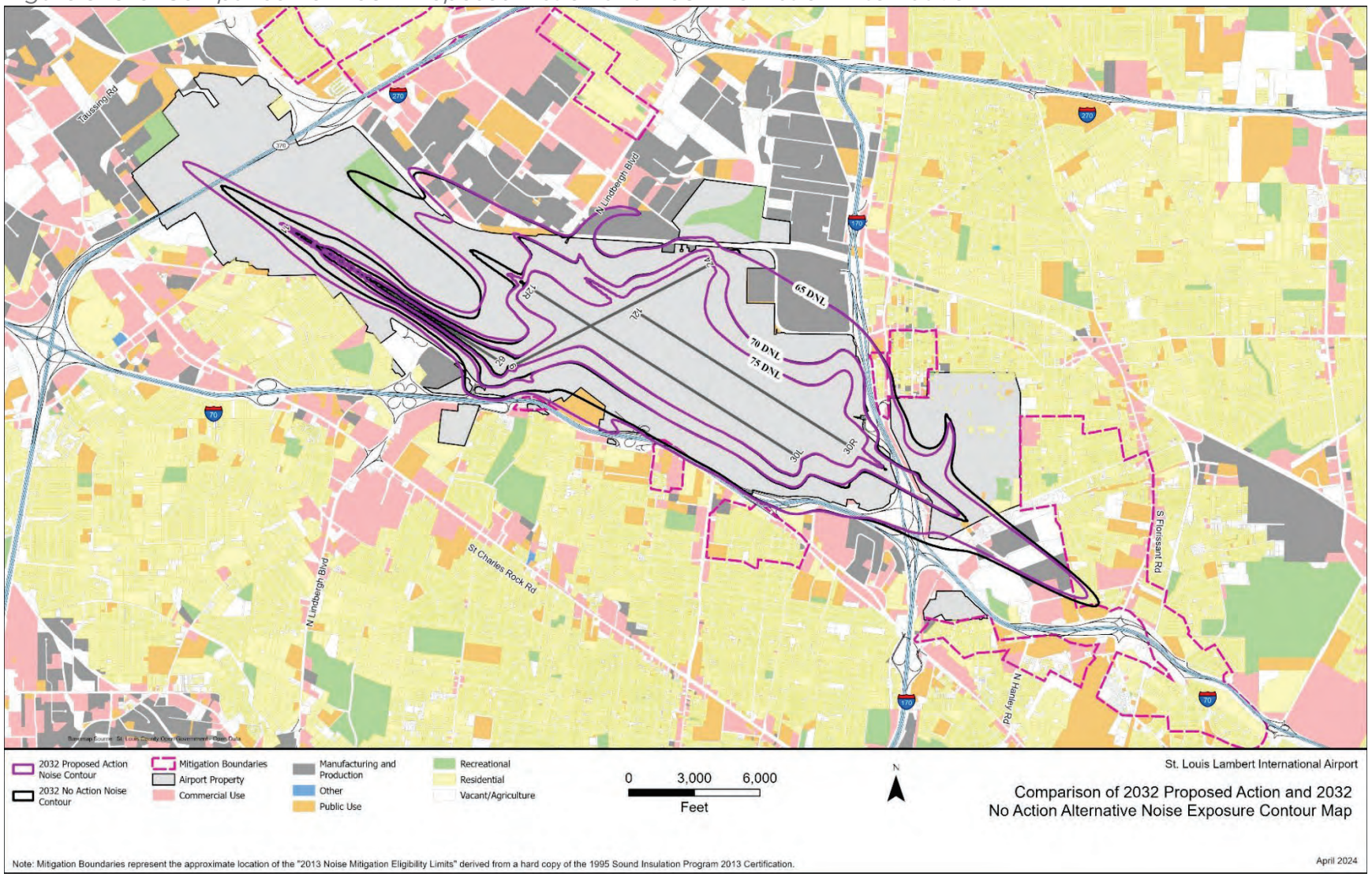
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-5: 2037 Proposed Action Noise Exposure Contour



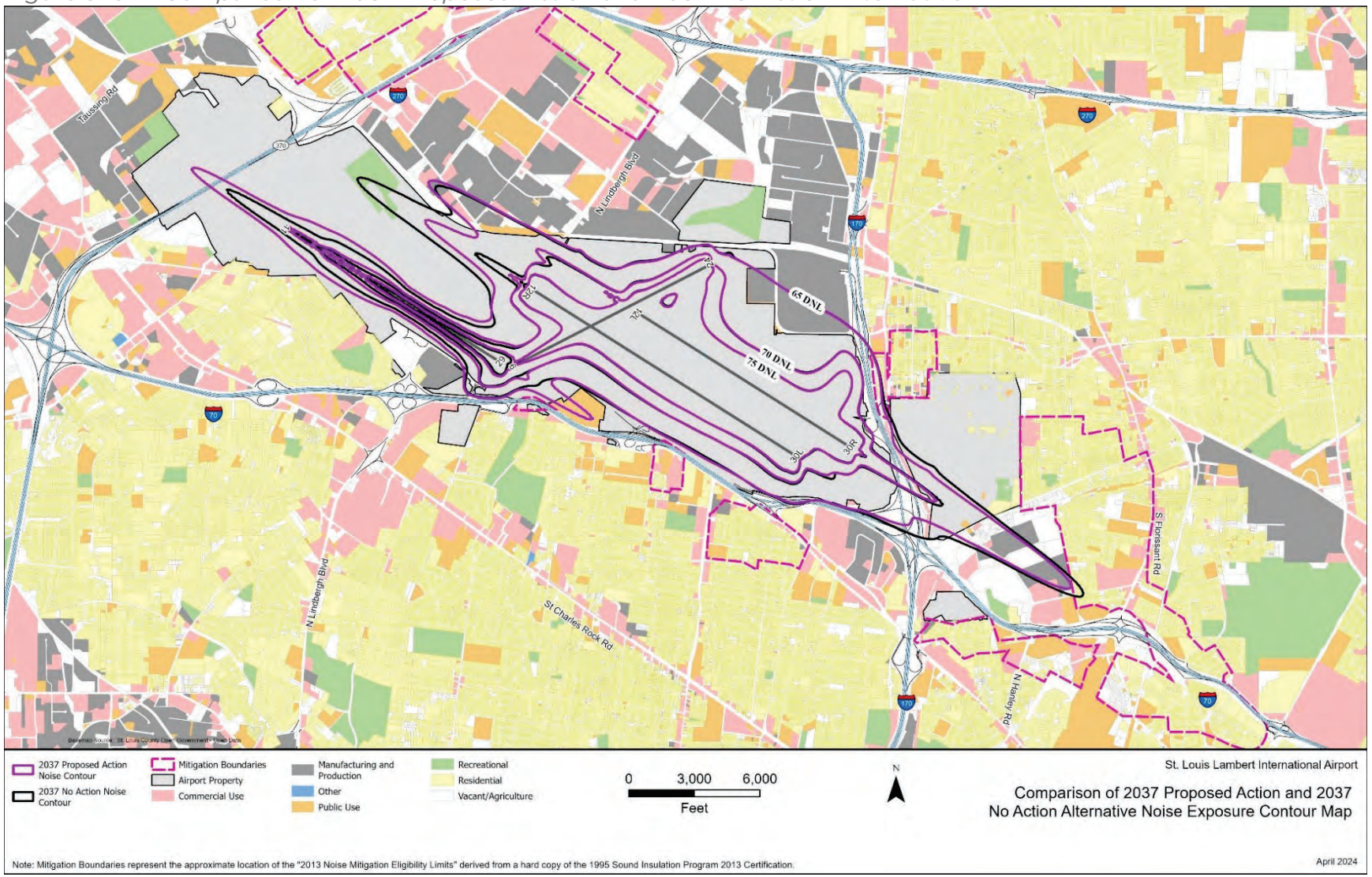
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-6: Comparison of 2032 Proposed Action and 2032 No Action Alternative



Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-7: Comparison of 2037 Proposed Action and 2037 No Action Alternative



Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

3.14 Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks

The character of a community is largely determined by the people that live or work there. Associated factors that contribute to the characteristics of a community are business and labor markets, transportation systems, and utilities. Any of the proposed actions that affect individuals within a community is a social impact. The FAA evaluates impacts of projects on three related categories – socioeconomics, environmental justice and children's environmental health and safety. A detailed evaluation of these three categories is provided below. Detailed data tables, mapping and methodology used for this analysis is provided in Appendix J.

SOCIOECONOMICS

Socioeconomic impacts are assessed to determine the effect that the Proposed Action would have on the social and economic fabric of the surrounding communities. According to FAA Order 1050.1F, Exhibit 4-1, the FAA has not established a significance threshold for this resource; however, the FAA does list several factors to consider:

- Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area)
- Disrupt or divide the physical arrangement of an established community
- Cause extensive relocation when sufficient replacement housing is unavailable
- Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities
- Disrupt local traffic patterns and substantially reduce the levels of service of roads and serving an airport and its surrounding communities
- Produce a substantial change in the community tax base

ENVIRONMENTAL JUSTICE

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, Section 1-101 requires all federal agencies to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

The USDOT Order 5610.2(a) defines minority as "individuals who are Black; Hispanic or Latino; Asian American; American Indian and Alaskan Native; Native Hawaiian and other Pacific Islander." The CEQ's Environmental Justice Guidance under NEPA indicates that for populations to be considered as a minority, the minority composition should either exceed 50% or be meaningfully greater than the minority population percentage in the general population of the geographic area under analysis. The appropriate unit of geographic analysis may be a governing body's jurisdiction, a neighborhood, a census tract, or other similar unit.

FAA Order 1050.1F provides guidance for the preparation of environmental justice analysis in support of an EA. Although FAA has not established a significance threshold for environmental

justice, Section 4-3.3., Exhibit 4-1 of the Order indicates that FAA should consider whether the action would have the potential to lead to a disproportionately high and adverse impact, on either a low-income or minority population due to significant impacts in other environmental impact categories or impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population. If a significant impact would affect low income or minority populations at a disproportionately higher level than it would other population segments, an environmental justice issue is likely.

CHILDREN'S ENVIRONMENTAL HEALTH & SAFETY RISKS

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks, requires all federal agencies as appropriate and consistent with the agency's mission, (a) to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they might be exposed. FAA has not established a significance threshold for this category of impacts, but factors to consider include whether the action would have the potential to lead to a disproportionate health or safety risk to children.

3.14.1 Affected Environment

SOCIOECONOMICS

Economy and Population

Due to the large impact the Airport has on the region and the amount of people and businesses that directly rely on the airport operations in their day to day lives, the surrounding communities are heavily interested in the airport's development and any changes that may occur that would affect the economy of the local area.

The project site is in St. Louis County, Missouri, which has a population of 998,227 people. The population within the county and the greater St. Louis area has seen a slight population decline in recent years. The Airport is and will continue to be a major attractor of business and development in the St. Louis region. The Airport currently employs more than 15,000 people and generates an estimated $5.1 billion annually to the St. Louis region.

Traffic Patterns

The existing primary access to the main terminal is currently provided by Lambert International Boulevard. The Proposed Action includes roadway improvements to enhance the passenger experience and provide safe and efficient traffic operations, and in particular would allow for the optimal one mile spacing between I-70 and the terminal to improve roadway safety. The proposed improvements include:

- Adding an auxiliary lane and shoulder improvements on the north side of I-70 from the Airflight Drive interchange to the existing west onramp at Lambert International Boulevard

- Airflight Drive intersection improvements that would remove direct access to Lambert International Boulevard
- Remove the ramp from Lambert International Boulevard onto westbound I-70
- Restripe and/or widen the lanes at the Cypress Road/Natural Bridge Road Intersection

These changes have been evaluated in a draft Traffic Safety and Operations (TS&O) report. MoDOT has reviewed the TS&O report and issued a letter of no objection. The draft TS&O and the MoDOT letter are provided in Appendix K. The draft TS&O report will continue to be coordinated with MoDOT during design of the proposed roadway improvements, which may include preparation of an Access Justification Report (AJR).

ENVIRONMENTAL JUSTICE

When comparing the affected community with St. Louis County using the 50% criteria or meaningfully greater than the population percentage in the general population, the following census tracts were identified as having both minority and low-income EJ populations of concern:

- Census Tract 2115
- Census Tract 2127.01
- Census Tract 2127.02
- Census Tract 2131.04
- Census Tract 2132.04
- Census Tract 2133.02
- Census Tract 2134.01
- Census Tract 2134.02
- Census Tract 2135
- Census Tract 2136
- Census Tract 2147
- Census Tract 2149.01
- Census Tract 2218

Most of these census tracts are located in the southeastern portion of the affected community, with all the census tracts east of SR 67 having both minority and low-income EJ populations of concern, except Census tract 2133.01 and Census Tract 2148. Only six census tracts within the affected community were not identified as having both populations of EJ concern, and only two have neither a minority or low-income population (Census Tracts 2131.02 and 2132.03). Three of the four Census Tracts located within the study area were identified as both minority and low-income EJ population of concern.

CHILDREN'S ENVIRONMENTAL HEALTH & SAFETY RISKS

There are schools, childcare centers, parks, and similar areas frequented by children in the affected area. There are no community resources on the Airport that serve children.

3.14.2 Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative does not require any land acquisition; business or residential relocations; altering any surface transportation facility; shifting patterns of population movement and growth; dividing or disrupting any established community; change in public service demands or disrupting orderly, planned development; or creating an appreciable change in employment. In addition, the No Action Alternative does not result in any changes in products or substances that a child is likely to come in contact with or ingest or products they might use or be exposed to.

However, traffic operational and safety deficiencies with the current terminal configuration would remain, as would the deficiencies in the existing terminal passenger holding and processing areas, resulting in a poor passenger experience, reduced revenue for the Airport, resulting in an adverse economic impact to the Airport and the region's employment and tax base.

There would be no impacts to environmental justice populations, or to children's health and safety under the No Action Alternative.

PROPOSED ACTION

Socioeconomics

The Proposed Action would occur entirely on airport property or within existing MoDOT right-of-way. No residences or businesses would be relocated as a result of the project. No disruption or division of an established community would occur. The Proposed Action would result in changes in traffic patterns. The effect would be indirect and induced by the changes that are expected to occur at the Airport as a result of the Proposed Action. The planned roadway projects, part of the Proposed Action, are intended to improve the safety and reduce the congestion of the airport access roadways but could alter the foot traffic to neighboring communities, which could have an adverse impact on the local economy. The main changes in traffic patterns will occur due to the closure of Airflight drive north of I-70 for residential traffic and removal of the ramp from Lambert International Boulevard onto westbound I-70. The ramp proposed for closure was mainly used for airport traffic and would only alter where vehicles trying to go westbound on I-70 would access the Airport. Other roadway changes, including adding a west-bound auxiliary lane between the Airflight Drive and Natural Bridge Road interchanges, and intersection improvements at the I-70

and Cypress Road/Natural Bridge Interchange, are improvements that will make traveling on I-70 to and from the Airport safer and more efficient.

Access to the Airport would change for multiple hotels, restaurants, surface parking lots, a rental car facility, a gas station and residential neighborhoods located in the area of the Pear Tree Drive and Airflight Drive intersection. The existing access to and from the Airport is directly from Airflight Drive. Under the Proposed Action, travel on I-70 would be needed to go from the on-ramp at Pear Tree Drive to the off-ramp at Natural Bridge Road where the new main airport entrance would be. While the 2037 traffic predicted for some turning movements along Pear Tree Drive for the Proposed Action decreases when compared to the No Action, the overall traffic in the I-70 corridor adjacent to the Airport and adjacent to these businesses increases. Furthermore, the majority of the businesses in this area are airport user-based businesses, such as hotels, rental car facilities airport parking lots, gas stations and restaurants, which will continue to serve airport users under the Proposed Action. Therefore, while the Proposed Action would slightly alter the travel time and distance, and could be an adverse economic impact on Pear Tree Drive/Natural Bridge Road area businesses and residences, the impact is not anticipated to be significant (as defined in FAA Order 1050.1F, Exhibit 4-1) as compared to the No Action alternative. Exhibits showing the changes in the travel patterns for locations around the Airport are provided in Appendix K.

The Proposed Action is expected to result in a short-term economic benefit due to the increase in employment in the construction sector proportionate to the construction projects. This increased employment would result in a boost to local merchants/professionals from the sale of goods and services and could result in positive growth and a short-term increase in the community tax base. The induced economic and employment effects likely to result from the Proposed Action are positive and consistent with local plans. The altered roadway configuration would also lead to the benefit of improved transit due to the freeing up of space to add in a dedicated shuttle lane. In addition, the Proposed Action does not preclude the construction of the Woodson Road Airport Connection project currently being studied by Woodson Terrace, which would also provide vehicle and pedestrian connections to the Airport and Metrolink stations that are currently lacking. No substantial shifts in business or economic activity adversely impacting the local economy are expected.

Environmental Justice

As indicated in the affected environment section, minority and low-income populations are present within three of the four census tracts within the study area and only two census tracts within the affected community lacked an EJ minority and low-income population of concern. The Proposed Action would not increase air emissions beyond *de minimis* levels for any evaluated pollutant, nor would it create aviation noise impacts at or above 65 dB. While the other roadway access improvements connected to the Proposed Action do not result in a substantial increase in noise for noise sensitive resources south of I-70 in the project area, noise generated by I-70 traffic does result in impacts for noise sensitive resources south of I-70 along the project area, requiring evaluation of noise abatement under FHWA rules. A noise barrier was determined to be feasible and reasonable and would be expected to be constructed to mitigate noise at the Pear Tree Apartments complex. See additional discussion below under Section 3.15 Surface Transportation Noise. No significant effects are anticipated for other resources evaluated by this environmental document.

Therefore, the focus for evaluating potential disproportionately high and adverse impacts to populations of EJ concern was for areas that would experience a change in traffic patterns.

The existing entrance at Block Group 2, Census Tract 2133.02 is located within a community that is identified as a low-income and minority population of concern and is used by the surrounding block groups and census tracts as an entrance to the Airport. The Proposed Action would move the main entrance to the Airport to Census Tract 2133.01 (minority populations but not low-income, which would be expected to divert traffic away from the existing Airfield Drive intersection and limiting the amount of foot traffic that could positively affect the economy in the area.

As discussed, access to the Airport would change for business and residential neighborhoods located near the Pear Tree Drive and Airflight Drive intersection. The Proposed Action would slightly alter the travel time and distance, and could be an adverse economic impact on Pear Tree Drive/Natural Bridge Road area businesses and residences. However, the impact is not anticipated to be significant as compared to the No Action alternative.

The airport affected area includes EJ populations in all but 3 census tracts within the entire affected community, so disproportionate effects would not be expected. Therefore, the Proposed Action would not be expected to cause disproportionate high and adverse human health or environmental effects on minority or low-income populations.

Children's Environmental Health and Safety Risks

The Proposed Action would not result in an elevated risk related to health or safety concerns for children in any of the block groups or census tracts within the affected community. Typically, the primary children's health concern is asthma and related lung disorders. As indicated previously, the air quality analysis indicated no increase in air emissions beyond *de minimis* levels for any evaluated pollutant under the Proposed Action. Therefore, no air quality conditions that could worsen breathing conditions for children would result. In addition, the Proposed Action would not result in the release of soil or groundwater contaminants that could affect children's health or safety. Therefore, there would be no adverse effects on children's health and safety under the Proposed Action.

3.14.3 Proposed Mitigation

The draft TS&O report will continue to be coordinated with MoDOT during design of the proposed roadway improvements, which may include preparation of an Access Justification Report (AJR). Recognizing the economic impact the Airport has on the surrounding communities and region, STL will continue collaborating with stakeholders for continued input during landside access improvement design efforts.

3.15 Visual Effects (including Light Emissions)

FAA Order 1050.1F Desk Reference, Section 13, states that "visual effects deal broadly with the extent to which the proposed action or alternative(s) would either: 1) produce light emissions that create annoyance or interfere with activities; or 2) contrast with, or detract from, the visual resources and/or the visual character of the existing environment."

Light emissions include any light that emanates from a light source into the surrounding environment. Visual resources refer to the natural or manmade landscape features that are visually important or have unique characteristics. Visual character refers to the overall visual makeup of the existing environment where the proposed action and alternative(s) would be located.

The FAA has not established a significance threshold for Visual Resources/Visual Character or Ligh Emissions; however, FAA Order 1050.1F, Exhibit 4-1 lists several factors to consider. For Visual Resources/Visual Character, factors to consider include the extent the action would have the potential to:

- Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
- Contrast with the visual resources and/or visual character in the study area; and
- Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.

For Light Emissions, the factors include the degree to which the action would have the potential to:

- Create annoyance or interfere with normal activities from light emissions; and
- Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.

3.15.1 Affected Environment

The existing terminals are illuminated by various types of lighting. Some of those lights are critical to safe airport operation, while others provide light for nighttime use of the airport facilities. Most light fixtures are shielded to direct light within the designated area. Roadway lighting and parking lot lights consist of lower intensity white light. Such lighting, similar to building light, is directed downward and does not typically spill more than 30 to 50 feet away from the light source. The closest residential areas are to the southeast across Interstate 70. The Airport is located in a highly urbanized area, which is made up of other development that is also lighted and contributes to the overall light emissions in the area.

The NRHP-eligible iconic 1956 domes of the existing main terminal ticket lobby are historic under federal regulations and are visual resources. Other historic visual resources are located near the Proposed Action area which include the Lambert Field Historic District and the Ozark Air Lines Office, Shop and Hangar. See Section 3.10 above for additional discussion regarding historic resources. The visual character of the Proposed Action area is typical of an airport setting. The existing land uses within the Proposed Action area are made up of developed land used for airport operations. Views into the portion of the Airport to be redeveloped include terminals, parking garage and other ancillary airport buildings. Views out of the Proposed Action area include office development, parking lots, parking garages and hotels to the southwest, airport support buildings and an office park to the southeast, airfield and aviation related buildings to the northwest and northeast.

3.15.2 Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative assumes that there would be no construction of any facilities at the Airport to address the purpose and need and no changes would occur. There would be no change from the existing conditions to light emissions or visual character for the No Action Alternative.

PROPOSED ACTION

It is anticipated that the proposed replacement terminal would be illuminated by the same basic types of lighting currently used on the existing terminals. Therefore, lighting from the Proposed Action when compared to the No Action Alternative would not significantly increase the overall light emissions due to their type, intensity, and distance from residential areas. Lighting would not be directed toward residential areas and would be designed in compliance with St. Louis County Ordinance 1003.169, Lighting Regulations,[63] and FAA lighting requirements. Light emissions from the Proposed Action are not expected to be significant, interfere with normal activities, affect airport operations, or create a potential for annoyance for surrounding areas or nearby uses.

The Proposed Action could result in minor, short-term, direct, adverse impacts on visual resources during construction of the facilities. Adverse impacts on visual resources could occur during construction from stockpiles of materials, construction vehicles onsite, and partially constructed buildings. These impacts would be temporary and would end after completion of the construction activities.

The Proposed Action would remove the Lambert Historic District and other buildings and demo the existing parking garage and Concourse D. The Proposed Action would introduce new visual elements to the project site, including a new combined linear terminal building, other buildings, roadways, a parking garage and parking lots. The FAA has prepared an MOA, and will continue consultation to finalize the MOA, to avoid an adverse effect on the terminal building's domes. The views of the domes from off-airport would be similar to the existing views. No impacts to the Ozark Air Lines Office, Shop and Hangar are expected as a result of the Proposed Action and the views to and from this facility would be similar to existing views.

The proposed new terminal building must not interfere with the line of sight between the FAA owned and operated Air Traffic Control Tower (ATCT) and aircraft movement areas. Therefore, due to the location of the existing ATCT and existing runways and taxiways, the proposed new terminal building would be designed so as to not obstruct the view from the ATCT. Following construction, the views would be consistent with the airport setting, and no significant impacts to visual resources and visual character are expected.

3.15.3 Proposed Mitigation

No mitigation is required.

[63] St. Louis County, Missouri, Municipal Code § 1003.169, Lighting Regulations, O. No. 26111, 6-30-15.

3.16 Water Resources - Wetlands and Waters of the U.S.

Wetlands are defined as those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats and natural ponds.[64] Waters of the U.S. are regulated surface waters that require the presence of an ordinary high-water mark (OHWM) and the stream must be a perennial, intermittent or ephemeral tributary with ultimate connection to downstream Section 10 Traditional Navigable Waters (TNW). Additional information regarding wetlands and waters of the U.S., including current regulatory information and guidance, is presented in Appendix E.

FAA Order 1050.1F Exhibit 4-1 establishes that significant impacts would occur if the action would: (1) Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers; (2) Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected; (3) Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and scientific resources or property important to the public); (4) Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands; (5) Promote development of secondary activities or services that would cause the circumstances listed above to occur; or (6) Be inconsistent with applicable state wetland strategies.

3.16.1 Affected Environment

The project study area was investigated for the presence of wetlands and regulated surface water resources during on-site evaluations conducted by CMT personnel on May 23 and 24, 2023, January 31, 2024, and March 20, 2024. As depicted in Figure 3.16-1, one wetland and eight streams were identified within the study area: Coldwater Creek, and seven unnamed tributaries to Coldwater Creek.

Coldwater Creek is a perennial tributary of the Missouri River and is federally jurisdictional. Four of the seven unnamed tributaries (UNT 1, UNT 2, UNT 3, and UNT 5) were identified as perennial streams that flow to Coldwater Creek and ultimately to the Missouri River, and are also jurisdictional waters of the U.S. One of the seven unnamed tributaries (UNT 6) was initially identified as an intermittent stream that flows to Coldwater Creek and ultimately to the Missouri River; however, this stream was reviewed by the USACE and determined to be an ephemeral stream that is not a jurisdictional water of the U.S. Two of the seven unnamed tributaries (UNT 4 and UNT 7) were identified as ephemeral streams that lacked relatively permanent flow and USACE determined these were non-jurisdictional.

The one wetland within the project area, totaling approximately 0.01 acre, was identified as a severely degraded, low-quality wetland. One emergent wetland (A), totaling approximately 0.01 acre, is exempt from federal regulation because it is an incidental feature in a constructed ditch.

[64] Federal Executive Order 11990 - Protection of Wetlands, May 24, 1977.

This wetland appears to have been constructed in upland areas in non-hydric soils. Based on a review of historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location.

A jurisdictional determination request for the project was submitted to the USACE St. Louis District on April 11, 2024. The approved jurisdictional determination was received from the USACE on May 7, 2024. A copy of the correspondence is provided in Appendix E.

3.16.2 Environmental Consequences

NO ACTION ALTERNATIVE

The No Action Alternative assumes the existing conditions at STL would remain in place. Therefore, there would be no impacts to wetlands or streams not already occurring or expected to occur.

PROPOSED ACTION

The Proposed Action may impact up to 0.01 acre of wetland and 4,018 linear feet (1.4 acres) of streams as summarized in Tables 3.16-1 and 3.16-2.

Table 3-16-1: Wetland Resources

Wetland ID	USACE Jurisdictional Status	Wetland Type	Acres within Study Area	Potential Acres of Impact (acres)
Wetland A	Non-Jurisdictional	Emergent	0.01	0.01
		TOTALS	**0.01**	**0.01**

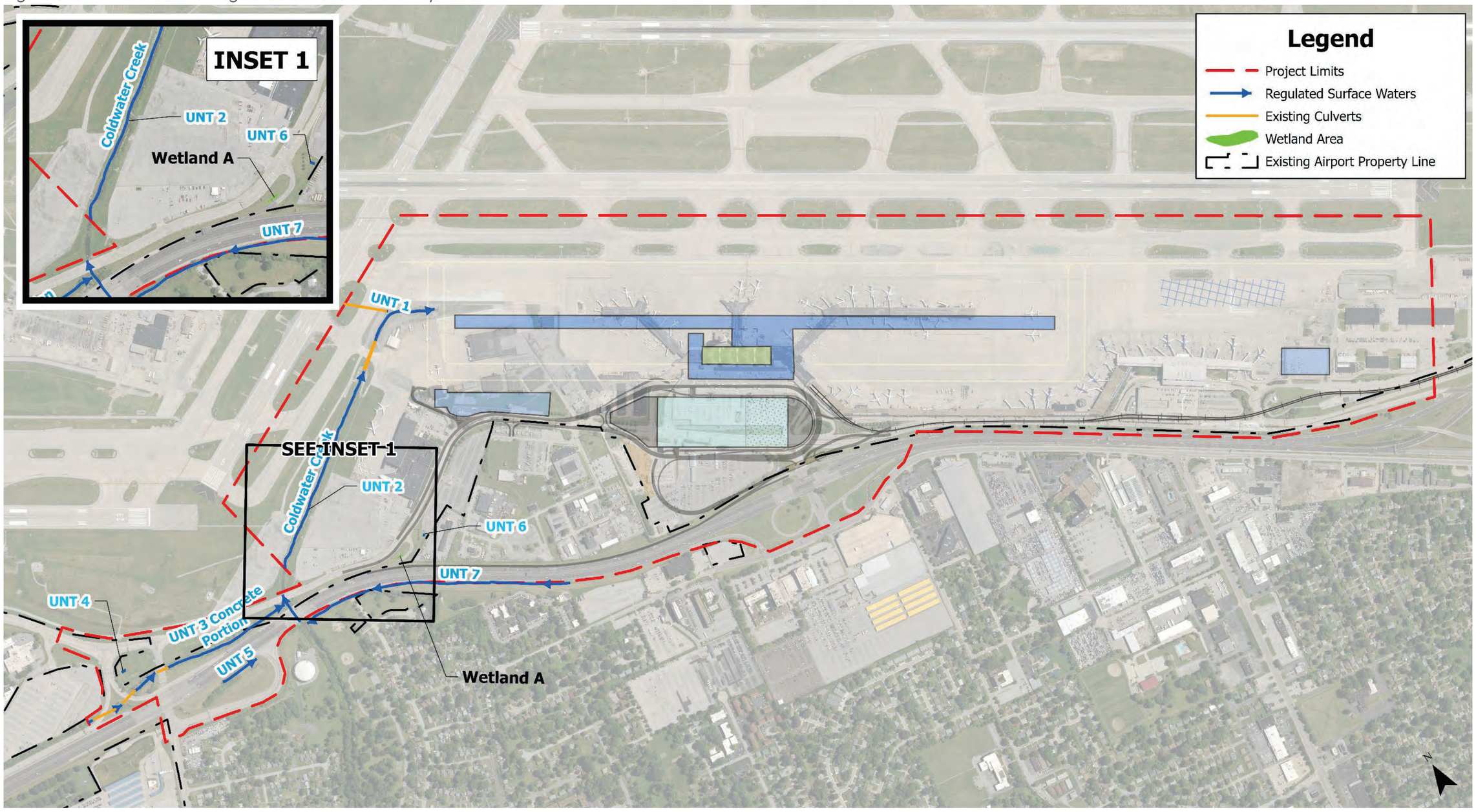
Source: CMT, 2024.

Table 3-16-2: Stream Resources

Stream ID	USACE Jurisdictional Status	Stream Type	Acres within Study Area	Potential Acres of Impact (acres)
UNT 1	Federally Jurisdictional (a)(3)(i)	Perennial	0.09	0.09
UNT 2	Federally Jurisdictional (a)(3)(i)	Perennial	0.002	0
UNT 3	Federally Jurisdictional (a)(3)(i)	Perennial	0.45	0.2
UNT 4	Non-Jurisdictional	Ephemeral	0.005	0.005
UNT 5	Federally Jurisdictional (a)(3)(i)	Perennial	0.03	0
UNT 6	Non-Jurisdictional	Ephemeral	0.002	0.002
UNT 7	Non-Jurisdictional	Ephemeral	0.14	0.14
Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	2.98	0.93
		TOTALS	**3.7**	**1.4**

Source: CMT, 2024.

Figure 3.16-1: Wetlands and Regulated Surface Waters Map



Source: CMT, 2024

No impacts to the two stream segments (UNT 2 and UNT 5) located in the western portion of the study area are anticipated from the Proposal Action. However, up to 4,018 linear feet of stream impacts (UNT 1, UNT 3, UNT 4, UNT 6, UNT 7, and Coldwater Creek) could occur, primarily associated with construction of the Consolidated Terminal and noise wall, and for road infrastructure improvements. Placement of fill materials for installation of culverts as well as channel improvements and bank stabilization along impacted streams (UNT 1, UNT 3, UNT 4, UNT 6, UNT 7, and Coldwater Creek), is also required as part of the Proposed Action. As shown in Table 3-17-2 above, a total of 3.7 acres of stream are located within the study area. A total of 1.4 acres of streams, 1.2 acres of federally jurisdictional streams (UNT 1, UNT 3, and Coldwater Creek) and 0.2 acre of non-jurisdictional streams (UNT 4, UNT 6, and UNT 7), will be impacted as a result of the Proposed Action. Three (3) perennial and three (2) non-jurisdictional ephemeral streams will be impacted as a result of the Proposed Action. Further information regarding the proposed stormwater improvements is included in Section 3.17.3 of Floodplains and in Appendix L.

There is no practicable alternative to construction in wetlands. The Proposed Action includes all practicable measures to minimize harm to wetlands which may result from such construction. A Section 404 permit processed through the USACE St. Louis District will be necessary to comply with the Clean Water Act for proposed impacts to waters of the US (UNT 1, UNT 3, UNT 6, and Coldwater Creek). The full extent of the impacts will be determined during the design and permitting phase of the project. it is anticipated that the project would require a Section 404 Individual Permit due to the length of potential stream impacts as well as an individual 401 Water Quality Certification.

3.16.3 Proposed Mitigation

The No Action Alternative would have no impacts to wetlands or waters of the U.S. and no mitigation is required.

Unavoidable impacts to jurisdictional wetlands and waters of the U.S. as a result of the Proposed Action will be mitigated in accordance with USACE Section 404/401 permit requirements. It is anticipated that impacts could be offset through the purchase of credits at a USACE approved mitigation bank or as part of an In Lieu Fee (ILF) Mitigation Program.[65]

3.17 Water Resources - Floodplains

Floodplains are low-lying, flat or nearly flat areas of land adjacent to rivers, streams, and other water courses, that are periodically inundated with water due to natural events. Floodplains perform many important functions included in wildlife habitat, food chain support, nutrient retention and removal, and erosion control. A 100-year flood has been adopted by the Federal Emergency Management Agency (FEMA) as the base flood for floodplain management purposes. A 100-year flood is a flood having a one percent chance of occurring in any given year.

[65] An ILF compensatory mitigation program is one that involves the restoration, establishment, enhancement, and/or the preservation of aquatic resources through funds paid to a non-profit natural resource management entity or to a governmental (federal, tribal, state, or local) body by a USACE permit recipient in order to satisfy compensatory mitigation requirements outlined in the USACE permit.

Longitudinal encroachment of transportation projects on designated floodplains requires a formal review under Executive Order 11988, Floodplain Management. Executive Order 11988 directs federal agencies to "take actions to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare and restore and preserve the natural and beneficial value served by floodplains." U.S. DOT Order 5650.2, Floodplain Management and Protection, contain procedures for implementing the Executive Order and establish a policy of avoiding actions within the 100-year floodplain.

Section 5(e) of Executive Order 14030[66] reinstated Executive Order 13690[67] which established a Federal Flood Risk Management Standard (FFRMS)[68] to manage current and future flood risk by incorporating anticipated changes in future flood risk into certain federally funded projects to ensure that those projects last as long as intended. The FFRMS identifies various approaches for establishing the flood elevation ("how high") and corresponding flood hazard area ("how wide") used for project evaluation. One approach to evaluating flood risk includes identifying the 500-year floodplain, the area subject to flooding by a flood having a having a 0.2 percent chance of occurring in any given year.

Because federal funding is proposed to be used for the Proposed Action, evaluation of potential climate-related financial flood risk is based on the 500-year floodplain limits, as directed by Executive Order 14030. The 100-year floodplain encroachment is also presented in this EA for comparison against the No Action Alternative, as required by FAA Order 1050.1F.

FAA Order 1050.1F Exhibit 4-1 establishes that significant impacts would occur if the action would cause notable adverse impacts on the natural and beneficial floodplain values.

3.17.1 Affected Environment

According to the current floodplain maps,[69] effective at the time of this evaluation, the project study area is depicted in an area of minimal flood hazard, outside of the existing 100-year and 500-year floodplains, as shown on Figure 3.17-1.

The Missouri State Emergency Management Agency (SEMA), in cooperation with FEMA, is currently in the process of updating the floodplain maps across many counties in the State of Missouri. The revised floodplain maps in the vicinity of the Airport, including participating communities in St. Louis County and unincorporated St. Louis County, are anticipated to become effective in 2024.[70] Therefore, the revised (preliminary) 100-year and 500-year floodplain limits generated by SEMA, as shown in Figure 3.18-2 are the basis for evaluating potential floodplain encroachments in this EA. Based on these newly delineated floodplain limits, approximately 39

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66 Executive Order 14030, Climate-Related Financial Risk, May 20, 2021.
67 Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, January 30, 2015.
68 Guidelines for Implementing Executive Order 11988, Floodplain Management, and Executive Order 13690, Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input, October 8, 2015.
69 FEMA, Flood Insurance Rate Maps, Panel 29189C0063K & 29189C0182K, effective 2/4/2015.
70 Further information regarding the status of the updated Missouri SEMA FIRMs can be reviewed at: https://missouri-sema-outreach-amecei.hub.arcgis.com/, accessed on April 15, 2024.

acres of the project study limits are located within the 100-year floodplain and approximately 55 acres are within the 500-year floodplain.

3.17.2 Environmental Consequences

NO ACTION ALTERNATIVE

With the No Action Alternative, the existing conditions at STL would remain in place. Therefore, there would be no impacts to floodplains not already occurring or expected to occur.

PROPOSED ACTION

Under the Proposed Action, up to 3 acres of encroachment, associated with encapsulating a portion of Coldwater Creek, would occur within the newly delineated 100-year floodplain and up to 5 acres of encroachment would occur within the 500-year floodplain. The proposed Consolidated Terminal, including all new structures, would be located outside of the newly delineated 100-year and 500-year floodplain limits.

During the planning process, analysis of potential stormwater impacts of the Consolidated Terminal Program was conducted to identify alternatives to mitigate flood impacts in the project area. A copy of the Stormwater Report is included in Appendix L. Based on this evaluation; the Proposed Action includes rerouting all existing culverts around the footprint of the new Consolidated Terminal. The Proposed Action also includes encapsulating a portion of Coldwater Creek upstream of Taxiway C. The proposed section of Coldwater Creek to be enclosed and any proposed fill in the floodplain proposed as part of the CTP will require compensatory excavation within the floodplain to avoid a rise in the base flood elevation.

The Proposed Action would require a floodplain development permit associated with the proposed Coldwater Creek enclosure, which would be submitted to and approved by the St. Louis County floodplain administrator. The Airport is also located within the MSD service boundaries; therefore, alteration of any storm drainage channels, site drainage or floodplain encroachments would need to be designed and approved in coordination with MSD.

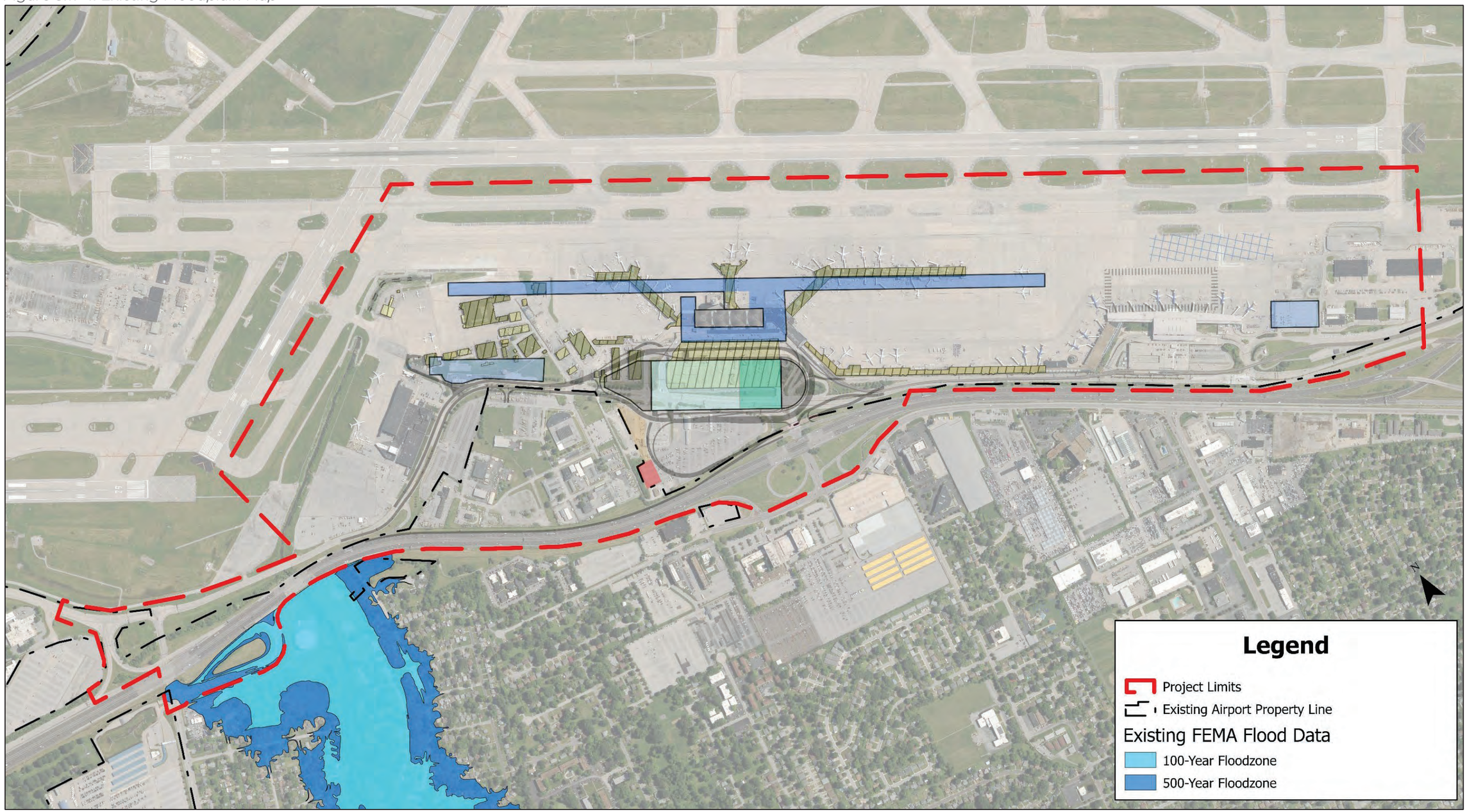
In summary, the basis for a federal floodplain finding is predicated on the fact that the projects included within the Proposed Action have been diligently reviewed and recommended, and that no other practical alternatives exist. (See Chapter 2, Alternatives). Sufficient evidence exists to support that there is no practical alternative to such construction and that the proposed action includes all practical measures to minimize harm to floodplains. The Proposed Action would not have significant adverse impacts on floodplains.

3.17.3 Proposed Mitigation

The following mitigation measures would be implemented with the Proposed Action, as required.

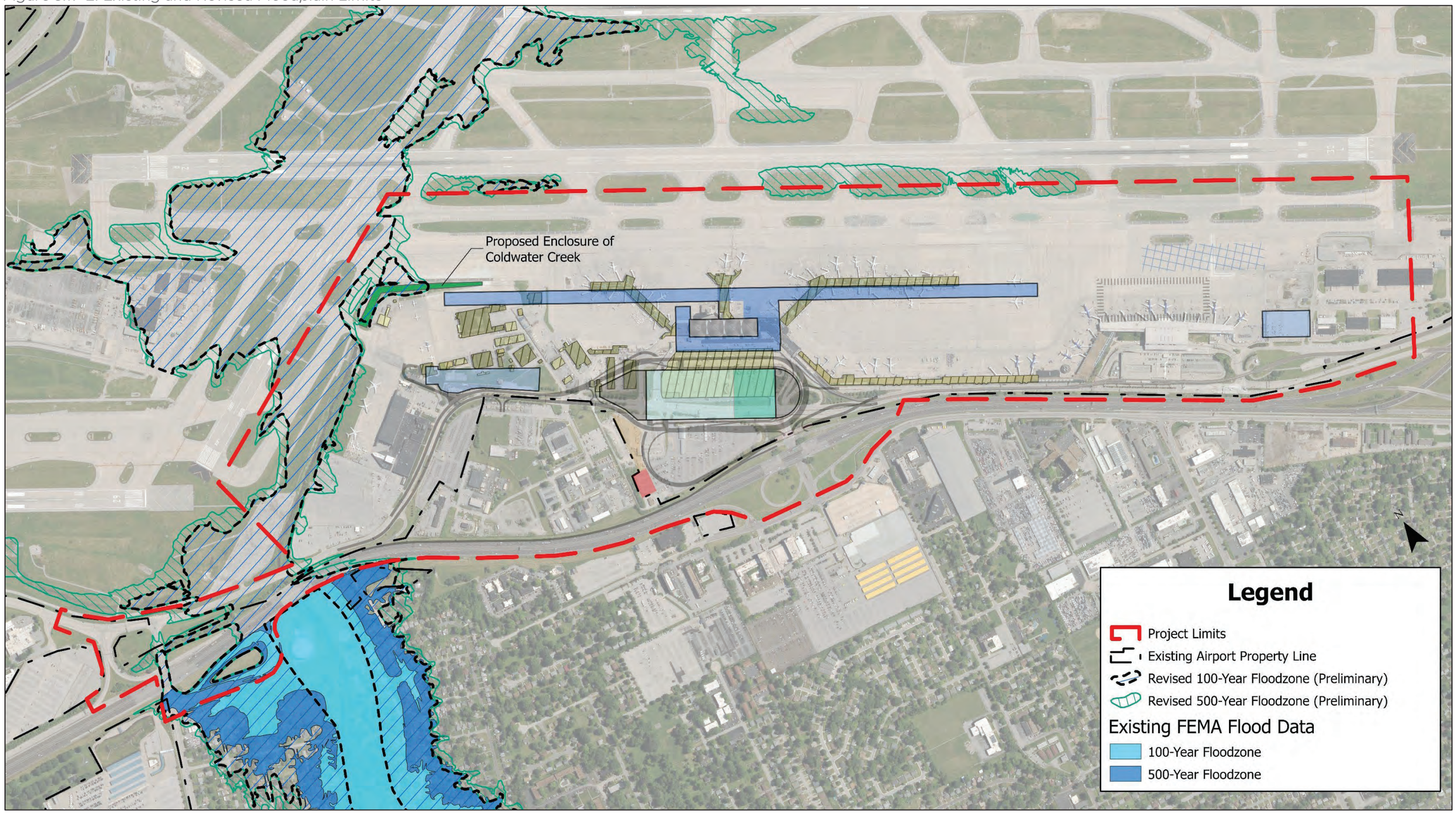
- A floodplain development permit will be secured in coordination with the St. Louis County floodplain administrator and with SEMA, as required.
- Alteration of storm drainage channels, site drainage or floodplain encroachments would be designed and approved in coordination with MSD and in accordance with the NPDES permits.

Figure 3.17-1: Existing Floodplain Map



Source: FEMA, Flood Insurance Rate Maps, Panels 29189C0201K & 29189C0182K, effective 2/4/2015.

Figure 3.17-2: Existing and Revised Floodplain Limits



Sources: Existing Floodzones - FEMA, Flood Insurance Rate Maps, Panel 29189C0201K & 29189C0182K, effective 2/4/2015; Revised 100-Year Floodplain Limits (Preliminary) – Missouri SEMA, 2024.

3.18 Water Resources - Surface Water

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans. FAA Order 1050.1F Exhibit 4-1 establishes that significant impacts would occur if the action would: "Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or… Contaminate public drinking water supply such that public health may be adversely affected."

3.18.1 Affected Environment

The project is located within the Headwaters Coldwater Creek watershed. The stormwater runoff from the existing project area is through sheet flow into stormwater inlets and culverts that drain into Coldwater Creek located on the northeast side of the existing terminal. Coldwater Creek flows northeast into a large box culvert that runs under associated airfield pavements and then flows northeast under Runway 12R/30L and continues off airport property. According to the MDNR 2020 Section 303 (d) Listed Waters,[71] Coldwater Creek has been listed as impaired for chloride from urban runoff and storm sewers.

The Airport currently controls stormwater pollution in accordance with its Missouri State Operating Permit[72] for stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System. This permit was issued to ensure compliance with federal and state water quality regulations and contains specific operational and facility management actions to prevent and control the potential for discharge of pollutants into surface and groundwater within existing operational areas of the Airport.

MoDOT manages stormwater runoff through its Transportation Separate Storm Sewer System (TS4) Permit issued by MDNR.[73] MoDOT has developed a Stormwater Management Program (SWMP) to comply with its TS4 Permit requirements and address stormwater pollution related to highway planning, design, construction, and maintenance activities throughout the state. Post-construction stormwater management would be required for new or redevelopment projects that disturb one or more acres.

The MSD maintains and operates the wastewater collection and treatment systems provided to STL. A glycol drainage system catches deicing runoff fluid from dedicated areas on the airport's air carrier aprons, within the glycol effluent capture zone, via trench drains, then pumps and directs the glycol/water runoff to an aboveground storage tank located east of I-170. The runoff is then pumped to the MSD facility for treatment in accordance with the approved release rates. This existing glycol collection system is manually activated during the winter months when deicing is required. Deicing on pavements outside of the capture zone is not allowed.

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[71] The term "303(d) list" is short for a state's list of impaired and threatened waters (e.g., stream/river segments, lakes). States are required to submit their list for EPA approval every two years.

[72] Missouri State Operating Permit (NPDES) Permit No. MO-0111210, Effective January 1, 2022, Expiration March 31, 2026, Issued by MDNR.

[73] Missouri State Operating Permit No. MO-0137910, Effective November 1, 2021, Expiration October 31, 2026, Issued by MDNR.

3.18.2 Environmental Consequences

NO ACTION ALTERNATIVE

With the No Action Alternative, the existing conditions at STL would remain in place. Therefore, there would be no impacts to surface waters not already occurring or expected to occur.

PROPOSED ACTION

Water quality can be adversely impacted by several means including construction activities, stormwater discharges from impervious surfaces, accidental releases of hazardous substances, and maintenance activities. Potential construction impacts could include disturbance from earthmoving and grading and discharge of contaminants such as fuels and lubricating oils used for construction machinery.

The Proposed Action would result in a net increase of approximately six (6) acres of impervious surfaces, which considers existing pavements/structures proposed for removal and new proposed pavements and structures. Stormwater management facilities to accommodate the additional impervious surfaces will be evaluated in the next phase during detailed design. New stormwater basins, as required, would be designed to drain completely within 48 hours to reduce inadvertently creating a hazardous wildlife attractant.

MSD's Rules and Regulations[74] state that water quality compliance will be required for all new development and redevelopment projects that disturb an area greater than or equal to one acre. To meet the MSD's rules, and accommodate increased storage volumes, the previous West Airfield Program (WAP) project included the modification of the existing outlet riser structure at the North Detention Basin. This outlet structure was proposed to be raised so that water would be stored in the basin to meet the MSD 24-hour extended detention requirements but would drain within a 48-hour period to meet FAA guidelines. The North Detention Basin modifications are expected to account for the development of the Proposed Action to meet MSD water quality requirements.

The Proposed Action includes rerouting all existing culverts around the footprint of the new Consolidated Terminal. This consists of installing a 60-inch storm sewer around the west end of the proposed terminal and rerouting the existing arch sewer around the east end of the new terminal. The Proposed Action also includes encapsulating a portion of Coldwater Creek upstream of Taxiway C. The proposed section of Coldwater Creek to be enclosed and any proposed fill in the floodplain as a result of the Proposed Action will require compensatory excavation within the floodplain to avoid a rise in the base flood elevation. The Proposed Action is expected to result in a net decrease in flow leaving the airport property through Coldwater Creek for both the 2-year and 100-year storm. Therefore, the Proposed Project could improve potential surface water impacts when compared to the No Action Alternative.

The proposed stormwater infrastructure improvements included in the Proposed Action will be designed in accordance with the requirements of the NPDES Permits. Post-construction BMPs would also be implemented to address stormwater runoff from the project within MoDOT right-of-

[74] The Metropolitan St. Louis Sewer District, Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities, February 1, 2018.

way in accordance with the TS4 Permit, as required. Neither the No Action nor the Proposed Action would result in significant impacts to surface waters.

3.18.3 Proposed Mitigation

The following mitigation measures would be implemented with the Proposed Action, as required.

Proposed stormwater management facilities would be designed in coordination with state and local regulatory agencies, as required. Further, all construction and stormwater permits would be secured in coordination with federal, state, and local regulatory agencies.

An erosion control plan would be developed based on the FAA's Temporary Air and Water Pollution Soil Erosion and Siltation Control Standards for Specifying Construction on Airports, FAA AC 150/5370-10H. The erosion control plan would incorporate Best Management Practices (BMPs) to minimize impacts to water quality during construction. Depending upon the evaluations and conclusions of the design process for the proposed project, these BMPs could include requirements for erosion control and temporary seeding of all exposed soils, segregation and protection of fuel supplies and hazardous materials, and other measures for the protection of surface and subsurface waters, including periodic meetings between the Airport, resident engineer/architect, and contractor to ensure compliance with the BMPs. These BMPs would be incorporated into the project construction specifications. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared in support of the NPDES permit. Post-construction BMPs would also be implemented to address stormwater runoff from the project within MoDOT right-of-way in accordance with the TS4 permit, as required.

3.19 Water Resources - Groundwater

Groundwater, as defined in FAA Order 1050.1F Desk Reference, Section 14.4, is subsurface water that occupies the space between sand, clay, and rock formations. The term aquifer is used to describe the geologic layers that store or transmit groundwater, such as to wells, springs, and other water sources.

FAA Order 1050.1F Exhibit 4-1 establishes that significant impacts would occur if the action would: "Exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; or … Contaminate an aquifer used for public water supply such that public health may be adversely affected."

3.19.1 Affected Environment

Based on a review of the USEPA's National Sole Source Aquifer Database,[75] there are no sole source aquifers in Missouri. There are no public or private drinking water wells or wells used for agricultural purposes within the project area. According to the Missouri Department of Conservation (MDC) Natural Heritage Database search, accomplished on February 21, 2024, St. Louis County has known karst geologic features (e.g., caves, springs, and sinkholes, all

[75] USEPA Map of Sole Source Aquifer Locations, https://www.epa.gov/dwssa/map-sole-source-aquifer-locations, Last Updated on May 18, 2023.

characterized by subterranean water movement); however, no known karst features are located within the project area.

3.19.2 Environmental Consequences

NO ACTION ALTERNATIVE

With the No Action Alternative, the existing conditions at STL would remain in place. Potential stormwater discharges would continue to be managed in accordance with the Airport's NPDES Permit under the No Action Alternative.

PROPOSED ACTION

The project site is in a well-developed area with public water available. There is no drinking water wells or agricultural wells within the project area. Rainwater infiltration and groundwater flow conditions would not be affected during construction or operations. Construction and operation of the proposed development would abide by all applicable regulations related to spill prevention and control regulations to prevent spills from causing significant adverse impacts to groundwater. Neither the No Action nor the Proposed Action would result in significant impacts to groundwater resources.

3.19.3 Proposed Mitigation

Mitigation is not required.

3.20 Cumulative Impacts

Cumulative impacts are defined by the CEQ in 40 CFR § 1508.1(g)(3) as: "effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions."

The FAA 1050.1F Desk Reference Section 15.2 states "The study area for cumulative impacts analysis is the same area defined for a project's direct and indirect impact analysis. Thus, the study area will be different for each impact category." To identify past, present and foreseeable future actions, the "Affected Community" area, as referenced in Section 3.14, Socioeconomic, Environmental Justice and Children's Environmental Health and Safety Risks, is used for the Cumulative Impacts Study Area.

The potential for cumulative impacts on the environment from the Proposed Action were evaluated by reviewing recently completed, ongoing, and planned actions that could affect the same environmental resources as the Proposed Action. Table 3.21-1 includes the list of past, present, and reasonably foreseeable actions and the approximate locations of each action are depicted in Figure 3.20-1.

Cumulative impacts must be evaluated relative to the direct and indirect effects of the Proposed Action for each environmental category. Significant cumulative impacts are determined according to the same thresholds of significance used in the evaluation of each environmental category in

the environmental consequences discussion. For environmental resources where construction and implementation of Proposed Action would have no environmental impact, there is no potential for an adverse cumulative environmental impact to occur. Therefore, the following discussion of cumulative impacts discusses only those environmental categories where environmental impacts could result from implementation of the Proposed Action.

3.20.1 Air Quality

The increase in emissions due to construction and implementation of the Proposed Action would not exceed the applicable thresholds and is therefore not significant. Construction activities associated with the Proposed Action would result in temporary emissions from construction equipment, trucks, and fugitive dust emissions from site demolition and earthwork. However, even when combined with other construction activities that could overlap with construction of the Proposed Action, emissions impacts would occur only within the immediate vicinity of the construction sites and would be mitigated through best management practices to reduce emissions, particularly fugitive particle emissions, during construction. Therefore, cumulative impacts on emissions due to construction would not be significant. While the Proposed Action would contribute to the cumulative emissions of air pollutants in the region, the emissions would be less than those under the No Action Alternative. Accordingly, the cumulative effect of the net air emissions would not cause or contribute to any new violation of the NAAQS, would not increase the frequency or severity of an existing violation, and would not delay timely attainment of any standard. Therefore, the cumulative impact on air quality is not significant.

3.20.2 Biological Resources

The Proposed Action could remove up to 3.9 acres of trees, including 16 bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the inactive season, between November 1 and March 31, and structures that may allow for bat roosting would be inspected prior to demolition. The Proposed Action would combine with other past, present, and future development projects in the area and contribute to cumulative impacts on biological resources from vegetation and habitat loss. It is often difficult to estimate or predict the impact of future projects until detailed plans are developed, and any requisite environmental analysis conducted. However, other projects at STL, including the Boeing and West Airfield Program, require similar commitments. With implementation of proposed protection measures, the cumulative impacts to biological resources would be less than significant.

3.20.3 Hazardous Materials, Solid Waste and Pollution Prevention

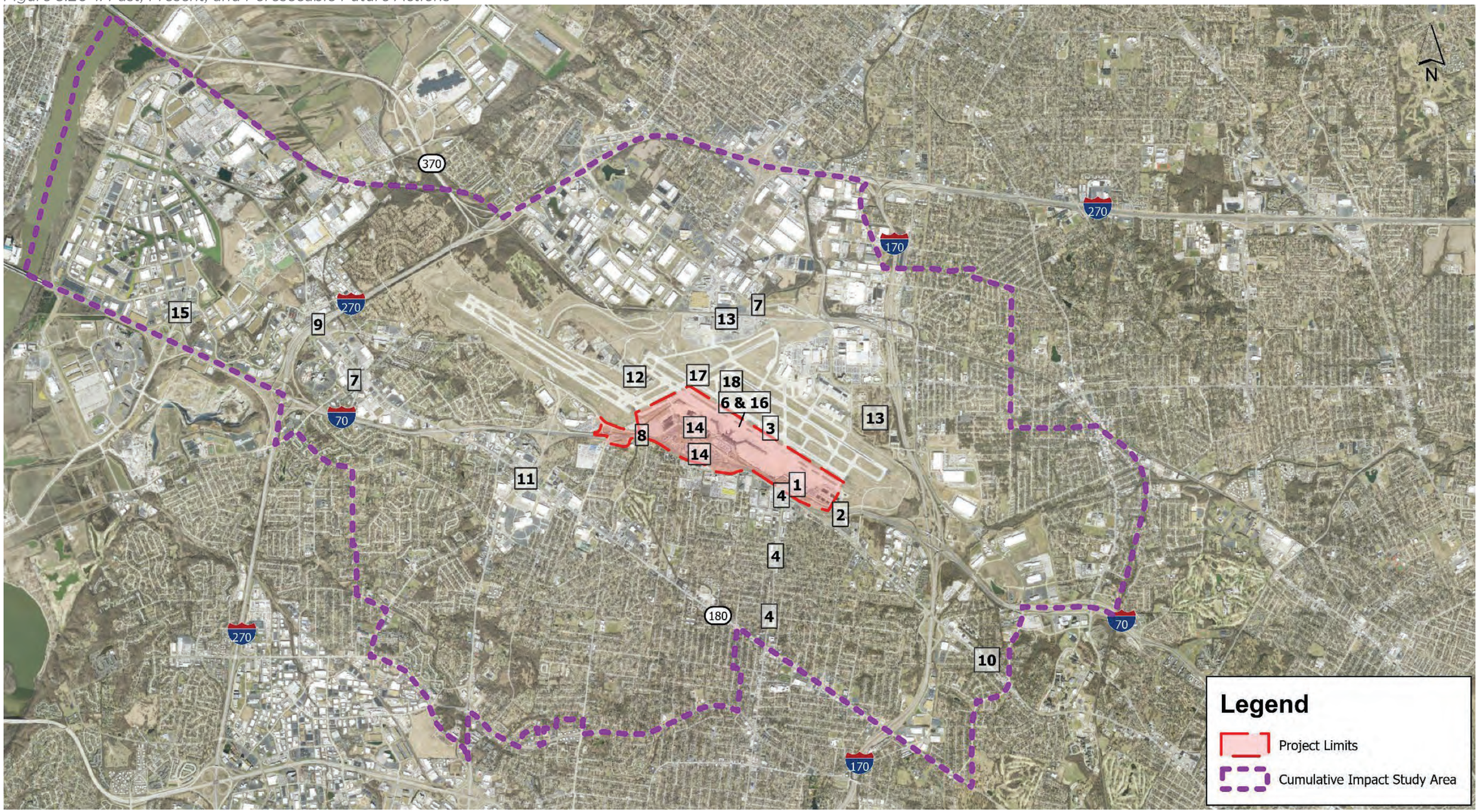
The Proposed Action, in combination with other past, present, and future development projects may encounter hazardous materials, unknown fuel spills and contaminated soil during construction, and have the potential for an incremental increase in generation of hazardous wastes. With proper handling and disposal of hazardous materials and wastes during construction and operation, cumulative impacts to hazardous materials and pollution prevention would be less than significant.

Table 3.20-1: Past, Present, and Foreseeable Future Actions

ID #	Past Actions	Completed
1	**New T2 Garage Entrance**: The project created an additional entrance lane from Lambert International Boulevard for eastbound traffic and a new Terminal 2 garage entrance.	2023
2	**Lindbergh International Boulevard Bridge Rehabilitation**: Lindbergh International Boulevard Bridge at James S. McDonnell Boulevard and Lambert International Boulevard ramp to Interstate 70 eastbound.	2023
3	**Reconstruction of Runway 12R- 30L from Taxiway Romeo to Taxiway Golf – Project 2**: The project involves removing and replacing Runway 12R-30L as well as narrowing its width to 150 feet and reconfiguring adjacent taxiways according to the desired layout.	2023
4	**Route EE (Woodson Road):** Signal Replacements at the intersections of North Ave., Guthrie Ave. and Natural Bridge Road.	2023
ID #	**Present (2024) and Foreseeable Future Actions (2025-2029)**	**Construction Period**
5	**James S. McDonnell Boulevard Bridge Number 164 Replacement over Coldwater Creek**: Includes removal and remediation of contaminated soil in the project area.	Spring 2024-End of 2025
6	**Reconstruction of Taxiway C from Taxiway Sierra to Taxiway Golf – Project 1**: The project involves removing and replacing Taxiway C as well as reconfiguring adjacent taxiways according to the desired layout between Taxiway C6 (currently Papa) to Taxiway Juliet.	Spring 2024-Fall 2025
7	**McKelvey Road Resurfacing: Natural Bridge Road to Interstate 270:** This project provides for the pavement resurfacing of McKelvey Road from Natural Bridge Road to Interstate 270, and associated curb, sidewalk and traffic signal upgrades.	Spring 2024
8	**I-70:** Pavement Improvements from Fee Fee Road to Springdale.	Summer 2024
9	**I-270:** Replace bridge approaches and upgrade guardrails at Route 180 (St. Charles Rock Road)	Summer 2024
10	**Route 115 (Natural Bridge Road):** Pavement resurfacing, upgrade signal, drainage and sidewalk improvements from I-170 to North Hanley Road and on Engler Ave. from Route 115 to Wood Ave. This work will result in lane drops along Natural Bridge Road.	Summer 2024-End of 2025
11	**Route 180 (St. Charles Rock Rd.):** Bridge redecking over Route 67 (Lindbergh)	2024
12	**West Airfield Program**: Relocation/Construction of new Airfield Maintenance (AFM) Complex, West Deicing Pad, and Construction and/or Realignment of Taxiway System.	2024-2027
13	**Boeing Assembly and Testing Campus:** Includes demolition of existing structures and construction of new structures, taxiway connectors, roadways, parking and other support infrastructure, including GoJet and ATS Relocation if Phase 2 is implemented.	2024-2029
14	**New Central Utility Plant and Substation and Duct Bank: R**eplace the Climate Control West Facilities, Lambert Substation and Terminal 1 Duct Bank.	2024-2028
15	**Route 141**: Pavement Resurfacing along Route 141 between Rider Trail South to South Riverport Drive.	2025
16	**Reconstruction of Taxiway C from Taxiway Sierra to Taxiway Golf – Project 2**: The project involves removing and replacing Taxiway C as well as reconfiguring adjacent taxiways according to the desired layout at Taxiway C6 (currently Papa) and between Taxiways Juliet and Golf.	2026
17	**Reconstruct Runway 6-24 (Phase I & II)**	2027-2028
18	**Reconstruct Runway 12L/30R from 12L to Taxiway L**	2029

Sources: STL Final EA for Site Development for Aircraft Assembly and Flight Testing, December 2023, Jacobs; MoDOT, North St. Louis County Major Construction Projects 2023-2024 and 2024-2025 Construction Maps. (https://www.modot.org/north-st-louis-county-projects, Accessed 4/23/2024); STLAA; CMT 2024.

Figure 3.20-1: Past, Present, and Foreseeable Future Actions



Source: CMT 2024.

Demolition activities associated with the Proposed Action, combined with other potential projects in the area that may occur during the same time, would generate a temporary increase in solid waste during construction. However, the solid waste generated is not expected to exceed the capacity of existing waste management facilities in the St. Louis region. Therefore, no significant cumulative impacts related solid waste management would be anticipated.

3.20.4 Historic, Architectural, Archeological, and Cultural Resources

Impacts to historic resources are generally site specific and will not combine with impacts from other projects to cause significant impacts. For present and foreseeable future actions, independent of the Proposed Action, an analysis of historic, architectural, archeological, and cultural resources would be required if there is an undertaking by a federal agency. For present and foreseeable future actions that do not involve an undertaking by a federal agency, such as private development off airport property that is not being done under the direct or indirect jurisdiction of a federal agency or does not require federal financial assistance or a federal permit, license, or approval, the private developer (not the Airport or FAA) would be responsible to meet any local or state requirements. Therefore, implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future projects, would not result in significant adverse impacts to historic, architectural, archeological, and cultural resources.

3.20.5 Natural Resources and Energy Supply

The Proposed Action would combine with other past, present, and future development projects in the area and increase the demand on local energy supply, natural materials used in construction, and water use. The increased demand would be within the regional capacity, and no significant cumulative impacts would occur.

3.20.6 Noise and Noise-Compatible Land Use

Construction of The Proposed Action would combine with other past, present, and future projects in the area and may contribute to adverse cumulative effects on the noise environment if the timing of the other construction projects in the surrounding area overlaps with the timing of the construction of the Proposed Action. Impacts on the noise environment from these construction projects would be temporary and intermittent and anticipated to occur during daylight hours and primarily on weekdays. Therefore, cumulative construction noise impacts would not be significant.

No new unmitigated noise sensitive land uses, such as residences, public schools, nursing homes, hospitals, libraries, and religious institutions, would be subject to noise levels of DNL 65 dB or greater due to an increase in noise of DNL 1.5 dB or greater due to the Proposed Action. Further, no existing noise sensitive land uses within the DNL 65 dB would be subject to an increase in noise of DNL 1.5 dB or greater. Therefore, no significant aircraft noise impacts would occur, nor would there be new non-compatible land uses as a result of the Proposed Action. The development and operation of one or more of the past, present, and reasonably foreseeable future actions identified in Table 3.20-1 would not be expected to result in changes to the noise contours or result in non-compatible land uses. Therefore, it is reasonable to expect implementation of the Proposed Action, when combined with other past, present, or reasonably foreseeable future

projects, would not result in significant adverse impacts to noise and noise-compatible land uses because there were no noise impacts associated with the Proposed Action.

3.20.7 Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks

The Proposed Action would combine with other past, present, and future development projects in the area and result in beneficial cumulative effects to economic development in the region. Cumulative impacts would derive from the induced construction employment, wages, and increased sales of construction related materials. Temporary construction impacts to traffic from construction vehicles at the site would cause minor, temporary traffic delays. There would not be significant increases in noise levels or air emission from the implementation of the Proposed Action. These nominal increases could interact with other local area development projects that could result in cumulative impacts to air quality and noise that may affect the surrounding area; however, these cumulative impacts would be negligible.

3.20.8 Visual Effects (Including Light Emissions)

The Proposed Action would combine with other past, present, and future development projects in the area and could contribute to adverse cumulative impacts to visual resources from stockpiles of materials, construction vehicles onsite, and partially constructed buildings. These impacts would be temporary and would end after completion of the construction activities. The interaction of the Proposed Action with other local area development projects could result in increased cumulative light emissions. Given the urban location of the Proposed Action and the already high amount of light emissions at the Airport and in the surrounding area, any cumulative increase in light emissions would be negligible.

3.20.9 Water Resources

The Proposed Action, in combination with other past, present and future projects in the area would have impacts on water quality and water resources, including potential wetlands, streams, and floodplain encroachments. However, it is reasonable to assume that these projects will require permits, protective measures to avoid and minimize impacts during implementation of the project, and mitigation for unavoidable impacts. The north tract of the proposed Boeing project is located within the newly delineated floodplain and would be required to confirm floodplain storage and conveyance capabilities would not decrease. With the proposed stormwater improvements and mitigation measures to be implemented, no significant cumulative impacts to water resources would be expected.

3.20.10 Cumulative Impact Conclusion

NO ACTION ALTERNATIVE

Under the No Action Alternative, the existing conditions at STL would remain in place. STL would continue to operate the Airport using the existing two terminals and no roadway improvements would be implemented. Other airport development would be subject to review and approval under NEPA and is not assumed under this alternative.

PROPOSED ACTION

The level of cumulative impacts anticipated to occur within the environmental resource categories evaluated for this EA is not significant due to the types of past, present, and reasonably foreseeable future projects, the extent of the built environment in which they would occur, the lack of certain environmental resources in the area, and the mitigation measures identified for the Proposed Action. Therefore, implementation of the Proposed Action would not result in significant cumulative environmental impacts.

3.21 Summary

This section summarizes the environmental impacts associated with the implementation of the Proposed Action and the No Action Alternative. Table 3.21-1 compares the potential impacts of the Proposed Action and No Action Alternative on the resources analyzed in this EA and identifies proposed mitigation measures to be implemented, as required.

Table 3.21-1: Summary of Impact Category Determinations and Mitigation

Environmental Consequences Impact Category	Proposed Action Impacts	Proposed Action Mitigation	No Action Impacts	No Action Mitigation
Air Quality	Not significant	Implement Best Management Practices (BMPs) during construction activities to reduce fugitive dust emissions.	Not significant	None
Biological Resources	May effect, but not likely to adversely affect federally listed bats	Sponsor commits to clear suitable bat roost trees during the inactive season, between November 1 and March 31. Nesting bird surveys would be conducted prior to tree removal and demolition of structures. Structures that may allow for bat roosting would be inspected prior to demolition.	None	None
Climate	Not significant	None required	None	None
Coastal Resources	None	None required	None	None
DOT Section 4(f)/6(f)	Not significant	Section 4(f) use of historic properties would be mitigated through implementation of mitigation measures established in the Section 106 MOA.	None	None
Farmlands	None	None required	None	None
Hazardous Materials, Solid Waste and Pollution Prevention	Not significant	Conduct soil and groundwater testing to identify any remediation that may be required. Any hazardous materials encountered in site soils would be managed in accordance with EPA and/or MDNR risk-based corrective action requirements with an emphasis on on-site re-use of impacted materials to limit risks associated with the off-site movement of contaminated materials. Design and permit proposed stormwater and glycol collection facilities in coordination with federal, state and local agencies, as required. Implement BMPs during construction to limit runoff and erosion. Prepare construction specific SWPPP during design.	Not significant	None
Historical, Architectural, Archeological, and Cultural Resources	Adverse effects on historic properties	The adverse effects on historic properties would be addressed through implementation of mitigation measures established in the Section 106 MOA. Archaeological monitoring during construction in coordination with Osage Nation. Contact SHPO, tribes and FAA if resources are discovered during construction.	None	None
Land Use	None	None required	None	None
Natural Resources and Energy Supply	Not significant	None required	None	None

Environmental Consequences Impact Category	Proposed Action Impacts	Proposed Action Mitigation	No Action Impacts	No Action Mitigation
Noise and Noise Compatible Land Use	Not significant	None required	None	None
Socioeconomic, Environmental Justice, & Children's Health & Safety Risks	Not significant	Improvements to the I-70 interstate system shall be designed and approved in coordination with MoDOT/FHWA. STL will continue collaborating with stakeholders for continued input during landside access improvement design efforts.	None	None
Surface Transportation Noise	Traffic noise impacts	Conduct noise public involvement during the design phase to determine if a noise barrier is desired to mitigate traffic noise at the Pear Tree Apartments. Construct noise barrier if determined reasonable and feasible. Only barriers determined to be both reasonable and feasible will be constructed.	None	None
Visual Effects (including Light Emissions)	None	None required	None	None
Water Resources-Wetlands and WOTUS	Not significant	Four unnamed tributaries to Coldwater Creek and Coldwater Creek are anticipated to be jurisdictional waters of the United States. Discharges of dredged or fill material will likely require an Individual Permit under Section 404 of the Clean Water Act from USACE and Section 401 Water Quality Certification from MDNR. Mitigation to be determined in coordination with the USACE and MDNR during the permitting process. Permit application and USACE and MDNR approval required prior to construction.	None	None
Water Resources - Floodplains	Not significant	Floodplain development permit will be secured in coordination with the St. Louis County floodplain administrator and SEMA, as required. Alteration of storm drainage channels, site drainage or floodplain encroachments would be designed and approved in coordination with MSD and in accordance with the NPDES permits.	None	None
Water Resources - Surface Waters	Not significant	Implement Best Management Practices during construction activities to limit runoff and erosion and in accordance with the requirements of the NPDES permits. Implement post-construction BMPs in accordance with the MoDOT TS4 permit, as required.	Not significant	None
Water Resources - Ground Water	Not significant	None required	None	None
Wild and Scenic Rivers	None	None required	None	None
Cumulative Impacts	Not significant	None required	None	None

Source: CMT, 2024.

Chapter Four
FHWA Impact Analysis

4.1 Introduction

NEPA requires federal agencies to consider the potential environmental impacts of their proposed actions (40 CFR parts 1500–1508). The FAA, MoDOT and FHWA have determined that a joint NEPA review is appropriate for this project. While the proceeding chapter detailed the environmental consequences resulting from the Proposed Action, this chapter identifies only the environmental impacts and commitments applicable within the existing MoDOT right-of-way (R/W), and subject to FHWA NEPA requirements. MoDOT/FHWA-related commitments are not subject to change without prior coordination with MoDOT and FHWA.

4.2 Socioeconomic & Community Impacts

The project will result in traffic pattern changes which have been evaluated in a draft TS&O report (see Appendix K). Access to the Airport would change for multiple hotels, restaurants, surface parking lots, a rental car facility, a gas station and residential neighborhoods located in the area of the Pear Tree Drive and Airflight Drive intersection. The existing access to and from the Airport is directly from Airflight Drive. Under the Proposed Action, travel on I-70 would be needed to go from the on-ramp at Pear Tree Drive to the off-ramp at Natural Bridge Road where the new main airport entrance would be. Since the majority of the businesses in this area are airport user-based businesses, such as hotels, rental car facilities airport parking lots, gas stations and restaurants, these businesses will continue to serve airport users under the Proposed Action. Therefore, while the Proposed Action would slightly alter the travel time and distance, and would be an adverse economic impact on Pear Tree Drive/Natural Bridge Road area businesses and residences, the impact is not significant (as defined in FAA Order 1050.1F, Exhibit 4-1) as compared to the No Action alternative. Exhibits showing the changes in the travel patterns for locations around the Airport are provided in Appendix K.

- *Commitment:* STL commits to collaborating with MoDOT to look at making improvements along existing pedestrian and bicycle paths along Airflight Drive. Additional pedestrian and bicycle connectivity will be evaluated in coordination with MoDOT.
- *Commitment:* Recognizing the economic impact the Airport has on the surrounding communities and region, STL will continue collaborating with stakeholders for continued input during landside access improvement design efforts.
- *Commitment:* During the design of the roadway improvements to the I-70 interstate system, the completion of the Traffic Safety & Operations (TS&O) report and preparation of an Access Justification Report (AJR), if required, will be approved in coordination with MoDOT/FHWA.

4.2.1 Maintenance of Traffic

The maintenance of traffic needed will depend on the final design of the proposed improvements. Preparation of a Traffic Management Plan (TMP) will be incorporated into the construction contract and the public will be notified of all temporary traffic impacts prior to construction.

- *Commitment:* STL will ensure that continuous traffic flow and accessibility is provided to all nearby properties during construction. STL will coordinate with MoDOT to notify the public of construction and traffic impacts two weeks prior using news releases, postings on social media, and changeable message boards.
- *Commitment:* STL will ensure a Traffic Management Plan (TMP) is included in the construction contract to respond to temporary disruptions in travel patterns and travel time. Once developed, MoDOT will assess the impacts of the TMP within the framework of NEPA. If the TMP could result in impacts that were not previously reviewed under NEPA—such as new or additional road closures, access changes, or other circumstances that could cause new or modified impacts to resources, the MoDOT's environmental section will review these impacts prior to implementing the TMP.

4.2.2 Right-of-Way and Relocations

No new right of way or relocation is expected to be necessary for the proposed improvements. However, due to the proximity of the roadway improvements to Department of Defense owned properties, coordination with US Navy & Missouri National Guard will be necessary.

- *Commitment:* STL will coordinate with the US Navy and the Missouri National Guard for the roadway improvements within MoDOT right of way adjacent to the Department of Defense owned properties.

4.2.3 Environmental Justice

There are no HUD assisted housing units within or immediately adjacent to the project area. There are low income and minority populations present in the project area. The analysis in Section 3.4, which was focused on the impacts resulting from a change in traffic patterns, identified no disproportionately high and adverse effects on any minority or low-income population.

Therefore, it is determined in accordance with the provisions of E.O. 12898 and FHWA Order 6640.23, that temporary construction impacts and the completed project will not result in disproportionately high and adverse effects on any minority or low-income population.

4.3 Farmlands

No farmland impacts would occur within the MoDOT right-of-way and within the Proposed Action.

4.4 Wetlands and Streams

According to the Waters of the US Delineation Report (see Appendix E), the following streams are located within the existing R/W and would be the worst-case impacts:

- UNT 3– 2,330 LF, 0.52 acres
- UNT 5 – 367.9 LF, 0.03 acres
- Coldwater Creek – 296 LF, 0.31 acres

No federally jurisdictional wetlands are located within the existing MoDOT right of way (see Section 3.16 and Appendix E).

- *Commitment:* Discharges of dredged or fill material may require a permit under Section 404 of the Clean Water Act from USACE and Section 401 Water Quality Certification from MDNR. Mitigation to be determined in coordination with the USACE and MDNR during the permitting process. STL will obtain any USACE and MDNR permits required prior to construction and if required, implement necessary mitigation prior to any impacts.

4.5 Stormwater/Land Disturbance

Pollution of surface water resources will be minimized during construction with the incorporation of construction stormwater Best Management Practices (BMPs) and post construction BMPs, as appropriate (see Section 3.18).

- *Commitment:* STL must consider the design and implementation of permanent stormwater BMPs to detain and/or treat new stormwater from the project where feasible and appropriate to the maximum extent practicable.
- *Commitment:* STL will obtain a Land Disturbance Stormwater Permit, a MSD Permit and provide all drainage calculations and plans to MoDOT for approval prior to any work within the existing MoDOT R/W.

4.6 Floodplains and FEMA Buyout Lands

A small area of the Cypress Road interchange is located within the proposed floodplain limits (see Figure 3.17-2: Existing and Revised Floodplain Limits). If floodplain encroachment will occur for improvements needed, a floodplain development permit would be obtained (see Section 3.17). There are no FEMA buyout sites within the existing MoDOT R/W.

- *Commitment:* STL will adhere to the requirements of 23 CFR 650 for the design and erosion and sediment control for floodplain encroachments occurring within the project area and within MoDOT R/W.
- *Commitment:* STL will secure a floodplain development permit in coordination with the St. Louis County floodplain administrator and SEMA and obtain a no-rise certificate, if required.

4.7 Air Quality

Transportation conformity was evaluated for the project. None of the estimates for the criteria air pollutants exceed the de minimis threshold of 100 tons. Therefore, the air pollutant emissions that would result from the construction of the Proposed Action are exempt from the General Conformity Rule/SIP conformance requirements of the CAA. Further, the estimates for operational emissions through 2037 are also below the de minimis threshold (see Section 3.5).

- *Commitment:* STL will implement Best Management Practices (BMPs) during construction

activities to reduce fugitive dust emissions.

4.8 Surface Transportation Noise

The Proposed Action includes roadway access improvements that would be constructed in coordination with the Federal Highway Administration (FHWA) and the Missouri Department of Transportation (MoDOT). The Federal Aid Highway Act of 1970 required FHWA to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in Title 23, Code of Federal Regulations (CFR), Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. This regulation applies to highway construction projects where a state department of transportation has requested federal funding for participation in the project. 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. The regulations do not mandate that the abatement criteria be met in all situations, but rather require that reasonable and feasible efforts be made to provide noise mitigation when the abatement criteria are approached or exceeded. Per 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with FHWA noise standards.

Noise loudness is measured in terms of sound pressure levels expressed in decibels (dB) and is composed of a wide range of frequencies. Most sounds occurring in the environment do not consist of a single frequency, but rather a broad band of differing frequencies. Frequencies are measured in hertz (Hz), which is the number of cycles per second. The human ear is typically capable of hearing frequencies from approximately 20 to 20,000 Hz, and is less sensitive to higher and lower frequencies than mid-range frequencies. To compensate for low-end and high-end frequency insensitivity and to render noise levels readings more relevant to human experience, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted decibel (dB(A)) unit emphasizes measurement of perceptible sound energy and factors out the frequencies not perceptible to humans.

The dB(A) unit may indicate the level of environmental noise at an instant in time, but community noise levels vary continuously. Most environmental noise includes a composite of noise from different sources, creating a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of traffic noise, the equivalent hourly sound level Leq(h), is commonly used. Leq(h) is defined as the equivalent steady-state sound level over a one-hour period which contains the same acoustic energy as the time-varying sound level during the same period. Noise levels referred to in this section are stated as hourly-equivalent sound pressure levels Leq(h) expressed in units of dB(A).

4.8.1 Affected Environment

NOISE MODEL

FHWA requires use of FHWA Traffic Noise Model (TNM) 2.5 or 3.0 to determine current and future traffic noise levels created by a proposed project; TNM 2.5 has been used to perform this noise analysis. The model is a function of the number of vehicle operations during the period

evaluated and the types of vehicles operating. The specific assumptions used in the TNM model for this analysis are provided in Appendix K.

The noise model was validated according to FHWA and MoDOT procedures, which means it can reasonably be expected to reflect noise levels generated by area traffic.

A total of 204 noise-sensitive receptors, represented by 205 TNM receivers, were evaluated, all on the south side of I-70. Noise-sensitive receptors are land uses that FHWA has determined are sensitive to noise. These receptors included residences, a park, a day care center with a playground and three hotel swimming pools. TNM receivers are the modeled locations that represent each receptor. Traffic noise impacts are future noise levels if the Proposed Action is constructed which are projected to come within 1 dB(A) of, meet or exceed the Noise Abatement Criteria (NAC) for a given land use, or for which a substantial increase is projected between the existing condition and the future build condition (if the Preferred Action is carried out) at any existing noise-sensitive receptor. The FHWA regulation and related MoDOT policies define the NAC as 67 dB(A) for the residences, park or playground; and 72 dB(A) for the hotel swimming pools, resulting in a determination of a traffic noise impact at or above a future build noise level of 66 dB(A) for most of the noise-sensitive receptors in the FHWA noise study area and 71 dB(A) for the hotel swimming pools. The FHWA regulation and related MoDOT policies define a substantial increase as an increase of 15 dB(A) or greater.

MODELED EXISTING SOUND LEVELS

Of the 205 modeled receivers, the TNM model of existing traffic noise levels indicates that 60 receivers are currently experiencing traffic noise levels that approach, meet, or exceed the NAC. These sound levels do not constitute an impact under FHWA regulations and MoDOT policies because they are existing sound levels and FHWA considers only the future build condition when determining traffic noise impacts. The locations of the present-day noise-impacted receivers having modeled traffic noise levels within this range are shown in Figures 4.8-1 and 4.8-2.

4.8.2 Environmental Consequences

NO ACTION ALTERNATIVE – 2037 NO BUILD NOISE LEVELS

Of the 205 modeled receivers, the TNM model of future no-build traffic noise levels (if the Proposed Action is not implemented) indicates that 63 will experience traffic noise levels that approach, meet, or exceed the NAC. As with the existing sound levels, these sound levels do not constitute an impact under FHWA regulations and MoDOT policies because FHWA considers only the future build condition when determining traffic noise impacts. The locations having modeled traffic noise levels within this range are the same as for the Existing Conditions with the addition of one receiver on Pear Tree Lane and two balcony apartments within the Pear Tree Apartments complex. The locations of these receivers for the 2037 No Build alternative are shown in Figures 4.8-3 and 4.8-4.

PROPOSED ACTION - 2037 BUILD NOISE IMPACTS

Of the 205 modeled receivers, the TNM model of future build traffic noise levels (if the Proposed Action is implemented) indicates that 67 will experience traffic noise impacts due to traffic noise levels approaching, meeting, or exceeding the NAC. The impacted receivers are the same

receivers that experienced traffic noise levels approaching, meeting, or exceeding the NAC in the No Action Alternative/No Build with the addition of four locations. Three of the additional receivers are located in the Pear Tree Apartments and the fourth is located along Douglas Court. The locations of the noise-impacted receivers for the 2037 Build Alternative are shown in Figures 4.8-5 and 4.8-6.

FHWA regulations (23 CFR 772.15C) list the types of traffic noise abatement to be considered if noise impacts from a highway project approach (within 1 dB(A)) the NAC (67 dB(A) for most receptors on this project and 72 dB(A) for the hotel pools, so noise levels of 66 dB(A) for most receptors and 71 dB(A) for the pools) or exceed the substantial increase criterion (increase of at least 15 dB(A)). Types of abatement include traffic management, horizontal and vertical alignment changes, noise insulation, undeveloped property acquisition and noise barrier construction. FHWA requires abatement measures to be considered, but only requires implementation if the abatement measures are found to be both feasible and reasonable as defined by the regulations.

I-70 is the primary traffic noise source in the traffic noise study area. Traffic management is not a feasible abatement measure for I-70 because of its assigned transportation purpose. Horizontal and vertical alignment changes to the travel lanes would cause extensive costs, environmental impacts and travel disruption and would likely have a negative impact on the purpose of the highway. For that reason, alignment changes to address noise impacts are also not feasible.

FHWA regulations allow consideration of noise insulation for noise-impacted buildings only for public use or nonprofit institutional structures. The noise-impacted property in this study area does not include any public use or nonprofit institutional structures, and therefore noise insulation is not an appropriate abatement measure. Similarly, the acquisition of undeveloped property was not considered because there is no undeveloped property in the traffic noise study area which will be available for future development.

Noise barrier construction was considered by analyzing noise barrier design using FHWA's TNM 2.5. Noise barriers were considered for the three neighborhoods having noise impacted receptors: the Cypress Road neighborhood, the Ashby Road neighborhood and St. Ann Park, and the Pear Tree Lane/Natural Bridge Road neighborhood and Pear Tree Apartments. A receptor that is considered benefited by a noise barrier receives a reduction in noise levels of 7 dB(A) from the barrier. A receptor does not have to be impacted to be benefited.

Figure 4.8-1: Existing Conditions Traffic Noise Levels

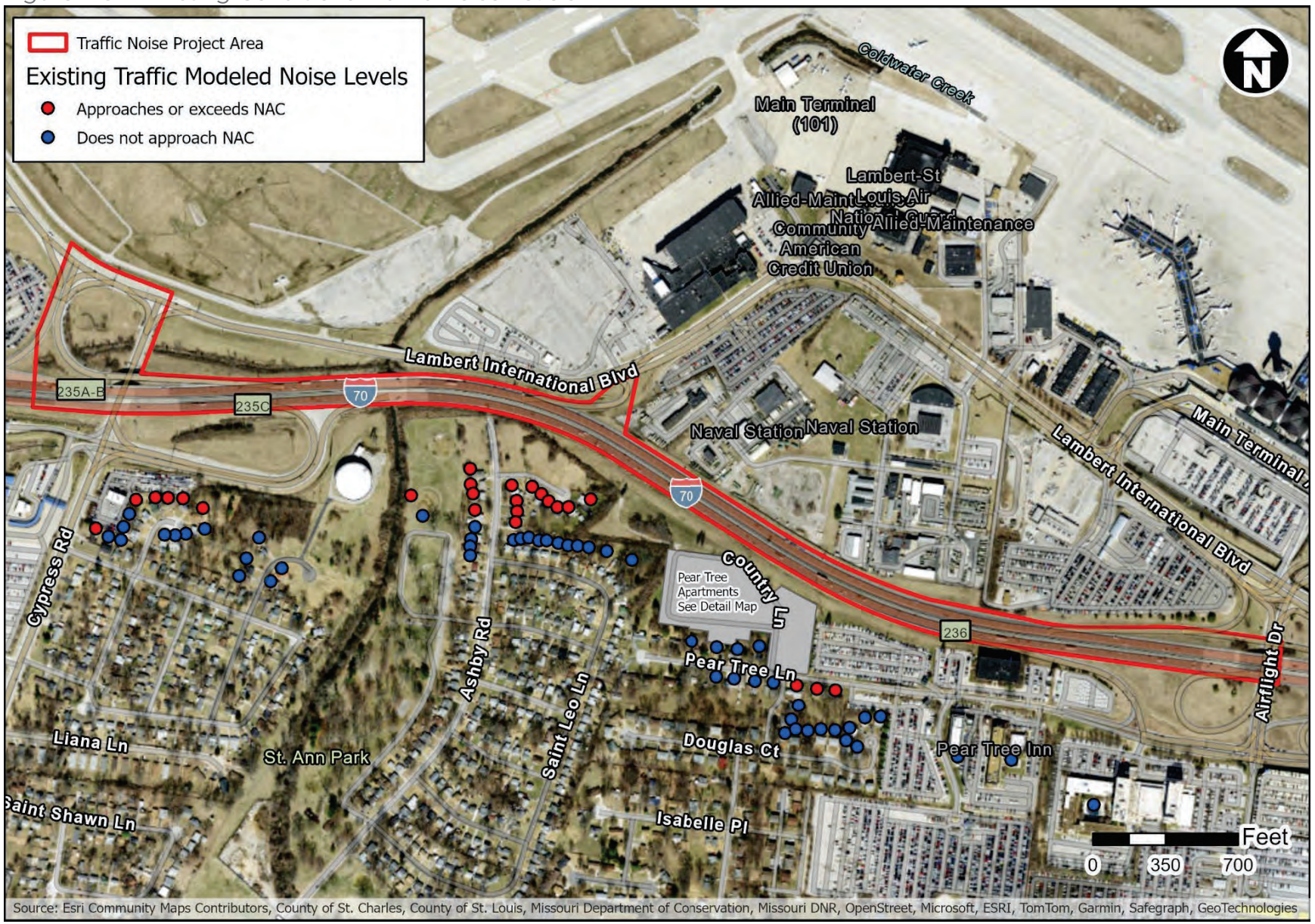


Figure 4.8-2: Existing Conditions Traffic Noise Levels - Pear Tree Apartments Detail Map

Figure 4.8-3: No Action Alternative/2037 No Build Traffic Noise Levels

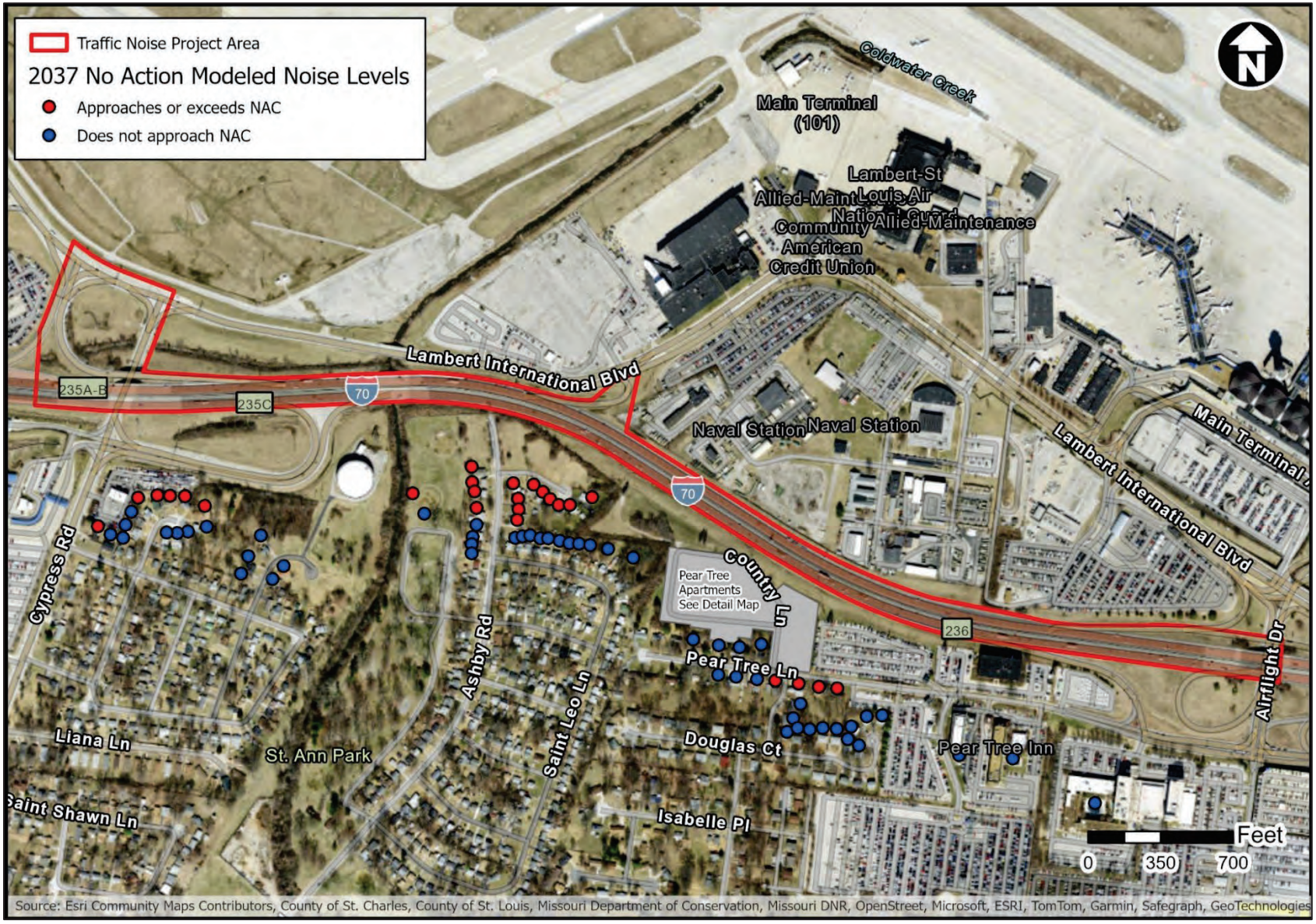


Figure 4.8-3: No Action Alternative/2037 No Build Traffic Noise Levels – Pear Tree Apartments Detail Map

Figure 4.8-5: Proposed Action/2037 Build Traffic Noise Impacts

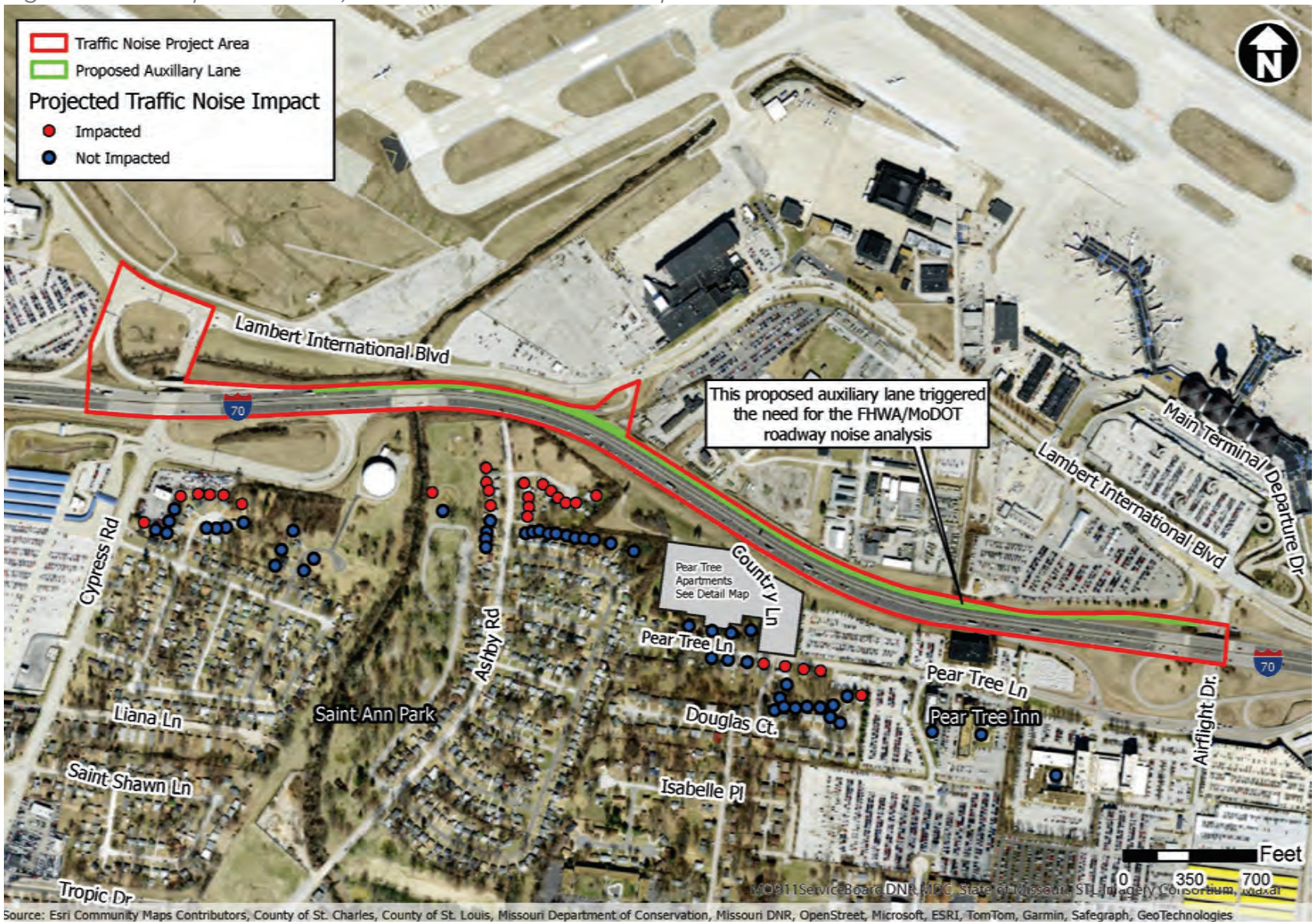


Figure 4.8-6: Proposed Action/2037 Build Traffic Noise Impacts – Pear Tree Apartments Detail Map

When noise barriers are considered for abatement of noise impacts, FHWA and MoDOT require they meet the following feasibility and reasonableness standards:

- Engineering feasibility means the wall can physically be constructed – there are no structural, utility, drainage, sight line or other engineering-based impediments to constructing the wall. For the Proposed Action, engineering feasibility played a role in determining where to place barriers that were modeled in TNM. MoDOT also generally limits barrier height to 20 feet, but no barrier will be judged unfeasible based only on this height limit.

- Acoustic feasibility means that the barrier provides a 5 dB(A) noise reduction for a minimum of two impacted first-row receptors.

- Social reasonableness considers the views of benefitted property owners and residents: When project design has advanced sufficiently as determined by MoDOT, ballots are sent to all benefitted receptors. A simple majority of returned ballots is required for property owner and resident approval, with the viewpoints of non-owner residents (tenants) evaluated as an aggregate of 25 percent of the total and the viewpoints of owners evaluated as a portion of an aggregate of 75 percent of the total.

- Economic reasonableness is cost effectiveness, which MoDOT defines as limiting a barrier's surface area to no greater than 1,300 square feet per benefited receptor.

- Acoustic reasonableness means the barrier meets the noise reduction design goal, which MoDOT defines as achieving at least 7 dB(A) of noise reduction for 100% of benefitted, first-row first-story receptors.

One noise barrier was analyzed for the residential neighborhood directly south of the eastbound I-70 Cypress Road interchange ramps. The barrier was modeled at the southern edge of the limited access right of way south of the ramps. The barrier was determined not to be reasonable under MoDOT requirements because the barrier failed to provide at least 7 dB of noise reduction for the first-row receptors within MoDOT's reasonable square footage limit of 1,300 square feet per benefitted receptor. Therefore, in compliance with FHWA regulations and MoDOT policy construction of the barrier is not recommended.

Two noise barrier alternatives were analyzed for St. Ann Park and the adjacent residential neighborhood to its east. The first alternative barrier was located at the edge of the I-70 limited access right of way. The second alternative barrier included a western section located at the edge of the limited access right of way and an eastern section located directly south of the road ditch that parallels eastbound I-70. Both barriers were determined not to be reasonable under MoDOT requirements because the barriers failed to provide at least 7 dB of noise reduction for the first-row receptors within MoDOT's reasonable square footage limit of 1,300 square feet per benefitted receptor. Therefore, in compliance with MoDOT policy neither barrier is recommended for construction.

Two noise barrier alternatives were analyzed for the Pear Tree Apartments complex and the adjacent residential neighborhood to its south. The first alternative barrier was located directly southwest of the road ditch that parallels eastbound I-70. The second alternative barrier was

located at the edge of the I-70 limited access right of way. Both barriers were constrained by a ditch running down the slope from the northeastern corner of the apartment complex property to meet the I-70 road ditch. The first barrier was determined not to be reasonable under MoDOT requirements because this barrier failed to provide at least 7 dB of noise reduction for the first-row, first-floor receptors. Therefore, in compliance with MoDOT policy this barrier is not recommended for construction.

The second alternative barrier for the Pear Tree Apartments complex is projected to provide at least 7 dB(A) of noise reduction for all first-row, first-floor receptors in accordance with Missouri's Noise Reduction Design Goal, provides at least 5 dB(A) of noise reduction for at least two front-row impacted receptors, and will have an area less than 1,300 square feet per benefited receptor. As a result, this barrier meets the preliminary feasibility and reasonableness requirements of MoDOT's Engineering Policy Guide Section 127.13, Noise. This barrier is depicted in Figure 4.8-7.

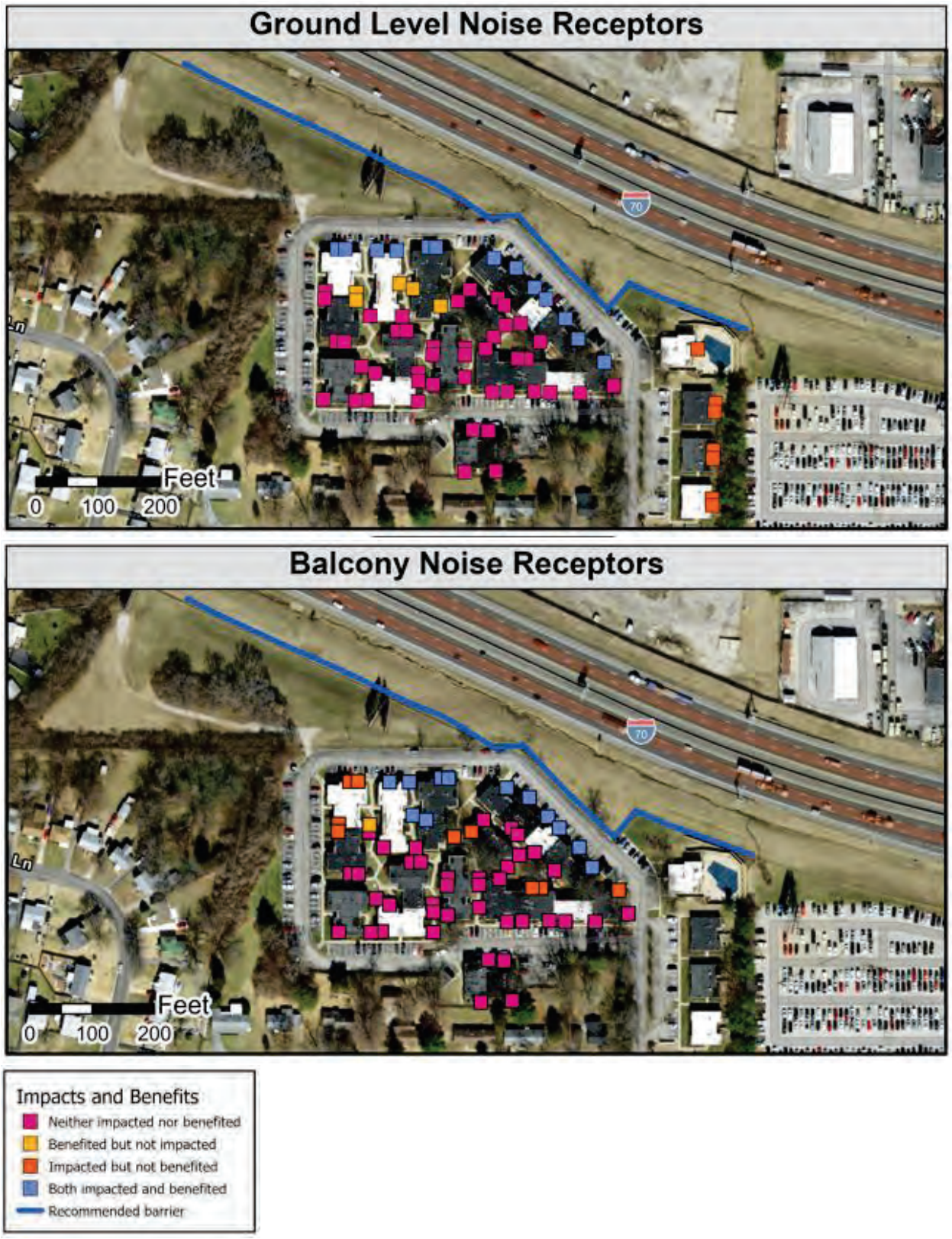
Roadway design has not advanced sufficiently to perform noise public involvement, which is the remaining reasonableness requirement under MoDOT's policy. The final decision on the implementation of noise barriers will be made by MoDOT during project design. When design is advanced sufficiently MoDOT will solicit the viewpoints of those benefitted by the noise barrier as part of the evaluation of reasonableness. MoDOT may again solicit viewpoints during final design if conditions substantially change that impact the implementation of the likely barrier.

4.8.3 Proposed Mitigation

If desired by the public and constructed, the recommended noise barrier along the limited access right of way is expected to mitigate traffic noise to the standards required by MoDOT and FHWA. Only barriers determined to be both reasonable and feasible will be constructed.

- *Commitment:* MoDOT will conduct noise public involvement during the design phase to determine if a noise barrier is desired to mitigate traffic noise at the Pear Tree Apartments in coordination with STL. STL will construct a noise barrier, approved by MoDOT/FHWA, if determined reasonable and feasible.

Figure 4.8-7: Reccomended Barrier Insertion Results



4.9 Cultural Resources

SHPO determined no adverse effects within the MoDOT R/W, but archaeological surveys will be completed within the project area within the MoDOT R/W if required by MoDOT. Archaeological monitoring will be conducted during construction for all ground disturbing activities and consultation will occur if any cultural resources are identified (see Section 3.10).

Mt. Lebanon and Washington Park cemeteries are located south of I-70 near the Airport. If any disturbance will occur within the project area south of I-70, archeological investigations would be completed to determine if any impacts to the cemeteries would occur.

- *Commitment:* Before any ground disturbing work in MoDOT right-of-way, work must first be cleared through MoDOT's Historic Preservation Office.

4.10 Section 4(f)/6(f)

No use of Section 4(f) or Section 6(f) resources will occur within MoDOT R/W (see Section 3.8).

4.11 Threatened and Endangered Species and Migratory Birds

A total of sixteen potential bat roost trees may be removed by the project (between I-70 and Lambert International Boulevard). FAA determined the project may affect, but is not likely to adversely affect threatened or endangered species and USFWS concurred on April 19, 2024. No bird nesting was observed on structures within the existing R/W. See Section 3.6 and Appendix E for documentation.

- *Commitment:* STL will only clear trees within MoDOT R/W during the inactive season, between November 1 and March 31.

4.12 Hazardous Waste Sites

No hazardous waste sites are within the MoDOT right-of-way and within the Proposed Action. E-START identifies multiple sites nearby, on STL/MoANG on the Regulated Petroleum and Hazardous Substance Storage Tank Facilities database and two active hazardous substance investigation and cleanup sites are located on MoANG. See Section 3.9 for documentation.

- *Commitment:* STL will conduct soil and groundwater testing to identify any remediation that may be required. Any hazardous materials encountered in site soils would be managed in accordance with EPA and/or MDNR risk-based corrective action requirements with an emphasis on on-site re-use of impacted materials to limit risks associated with the off-site movement of contaminated materials.

4.13 Airports

The proposed improvements within MoDOT R/W are adjacent to STL.

- *Commitment:* The roadway improvements will be reviewed by the FAA prior to construction to ensure compliance with 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace to include items such as any changes in ground

elevation, structures, towers, poles, objects, and temporary construction equipment that exceed the notice criteria.

Chapter Five
Agency and Citizen Coordination

5.1 Introduction

This chapter discusses coordination and public involvement associated with this EA. The NEPA process is designed to inform the public of the potential environmental consequences of the Proposed Action and involve them in the federal decision-making process. The Intergovernmental Cooperation Act of 1968 and Executive Order 12372, Intergovernmental Review of Federal Programs, requires federal agencies to cooperate with and consider state and local laws when implementing federal actions. Formal notification and opportunities for public participation, coordination with MoDOT, as a cooperating agency on this EA, as well as informal coordination with government agencies are incorporated into the EA process.

5.2 Agency and Public Scoping

As an outcome of the Airport's recently completed Master Plan process, two programs are being advanced: the Consolidated Terminal Program, which is evaluated in this EA and the West Airfield Program, which was previously evaluated under a separate NEPA process. Although each program is being evaluated separately, the FAA determined that a combined scoping process was appropriate to be conducted due to the anticipated implementation timeframes of these two programs.

STL and the FAA completed governmental agency and public scoping activities to determine the range of issues to be analyzed and to what magnitude they were to be treated. Key governmental agencies were invited to participate in an agency scoping meeting to provide any information they wished to be considered in the EA. The list of agencies invited is included in Appendix A.

The agency scoping meeting was conducted virtually on December 15, 2022. At this meeting, STLAA and the EA consultant team made a presentation about the Proposed Actions and the preliminary scope of environmental analyses to be included in the NEPA documents. There were 17 representatives of state and local agencies that participated in the agency scoping meeting. In addition to the agency scoping meeting, a public scoping meeting was held that same day to introduce the environmental review process and solicit feedback on issues or concerns to be evaluated during the NEPA processes.

Several methods were used to notify the public of the public scoping meeting. Postcards announcing the meeting date, time, location and purpose were mailed to 14,110 residences and businesses within a one-mile radius of the Airport. Email invitations were sent to 49 project stakeholders who were part of the Airport's Master Planning process and to 101 individuals who registered for updates at a May 2022 Master Plan Open House. Airport officials placed six (6) social media posts and advertised on their FlySTL website. Both a media advisory and press release were distributed to local media outlets.

The Public Scoping Meeting involved an open house format as well as a formal presentation followed by audience questions. A total of 65 people were in attendance. Attendees viewed several display boards at their leisure. Airport and FAA officials, along with the project consultant team, were stationed around the room to explain the boards and to answer any questions. At the final station, meeting attendees could provide their feedback either by completing a survey online using their personal smart phone or an iPad on display or a paper survey.

Two times during the Public Scoping Meeting, there was a formal presentation given by airport officials and their consultants. The presentation focused on an overview of both the Consolidated Terminal Program and the West Airfield Program, and an explanation of the environmental review process. After the presentations, audience members were given the opportunity to ask questions. Following the meeting, a recording of the presentation was posted on the FlySTL website along with the comment form.

In addition to completing an online comment form, agencies and the public could email or mail their comments to Airport Project Manager, Jay Christians, or FAA Project Manager Scott Tener during the scoping comment period (December 15, 2022 – January 16, 2023).

Comments were received from the following three public agencies during the scoping comment period:

- **Missouri Department of Transportation** (MoDOT) noted that secondary and cumulative impact analysis will be required.
- **Missouri State Historic Preservation Office** (SHPO) noted that demolishing the Missouri Air National Guard buildings will result in an adverse effect determination under Section 106 of the National Historic Preservation Act and other factors will be reviewed in determining impacts on the terminal domes.
- **Metropolitan St. Louis Sewer District** (MSD) commented that resource impacts, alternatives and permits required should be addressed. MSD submitted additional comments via email after the scoping meeting, primarily related to water resources, including floodplains, stormwater, wetlands, and associated approvals and permits that may be required.

Two tribes submitted letters, via email, during the scoping comment period:

- **Osage Nation** Historic Preservation Office requested copies of previous archaeological survey report within the APE and expressed interest in protecting its historic and ancestral cultural resources.
- **Eastern Shawnee Tribe of Oklahoma** Cultural Preservation Department noted that the project proposes No Adverse Effect or endangerment to known sites of interest to the tribe, but requested stopping ground disturbing activity and contacting the tribe and appropriate state agencies should the project inadvertently discover and archaeological site or object(s).

Eight comment forms (six paper and two online) and one email were submitted from individuals during or after the public scoping meeting. The comments covered a wide range of topics that should be considered, including economic impacts, interstate impact and access, MetroLink connectivity and access, Terminal 2 reuse, funding, deicing and soil contamination and wetlands.

In addition to the above referenced scoping comments, an email was submitted from a community and strategic planning consultant for the City of Woodson Terrace, which included the following documents:

- Letter from City of Woodson Terrace
- Woodson Road Airport Connection/Corridor Study
- City of Woodson Terrace Comprehensive Plan
- Gateway Community Corridors Strategy
- Municipal Resolutions and Letters of Support for Gateway Community Corridors Initiative from City of Woodson Terrace, City of Berkley, City of Kinloch, and City of Bridgeton.

There were several topics included in the Woodson Terrace letter and supporting documentation, including noise, pollution, I-70 access, connectivity and associated economic impacts and benefits, MetroLink and public transit connectivity, possible land use impacts, roadway alternatives, mitigation of adverse impacts, urban quality, historic and cultural resources, and support of regional goals.

A copy of the STL scoping summary document, which includes the notices, presentation materials, as well as verbatim and summarized comments received during the scoping process, is included in Appendix A. Comments received during the scoping process have been evaluated and addressed in Chapter 3, in the applicable sections for each resource category.

5.3 Local and Governmental Agency Coordination

In November 2023, a briefing was conducted with the Gateway Airport Communities Coalition (GACC), which includes communities and stakeholders in proximity of STL and along the I-70 corridor in St. Louis County. The purpose of this briefing was to provide a recap of the airport planning requirements that led to the consolidated terminal a status update on the Consolidated Terminal Program planning process, identify landside access alternatives, and discuss other comments or concerns of the participants.

In response to the connectivity and access concerns brought up during the scoping process, three concepts were discussed, including 1) providing an access-controlled shuttle bus lane into the proposed terminal loop, 2) maintaining eastbound flow through the Airflight intersection north of I-70, and 3) providing a turnaround nearer to the consolidated terminal loop to avoid having to go all the way to Terminal 2 to turnaround to enter back into the loop road. While these concepts have not been modeled or analyzed in detail as part of this EA, STL has committed to further study these connectivity concepts during the design process in coordination with the GACC. A copy of the GACC briefing presentation, briefing memo that summarizes comments and discussions, and additional information on the three access concepts are included in Appendix A.

Substantial coordination has also been conducted with MoDOT due to the proposed access improvements along I-70. Associated correspondence is included in Appendix K.

Other agency correspondence is included in the respective Appendices associated with each of the resource categories as noted in Chapter 3.

5.4 Availability of the Draft EA

A Notice of Availability (NOA) announcing the availability of the Draft EA, Draft MOA and Draft Section 4(f) Evaluation, and a Notice for a Public Meeting was published in the St. Louis Post Dispatch, a newspaper of general circulation, on July 3, 2024. A copy of the Affidavit of Publication is included in Appendix A.

During the public notice period, the Draft EA was made available to the public for review online at the FlySTL website at http://www.flystl.com/civil-rights/public-notices-and-reports. Paper copies of the Draft EA were also available at the following public locations.

Bridgeton Trails Library Branch
3455 McKelvey Road
Bridgeton, MO 63044-2500

Rock Road Library Branch
10267 St. Charles Rock Road
St. Ann, MO 63074-1812

Oak Bend Branch (temporary St. Louis County Library headquarters)
842 S. Holmes Avenue
St. Louis, MO 63122-6507

Jim Neidel
Planning Manager
St. Louis Lambert International Airport
(w) 314-551-5027
jrneidel@flystl.com
Contact Mr. Neidel to request a hard copy of the draft document.

The Draft EA was also sent for review to governmental agencies and communities in and adjacent to the project study area. A copy of the email cover memo and agency distribution list is included in Appendix A.

A public meeting was held on August 6, 2024, from 4 p.m. to 7 p.m. at the St. Louis Lambert International Airport's Concourse B. The meeting included two presentations followed by an opportunity to view visual displays and speak with project representatives. A summary of the public meeting, including presentation materials, notices, substantive comments received during the public comment period, July 3 through August 16, 2024, and responses to the comments are provided in the Public Meeting Summary Report included in Appendix A. Comments received during the public comment period, including during the public meeting, have been considered in the preparation of this Final EA.

Chapter Six
List of Preparers

This chapter provides the list of individuals contributing information to this document. The FAA and STLAA employed the efforts of a team of planners, scientists, technicians, and experts in various fields to prepare this EA. Specialists included expertise in air quality, water and biological resources, Section 106, and other disciplines. While an interdisciplinary approach was used to develop the EA, all decisions regarding the EA scope and content are made by the FAA.

Table 6-1: Federal Aviation Administration (FAA), lead federal agency

Name	Organization	Title	Role in EA Preparation
Scott Tener, P.E.	FAA, Central Region Airports Division	Environmental Protection Specialist	Detailed review of the EA and coordination of comments from federal and state agencies.

Table 6-2: Federal Highway Administration

Name	Organization	Title	Role in EA Preparation
Taylor Peters	FHWA	Environmental Specialist	EA document reviews

Table 6-3: Missouri Department of Transportation

Name	Organization	Title	Role in EA Preparation
Melissa Scheperle	MoDOT	Environmental and Historic Preservation Manager	EA document reviews
Lisa Kuntz	MoDOT	Transportation Project Manager	EA document reviews, TS&O reviews

Table 6-4: St. Louis Airport Authority (STLAA)

Name	Organization	Title	Role in EA Preparation
Jerry Beckman	STLAA	Deputy Director, Planning & Development	Project oversight and EA document reviews
Jim Neidel	STLAA		EA document reviews

Table 6-5: Contractor/Consultant Team

Name	Organization	Education	Years of Experience	Role in EA Preparation
Doug Gregory, C.M.	CMT	B.S. Aeronautical Science	19	Project oversight, document reviews
Heather Lacey	CMT	M.S. and B.S. Biological Sciences	25	Environmental Lead, Agency coordination, NEPA document reviews

Name	Organization	Education	Years of Experience	Role in EA Preparation
Laura Sakach, P.E., AICP	CMT	B.S. Civil Engineering	35	Cumulative impacts, agency and citizen coordination, NEPA document reviews, document preparation, reviews and production
Paola Pringle	CMT	M.S. Management B.S. Environmental Engineering	25	Air quality and climate analysis and report
Lana Sumner, AICP	CMT	B.S. Aeronautics	33	Hazardous materials, solid waste, pollution prevention, land use, natural resources and energy supply, visual effects, surface transportation noise report, document preparation, reviews and production
Marion Wells, CSE	CMT	M.S. Environmental Science B.S. Zoology & Environmental Science	12	Wetland delineation, biological resource survey, Aquatic and Ecological Resources Report, biological resources, water resources
Stephanie Spence	CMT	M.S. Environmental Science B.S. Zoology & Environmental Science	2	Wetland delineation, biological resource survey, Aquatic and Ecological Resources Report, biological resources, water resources, noise report
Meghan Oh	CMT	M.S. and B.S. Chemistry	20	Wetland delineation, biological resource survey
Terry Schaddel	CMT	M.S. Civil Engineering B.S. Civil Engineering	47	Department of Transportation, Section 4(f), Historical, Architectural, Archaeological and Cultural Resources, Section 4(f) Evaluation
Austin Clarridge	CMT	M.A. Earth & Environmental Resources Management B.S. Environmental Science	9	Department of Transportation, Section 4(f), historical, architectural, archaeological and cultural resources, Section 4(f) Evaluation

Name	Organization	Education	Years of Experience	Role in EA Preparation
Jennifer Miller	CMT	B.S. Chemistry & Psychology	34	Socioeconomic, environmental justice and children's environmental health and safety risks, surface transportation noise analysis and report
Alexander Tadda	CMT	B.S. Environment, Economy, Development, and Sustainability	2	Socioeconomic, environmental justice and children's environmental health and safety risks
Gregory Maxwell	CMT	M.S. Aviation Safety B.S. Geography	17	Noise and noise compatible land use
Justin Godin	CMT	B.S. Meteorology	21	Noise and air quality analysis
Ryan Johnson	CMT	A.A.S. Mechanical Technology	18	GIS, Figure preparation
Marla Engel, AICP	WSP	M.R.P. Environmental Planning B.A. Political Science	38	Purpose & need, alternatives
Guy Blanchard	WSP	J.D. Law M.H.P. Historic Preservation B.A. Art History	12	Historic resource survey, Section 106 Survey Report
Laurna Godwin	Vector	M.A. Journalism B.A. English Literature and American Studies	43	Citizen coordination, Scoping/public involvement
Taylor Bardsley	Vector	Master of Social Work B.A. Psychology	6	Citizen coordination, Scoping/public involvement

Notes: CMT=Crawford, Murphy & Tilly, Inc.; WSP=WSP USA; Vector= Vector Communications.

Source: CMT, WSP and Vector, 2024

Appendix A:
Public and Agency Coordination

Agency Scoping Invitee List

Agency scoping invitee list

STL CTP / WAP Dec 15, 2022

Agency	Contact / Address	Name (Position)	Email
Federal Highway and Transportation Administration	3220 W Edgewood Dr h, Jefferson City, MO 65109	Missouri Division	Missouri.FHWA@dot.gov Adding Felix Gonzalez -- felix.r.gonzalez@dot.gov Taylor taylor.peters@dot.gov Julie Stotlemeyer julie.stotlemeyer@dot.gov Dawn Perkins dawn.perkins@dot.gov
Federal Transit Administration	901 Locust St # 404, Kansas City, MO 64106	• Mokhtee Ahmad (Region 7 Administrator) • Mark Bechtel (Deputy Regional Administrator)	mokhtee.ahmad@dot.gov Mark.bechtel@dot.gov
U.S. Army Corps of Engineers	St. Louis District Office 1222 Spruce Street St. Louis, MO 63103-2833	St. Louis District Public Affairs Office	TeamSTL-PAO@usace.army.mil
U.S. Department of Interior, National Park Service	Office of Environmental Policy and Compliance Denver Region Denver Federal Center Building 46, PO Box 25207 Denver, CO 80225-0007 Telephone: (303) 478-3373	• Courtney Hoover (Regional Environmental Officer) • Glenn Schroeder (Regional Environmental Protection Specialist)	courtney_hoover@ios.doi.gov glenn_schroeder@ios.doi.gov
U.S. Environmental Protection Agency, Region 7	1201 Renner Boulevard Lenexa, KS 66219	Joshua Tapp, NEPA Program Director	tapp.joshua@epa.gov
U.S. Fish and Wildlife Service	Big Muddy NWR Headquarters 18500 Brady Lane Boonville, MO 65233-3126	Jason Wilson (Refuge Manager)	jason_wilson@fws.gov
Missouri Department of Natural Resources	1101 Riverside Drive PO Box 176 Jefferson City, MO 65102-0176	St. Louis Regional Office	SLRO@dnr.mo.gov
Missouri Department of Conservation	11715 Cragwold Rd Kirkwood, MO 63122	St. Louis Regional Office	stlouis@mdc.mo.gov
Missouri State Historic Preservation Officer	1659 E Elm St. Jefferson City, MO 65101	• Dr. Toni M. Prawl (Deputy Director SHPO)	moshpo@dnr.mo.gov toni.prawl@dnr.mo.gov
Missouri Department of Transportation	105 W. Capitol Avenue Jefferson City, MO 65102	Shaun E. Tooley	Shaun E. Tooley Shaun.Tooley@modot.mo.gov **sending Dec 2** **Aaron Hugenberg Aaron.Hugenberg@modot.mo.gov** **Lisa Kuntz lisa.kuntz@modot.mo.gov** **Tom Evers Thomas.Evers@modot.mo.gov Jenn B jennifer.becker@modot.mo.gov Melissa Melissa.Scheperle@modot.mo.gov** THOMAS K BLAIR Thomas.Blair@modot.mo.gov
Missouri State Emergency Management Agency	2302 Militia Dr, Jefferson City, MO 65101	James Remillard Director	james.remillard@sema.dps.mo.gov
St. Louis County Government	41 South Central Clayton, MO 63105	Stephanie Leon Streeter, Acting Director of Transportation Kulessa, Joseph Henninger, Glenn	sleonstreeter@stlouiscountymo.gov Per Stephanie – add the following: JKulessa@stlouiscountymo.gov GHenninger@stlouiscountymo.gov
Metropolitan St. Louis Sewer District	2350 Market Street, Walnut Pl, St. Louis, MO 63103	Jay Hoskins (Head of Environmental Compliance)	jshosk@stlmsd.com
East-West Gateway Council of Governments	1 S. Memorial Drive, Suite 1600, St. Louis, MO 63102	Marcie Meystrik (Director of Transportation Planning)	Marcie.Meystrik@ewgateway.org
Bi-State Development Agency	One Metropolitan Square 211 North Broadway, Suite700 St. Louis, MO 63102-2759	Taulby Roach (President & CEO)	troach@bistatedev.org

Also send invite to:
Scott Tener, FAA
Todd Madison, FAA
Mark Schenkelberg, FAA
Ed Hyatt, FAA
Jim Johnson, FAA
Ryan Vogt, FAA
Kristen Lewandowski, STL ATCT Kristen.Lewandowski@faa.gov

Scoping Summary Report

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

NEPA AGENCY AND PUBLIC SCOPING MEETINGS

COMMENTS SUMMARY

SEPTEMBER 2023

Prepared by:

VECTOR COMMUNICATIONS 1998 25 YEARS 2023

wsp

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Appendix N: Paper comment form

Appendix O: Question 1 Verbatim comments with thematic codes

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Appendix R: Emailed Comment 1

Appendix S: Emailed Comment 2 and Supporting Documents

Appendix T: Emailed Comment 3 and Supporting Documents

Appendix U: Emailed Comment 4 and Supporting Documents

Appendix V: Table of emailed comments categorized by theme

1 OVERVIEW

As the St. Louis Lambert International Airport (STL) Master Plan concludes, two proposed programs are advancing to the environmental review stage: the Consolidated Terminal Program (CTP) and West Airfield Program (WAP). Because each of these programs requires approvals from the Federal Aviation Administration (FAA) and STL plans to apply to the FAA for grants for the programs, the programs are subject to compliance with the National Environmental Policy Act (NEPA) process. The NEPA processrequires the FAA to consider the environmental impacts of the programs before taking actions such as funding or approving the project.

As a part of the NEPA process, STL and FAA must first determine the scope of the environmental analysis, which includes exploring identifying and reasonable alteranative to the proposed programs and identifying their potential environmental impacts.In December 2022, STL hosted two meetings to introduce the environmental review process and solicit agency and public input about the environmental review scope. The remainder of this report summarizes the input received during the Agency and Public Scoping Meetings.

2 AGENCY SCOPING MEETING

The Agency Scoping Meeting was attended by 17 representatives of state and local agencies, including the East-West Gateway Council of Governments, Metropolitan St. Louis Sewer District, Missouri State Historic Preservation Office, Missouri Department of Transportation and their I-70 design consultants, and St. Louis County. Other attendees included 20 representatives of the FAA Airports Division (the NEPA lead federal agency), FAA STL Air Traffic Control Tower, STL staff, and representatives of the STL Master Plan and NEPA teams.

The STL Master Plan/NEPA team made a presentation about the proposed West Airfield Program (WAP) and Consolidated Terminal Program (CTP), as well as the impact categories that are evaluated by FAA. The team also identified existing resources present in the study areas for the WAP and the CTP. Next steps in the NEPA process were identified.

*The Agency Scoping Meeting invitation letter and presentation can be found in **Appendix A** and **Appendix B**, respectively.*

3 PUBLIC SCOPING MEETING

STL hosted a public Public Scoping Meeting to share information about the two proposed programs (CTP and WAP), introduce the NEPA process, and gather public input about the scope of the alternatives and impacts to be evalauted. The Public Scoping Meeting took place on Thursday, December 15, 2022 from 4:00 p.m. to 7:00 p.m. at STL Terminal 1, Concourse B.

The Public Scoping Meeting was promoted on STL's social media platforms and the FlySTL website. Postcards with the Public Scoping Meeting details were sent to 14,110 residents and businesses within a one-mile radius of the airport. Email invitations were sent to 49 Master Plan project stakeholders and 101 individuals who subscribed for updates at the May 5, 2022 Master Plan Open House. Six social media posts were distributed by STL. A media advisory and press release were also distributed to regional new outlets. These tasks resulted in several promotional stories about the Public Scoping Meeting and comment process.

*Emails sent to project stakeholders and subscribers can be found in **Appendix C**. Social media posts distributed by STL are in **Appendix D.** The media advisory and press release can be found in **Appendices E and F**, respectively. The postcard and one-mile radius delivery map can be found in **Appendices G and H**, respectively.*

The purpose of the Public Scoping Meeting was to inform the public about the NEPA process and receive public input about the scope of the environmental review. Meeting attendees had the opportunity to complete paper or online comment forms, ask questions, and share their thoughts about the environmental review scope. Sixty-five people attended the Public Scoping Meeting.

Attendees viewed 27 display boards illustrating features of the proposed programs and explaining the environmental review process. STL, FAA, and WSP staff were stationed around the room to respond to questions and explain the display boards. At the final station, the public had the opportunity to submit comments. Comments could be submitted online using their personal smart phone or a provided iPad, in writing, or verbally.

Additionally, attendees heard a formal presentation with remarks from Rhonda Hamm-Niebruegge, Airport Director, an overview of the proposed programs from WSP Project Manager John van Woensel, and explanation of the environmental review process from WSP Director of Environmental Planning, Marla Engel. A Question & Answer session was facilitated by Laurna Godwin of Vector Communications. The formal presentation was held at 4:45 p.m. and repeated at 5:45 p.m. A recording of the formal presentation was posted on the FlySTL website on Monday, December 19, 2022.

*The Public Scoping Meeting station guide, display boards and presentation slides can be found in **Appendices I, J, and K** respectively. To watch a recording of the Public Scoping Meeting presentation, which is available publicly on the FlySTL website, click here.*

4 COMMENTS SUMMARY

4.1 AGENCY SCOPING MEETING COMMENTS

Comments from the agencies present at the Agency Scoping Meeting include:

- Metropolitan Sewer District asked about the type of feedback requested and was told to address resource impacts, alternatives , and permits that are required.
- Missouri Department of Transportation noted that secondary and cumulative impacts analysis will be required.
- Missouri State Historic Preservation Office (SHPO) noted that demolishing the Missouri Air National Guard buildings will result in an adverse effect determination under Section 106 of the National Historic Preservation Act and that lighting, materials used, and other factors will be reviewed in determining impacts on the terminal domes.
- SHPO identified Amy Rubingh as the SHPO contact for these projects.
- The STL team noted that the Section 106 Area of Potential Effect (APE) for the West Airfield Program will be submitted to SHPO soon, followed by Determination of Eligibility for the Terminal Program.
- STL clarified that no design efforts have started and that many permits would be required.
- The STL team acknowledgement that floodplain permits would be required.

One (1) agency comment was submitted after the agency scoping meeting. The comment was categorized by theme.

Theme	Count
Clean Water Act section 401/404	1
Construction requirements	1
Deicing waste/runoff	1
Detention facilities	1
Flood plain study	1
Maintenance Access	1
MoDOT review and approval	1
MSD review and approval	1
Permit requirements	1

Sanitary flow estimates	1
Sewer ownership and maintenance responsibilities	1
Stormwater run-off	1

Verbatim agency comments, categorized by theme, can be found in ***Appendix L.***

4.2 PUBLIC SCOPING MEETING COMMENTS

Public Scoping Meeting attendees were encouraged to provide their input during the event by submitting an online comment form on their smartphone or tablet, verbally sharing, or submitting a paper comment form. The online comment form was also available on the Public Scoping Meeting website. The public was given an additional 31 days – until January 16, 2023 – to complete the online comment form or email/mail their comments to STL Project Manager Jay Christians or FAA Project Manager Scott Tener. Jay and Scott's contact information is available at the FlySTL website.

A total of 12 comments were received via:

- Online comment forms (6),
- Comments directly shared with Jay Christians or Scott Tener via phone, email, or mail (4), and
- Paper comment forms (2).

4.2.1 ONLINE & PAPER COMMENT FORM RESULTS

Two individuals submitted paper comment forms and six submitted feedback through the online comment form. Both forms included the same seven questions and write-in areas. Results from the eight comment forms are summarized in this section.

The online and paper comment forms can be found in ***Appendices M and N****, respectively.*

Question 1: Considering the information you have seen at the STL Environmental Review Public Scoping Meeting, what environmental impacts should the project team be considering?

Seven respondents responded to this question and were categorized with at least one theme. There was no limit to the number of themes allocated per comment. Environmental impacts highlighted in comments include economic impacts (1, 13%), interstate impacts (1,13%), soil contamination (1, 13%), sustainable transportation options to and from parking facilities (1, 16%), and wetlands (1, 13%). Two comments did not have any applicable content and were therefore categorized as N/A (3, 38%).

Theme	Count
N/A	3
Economic impact	1
Interstate impact	1
Soil contamination	1
Sustainable transportation options to/from parking facilities	1
Wetlands	1

*Verbatim comments, categorized by theme can be found in **Appendix O**.*

Question 2: What alternatives to the proposed projects do you want to see implemented at STL?

Six respondents responded to this question and were categorized with at least one theme. There was no limit to the number of themes allocated per comment. Alternatives highlighted in public comments include a canopy over the MetroLink station (1, 8%), extending MetroLink to Bridgeton (1, 8%), having hotels (1, 8%) and rental car agencies (1, 8%) on site, and creating a pedestrian ramp from the MetroLink station to Woodson Terrace Road (1). Additionally, three potential uses for Terminal 2 were highlighted: a connected hotel (1, 8%), a museum (1, 20%), and a vertiport (1, 8%). One (1, 8%) comment contained a question about potential uses for Terminal 2. One (1, 8%) comment did not reference different alternatives from the proposed projects and was therefore coded as N/A.

Theme	Count
Canopy over MetroLink station	1
Deicing	1
Extend MetroLink to Bridgeton	1
Hotels on site	1
N/A	1
Pedestrian ramp from MetroLink station to Woodson Terrace Rd.	1
Rental car agencies on site	1
Taxiway Constraints	1
Terminal 2 use: Connected hotel	1
Terminal 2 use: Museum	1
Terminal 2 use: Question	1
Terminal 2 use: Vertiport	1

*Verbatim comments, categorized by theme can be found in **Appendix P**.*

Question 3: What additional comments do you have about the environmental review process?

Seven comments were coded. There was no limit to the number of themes per comment. Comment themes included positive sentiment about the project (2, 29%), questions about funding (1, 14%), a desire to speed up the project timeline (1, 14%), and the west interchange access point (1, 14%). Two (2, 29%) comments did not contain substantive comments and were therefore coded as N/A.

Theme	Count
N/A	2
Positive sentiment	2
Funding questions	1
Speed up project timeline	1
West interchange access point	1

Verbatim comments are listed by theme in **Appendix Q**.

Question 4: In what zip code do you live?

The eight survey respondents represent eight distinct zip codes. There were three (3, 38%) responses from St. Louis City, three (3, 38%) from St. Louis County, and one (1, 13%) from Illinois. One response was received from Timnath, Colorado (1, 13%).

Zip code	Count
62025 (Edwardsville, IL)	1
63104 (St. Louis City)	1
63105 (Clayton, St. Louis County)	1
63108 (St. Louis City)	1
63110 (St. Louis City)	1
63114 (Overland, St. Louis County)	1
63123 (Affton, St. Louis County)	1
80547 (Timnath, CO)	1

Question 5: What is your relationship to STL and this project? Please check all that apply.

The most frequently reported relationship to the project was respondents living near STL (5, 29%) followed by frequently traveling via STL more than twice per month (4, 24%) working in or near STL (3, 18%), and other (3, 18%). Two (2, 12%) participants indicated that they sometimes travel via STL, monthly or less.

Relationship to Project	Count
I live near STL.	5
I frequently travel via STL (more than twice per month).	4
I work in/near STL.	3
Other	3
I sometimes travel via STL (monthly or less).	2
I am an elected official in St. Louis City.	0
I am an elected official in St. Louis County.	0
I rarely travel via STL (once per year or less).	0

“Other” responses included the following:

- Area resident concerned about having a good airport
- City Manager
- I work and commute in and out of the airport on a weekly if not daily basis

Question 6: Please evaluate this event according to the following criteria.

All respondents (8, 100%) agreed or strongly agreed that they understood the purpose of the scoping meeting, that the public scoping meeting was informative, and that the public scoping meeting was well planned.

I understood the purpose of the Public Scoping Meeting.

Sentiment	Count
Strongly agree	6
Agree	2
Neutral	0
Disagree	0
Strongly disagree	0

The Public Scoping Meeting was informative.

Sentiment	Count
Strongly agree	6
Agree	2
Neutral	0
Disagree	0
Strongly disagree	0

The Public Scoping Meeting was well planned.

Sentiment	Count
Strongly agree	7
Agree	1
Neutral	0
Disagree	0
Strongly disagree	0

Question 7: How did you find out about this Public Scoping Meeting? Please check all that apply.

The most frequently reported method of learning about the Public Scoping Meeting was email (4, 36%), followed by the STL website and social media (3, 27%), local media coverage (2, 18%), and word of mouth (2, 18%).

Method	Count
Email	4
STL website/social media coverage	3
Local media coverage	2
Word of mouth	2
Mailed postcard	0
Other	0

4.2.2 PUBLIC COMMENTS DIRECTLY SUBMITTED TO STL OR FAA

Four public comments were emailed directly to STL Project Manager Jay Christians and/or FAA Project Manager Scott Tener. All comments were assigned at least one code indicating the mentioned themes. The following table shows the themes represented in these comments.

*Verbatim comments and supplementary documents directly submitted to STL Project Manager Jay Christians and FAA Project Manager Scott Tener can be found in **Appendices R, S, T, and U**. Comments are ordered based on date received. The themes attributed to each comment can be found in the table in **Appendix V**.*

Theme	Count
Tribe and state agency consultation	2
Adverse economic effects to adjacent communities	1
Adverse environmental effects (noise, pollution, etc.) to adjacent communities	1
Archaeological survey reports	1
City of Woodson Terrace Comprehensive Plan	1
Collaboration and alignment of goals	1
Community and local government engagement	1
Connections to the airport	1
Cultural, historic, tourism, and business preservation and recruitment	1
Duel jurisdictional context	1
Economic revitalization	1
Energy and natural or depletable resources	1
Land use	1
MetroLink connectivity and access from neighboring communities	1
Negative impact of severed communities due to roadway development	1
No adverse effect or endangerment of tribal cultural history	1
Noise mitigation studies	1
Partnership with neighboring communities	1
Public engagement	1
Redevelopment of airport-adjacent communities	1
Redevelopment of commercial corridors	1
Review impact on neighboring communities	1
Roadway connectivity and access to neighboring communities	1
Urban quality, historic and cultural resources	1
USDOT Reconnecting Communities Program	1
Woodson Road Gateway Airport Connection feasibility study	1

5 CONCLUSION

The Agency Scoping Meeting and Public Scoping Meeting serve an important role as the CTP and WAP transition from planning to implementation. The comments shared by the public and agencies will be considered by FAA as they determine the scope of the environmental review process.

APPENDICES

APPENDIX A: INVITATION TO AGENCY SCOPING MEETING AND PROJECT DESCRIPTIONS

Agency Scoping Letter

November 17, 2022

RE: St. Louis Lambert International Airport
NEPA Agency Scoping Meeting
Consolidated Terminal Program
West Airfield Program

Pursuant to the National Environmental Policy Act (NEPA) of 1969, the St. Louis Airport Authority (STL), in coordination with the Federal Aviation Administration (FAA), intends to evaluate the potential environmental impacts resulting from FAA actions on each of the following proposed development programs at the St. Louis Lambert International Airport:

- Consolidated Terminal Program (CTP)
- West Airfield Program (WAP)

These programs have independent utility and are not connected actions under NEPA; therefore, they will be evaluated in separate NEPA documents for each program. The FAA intends to determine the NEPA class of action for each program after considering comments received in Scoping. In preparation of these NEPA documents, STL and the FAA are seeking early involvement and consultation with Federal, state, and local government agencies. Accordingly, you are invited to attend an Agency Scoping Meeting, at which both programs will be discussed. The purpose of the meeting is:

- For you to learn more about the proposed CTP and WAP;
- To solicit input and comments related to issues or concerns that should be addressed in each NEPA process;
- To request any background information that your agency may have regarding the project environs; and;
- To obtain an understanding of any issues, concerns, policies or regulations that your agency may have regarding the proposed actions.

For your review, enclosed are Scoping materials that briefly describe the proposed project.

If you are unable to attend the morning Agency Scoping Meeting, you are welcome to attend the Public Scoping Meeting that will be held later the same day. The date, times, and location of the Scoping Meetings are provided below.

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Agency Scoping Meeting
Thursday, December 15, 2022
Virtual Zoom Meeting
10 a.m. – 12:00 p.m.
Please email JAChristians@flystl.com that you are interested in attending and the zoom link will be emailed to you.

Public Scoping Meeting
Thursday, December 15, 2022
In-person Meeting
STL Airport, Concourse B, Terminal 1
(Parking in the Terminal 1 Garage will be validated)
4:00 p.m. – 7:00 p.m.

The NEPA process for each program will allow additional opportunities for input from agencies and the public; however, we encourage your early participation as we begin the NEPA process for each of these programs.

If you cannot attend either of the Scoping Meetings, a video recording of the Public Scoping will be posted on the STL website (www.flystl.com) for viewing. You may submit written comments and recommendations to the following address or via email by close of business on December 30, 2022.

Mr. Jason Christians, PE
St. Louis Lambert International Airport
Assistant Director - Engineering
11495 Navaid Road
St. Louis, MO 63044
JAChristians@flystl.com

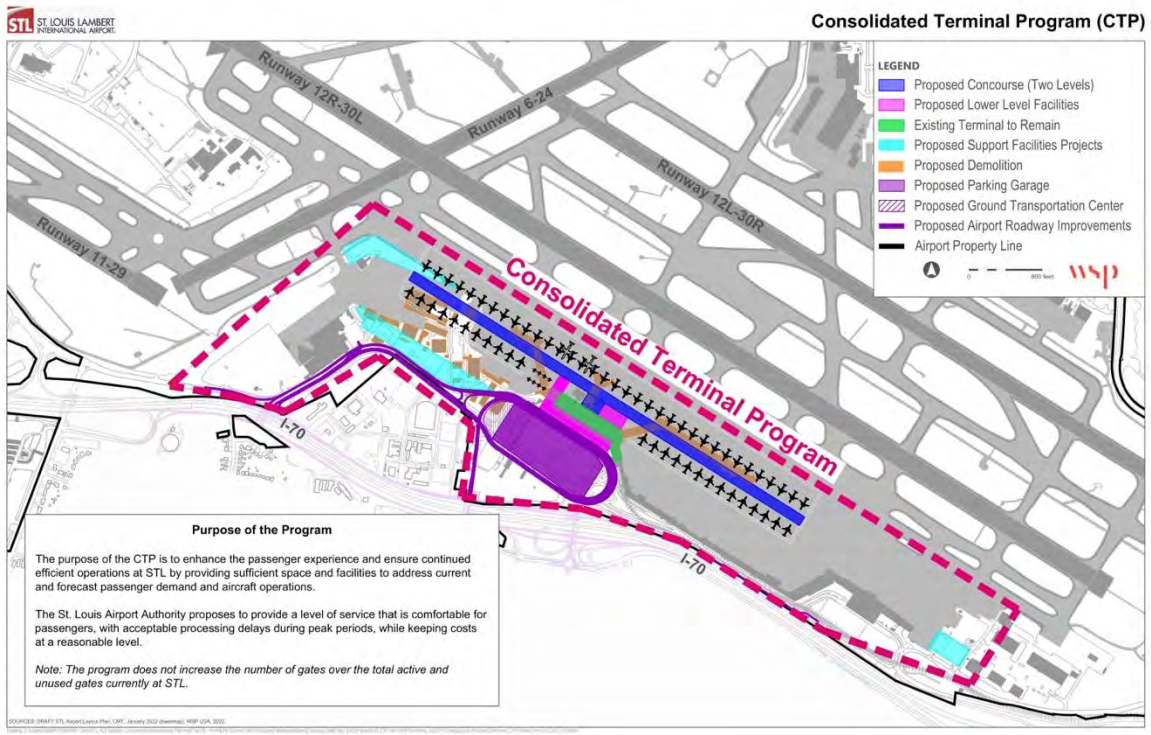
STL and FAA appreciate your participation in the NEPA process for these projects. Should you have any questions about the proposed programs or the upcoming Scoping Meetings, please call me at 314-551-5008 or e-mail me.

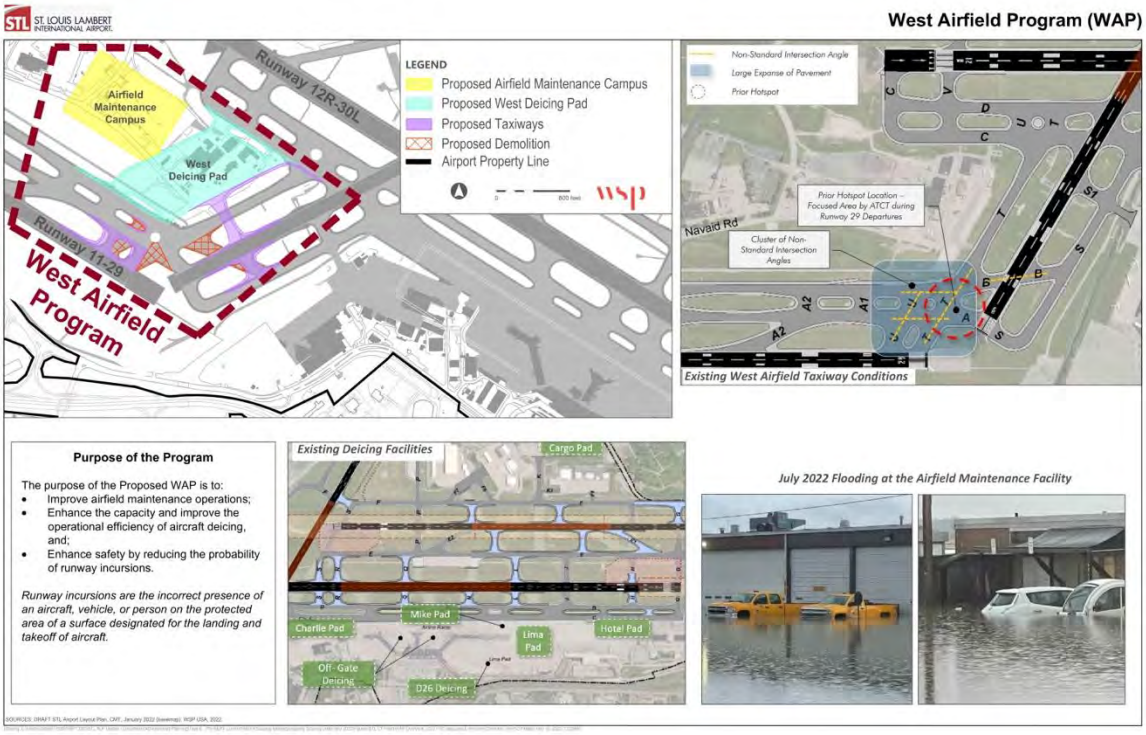
Sincerely,

Jason A Christians, PE

Copy: Jerry Beckmann, PE (STL Deputy Director)
Jennifer Kuchinski, PE (WSP)
Marla Engel (WSP)

Enclosures
- Scoping Materials


ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
Consolidated Terminal Program (CTP)
Runway 12R-30L
Runway 6-24
Runway 12L-30R
Runway 11-29
I-70
I-70
Consolidated Terminal Program
LEGEND
Proposed Concourse (Two Levels)
Proposed Lower Level Facilities
Existing Terminal to Remain
Proposed Support Facilities Projects
Proposed Demolition
Proposed Parking Garage
Proposed Ground Transportation Center
Proposed Airport Roadway Improvements
Airport Property Line
Purpose of the Program
The purpose of the CTP is to enhance the passenger experience and ensure continued efficient operations at STL by providing sufficient space and facilities to address current and forecast passenger demand and aircraft operations.
The St. Louis Airport Authority proposes to provide a level of service that is comfortable for passengers, with acceptable processing delays during peak periods, while keeping costs at a reasonable level.
Note: The program does not increase the number of gates over the total active and unused gates currently at STL.


ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
West Airfield Program (WAP)
Airfield Maintenance Campus
West Deicing Pad
Runway 12R-30L
Runway 11-29
West Airfield Program
LEGEND
Proposed Airfield Maintenance Campus
Proposed West Deicing Pad
Proposed Taxiways
Proposed Demolition
Airport Property Line
Non-Standard Intersection Angle
Large Expanse of Pavement
Prior Hotspot
Navaid Rd
Prior Hotspot Location – Focused Area by ATCT during Runway 29 Departures
Cluster of Non-Standard Intersection Angles
Existing West Airfield Taxiway Conditions
Purpose of the Program
The purpose of the Proposed WAP is to:
Improve airfield maintenance operations;
Enhance the capacity and improve the operational efficiency of aircraft deicing, and;
Enhance safety by reducing the probability of runway incursions.
Runway incursions are the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.
Existing Deicing Facilities
Cargo Pad
Mike Pad
Charlie Pad
Lima Pad
Hotel Pad
Off-Gate Deicing
D26 Deicing
July 2022 Flooding at the Airfield Maintenance Facility

APPENDIX B: AGENCY SCOPING MEETING PRESENTATION

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

STL NEPA Agency Scoping Meeting

for the
West Airfield Program
Consolidated Termina Program

December 15, 2022

Meeting Agenda

- Welcome
- Introductions
- Background
- Consolidated Terminal Program (CTP)
- West Airfield Program (WAP)
- FAA impact Categories and Existing Resources
- Next Steps

Background: Master Plan 2020 - 2022

- Needs Assessment → *Purpose and Need*
- Develop and Evaluate a Range of Solutions → *Alternative Analysis*
- Identify and Refine the Plan → *Airport Sponsor's Proposed Project/Program*

Background: Master Plan Needs Assessment

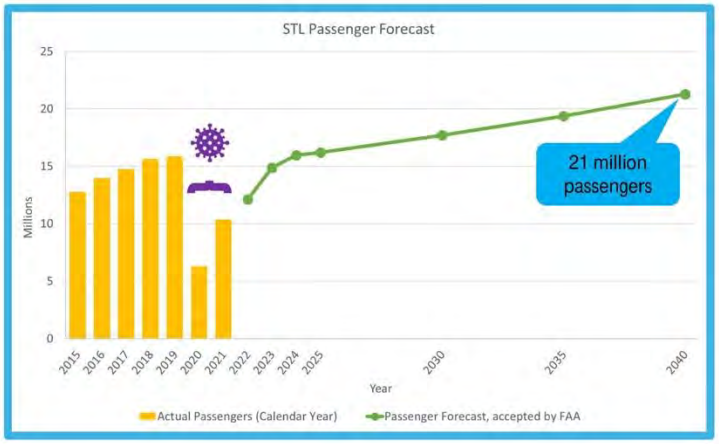
- Inventory of Existing Conditions
- Forecast of Passengers and Aircraft Operations
- Industry Standard for Optimum Level of Passenger Service
- Facilities Needs

Optimum Level of Service
Good comfort level for passengers and acceptable passenger processing delays during peak periods, while keeping costs at a reasonable level.

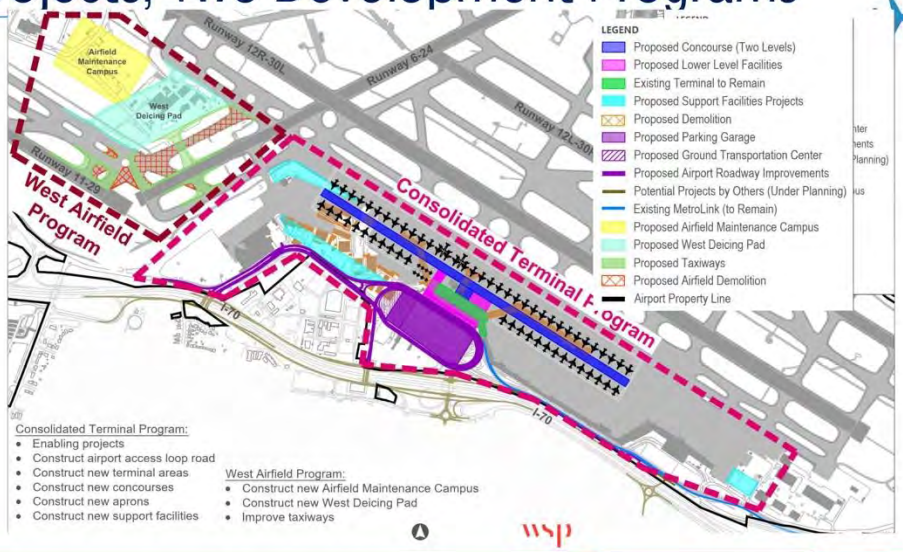
Industry Standards
- Queuing time
- Corridor widths
- Walking distances
- Area per passenger for various facilities

Background: Master Plan Forecast through 2040

- 21M passengers by 2040
- Strong recovery from COVID validated in 2022
- Approved by FAA ☑



Many Projects, Two Development Programs



Federal Actions that Trigger NEPA

- FAA's unconditional approval of the Airport Layout Plan depicting the projects in the STL Master Plan

- STL will seek FAA Airport Improvement Program Funding for the Consolidated Terminal Program and for the West Airfield Program

Why Two Programs and NEPA Processes?

- The West Airfield Projects **are connected** to each other because the proposed deicing pad requires relocation of the proposed maintenance facility

BUT:

- The WAP and the CTP have **independent utility**
- The CTP may have operational impacts that will take longer to evaluate than the WAP impacts
- The WAP is **urgently needed** to address flooding of the maintenance facility


Consolidated Terminal Program (CTP)
NEPA Agency Scoping – December 15, 2022
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Terminal Program Need
NEPA Agency Scoping – December 15, 2022
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Terminal Needs: Passenger Terminals

Aging and Obsolete Facilities

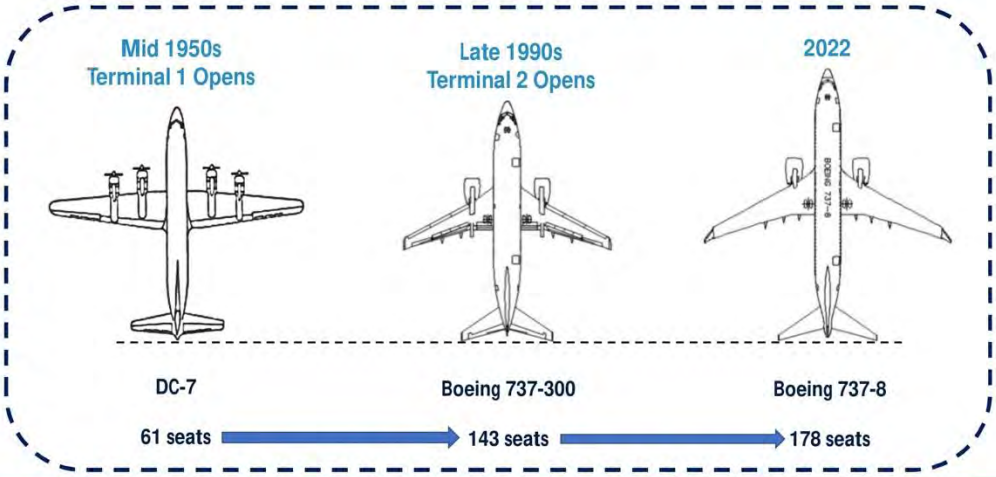
- Undersized passenger areas (hold rooms, restrooms, corridors)
- Lack of functionality (security checkpoints)
- Insufficient concessions (revenues & customer choices)
- Reliability, resiliency, maintenance costs

Growth in Passengers

- Require up to 62 usable aircraft gates
- Insufficient terminal and concourse space
- Need to accommodate modern, larger aircraft
- Customs cannot be accessed by all carriers

11

Terminal Needs: Industry Changes



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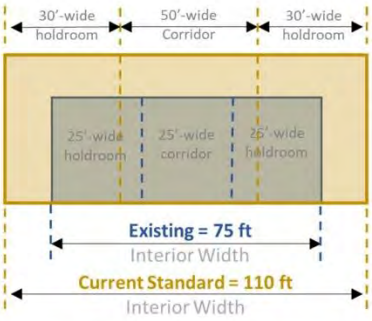
Station 2: Need for Improvements

Terminal Needs: Enhance Customer Experience



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Terminal Needs: Roadway and Parking

On-airport Roadways

- Insufficient distance for decision making
- Inadequate number of curb lanes

Parking Facilities

- Shortage of garage parking (revenues)
- Terminal 1 Garage inefficient & reaching end of useful life

NEPA Agency Scoping – December 15, 2022

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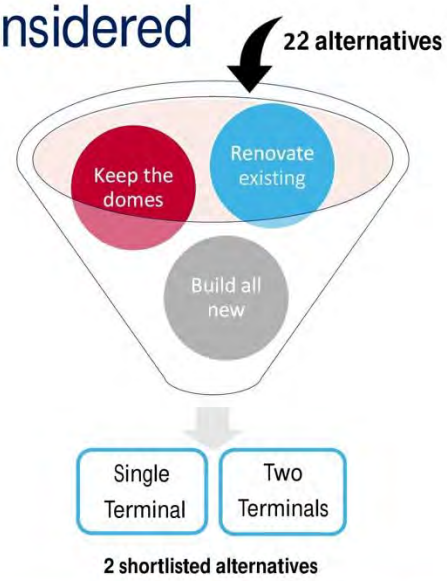
Terminal Roadway and Parking Needs: Enhance Customer Experience

- Short sightlines and decision distances
- Inadequate number of arrival curb lanes

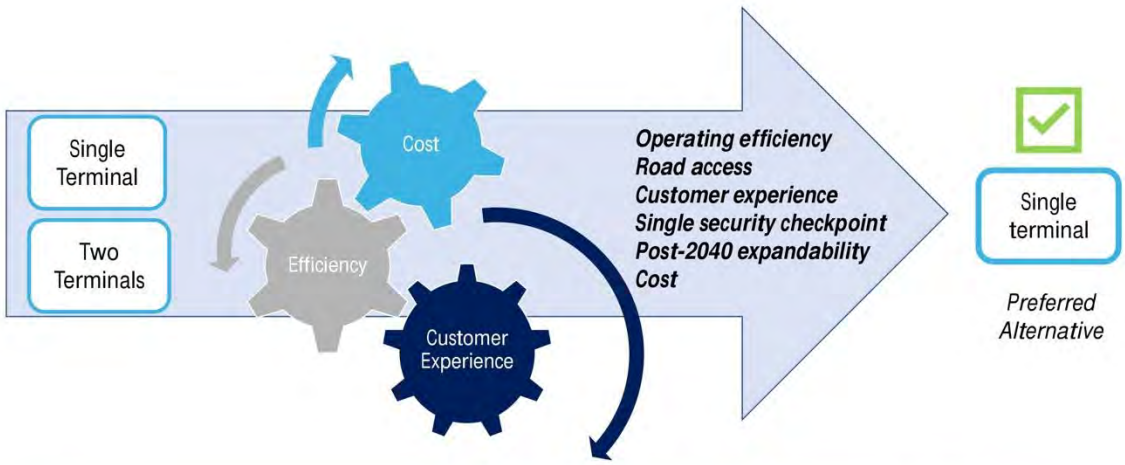
Terminal Alternatives

Terminal Alternatives Considered

- Terminal sites across entire airport property considered; due to cost and landside access, only the existing site is feasible
- 22 terminal alternatives considered at existing site, including variations of:
  - Renovate existing terminals
  - Retain domes
  - Airline terminal swap
  - Reopen Concourse D
  - Two new terminals
  - Single terminal



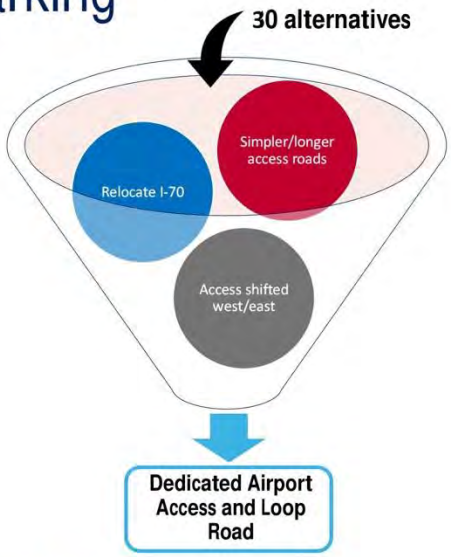
Terminal Alternatives Evaluation



Terminal Roadway & Parking Alternatives

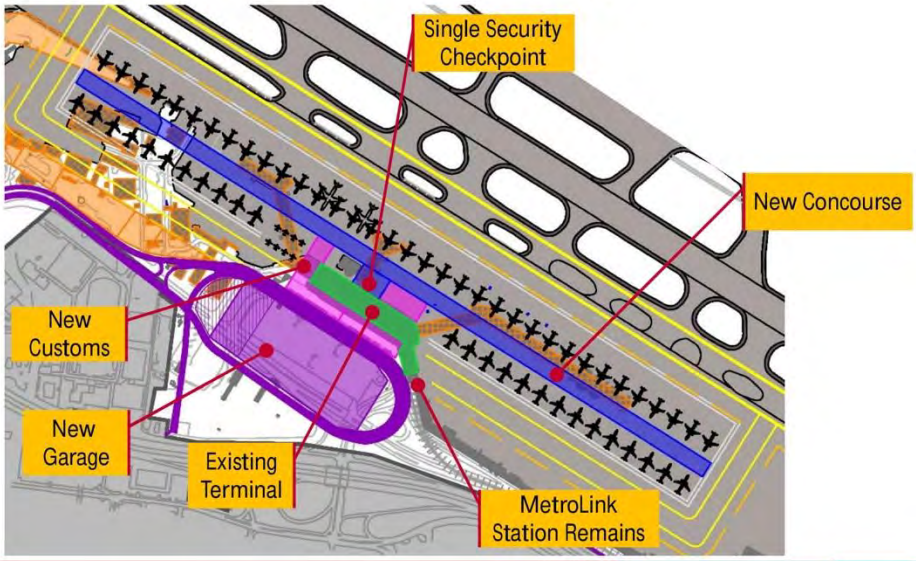
Terminal Roadways and Parking Alternatives Considered

- ~~Relocate I-70~~
- ~~Convert LIB and Natural Bridge Road to one-way~~
- One main airport access road
- Access shifted west/east
- Simpler/longer access to terminal



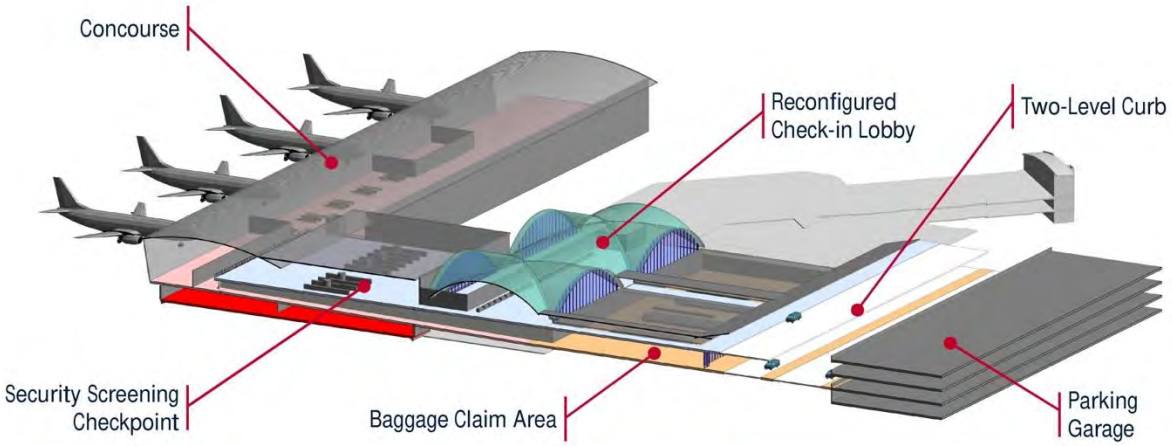
Proposed Terminal Program

Consolidated Terminal Program



Consolidated Terminal Program

Terminal Detail



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West Airfield Program

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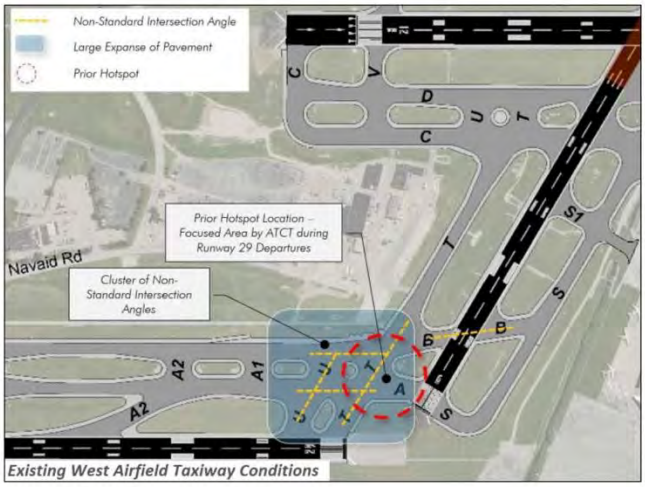
West Airfield Program Needs

West Airfield Needs: Airfield Maintenance Facility

- Facilities flood, causing costly and extensive equipment damage
- Larger, modern equipment does not fit into existing buildings
- Accelerated deterioration of equipment due to outdoor storage and maintenance
- Site and facilities layout and condition is poor due to age (1960s and 1970s)

West Airfield Needs: Taxiways

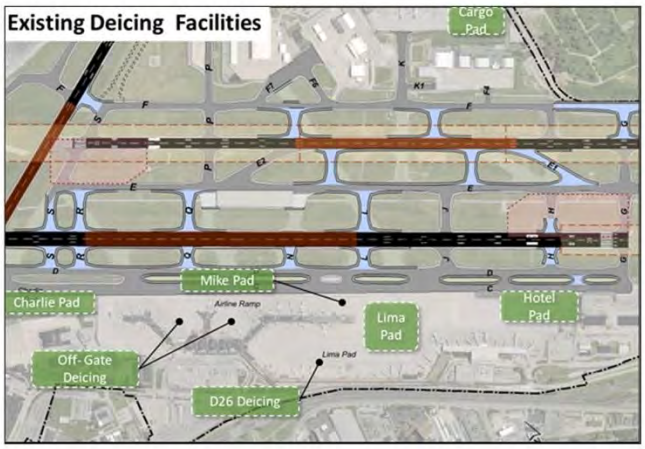
Taxiways do not comply with current FAA geometry standards



Existing West Airfield Taxiway Conditions

West Airfield Needs: Deicing

- Deicing facilities spread out and not close to southeast flow departure runway ends
- Current facilities nearing capacity (aircraft number and size during peak periods)
- Aging collection facilities lead to poor capture of spent deicing fluid



West Airfield Program Alternatives

West Airfield Alternatives: Airfield Maintenance Facility

Prior studies: recommended western shift

Site 1 (18 acres): West of existing Airfield Maintenance campus - ***Preferred site identified in prior study***

- Pros:
  - Best airfield access
  - Centralized location

PREFERRED SITE

- Cons:
  - Potential higher and better use of space

Site 2 (18 acres): Relocate[illegible] of Rwy 12R RPZ

- Pros:
  - [illegible] for expansion
- Cons:
  - Farthest from airfield compared to other sites

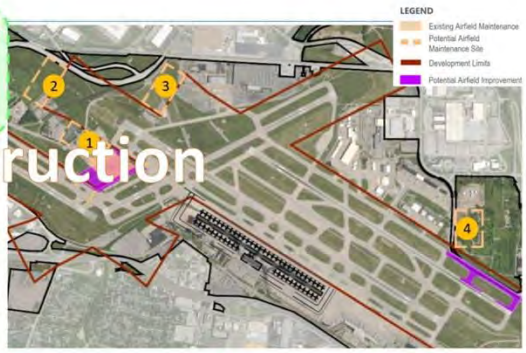
Site 3 (18 acres): Relocate west of Rwy 12L RPZ

- Pros:
  - Proximity to airfield
- Cons:
  - Potential long-term expansion site for cargo development in Northern Tract

Site 4 (18 acres): Relocate south of fuel farm

- Pros:
  - Proximity to airfield
- Cons:
  - Limits other uses/expansion
  - Potential higher and better use of space

Under Construction



West Airfield Alternatives

Siting Criteria

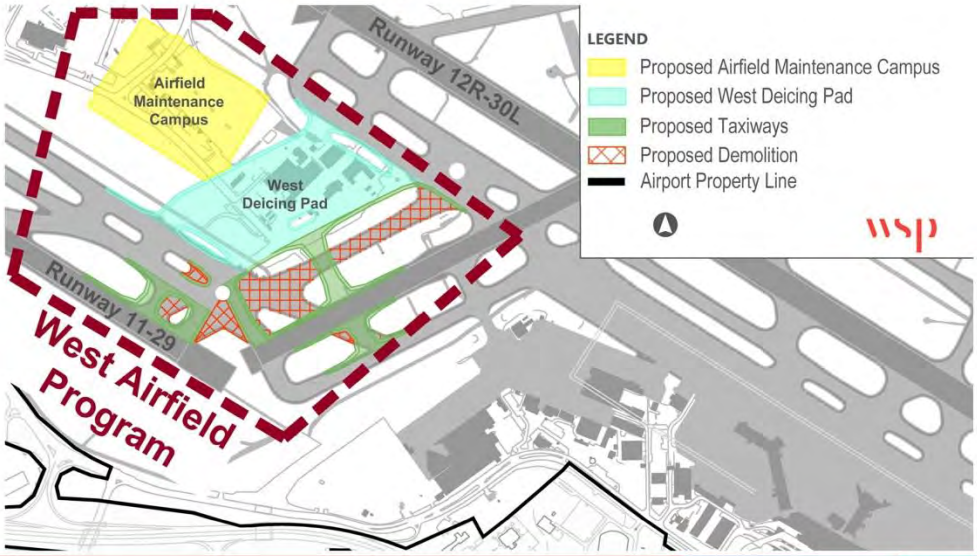
- AFM:
  - Location central to airfield pavement complex
  - Prior study recommended westward shift of site
- Taxiways configuration: dictated by FAA Airport Design Standards
- Deicing Pad:
  - Consolidated pad,
  - Close to runways 12R and 12L in southeast flow
  - Close to runway 29 in west flow

FAA Safety Review expert panel confirmed proposed solution

- FAA control tower, FAA Airports Division, STL operations
- Meeting participation from Airlines & GA/Corporate Ten AS50

Proposed West Airfield Program

West Airfield Program



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Impact Categories and Existing Resources

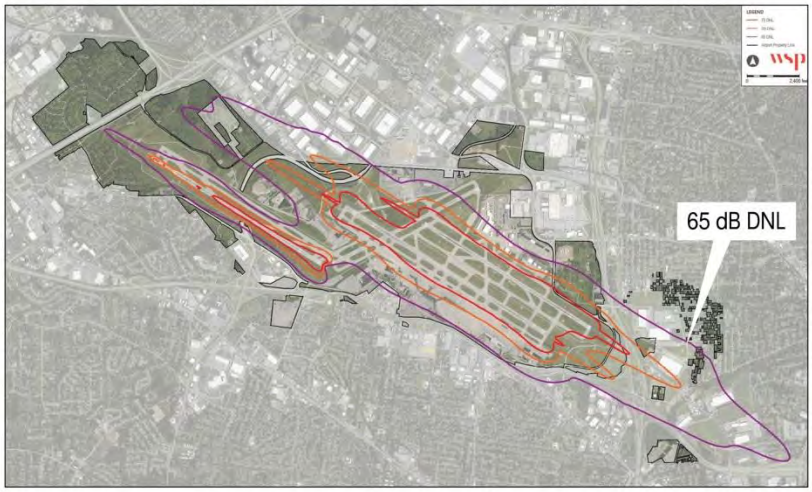
NEPA Agency Scoping – December 15, 2022 34

FAA Impact Categories

- Air quality
- Biological resources (fish, wildlife and plants)
- Climate
- DOT Section 4(f) resources: parks, recreational areas, refuges, historic sites
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archaeological and cultural resource
- Land use compatibility
- Natural resources and energy supply
- Noise and noise-compatible land use
- Socioeconomics, environmental justice and children's environmental health and safety risks
- Visual effects (including light)
- Water resources (wetlands, floodplains, surface waters, and groundwater)

* Farmland and coastal resources not present at STL

Noise Impacts: 2015 Noise Exposure Map



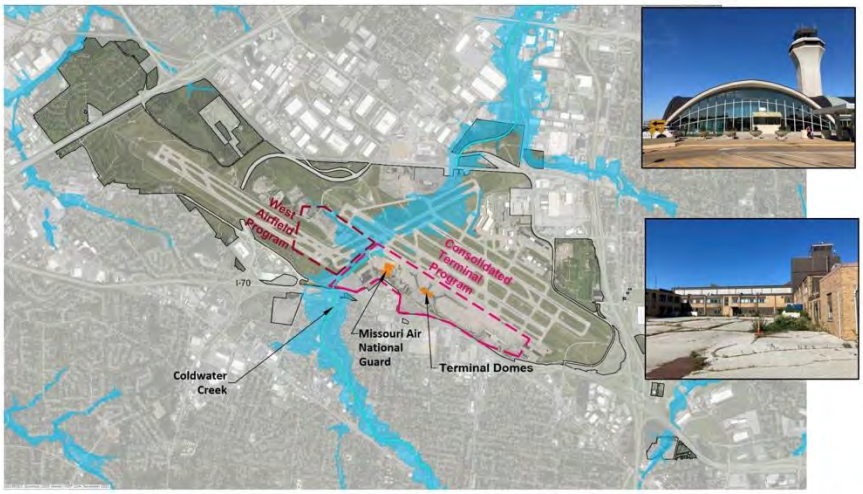
- Significant Impact
  - Newly in 65 dB DNL contour
  - 1.5 dB change in 65 dB DNL contour
- Aircraft are getting quieter

Known Natural And Cultural Resources

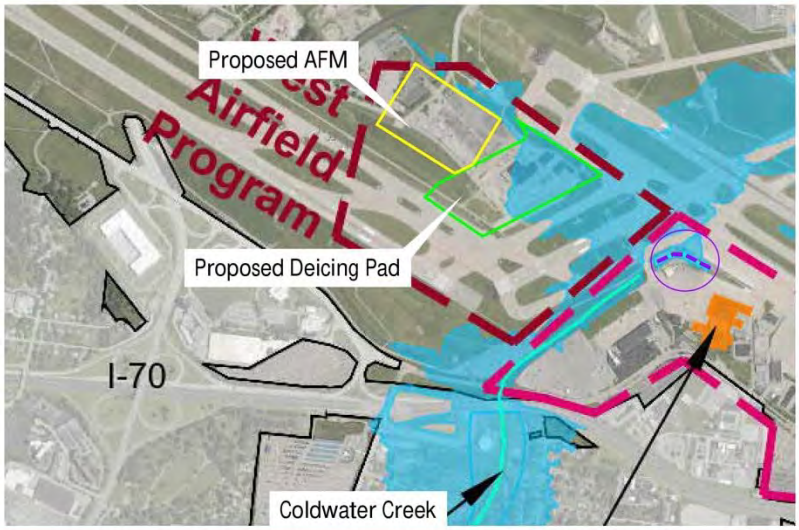
- 100-year Floodplain (preliminary)
- Coldwater Creek

National Register Eligible:

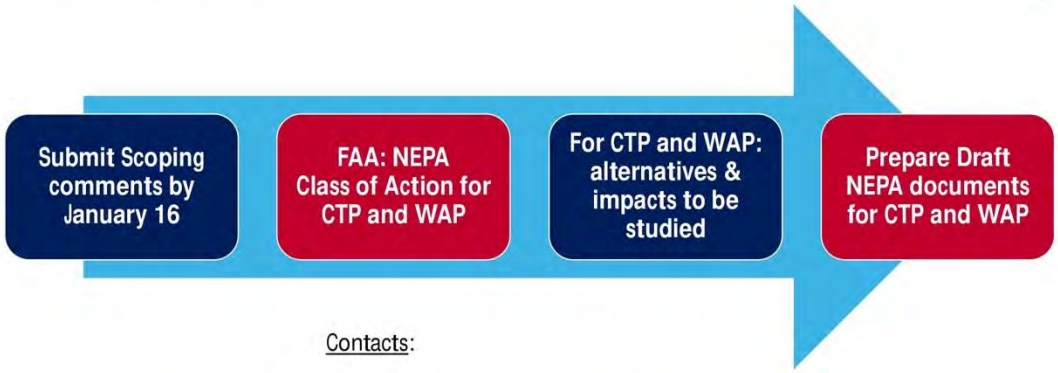
- Terminal Domes
- MO Air National Guard Buildings



Water Resources



Next Steps in the NEPA Process



Contacts:

Jay Christians
jachristians@flystl.com
314-551-5008

Scott Tener, FAA Environmental Specialist
scott.tener@faa.gov
816-329-2639

Thank You

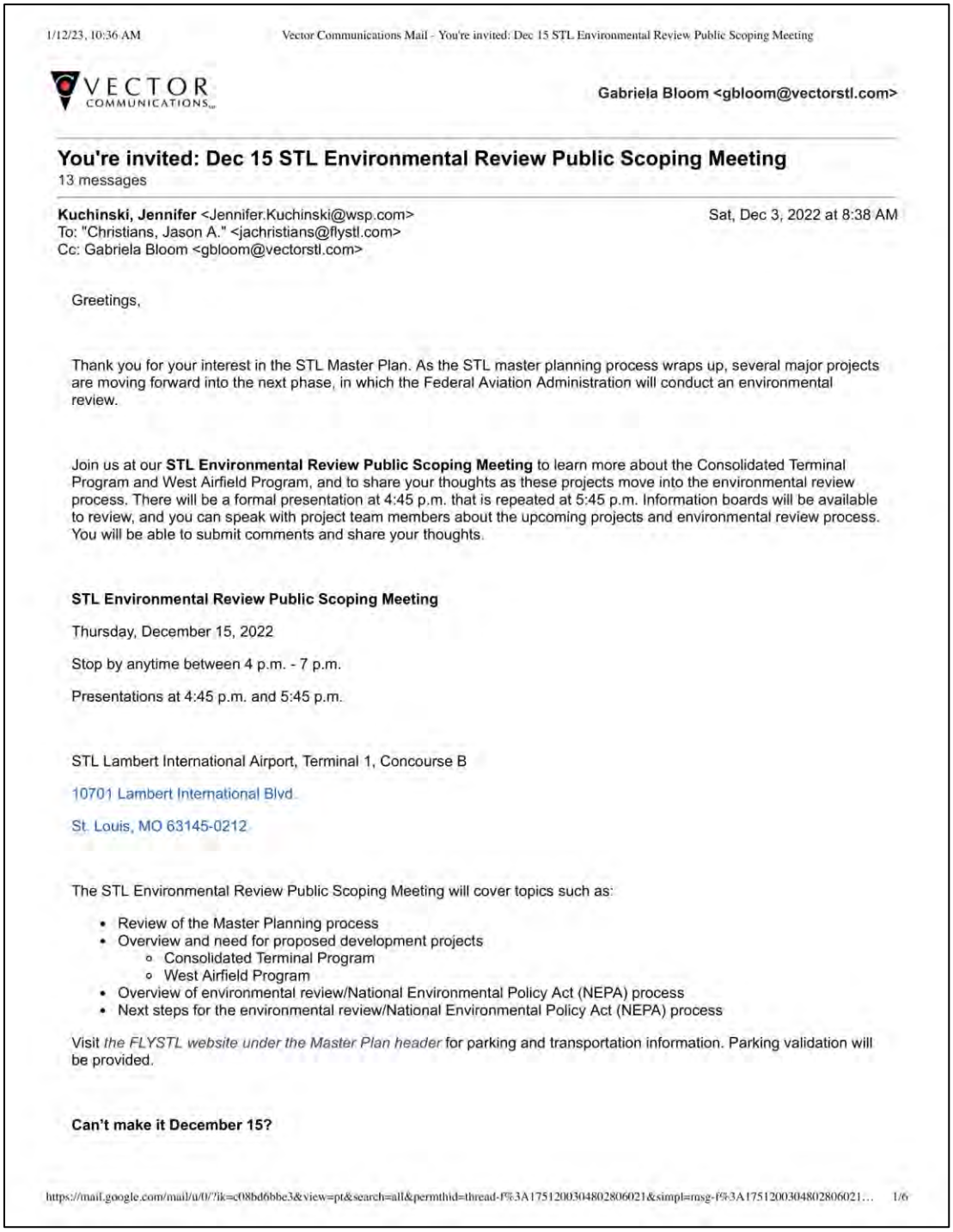
Discussion

Scoping Comments:

Jay Christians
jachristians@flystl.com
314-551-5008

Scott Tener, FAA Environmental Specialist
scott.tener@faa.gov
816-329-2639

APPENDIX C: PUBLIC SCOPING MEETING INVITATION EMAILS TO PROJECT STAKEHOLDERS AND SUBSCRIBERS



1/12/23, 10:36 AM Vector Communications Mail - You're invited: Dec 15 STL Environmental Review Public Scoping Meeting

VECTOR COMMUNICATIONS

Gabriela Bloom <gbloom@vectorstl.com>

You're invited: Dec 15 STL Environmental Review Public Scoping Meeting
13 messages

Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com> Sat, Dec 3, 2022 at 8:38 AM
To: "Christians, Jason A." <jachristians@flystl.com>
Cc: Gabriela Bloom <gbloom@vectorstl.com>

Greetings,

Thank you for your interest in the STL Master Plan. As the STL master planning process wraps up, several major projects are moving forward into the next phase, in which the Federal Aviation Administration will conduct an environmental review.

Join us at our **STL Environmental Review Public Scoping Meeting** to learn more about the Consolidated Terminal Program and West Airfield Program, and to share your thoughts as these projects move into the environmental review process. There will be a formal presentation at 4:45 p.m. that is repeated at 5:45 p.m. Information boards will be available to review, and you can speak with project team members about the upcoming projects and environmental review process. You will be able to submit comments and share your thoughts.

STL Environmental Review Public Scoping Meeting

Thursday, December 15, 2022

Stop by anytime between 4 p.m. - 7 p.m.

Presentations at 4:45 p.m. and 5:45 p.m.

STL Lambert International Airport, Terminal 1, Concourse B

10701 Lambert International Blvd.

St. Louis, MO 63145-0212

The STL Environmental Review Public Scoping Meeting will cover topics such as:

- Review of the Master Planning process
- Overview and need for proposed development projects
  - Consolidated Terminal Program
  - West Airfield Program
- Overview of environmental review/National Environmental Policy Act (NEPA) process
- Next steps for the environmental review/National Environmental Policy Act (NEPA) process

Visit *the FLYSTL website under the Master Plan header* for parking and transportation information. Parking validation will be provided.

Can't make it December 15?

https://mail.google.com/mail/u/0/?ik=c08bd6bbe3&view=pt&search=all&permthid=thread-f%3A1751200304802806021&simpl=msg-f%3A1751200304802806021… 1/6

Visit *the FLYSTL website under the Master Plan header* to request a paper packet, submit comments and watch the formal presentation recording. *Recording will be available by Monday, December 19.*

On behalf of STL, we look forward to seeing you on December 15.

Thank you,

Jay Christians, PE

STL Airport Assistant Director - Engineering

Jennifer Kuchinski, PE

Vice President, Aviation Services

Sr. Project Manager

Cell: 314-698-0974

Normal Working Hours M-F 7:30-4:30

wsp.com

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VECTOR COMMUNICATIONS

Gabriela Bloom <gbloom@vectorstl.com>

Event reminder: Dec 15 STL Environmental Review Public Scoping Meeting

10 messages

Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com> Tue, Dec 13, 2022 at 10:28 AM
To: "Christians, Jason A." <jachristians@flystl.com>
Cc: Gabriela Bloom <gbloom@vectorstl.com>

Greetings,

We look forward to seeing you at the **December 15 STL Environmental Review Public Scoping Meeting** on Thursday! You can stop by any time between 4:00 p.m. and 7:00 p.m. There will be a formal presentation at 4:45 p.m. that is repeated at 5:45 p.m. Information boards will be available to review and you can speak with project team members about the upcoming projects and environmental review process. You will be able to submit comments and share your thoughts.

The STL Environmental Review Public Scoping Meeting will cover topics such as:

- Review of the Master Planning process
- Overview and need for proposed development projects
  - Consolidated Terminal Program
  - West Airfield Program
- Overview of environmental review/National Environmental Policy Act (NEPA) process
- Next steps for the environmental review/National Environmental Policy Act (NEPA) process

Parking validation will be provided. Visit the FLYSTL website, Environmental Review Public Scoping Meeting page, for parking and transportation information.

STL Environmental Review Public Scoping Meeting

Thursday, December 15, 2022

Stop by anytime between 4 p.m. – 7 p.m.

Presentations at 4:45 p.m. and 5:45 p.m.

STL Lambert International Airport, Terminal 1, Concourse B

10701 Lambert International Blvd.

St. Louis, MO 63145-0212

Can't make it December 15?

Visit the FLYSTL website, Environmental Review Public Scoping Meeting page, to request a paper packet, submit comments and watch the formal presentation recording. *Recording will be available by Monday, December 19.*

Thank you,

Jay Christians

STL Airport Assistant Director - Engineering

Jennifer Kuchinski, PE

Vice President, Aviation Services

Sr. Project Manager

Cell: 314-698-0974

Normal Working Hours M-F 7:30-4:30

wsp.com

1/12/23, 10:35 AM Vector Communications Mail - STL Environmental Review Public Scoping Meeting - Comment Opportunities

VECTOR COMMUNICATIONS

Gabriela Bloom <gbloom@vectorstl.com>

STL Environmental Review Public Scoping Meeting - Comment Opportunities

7 messages

Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com> Thu, Dec 22, 2022 at 10:12 AM
To: "Christians, Jason A." <jachristians@flystl.com>
Cc: Gabriela Bloom <gbloom@vectorstl.com>

Greetings,

Thank you to everyone for attending the STL Environmental Review Public Scoping Meeting on December 15. If you were unable to join us at the STL Environmental Review Public Scoping Meeting, a recording of the presentation is now available at the FLYSTL website,
Environmental Review Public Scoping Meeting page.

You are invited to submit comments about the Environmental Review Scoping information.

To submit a comment, please complete the comment form found at the Environmental Review Public Scoping Meeting page under *Share Your Feedback*. Comments can be submitted until **Monday, January 16, 2023.**

Thank you & happy holidays,

Jay Christians

STL Airport Assistant Director - Engineering

Jennifer Kuchinski, PE

Vice President, Aviation Services

Sr. Project Manager

Cell: 314-698-0974

https://mail.google.com/mail/u/0/?ik=c08bd6bbe3&view=pt&search=all&permthid=thread-f%3A1752927554173624385&simpl=msg-f%3A1752927554173624385... 1/3

APPENDIX D: PUBLIC SCOPING MEETING SOCIAL MEDIA POSTS

Post 1: December 1, 3, 5, 9, 2022

STL is holding an Environmental Review Public Scoping Meeting on Thursday, December 15, 2022. Join us in T1's B Concourse. You can stop by anytime between 4 to 7 p.m., as presentations will be held at 4:45 and 5:45 p.m.

Post 2: December 11, 12, 13, 14, 2022

STL is holding an Environmental Review Public Scoping Meeting this Thursday. Join us in T1's B Concourse. You can stop by anytime between 4 to 7 p.m., as presentations will be held at 4:45 and 5:45 p.m.

Post 3: December 15, 2022

Tonight, STL is holding an Environmental Review Public Scoping Meeting. Join us in T1's B Concourse. You can stop by anytime between 4 to 7 p.m., as presentations will be held at 4:45 and 5:45 p.m.

APPENDIX E: PUBLIC SCOPING MEETING MEDIA ADVISORY

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

MEDIA RELEASE

For more information, contact:
Roger Lotz 314-426-8125 or (m) 314-795-2235
RPLotz@flystl.com

Media Advisory

STL to host Environmental Review Public Scoping Meeting for Proposed Projects

What: A public meeting featuring an overview of and seeking input on the environmental review process for two proposed projects that resulted from the St. Louis Lambert International Airport's (STL) Master Plan, including a single terminal option.

When: Thursday, December 15, 2022 from 4 p.m. to 7 p.m.
(*Identical presentations will take place at 4:45 p.m. and 5:45 p.m.*)

Where: STL, Terminal 1 (Lower Level), Concourse B, 10701 Lambert International Blvd, St. Louis, MO 63145
(*Parking will be validated for media and attendees*)

Information boards will also be on display with project team members available to discuss and answer questions. All attendees are encouraged to provide feedback on the environmental review process via comment forms available on site and on the FLYSTL website.

Please note that you will *not* need to go through a TSA Security Checkpoint to enter the public meeting. American Sign Language (ASL) interpretation will be available for the formal presentations.

Additional information about this event can be found at http://www.bit.ly/STL-public-scoping-meeting.

###

About STL:
St. Louis Lambert International Airport (STL) is the primary commercial airport for the St. Louis metro area and parts of eastern Missouri and southern Illinois serving 15.6 million passengers annually. STL is an Enterprise Fund Department of the City of St. Louis. It is wholly supported by airport user charges. No general fund revenues are used for the operation, administration, promotion or maintenance of airport facilities. For more information, visit www.flystl.com. Follow us on Facebook: @flySTL, Twitter: @flySTL and Instagram: @flySTL.

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APPENDIX F: PUBLIC SCOPING MEETING PRESS RELEASE

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

MEDIA RELEASE

For more information, contact:
Roger Lotz 314-426-8125 or (m) 314-795-2235
RPLotz@flystl.com

STL Hosts Public Scoping Meeting on Environmental Review Process for Proposed Projects

Consolidated Terminal Plan (CTP) and West Airfield Program (WAP) move forward from planning into environmental phase

ST. LOUIS, MO (December 15, 2022): Today, St. Louis Lambert International Airport (STL) is hosting a public meeting at the airport as part of the STL Master Plan implementation process.

The STL Master Plan is a roadmap for potential airport development and serves as a critical planning tool to ensure STL is in the best possible position to serve the needs of its passengers. The Federal Aviation Administration (FAA) requires updates to the plan every eight to ten years, and the document enable STL to continue receiving federal funding.

As the STL Master Plan wraps up, two proposed sets of projects – the Consolidated Terminal Program (CTP) and West Airfield Program (WAP) – are moving forward into the next phase. The CTP will combine the existing passenger terminal operations into a modern single terminal, improving the passenger experience. The single terminal would provide adequate space and facilities to accommodate current and expected passenger demand while ensuring continued efficient operations at STL.

The West Airfield Program (WAP) serves to enhance safety and improve airfield maintenance operations by providing sufficient space for indoor maintenance, repair, and storage of snow removal and maintenance equipment. The WAP would also improve the efficiency of the aircraft deicing process.

Because the CTP and WAP would be partially funded by federal grants, the FAA is responsible for conducting an environmental review in accordance with the National Environmental Policy Act (NEPA). **The purpose of today's public scoping meeting is to share information with the public about the environmental review process for CTP and WAP while gathering public input about which environmental impacts and alternatives should be studied.**

Some of the environmental impacts that may be studied as part of NEPA are noise; socioeconomic, environmental justice and children's environmental health and safety risks; air quality; biological resources (fish, wildlife, plants); climate; parks and recreational resources; hazardous materials, solid waste, pollution prevention; historical, architectural, archaeological, cultural resources; natural resources and energy supply; visual effects; and water resources.

During the NEPA scoping process, the public can learn more about the proposed projects and can comment on which environmental impacts should be studied and the alternatives to the proposed

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projects. The FAA will review and consider all public comments before the official NEPA review begins. Public comment forms will be available on site at the 12/15/22 public scoping meeting and online starting on 12/15/22 by clicking www.bit.ly/STL-public-scoping-meeting. All comments must be received by the close of the scoping period on 1/16/23.

The official NEPA process will begin once the scoping period is complete, likely in early 2023. It will take one to two years to complete. A schedule for the CTP and WTP NEPA processes will be on the STL website in early March.

Once the FAA completes and documents the NEPA analysis, a Draft NEPA document will be posted on the STL website, and a 30-day comment period and public information meeting will be held. The document will be considered a "Draft" because FAA will review and consider public comments on the document before it is finalized. Check the STL website in early March to find out the time-frame for when this comment period will occur.

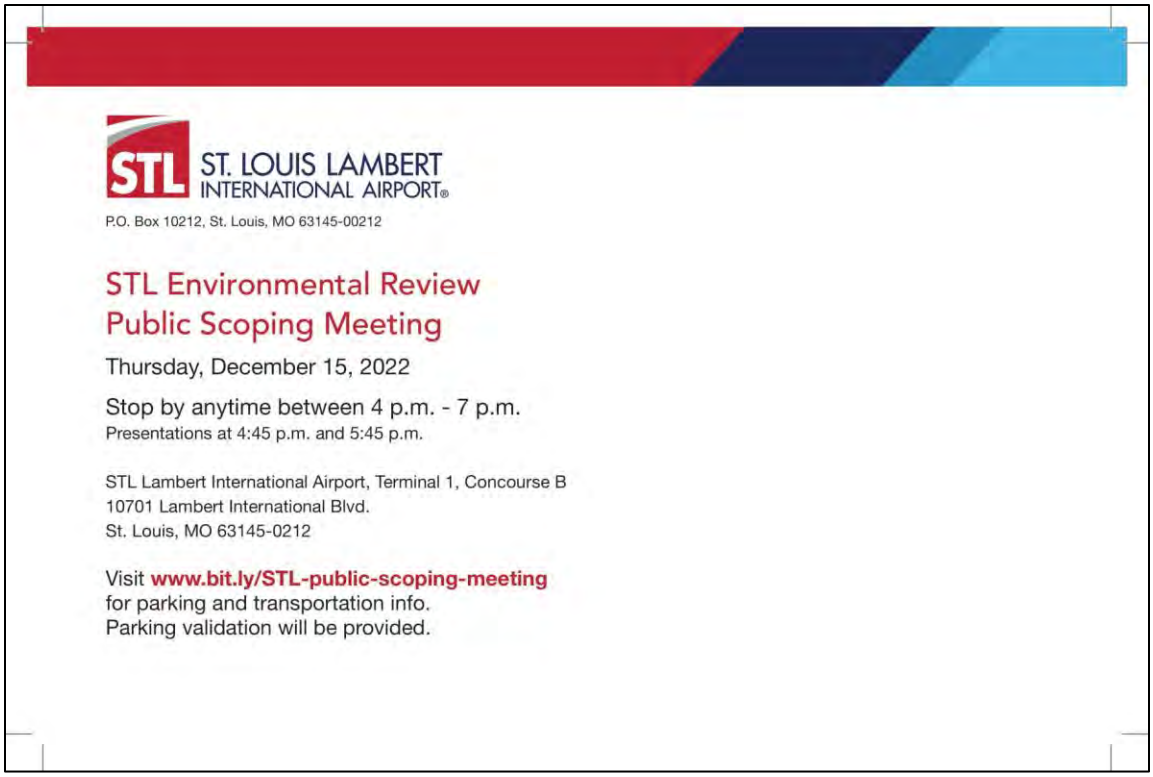
After the environmental review/NEPA process is complete and the FAA's NEPA document is final, approved projects may then advance to the architectural and engineering design phase, followed by construction.

Similar to the Master Plan process, no general City or local tax dollars will be used for the environmental review process. The airport funds its own operation entirely with aviation-generated funds and the same is true for ongoing and future capital improvement projects.

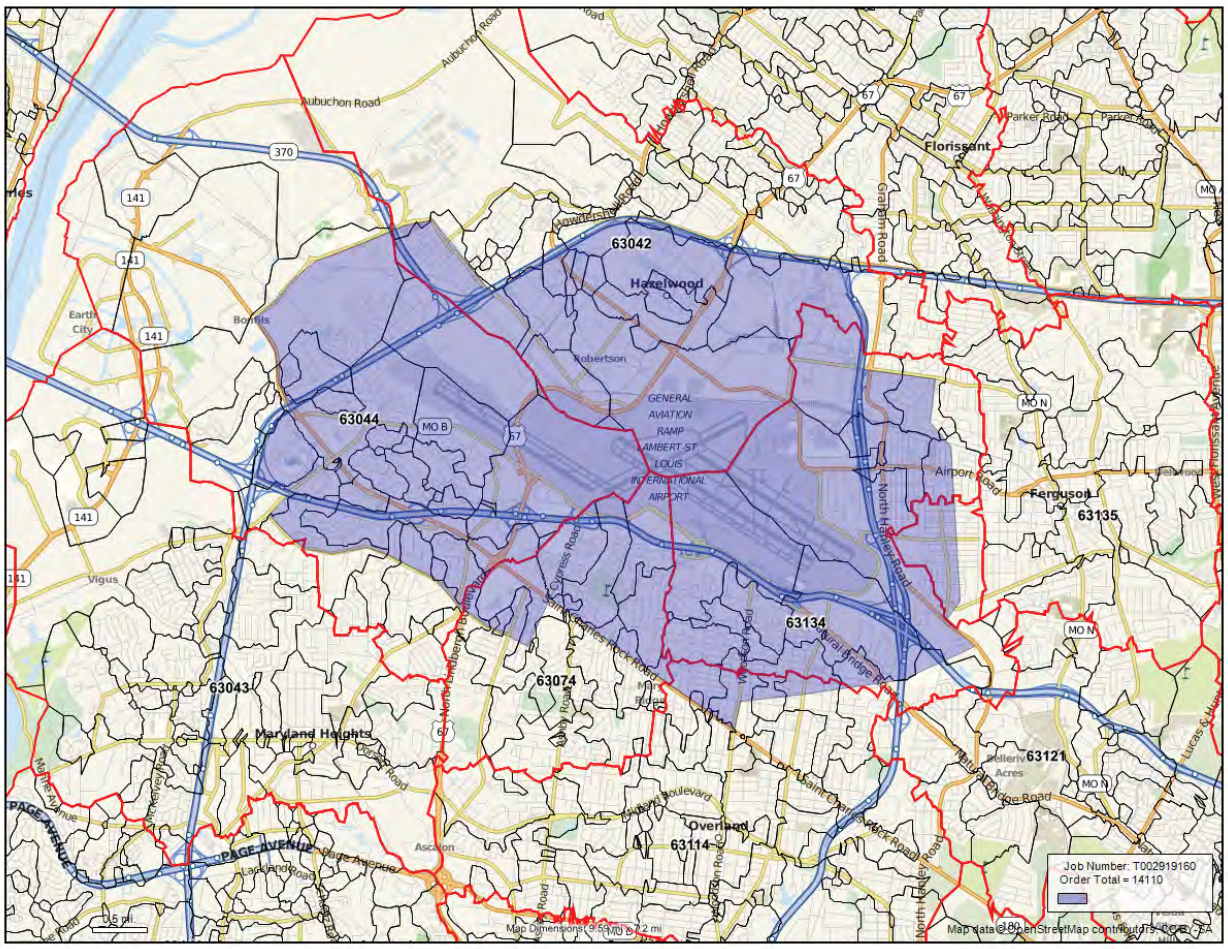
###

About STL:
St. Louis Lambert International Airport (STL) is the primary commercial airport for the St. Louis metro area and parts of eastern Missouri and southern Illinois serving 15.6 million passengers annually. STL is an Enterprise Fund Department of the City of St. Louis. It is wholly supported by airport user charges. No general fund revenues are used for the operation, administration, promotion or maintenance of airport facilities. For more information, visit www.flystl.com. Follow us on Facebook: @flySTL, Twitter: @flySTL and Instagram: @flySTL.

APPENDIX G: PUBLIC SCOPING MEETING POSTCARD



APPENDIX H: PUBLIC SCOPING MEETING POSTCARD DELIVERY MAP



APPENDIX I: PUBLIC SCOPING MEETING STATION GUIDE

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

STL Environmental Review Public Scoping Meeting

December 15, 2022

Welcome!

Thank you for attending STL's Environmental Review Public Scoping Meeting. As the STL master planning process wraps up, several major projects are moving forward into the next phase, in which the Federal Aviation Administration will conduct an environmental review. This guide provides an overview of the information presented at each station. Subject matter experts from the airport and consultant team members are at each station to answer your questions.

Presentation: A formal presentation will take place at 4:45 p.m. and repeated at 5:45 p.m. Hear an overview of the two proposed sets of projects, learn about the environmental review process and how you can provide input, and participate in a Q&A with project team members. *ASL interpretation will be provided at both presentations. A recording of this presentation will be available on the project website, listed below.*

Station #1 – Proposed Projects: At this station, learn about the two sets of the proposed projects that came out of the STL Master Planning process, the Consolidated Terminal Program (CTP) and the West Airfield Program (WAP).

Station #2 – Need for the Proposed Projects: Learn about the existing and forecast traffic and shortcomings that STL is planning to address with the proposed projects.

Station #3 – Alternatives Considered: At this station, you can learn about the alternatives considered during the Master Planning process to address existing and forecast traffic and shortcomings.

Station #4 – National Environmental Policy Act: This station introduces the National Environmental Policy Act (NEPA) process, what it entails, the responsibilities of key organizations, and opportunities for you to participate in this process.

Station #5 – Environmental Resources to be Assessed: Learn about the many different types of potential impacts to be analyzed during the NEPA process.

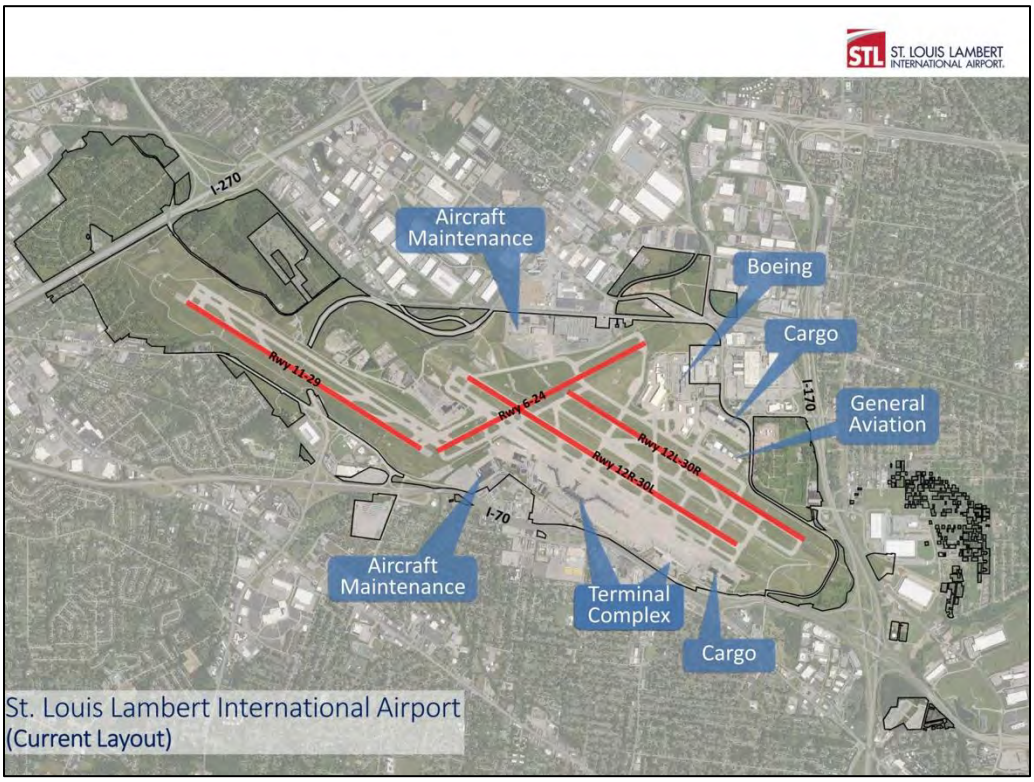
Station #6 – Public Comment: Submit an online, paper, or verbal comment. Scan the QR code to complete the online comment form on your phone. Also, learn about the stakeholder engagement that has been taking place since the beginning of the Master Plan in 2020.

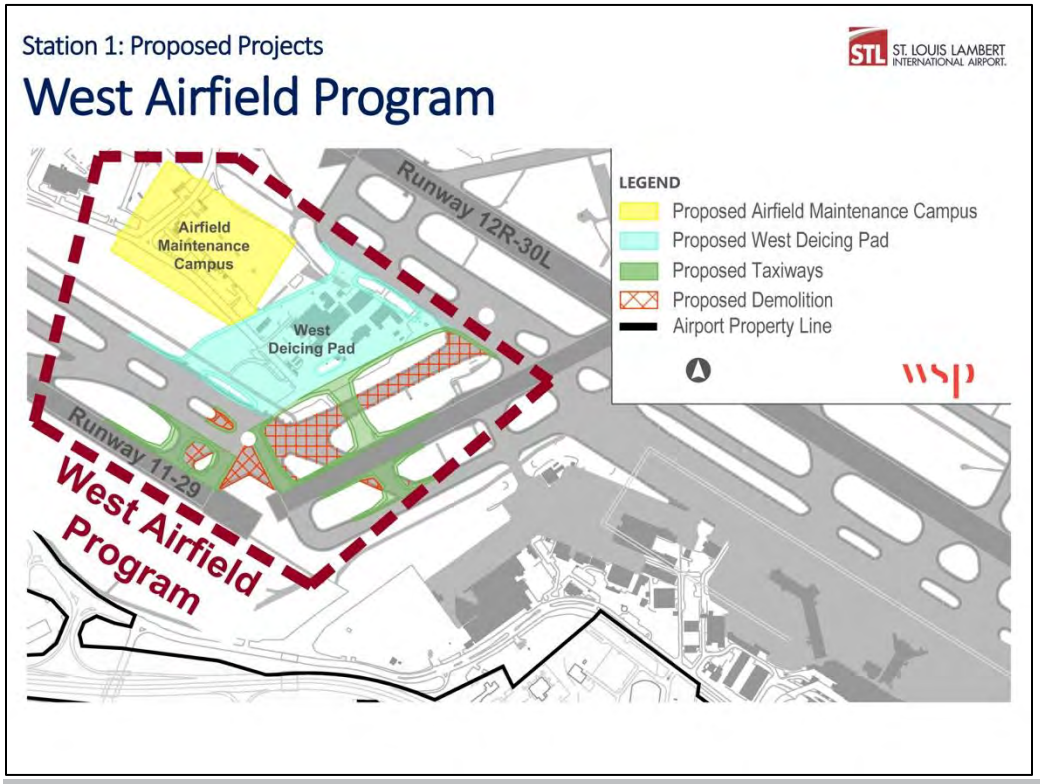
Pick up a parking validation ticket at the check-in table. Parking validation is available for the Terminal 1 Garage and Lot A. Shuttles to & from Lot A are available every 10 minutes from the SuperPark shuttle.

Scan the QR code to subscribe for project updates.

www.bit.ly/STL-public-scoping-meeting

APPENDIX J: PUBLIC SCOPING MEETING DISPLAY BOARDS



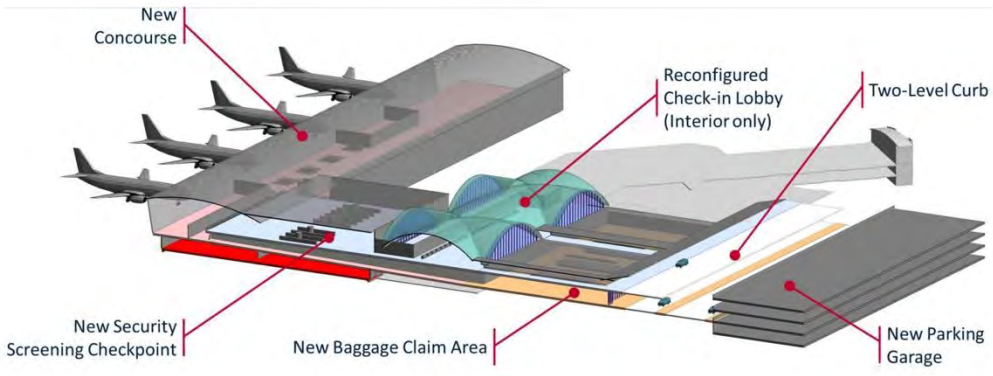


Station 1: Proposed Projects

Consolidated Terminal Program

Station 1: Proposed Projects

Consolidated Terminal Program Details



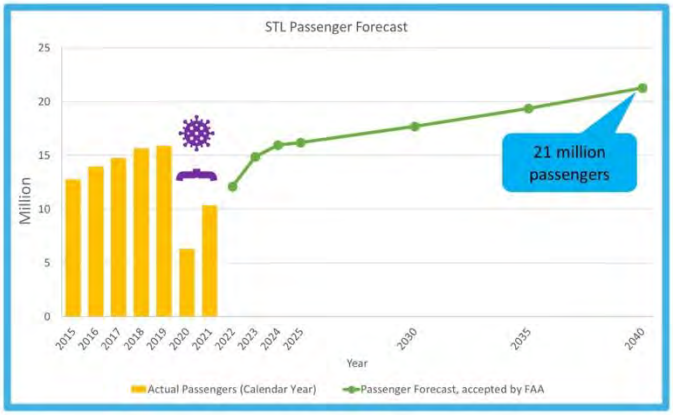
Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Why Plan for Improvements?

Passenger Forecast:

- Strong recovery from COVID
- Growth to 21 million passengers by 2040
- Approved by FAA ☑



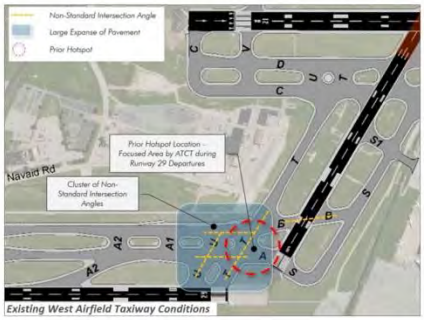
Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

West Airfield Program

- Facilities flooding
- Housing of maintenance equipment
- Deicing facilities spread out and nearing capacity
- Taxiways do not comply with current FAA geometry standards

July 2022 Flooding at the Airfield Maintenance Facility



Existing West Airfield Taxiway Conditions

Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Terminal Needs: Enhance Customer Experience

Aging and Obsolete Facilities

- Undersized passenger areas (hold rooms, restrooms, corridors)
- Lack of functionality (security checkpoints)
- Insufficient concessions (revenues & customer choices)
- Reliability, resiliency, maintenance costs

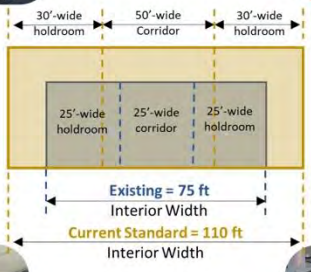
Growth in Passengers

- Need for up to 62 aircraft gates
- Insufficient terminal and concourse space
- Need to accommodate modern, larger aircraft
- Customs cannot be accessed by all carriers

Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

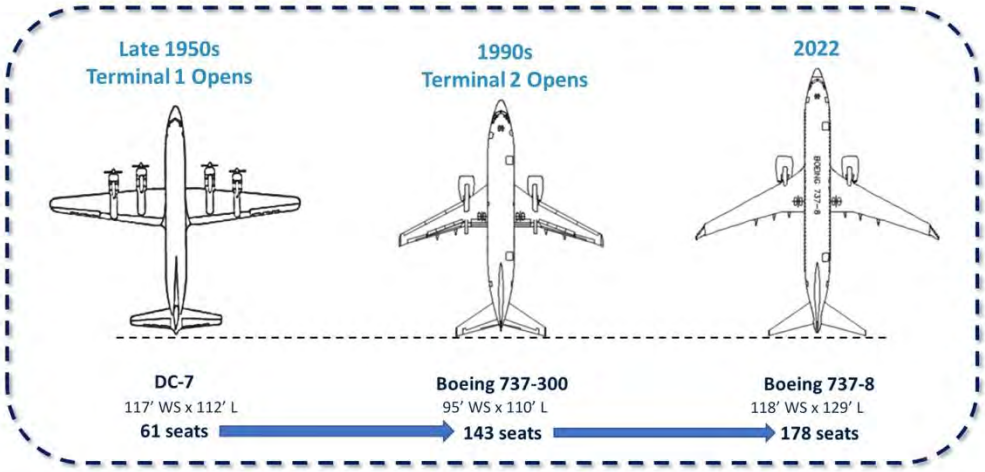
Terminal Needs: Enhance Customer Experience



Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Terminal Needs: Industry Changes



Station 2: Need for Proposed Projects

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Terminal Roadway and Parking Needs: Enhance Customer Experience

On-airport Roadways

- Insufficient distance for decision making
- Inadequate number of curb lanes

Parking Facilities

- Shortage of garage parking (revenues)
- Terminal 1 Garage inefficient & reaching end of useful life

Station 2: Need for Proposed Projects

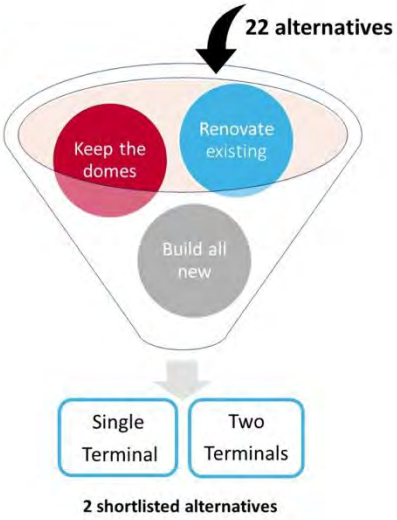
Terminal Roadway and Parking Needs: Enhance Customer Experience

- Short sightlines and decision distances
- Inadequate number of arrival curb lanes

Station 3: Alternatives Considered

Terminal Alternatives

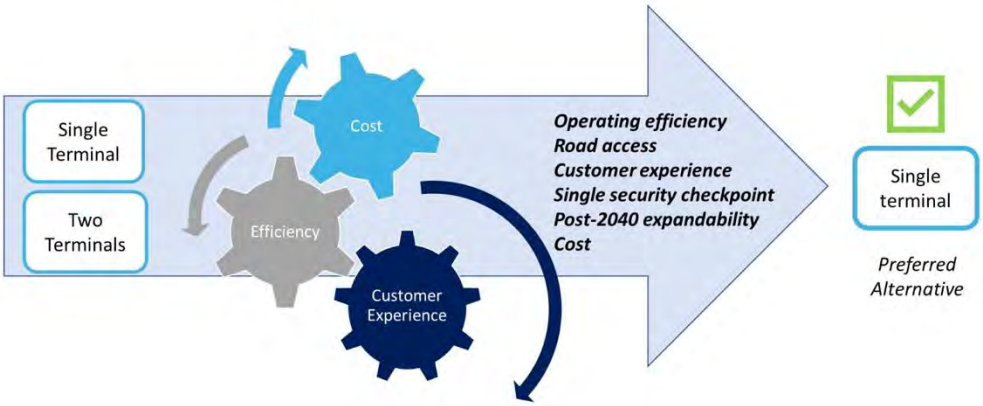
- Terminal sites across entire airport property considered; due to cost and landside access, only the existing site is feasible
- 22 terminal alternatives considered at existing site, including variations of:
  - Renovate existing terminals
  - Retain domes
  - Airline terminal swap
  - Reopen Concourse D
  - Two new terminals
  - Single terminal



Station 3: Alternatives Considered

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Terminal Alternatives Evaluation



Station 3: Alternatives Considered

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Terminal Roadway and Parking Alternatives

- ~~Relocate I-70~~
- ~~Convert LIB and Natural Bridge Road to one-way~~
- One main airport access road
- Access shifted west/east
- Simpler/longer access to terminal

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

What is the National Environmental Policy Act (NEPA)?

Federal law that requires federal agencies to consider environmental, social and economic impacts of projects before making decisions about them:

FAA approval required for changes that affect aviation activity and safety

STL will seek FAA grants for CTP & WAP

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

The Purposes of NEPA

- Ensure effects to the natural and human environment are considered by federal decision makers (FAA)
- Share information with and hear from the public (you) before making decisions
- Identify opportunities to avoid or minimize impacts

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

NEPA Process

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

What is the NEPA Document?

- Documents Purpose and Need (justification for project)
- Considers all reasonable alternatives to STL proposal
- Analyzes environmental, social and economic impacts
- Identifies ways to mitigate significant impacts

Station 4: National Environmental Policy Act (NEPA)

NEPA Roles and Responsibilities

Federal Aviation Administration (FAA)

- Responsible for NEPA compliance and decisions:
  - Is there an aviation need for the project?
  - Have all reasonable alternatives been considered?
  - What type of analysis is required?
  - Is mitigation required for significant impacts?
- Oversees and approves analysis and documentation
- Seeks input from public and agencies with relevant expertise

St. Louis Lambert International Airport (STL)

- Proposes projects for FAA consideration
- Provides planning, design and other information needed for evaluation
- Manages consulting team that provides technical and logistical assistance to FAA in conducting outreach, analyzing impacts, and documentation

Station 4: National Environmental Policy Act (NEPA)

NEPA Roles and Responsibilities

Local Officials, Political Leaders, and the Public (You)

- In Scoping, comment on:
  - Impacts you think the FAA should study
  - Alternatives to achieve the purpose and need that have not been studied

  FAA will study the issues raised or provide the reasons for not doing so.
- In the Draft NEPA Document, comment on:
  - Accuracy of information and assumptions
  - Adequacy of methodology
  - New information relevant to the analysis

  FAA will respond to substantive comments on the draft document.

Federal, State, and Local Agencies with Relevant Expertise and Jurisdiction

- Identify potentially-affected resources under their jurisdiction that may be affected
- Raise impacts and alternatives FAA should study
- Work with FAA and STL to resolve impacts and concerns
- Identify permit requirements

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

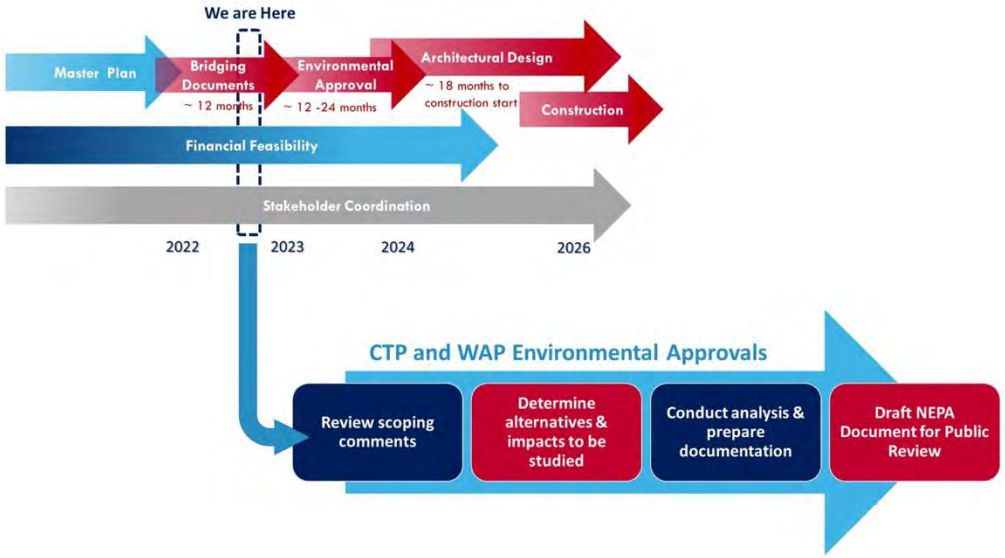
Why a Separate NEPA Process for the Consolidated Terminal Program (CTP) and the West Airfield Program (WAP)?

- The WAP is urgently needed to address flooding of the maintenance facility, and its NEPA process may be able to be completed more quickly than if it was joined with the CTP
- NEPA allows this because the CTP and WAP have Independent Utility, which means:
  - Each program has a demonstrated need that is separate from the other program
  - Each program stands on its own, could be developed and would provide the desired benefit and result, even if the other program never happens

Station 4: National Environmental Policy Act (NEPA)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Next Steps in the NEPA Process



Station 5: Environmental Resources to Be Assessed

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

FAA Impact Categories

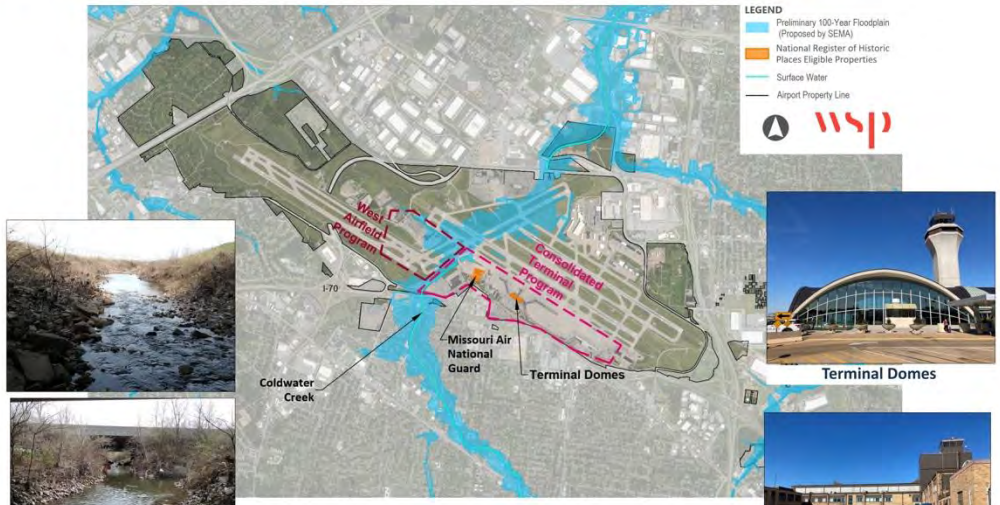
- Air quality
- Biological resources (fish, wildlife and plants)
- Climate
- Parks, other recreational resources and preserves
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archaeological and cultural resource
- Land Use
- Natural resources and energy supply
- Noise
- Socioeconomics, environmental justice and children's environmental health and safety risks
- Visual effects (including light)
- Water resources (wetlands, floodplains, surface waters, and groundwater)

* Farmland and coastal resources not present at STL

Station 5: Environmental Resources to Be Assessed

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Known Natural and Cultural Resources



Coldwater Creek on STL Property

Terminal Domes

Missouri Air National Guard Historic District

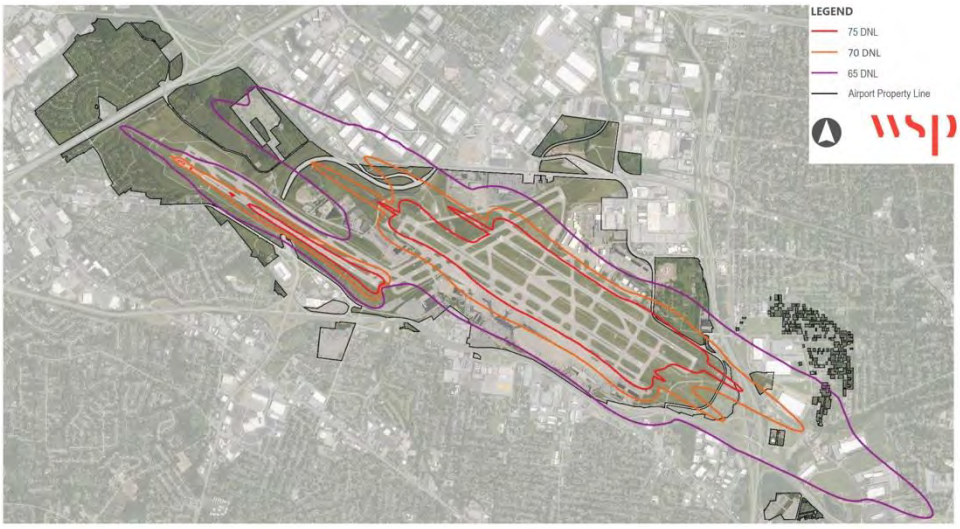
Station 5: Environmental Resources to Be Assessed

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Noise Impacts

2015 Noise Exposure Map

Will be updated as part of Environmental Review, to include proposed projects



Station 6: Public Comments

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Master Plan: Stakeholder and Public Engagement to Date

Including:
City of St. Louis
St. Louis Econ Dev Partners
Greater Saint Louis Inc.
St. Louis Co
St. John
Woodson Terrace
Bridgeton
St. Charles (Invited)

Federal Aviation Admin (regularly)

Technical Adv. Committee
40 members
Airport tenants
Local agencies

MODOT

Public

Local Municipalities

Airport/Airline Affairs. Committee

STL Airport Commission

Engagement to Date:

- Three Public surveys:
  - 2,948 total responses
- 33 meetings with over 1,000 total attendees:
  - TAC: 3 meetings
  - Airport Commission: 4 meetings
  - Airlines committee: 5 meetings
  - MODOT: 4 meetings
  - St. Louis County: 1 meeting
  - EWGCC: 1 meeting
  - Metro: 2 meetings
  - Greater STL Inc: 3 meetings
  - Regional Business Council: 1 meeting
  - YPO: 1 meeting
  - Southern municipalities: 4 meetings
  - American Society for Industrial Security : 1 meeting
  - Public Open House
  - Fenton Chamber of Commerce: 1 meeting
  - Engineers' Club of St. Louis: 1 meeting

Station 6: Public Comments

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

We want to hear from you!

Share your feedback about the NEPA process today :

- Scan the QR code on your *Welcome Handout* to complete an online comment form on your phone
- Submit a paper comment form in the Public comment area or mailing it in
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Need more time to compile your feedback?

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Jay Christians
STL Airport Assistant Director - Engineering
P.O. Box 10212
St. Louis, MO 63145-00212

Scott Tener
FAA Environmental Specialist
FAA Central Region Airports Division
901 Locust St., Room 364
Kansas City, Missouri 64106-2325

Comments must be received by January 16, 2023.

APPENDIX K: PUBLIC SCOPING MEETING PRESENTATION SLIDES

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

STL Master Plan Environmental Review

NEPA Public Scoping Meeting

December 15, 2022

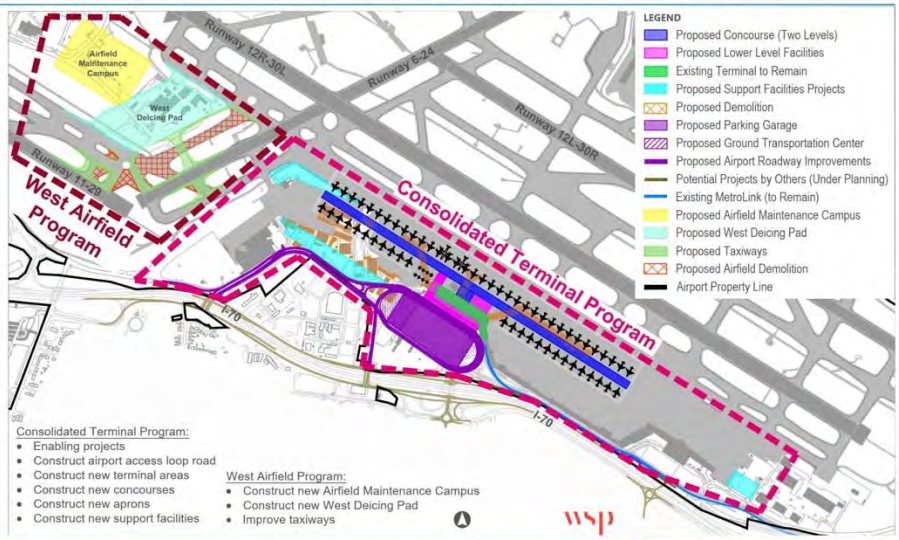
Meeting Agenda

- Director's welcome
- Purpose of the meeting
- Master Plan recap
- Overview of Environmental Review
- Next steps
- Q & A

Master Plan Recap

STL Planning Process To Date

Many Projects, Two Development Programs



NEPA Public Scoping – December 15, 2022 5

Terminal Needs

NEPA Public Scoping – December 15, 2022 6

Terminal Needs: Enhance Customer Experience

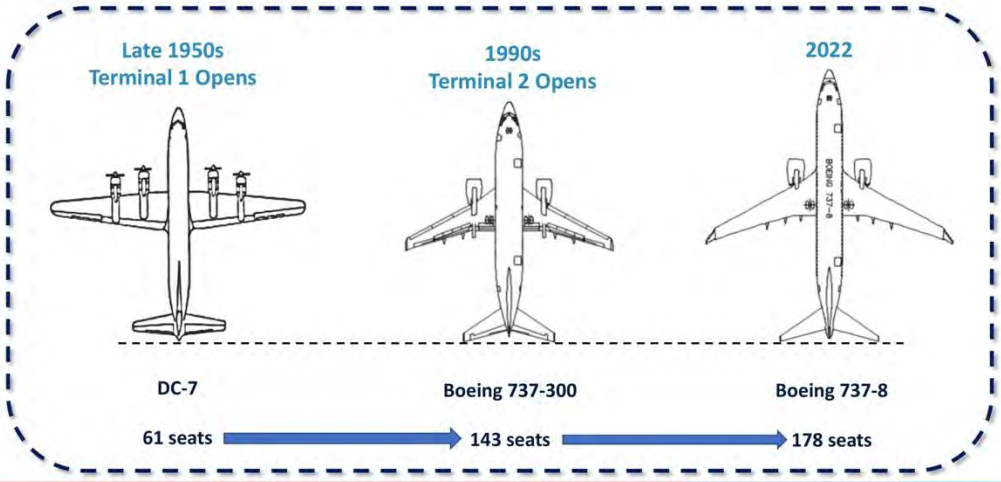
Aging and Obsolete Facilities

- Undersized passenger areas (hold rooms, restrooms, corridors)
- Lack of functionality (security checkpoints)
- Insufficient concessions (revenues & customer choices)
- Reliability, resiliency, maintenance costs

Growth in Passengers

- Require up to 62 usable aircraft gates
- Insufficient terminal and concourse space
- Need to accommodate modern, larger aircraft
- Customs cannot be accessed by all carriers

Terminal Needs: Industry Changes



Terminal Roadway and Parking Needs

Terminal Roadway and Parking Needs: Enhance Customer Experience

On-airport Roadways →
- Insufficient distance for decision making
- Inadequate number of curb lanes

Parking Facilities →
- Shortage of garage parking (revenues)
- Terminal 1 Garage inefficient & reaching end of useful life

Terminal Roadway and Parking Needs: Enhance Customer Experience

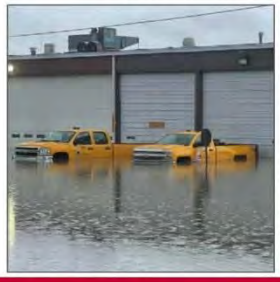
- Short sightlines and decision distances
- Inadequate number of arrival curb lanes

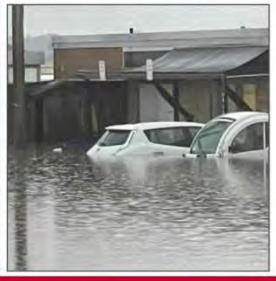
West Airfield Needs

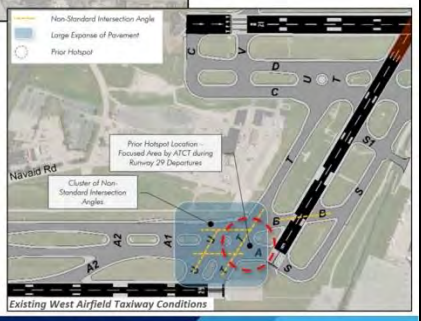
West Airfield Needs

- Facilities flooding
- Housing of maintenance equipment
- Deicing facilities spread out and nearing capacity
- Taxiways do not comply with current FAA geometry standards

July 2022 Flooding at the Airfield Maintenance Facility







Existing West Airfield Taxiway Conditions

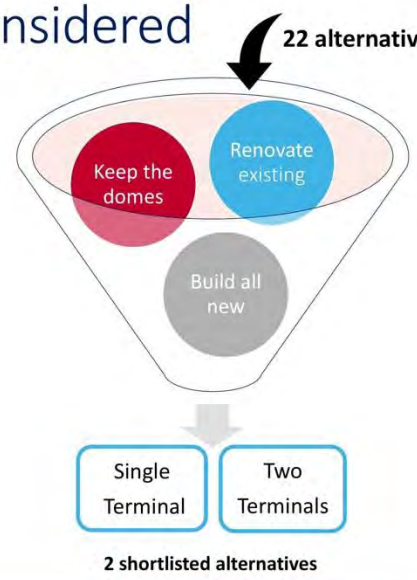
STL NEPA Public Scoping – December 15, 2022 13

Terminal Alternatives

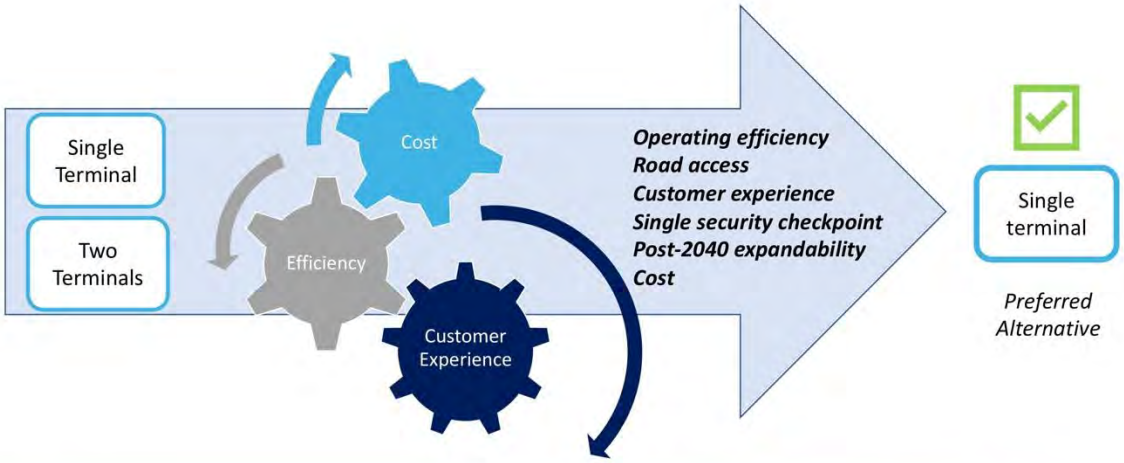
STL NEPA Public Scoping – December 15, 2022 14

Terminal Alternatives Considered

- Terminal sites across entire airport property considered; due to cost and landside access, only the existing site is feasible
- 22 terminal alternatives considered at existing site, including variations of:
  - Renovate existing terminals
  - Retain domes
  - Airline terminal swap
  - Reopen Concourse D
  - Two new terminals
  - Single terminal



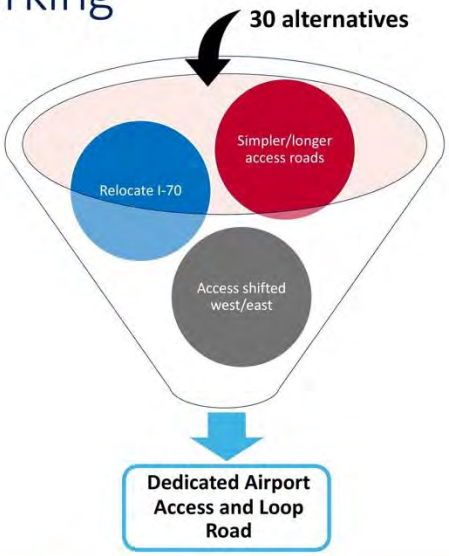
Terminal Alternatives Evaluation



Terminal Roadway & Parking Alternatives

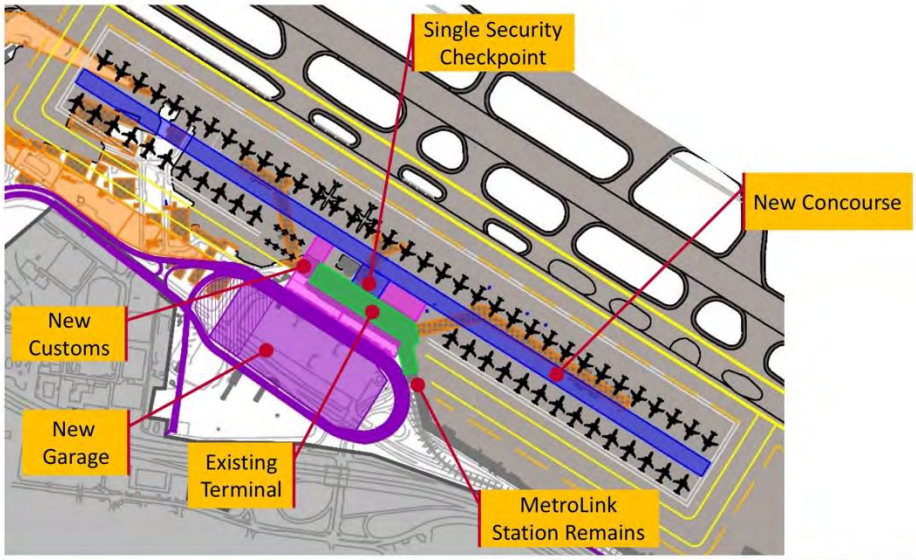
Terminal Roadways and Parking Alternatives Considered

- ~~Relocate I-70~~
- ~~Convert LIB and Natural Bridge Road to one-way~~
- One main airport access road
- Access shifted west/east
- Simpler/longer access to terminal



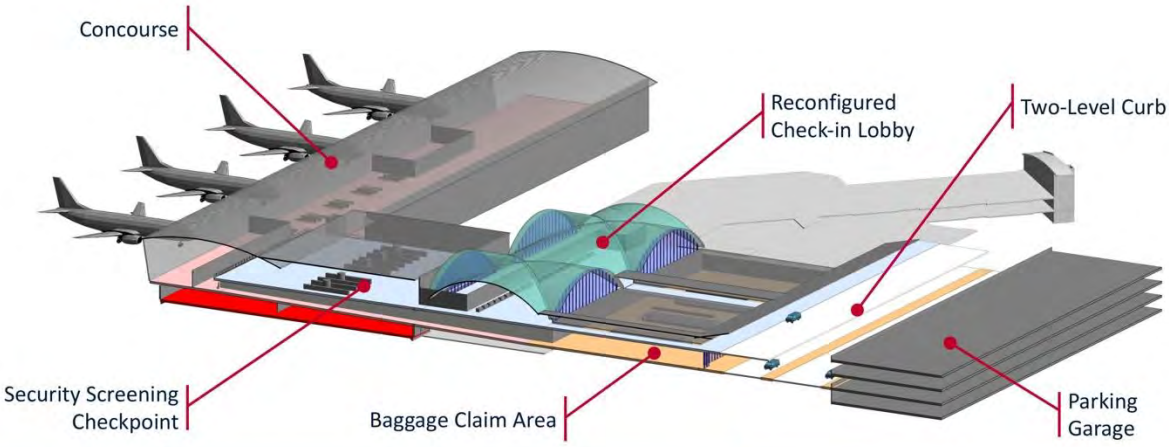
Consolidated Terminal Program (CTP)

Consolidated Terminal Program



Consolidated Terminal Program

Terminal Detail



West Airfield Program (WAP)

West Airfield Program

NEPA Public Scoping – December 15, 2022 23

NEPA Environmental Review Process

NEPA Public Scoping – December 15, 2022 24

What is the National Environmental Policy Act (NEPA)?

Federal law that requires federal agencies to consider environmental, social and economic impacts of projects before making decisions about them:

FAA approval required for changes that affect aviation activity and safety

STL will seek FAA grants for CTP & WAP

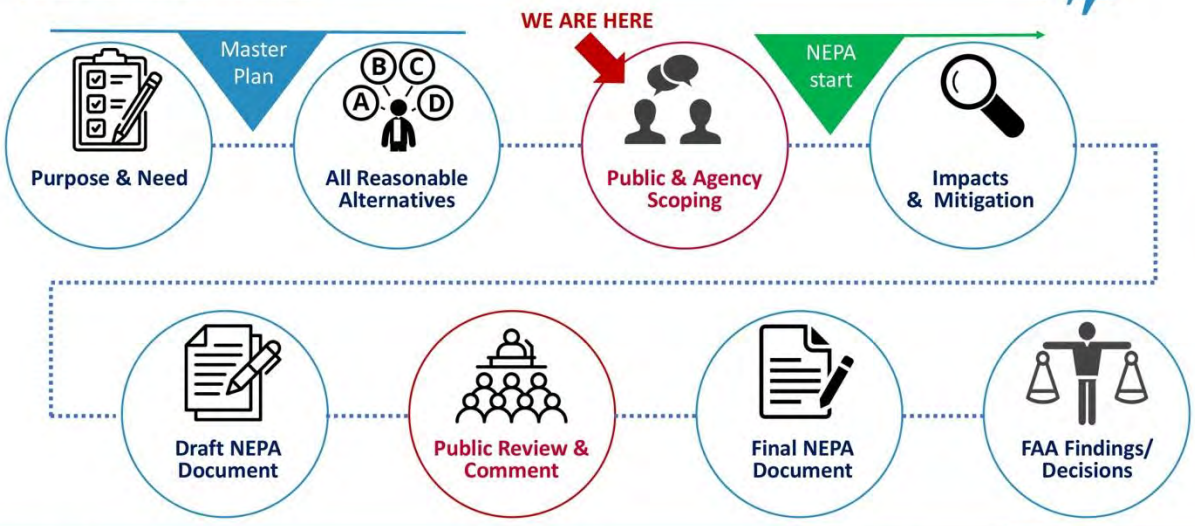
The Purposes of NEPA

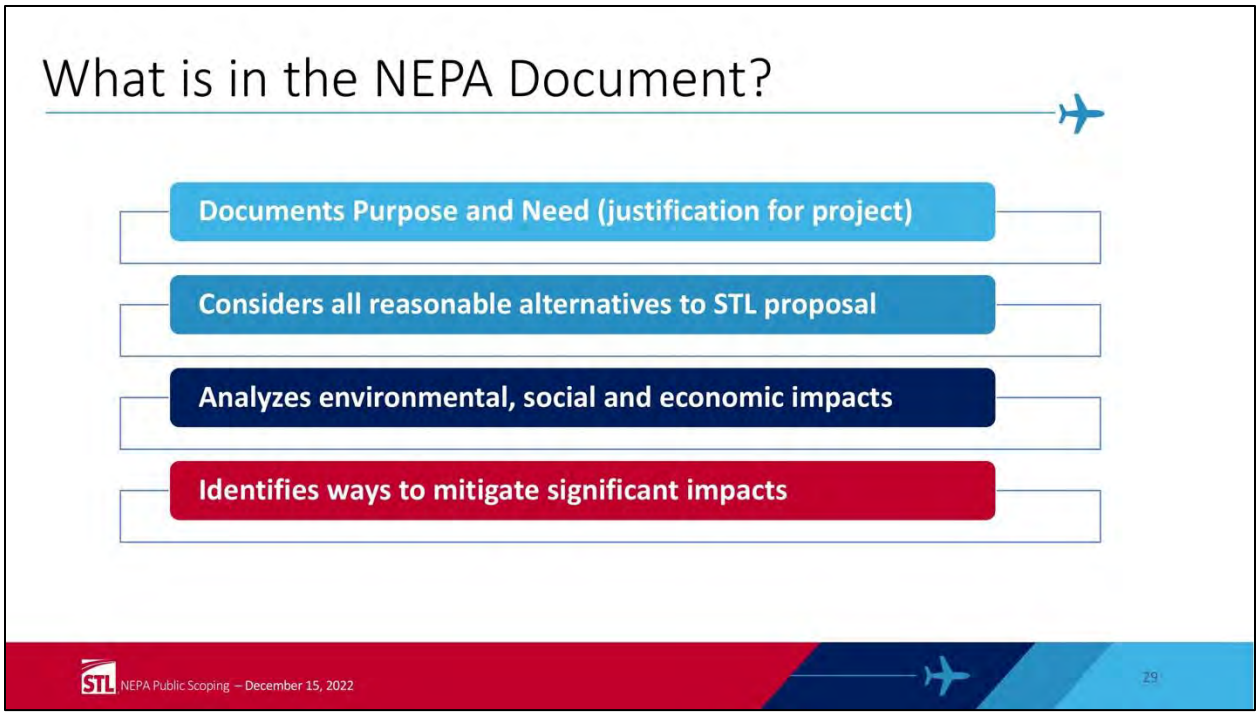
- Ensure effects to the natural and human environment are considered by federal decision makers (FAA)
- Share information with and hear from the public (you) before making decisions
- Identify opportunities to avoid or minimize impacts

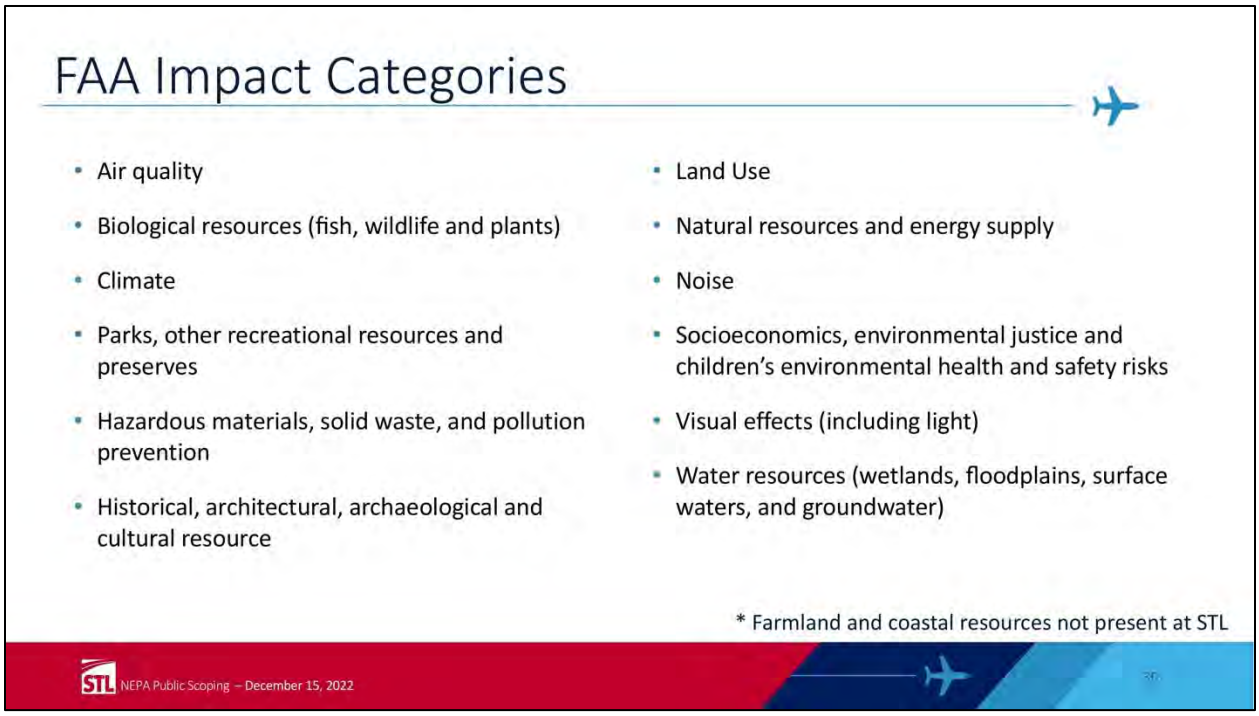
Why a Separate NEPA Process for CTP and WAP?

- The WAP is urgently needed to address flooding of the maintenance facility, and its NEPA process may be able to be completed more quickly than if it was joined with the CTP
- NEPA allows this because the CTP and WAP have Independent Utility, which means:
  - Each program has a demonstrated need that is separate from the other program
  - Each program stands on its own, could be developed and would provide the desired benefit and result, even if the other program never happens

NEPA Process




What is in the NEPA Document?
Documents Purpose and Need (justification for project)
Considers all reasonable alternatives to STL proposal
Analyzes environmental, social and economic impacts
Identifies ways to mitigate significant impacts
NEPA Public Scoping – December 15, 2022
29


FAA Impact Categories
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Climate
Parks, other recreational resources and preserves
Hazardous materials, solid waste, and pollution prevention
Historical, architectural, archaeological and cultural resource
Land Use
Natural resources and energy supply
Noise
Socioeconomics, environmental justice and children's environmental health and safety risks
Visual effects (including light)
Water resources (wetlands, floodplains, surface waters, and groundwater)
* Farmland and coastal resources not present at STL
NEPA Public Scoping – December 15, 2022
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NEPA Roles and Responsibilities

FAA

- Responsible for NEPA compliance and decisions:
  - Is there an aviation need for the project?
  - Have all reasonable alternatives been considered?
  - What type of analysis is required?
  - Is mitigation required for significant impacts?
- Oversees and approves analysis and documentation
- Seeks input from public and agencies with relevant expertise

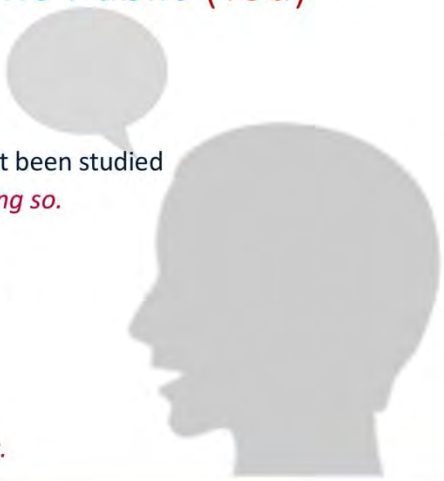
NEPA Roles and Responsibilities

STL (Sponsor)

- Proposes projects for FAA consideration
- Provides planning, design and other information needed for evaluation
- Manages consulting team that provides technical and logistical assistance to FAA in conducting outreach, analyzing impacts, and documentation

NEPA Roles and Responsibilities

Local Officials/Political Leaders and the Public (You)



- In Scoping, comment on:
  - Impacts you think the FAA should study
  - Alternatives to achieve the purpose and need that have not been studied

FAA will study the issues raised or provide the reasons for not doing so.

- Public Review of Draft NEPA Document comment on:
  - Accuracy of information and assumptions
  - Adequacy of methodology
  - New information relevant to the analysis

FAA will respond to substantive comments on the draft document.

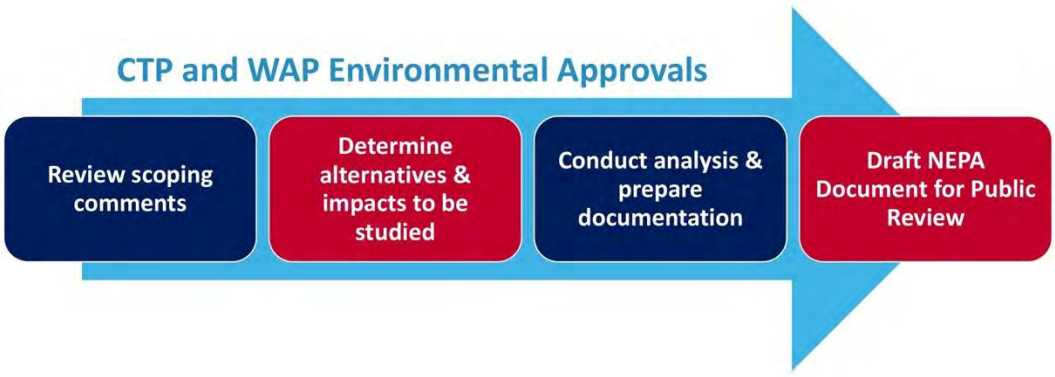
NEPA Roles and Responsibilities

Agencies with Relevant Expertise and Jurisdiction

- Identify potentially-affected resources under their jurisdiction that may be affected
- Raise impacts and alternatives FAA should study
- Work with FAA and STL to resolve impacts and concerns
- Identify permit requirements that can be addressed in NEPA

Next Steps

Next Steps in the NEPA Process



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Jay Christians
STL Airport Assistant Director - Engineering
P.O. Box 10212
St. Louis, MO 63145-00212

Scott Tener
FAA Environmental Specialist
FAA Central Region Airports Division
901 Locust St., Room 364
Kansas City, Missouri 64106-2325

Comments must be received by January 16, 2023.

Thank You

flystl.com

Contact:
Jay Christians
jachristians@flystl.com
314-551-5008

Contact:
Scott Tener, FAA Environmental Specialist
scott.tener@faa.gov
816-329-2639

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APPENDIX L: VERBATIM AGENCY COMMENTS, CATEGORIZED

Verbatim Comment	Theme(s)
Mr. Christians, MSD has reviewed the provided STL NEPA Scoping Project provided for Lambert International Airport Consolidated Terminal Program and West Airfield Program and has the following preliminary comments. 1) Formal MSD review, approval, and permits are required prior to construction. 2) For disturbed areas not covered by the Airport's Industrial User Permit issued by the Missouri Department of Natural Resources, Post-construction BMP's will be required. Stormwater Management facilities and site design strategies shall be applied such that the extents of the project's disturbed areas are managed. 3) Stormwater flood detention and channel protection storage may be required for this project, depending on the project runoff differential, project disturbance, any existing detention facilities, as well as any downstream stormwater problems or concerns 4) Offsite drainage areas should be routed around the detention basin. 5) The developer will be required to provide a 100-year overland flow path. 6) A flood plain study will be required for this project. 7) Note that projects that affect wetland or waters of the United States will likely be accompanied by an additional assessment of the feature as required by the U.S. Army Corp of Engineers and/or Missouri Department of Natural Resources under Clean Water Act section 401/ 404 permitting requirements. MSD may require documentation that the project has satisfied 401/404 permitting requirements prior to plan approval, or documentation that the activities are exempt. 8) Sanitary flow estimates must be provided. These shall include the estimated average daily and peak flow rates. These estimates are needed to determine the sanitary requirements for the site. Sanitary improvements may be required based on the flow rates provided. 9) MSD's Division of Environmental Compliance will need to review the deicing scope when those details become available. Of particular interest will the location of the deicing facilities, the nature of the deicing processes that will be implemented, changes in deicing capacity, and how process waste from the deicing facilities will be managed. 10) In general, stormwater shall not enter the sanitary sewer, including stormwater runoff from the deicing areas. 11) Grease traps may be required. 12) Sample manholes may be required. 13) Sample points will be required. 14) New encroachments will not be allowed. 15) MSD will need regular maintenance access to all public sewers constructed or modified by this project. MSD Rules and Regulations allow for many of the sewers within the airport to remain private. Sewers with no regular MSD maintenance access will be considered private.	Clean Water Act section 401/404; Construction requirements; Deicing waste/runoff; Detention facilities; Flood plain study; Maintenance access; MoDOT review and approval; MSD review and approval; Permit requirements; Sanitary flow estimates; Sewer ownership and maintenance responsibilities; Stormwater run-off

16) The project should consider a goal of determining the ownership and maintenance responsibilities of existing sewers within the airport site. 17) MoDOT approval may be required. If you have any further questions, feel free to contact me at 314-335-2053. Robert A. Miller, P.E. Principal Engineer Metropolitan St. Louis Sewer District 314-335-2053	

No comments from other agencies were submitted to Scott Tener (FAA) or Jay Christians (STLAA).

APPENDIX M: ONLINE COMMENT FORM

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

STL Environmental Review Public Scoping Meeting Comment Form

Thank you for completing this comment form. Your input will help inform how the Consolidated Terminal Program (CTP) and West Airfield Program (WAP) move forward through the environmental review/National Environmental Policy Act (NEPA) process. For more information, visit www.flySTL.com or follow us at @flySTL on Facebook, Twitter, and Instagram.

Questions? Contact Jay Christians, PE at 314-551-5008 or **JAChristians@flystl.com** or FAA Environmental Specialist Scott Tener, at 816-329-2639 or **scott.tener@faa.gov**.

All comments must be submitted by January 16, 2023.

Privacy Notice: Before including any personal identifying information in your comment (name, address, email address, etc.), be advised that your entire comment, including this personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

1. Considering the information you have seen at the STL Environmental Review Public Scoping Meeting, what environmental impacts should the project team be considering?

2. What alternatives to the proposed projects do you want to see implemented at STL?

3. What additional comments do you have about the environmental review process?

4. In what zip code do you live?

5. What is your relationship to STL and this project? Please check all that apply.

- ☐ I live near STL.
- ☐ I work in/near STL.
- ☐ I am an elected official in St. Louis City.
- ☐ I am an elected official in St. Louis County.
- ☐ I frequently travel via STL (more than twice per month).
- ☐ I sometimes travel via STL (monthly or less).
- ☐ I rarely travel via STL (once per year or less).
- ☐ Other (please specify)

6. Please evaluate this event according to the following criteria.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I understood the purpose of the Public Scoping Meeting.	☐	☐	☐	☐	☐
The Public Scoping Meeting was informative.	☐	☐	☐	☐	☐
The Public Scoping Meeting was well planned.	☐	☐	☐	☐	☐

7. How did you find out about this Public Scoping Meeting? Please check all that apply.

- ☐ Email
- ☐ Local media coverage
- ☐ STL website/social media
- ☐ Mailed postcard
- ☐ Word of mouth
- ☐ Other (please specify)

APPENDIX N: PAPER COMMENT FORM

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

STL Environmental Review Public Scoping Meeting – December 15, 2022
Comment Form

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Need more time? You can mail your comment form to Jay Christians, STL Airport Assistant Director - Engineering, P.O. Box 10212, St. Louis, MO 63145-00212 or to Scott Tener, FAA Environmental Specialist, FAA Central Region Airports Division, 901 Locust Street, Room 364, Kansas City, MO 64106-2325. **All comments must be submitted by January 16, 2023.**

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1. Considering the information you have seen at the STL Environmental Review Public Scoping Meeting, what environmental impacts should the project team be considering?

2. What alternatives to the proposed projects do you want to see implemented at STL?

FLIP OVER

3. What additional comments do you have about the environmental review process?

_____

_____

_____

_____

_____

4. In what zip code do you live?

_____

5. What is your relationship to STL and this project? *Please check all that apply.*

___ I live near STL.

___ I work in/near STL.

___ I am an elected official in St. Louis City.

___ I am an elected official in St. Louis County.

___ I frequently travel via STL (more than twice a month).

___ I sometimes travel via STL (monthly or less).

___ I rarely travel via STL (once per year or less).

Other: _____

6. Please evaluate this event according to the following criteria. *Circle one response per prompt.*

A. I understood the purpose of the Public Scoping Meeting.

Strongly agree Agree Neutral Disagree Strongly disagree

B. The Public Scoping Meeting was informative.

Strongly agree Agree Neutral Disagree Strongly disagree

C. The Public Scoping Meeting was well planned.

Strongly agree Agree Neutral Disagree Strongly disagree

7. How did you find out about this Public Scoping Meeting? *Please check all that apply.*

___ Email ___ Local media coverage ___ STL website/social media

___ Mailed postcard ___ Word of mouth Other: _____

APPENDIX O: QUESTION 1 VERBATIM COMMENTS WITH THEMATIC CODES

Question 1: Considering the information you have seen at the STL Environmental Review Public Scoping Meeting, what environmental impacts should the project team be considering?

Verbatim Comment	Theme(s)
Not sure about specifics. I'm sure the team is looking at all the impacts that this will bring to the actual environment the airport encompasses in regards to wildlife and such. But this expansion is vital to the economic environmental impact	Economic impact
impacts on the interstate highway system	Interstate impact
N/A	N/A
N/A	N/A
N/A	N/A
Wetland and soil contamination are primary.	Soil contamination Wetlands
Sustainable transportation options to and from the airport. Options to walk from parking to terminal, even if it's farther than Lot A to reduce dependency on shuttles.	Sustainable transportation options to/from parking facilities

APPENDIX P: QUESTION 2 VERBATIM COMMENTS WITH THEMATIC CODES

Question 2: What alternatives to the proposed projects do you want to see implemented at STL?

Verbatim Comment	Theme(s)
A protective canopy for the Metrolink platform.	Canopy over MetroLink station
Do you anticipate the terminal 2 building to become an on airport hotel? Is there a concern for plane access on the south gates? Will only 1 plane be able to push or taxi at a time causing a constraint? Will the west deicing be the only deicing location? What if aircraft are taking off from the eastern end, will they taxi the entire length of the runway after deicing on the west pad?	Deicing; Taxiway constraints; Terminal 2 use: Question
New maintenance facility and single terminal concept	N/A
I think terminal 2 should be modified into a vertiport. A vertiport accommodates EVTOL's. FAA mandates that specific marking placements for the EVTOL and little rework would be needed for terminal 2 to be a vertiport. The timeline for vertiport, EVTOL deliveries and the airport redesign all line up. This will open EVTOL connections between STL, Chicago and KC early. Most EVTOL's have ranges of 150 miles. I think a pedestrian ramp should be built to Woodson Terrace Rd. from the MetroLink. I also think the MetroLink should be expanded 1.4 miles into Bridgeton along I-70. This will increase ridership from St. Charles County areas.	Extend MetroLink to Bridgeton Pedestrian ramp from MetroLink station to Woodson Terrace Rd. Terminal 2 use: Vertiport
Will the airport consider having hotels and rental car agencies on site? These will add to the convenience for travelers.	Hotels on site Rental car agencies on site
Making terminal 2 into a hotel connected to the Terminal like the TWA hotel at JFK currently, or a museum to flight including of course the Spirit of St. Louis, History of Lambert Airport, the airport used in movies, etc...with of course more parking.	Terminal 2 use: Connected hotel Terminal 2 use: Museum

APPENDIX Q: QUESTION 3 VERBATIM COMMENTS WITH THEMATIC CODES

Question 3: What additional comments do you have about the environmental review process?

Verbatim Comment	Theme(s)
Curious to what the funding mechanisms would be for these programs? Has funding been addressed and how much is covered?	Funding questions
N/A	N/A
N/A	N/A
It looks like things are going in the right direction	Positive sentiment
Thank you.	Positive sentiment
The sooner the better, but obviously being thorough when it comes to the process is key so it's done right.	Speed up project timeline
Today, three imperfect interchanges provide access to the airport terminal one--from the east, at the front door, and from the west. The proposed solution appears to have only one interstate access point from the west to get the one-mile loop distance. This west interchange access point needs to be more fully conceptualized in the EIS to appreciate its function and I-70 impacts and not deferred to a future solution that was glossed over in the presentation.	West interchange access point

APPENDIX R: EMAILED COMMENT 1

Hi Jay,

I'm interested in the "Woodson Terrace Project" mentioned in the Airport Redevelopment Plan. I would love to see better bicycle connectivity to the T2 Metrolink station, especially between the station and the McDonnell Blvd/Brown Road intersection where the McDonnell Blvd bike lane starts. Does the current plan facilitate easier biking between these two points?

I would very much welcome the ability to use Metrolink to bike to work; hope it can fit into the budget. Thanks!

Kevin Richard

Design and Analysis Engineering

kevin.c.richard@boeing.com

(314) 563-5905

APPENDIX S: EMAILED COMMENT 2 AND SUPPORTING DOCUMENTS

Mr. Tener

Please see the attached review for: St. Louis Lambert International, St. Louis

EST Reference Number: 5142

To Expedite Our Review Process

Please Submit Electronic Copy of 106 Project Files to:

THPO@estoo.net

Rhonda Barnes

Cultural Preservation Department

Intake Clerk/Program Assistant

Eastern Shawnee Tribe of Oklahoma

70500 East 128 Road

Wyandotte, Ok 74370

918-238-5151 Ext 1862

rbarnes@estoo.net

Supporting document:

LETTER FROM PAUL BARTON, TRIBAL HISTORIC PRESERVATION OFFICER OF THE EASTERN SHAWNEE TRIBE OF OKLAHOMA

EASTERN SHAWNEE
CULTURAL PRESERVATION DEPARTMENT
70500 East 128 Road, Wyandotte, OK 74370

January 9, 2023
US Department of Transportation Federal Aviation
901 Locust
Kansas City, Missouri 64106

RE: *St. Louis Lambert International, St. Louis, St. Louis County, Missouri*

Dear Mr. Tener,

The Eastern Shawnee Tribe has received your letter regarding the above referenced project(s) within St. Louis County, Missouri. The Eastern Shawnee Tribe is committed to protecting sites important to Tribal Heritage, Culture and Religion. Furthermore, the Tribe is particularly concerned with historical sites that may contain but not limited to the burial(s) of human remains and associated funerary objects.

As described in your correspondence, and upon research of our database(s) and files, we find our people occupied these areas historically and/or prehistorically. However, the project proposes **NO Adverse Effect** or endangerment to known sites of interest to the Eastern Shawnee Tribe. Please continue project as planned. However, should this project inadvertently discover an archeological site or object(s) we request that you immediately contact the Eastern Shawnee Tribe, as well as the appropriate state agencies (within 24 hours). We also ask that all ground disturbing activity stop until the Tribe and State agencies are consulted. Please note that any future changes to this project will require additional consultation.

In accordance with the NHPA of 1966 (16 U.S.C. § 470-470w-6), federally funded, licensed, or permitted undertakings that are subject to the Section 106 review process must determine effects to significant historic properties. As clarified in Section 101(d)(6)(A-B), historic properties may have religious and/or cultural significance to Indian Tribes. Section 106 of NHPA requires Federal agencies to consider the effects of their actions on all significant historic properties (36 CFR Part 800) as does the National Environmental Policy Act of 1969 (43 U.S.C. § 4321-4347 and 40 CFR § 1501.7(a). This letter evidences NHPA and NEPA historic properties compliance pertaining to consultation with this Tribe regarding the referenced proposed projects.

Thank you, for contacting the Eastern Shawnee Tribe, we appreciate your cooperation. Should you have any further questions or comments please contact our Office.
Sincerely,

Paul Barton, Tribal Historic Preservation Officer (THPO)
Eastern Shawnee Tribe of Oklahoma
(918) 666-5151 Ext:1833
THPO@estoo.net

APPENDIX T: EMAILED COMMENT 3 AND SUPPORTING DOCUMENTS

Good afternoon Jay and Scott,

I am hopeful you will be able to get it into the formal record. Jennifer indicated that since yesterday was a holiday we could use today to wrap this up.

Attached please find comments from Mayor Besmer and supporting documents related to St. Louis Airport ALP Update - NEPA Scoping.

We look forward to next steps.

Laura

Laura Madden

Prosperity Homegrown / Phoenix Consults - community and strategic planning

Consultant, City of Woodson Terrace

Vice President, North County Community Betterment - an initiative of A Red Circle [aredcircle.org]

St. Louis, MO

Phone: 202-845-4503

Supporting documents:

- Letter from City of Woodson Terrace Mayor Lawrence Besmer (8 pages)
- Woodson Road Airport Connection/Corridor Study (11 pages)
- Letter from City of Kinloch City Manager Justine W. Blue (1 page)
- Resolution of the City of Woodson Terrace, Missouri, to participate in application for funding assistance to the Reconnecting Communities pilot program (2 pages)
- Gateway Community Corridors – Improving Linkages and Connectivity to Lambert Airport, Metrolink and Regional Growth Clusters (2 pages)
- City of Bridgeton Resolution #3657 (6 pages)

City of
Woodson Terrace
Missouri

Mayor
Lawrence P. Besmer
City Administrator
Douglas Zaiz
City Clerk
Ellie Crane
City Collector
Kyla Hill
City Attorney
Ed Sluys
Aldermen
Donna Conlon
Ronald A. Hogan
Caroline Martin
Robert McCabe
Gregory Mills
Robert Welby
Joan Willey
Maryanne Zaiz

January 17, 2023

Please accept our formal comments for the record, and for your consideration under the National Environmental Protection Act scoping process for the St. Louis Lambert International Airport Layout Plan and Master Plan Update (ALP Update).

I am Lawrence Besmer and I serve as Mayor of the City of Woodson Terrace, a municipality located to the immediate south of St. Louis Lambert International Airport. Since our incorporation in 1946, Woodson Terrace has valued our relationship with the Airport.

We support a strong and vibrant Lambert Airport and commend the forward-thinking approach the Airport is taking to modernize its facilities. Woodson Terrace welcomes a true Federal, State, and Local collaboration that recognizes the Airport's importance to the surrounding communities, and understands that new public investment in the Airport itself, as well as concomitant investment in the regional highway, local roadway, and public transit systems, will have a profound impact not only the Airport - but on all adjacent municipalities as well.

We also recognize that more efficient roadway connectivity in the future, for personal and business travelers, as well as for freight, is important to the modernization of the Airport. But we also understand (because we are living with its impact) that past public investment in such connectivity has physically separated communities close to the Airport and has, instead of linking all of us to the Airport, severed our connection to this important economic and job-creating engine. **We are unfortunately divided by highways and roadways that operate more as service roads to the Airport and destinations beyond than as connected corridors of prosperity and well-being for our residents and businesses.**

4323 WOODSON ROAD | WOODSON TERRACE, MISSOURI 63134 | 314-427-2600 | FAX 314-427-0571

What I ask, then, is for the FAA, in addition to looking at how any proposed highway and roadway improvements will support the modernization of the Airport, to include a robust review as part of the EIS study of how these actions will also impact the Airport-adjacent communities plans and visions for growth and connectivity. We have begun this process by reaching out to our neighboring municipalities as part of a proposed Gateway Community Corridors coalition and asking regional leaders to help us to pursue well-planned road and commercial connectivity for the area in proximity to the Airport and Interstate 70. We have received very positive input (letters attached).

We have also invested significant resources to complete a City of Woodson Terrace Comprehensive Plan, and to pursue recommendations in that plan to find ways to revitalize Woodson Road as a Gateway Community Corridor that will better support and serve our residents. A key part of this is improved connections to the airport that will enable transformational economic and community development along this and other potential corridors in neighboring municipalities. Their growth and well-being is directly connected to our own. Their success provides a better-shared environment for us all. In Woodson Terrace, located immediately south of Lambert Airports' Terminal 2, a feasibility study identified a preferred alternative for a new **Woodson Road Gateway Airport Connection** at Woodson Road to extend under Interstate 70 to Lambert International Drive, providing vehicular, bicycle and pedestrian connectivity to the airport and Metrolink station. The project identifies and advances infrastructure and mobility improvements to allow better access and opportunities for economic recovery and growth in adjacent communities. A copy of the study and a follow-up traffic study requested by MoDOT is included as part of these comments.

We are asking the FAA as part of the ALP Update to recognize and invite our connectivity as an Airport Gateway Communities partnership, and as part of the NEPA and EIS process, to work together to identify the priorities, impacts and benefits that support and align with the St. Louis ALP Update, and as part of the MO-DOT's Interstate 70 Segment 4 interstate improvement responsibility. This approach also aligns with the U.S. Department of Transportation's Reconnecting Communities Program which addresses the need to work with state and local governments to remove, retrofit or mitigate highways and other transportation facilities, such as airports and light rail, that create barriers, but also opportunities, to community connectivity, including mobility, access or economic development. These efforts can strengthen and support local and regional growth centers that utilize St. Louis Lambert Airport for travel, freight, hospitality and other services.

Using the NEPA environmental consequences section, Woodson Terrace would like the following issues to be studied during the NEPA process.

DUEL JURISDICTIONAL CONTEXT: It is understood that there are two main jurisdictional authorities involved in the ALP Update specifically related to landside modifications that may be recommended: 1) Lambert International Airport; and 2) Missouri Department of Transportation, in addition to St Louis County and the City of St. Louis.

The ALP Update is beginning its required review under the National Environmental Policy Act now. The recommended alternatives for highway modifications that are included in the ALP Update under review are within the MoDOT right of way and impact the interstate configuration. This will require an access justification process that has its own NEPA-like evaluation. For communities and citizens, it is difficult, and burdensome, to separate the processes and issues that must be considered by the two jurisdictions. These issues are interrelated in the preferred ALP Update. Therefore, we believe they should be coordinated and, if possible, done together. It is essential that the airport-related infrastructure recommendations respect the MoDOT community engagement and project review process and timeline, which includes the airport and other community projects along I-70 Segment 4 which includes connections extending from the Missouri River on the west end to Lucas & Hunt Boulevard on the east.

In the document below, the issues are listed and coded with **AIRPORT** or **ROADWAY** to recognize the limitations of the separate airport NEPA study to address issues beyond the Airport envelope, while also striving to provide a comprehensive list of all impacts from the ALP Update recommendations. References and links to supporting documents are also provided.

1) **Any potential unavoidable adverse environmental effects**

a. Address changes to environmental factors (noise, pollution, etc.) to adjacent communities by infrastructure that supports new operations. **AIRPORT.**

During the previous Master Plan and Airport Improvement Plan actions, the Airport proposed a major runway expansion that necessitated significant buyouts in neighboring municipalities (i.e., Bridgeton, Kinloch). In Woodson Terrace, increased noise impact was anticipated as part of this expansion and, as mitigation, homeowners in our city were offered soundproofing through the new window and door installation in exchange for a deed restriction that would prohibit any legal action against the airport related to noise or property value decline related to noise impacts. While these soundproofing benefits are, for the homes that accepted them, beyond their useful life, the deed restrictions remain in effect. Our citizens are concerned about future noise impacts as part of this ALP Update. We believe noise mitigations for homeowners and appropriate businesses should be included for review under the EIS study.

2) **The relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity.**

a. Determine if the Interstate 70 access improvements presented under the ALP Update limit the ability of the adjacent communities to recover from negative economic impacts and/or regain their access to the Interstate and surrounding roads that was removed at Brown Road. Woodson Terrace and adjacent communities require reconnection to Interstate 70 for their long-term productivity and economic growth. ROADWAY

i. Reference: Woodson Terrace Comprehensive Plan, Chapter 2 Existing Conditions, Existing Road Infrastructure, page 2-21 to 2-23 and Chapter 2 Market Report.

b. Address the inequities created by the disconnection of two MetroLink stations on airport property from the communities of potential riders. The location on the airport property and separation by Interstate 70 is a barrier to access by many potential users of the two publicly-funded Airport Metrolink stations. While the AIP Update recommends that the Lambert Terminal 2 Metrolink Station remain open, it will continue to have limited access without some connectivity measures for the Woodson Road access. Under current conditions, bus service is not available, and walking is infeasible, as sidewalks and crosswalks are not sufficient or accessible. Safety is also a concern as riders have been stranded on Interstate 70 after jumping the fence to cross the highway at Woodson Road, requiring police rescue. Providing connectivity to public transit to airport-adjacent communities would greatly benefit businesses and individuals without vehicle transportation, providing much-needed access to jobs and amenities in and outside the community. AIRPORT/ROADWAY

3) Any potential irreversible or irretrievable commitments of resources.

a. Refer to 2a above. There are a limited number of access points that will be functional and allowed by MoDOT along the airport frontage of 1-Interstate 70. Access for the airport-adjacent communities should be considered along with the airport needs in order to avoid an irreversible commitment of the resource. ROADWAY

b. As described in flystl.com, "STL ALP Update/MP's focus is on developing the terminal, roadway and airfield activities to accommodate future passenger and air traffic in 2040". From the plans that the City has seen, preferred roadway improvements (costing millions of dollars of public money) would represent a "real" (not simply "potential") irreversible and irretrievable commitment of public resources which will negatively impact the communities which abut the Airport. These improvements will reinforce the decades-long physical disconnection of the Airport from these communities, and continue to make it particularly difficult for them to access, and benefit from, the Airport's economic growth and expanding job opportunities.

The construction of the roadway improvements now being considered by the Airport will have a reasonably close causal relationship to the reasonably foreseeable continuation of the negative social and economic impacts that Woodson Terrace and the communities south of the Airport have experienced since the northward expansion of I-170 in the 1980s. As noted earlier, in its 2000 Master Plan and Airport Improvement Update, which was completed in 2006, the Airport worked with MoDOT to undertake several highway modifications at Brown Road, as well as at Cypress Road and its Natural Bridge connection point. These changes caused further disconnection for us in Woodson Terrace, retrofitting the only westbound exit into our city from Interstate 70 into a direct exit into the airport. The loss of this exit resulted in a significant loss of access for our citizens and

businesses, resulting in closures and vacant development sites. The City is doing everything to mediate this loss of economic activity. Today, 90% of existing business operations within the borders of the City are airport-related. Our dependency on airport-related commerce is our anchor, however, the COVID shutdown resulted in a loss of 80% of City tax revenues during that period. Diversification of the business presence in our City is essential to meet the needs of our residents and our fiscal sustainability.

4) Possible conflicts with land use plans, policies, and controls for the area.

a. Understand the adjacent communities' comprehensive plan goals and policies and priority projects to avoid conflict between the ALP Update and the future realization of community goals. AIRPORT/ROADWAY

i. Reference: Woodson Terrace Comprehensive Plan, Chapter 5 Planning for the Future, and Chapter 7 Implementation Strategy. http://woodsonterrace.net/pageimages/documents/2017/Comprehensive_Plan.pdf

ii. Reference: Woodson Road Airport Connection/Corridor Study. http://wrairportconnection.org/

b. The Airport's recommended alternative for "roadway" improvements conflicts with the City's adopted land use (and other) plans, particularly for that portion of the city that is positioned along Woodson Road. The City's plans (which were presented to the Airport in 2018, prior to the start of the Master Plan process) include creating immediate access to the Airport (through the northerly extension of Woodson Road under an elevated I-70) thus restoring the City's direct connection to the Airport that existed prior to the construction of the interstate. This connection is critical to reversing private disinvestment in the City, spurring the economic revitalization of the Woodson Road corridor, and enhancing the social well-being of the community. The Airport's roadway plans as presented in the ALP Update, do not take into account how the City's plans for direct access would serve to improve the community and commercial connection to the Airport, nor do they see the benefits to the local communities that such access will provide.

c. Initial Airport roadway alternatives included in the ALP Update included restrictions on Natural Bridge Road and Cargo Lane to one-way vehicle traffic. This is a non-starter for our residents and our businesses who use Natural Bridge as a connector to each other and to the interstate. We are also not clear on why a new service road is needed specifically to provide direct access to the airport, rather than to consider more fiscally sound and connected improvements along Natural Bridge, Woodson and Brown roads. The community has not been briefed on how these alternatives may or may not have been considered options. The ALP Update proposes two new bridge crossings on Interstate 70, and a new dedicated service road using the local right of way, to directly access/exit the airport. No accommodation that we are aware of is made to address the loss of access, or the additional barriers these configurations would present to the adjacent communities.

5) Energy and natural or depletable resource requirements and conservation potential of alternatives and mitigation measures. Issue not addressed by this list at this time

6) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.

a. Evaluate how the concept supports the redevelopment of airport-adjacent communities' ability to encourage investment and redevelopment of commercial corridors such as Natural Bridge and Woodson Road to be the Gateway Corridors for the Gateway Communities surrounding the airport. AIRPORT

b. Evaluate how the concept supports regional goals for cultural, historic, tourism and business preservation and recruitment. It is to the airport's benefit to be surrounded by safe, economically vibrant Gateway Communities that create a positive first impression for individual visitors and business travelers arriving in our metro area. Each Gateway Community has a story to tell that respects both our history and our hopes and dreams for the future. Our residents have shared with us their priorities to provide linkages for pedestrian, bike, parks, community and civic center resources. These are part of our Woodson Road Gateway Corridor plan. Such improvements will benefit our regional story as a diverse and welcoming St. Louis destination. AIRPORT

i. Reference: https://greaterstlinc.com/region/regional-overview

ii. Reference: https://greaterstlinc.com/doing-business/logistics-and-infrastructure-0

c. The modernization of the Airport, and the concomitant roadway improvements (including those to Interstate70), should reuse a viable alternative for access to the Airport, and in doing so, enhance the "urban quality" of the area. The need to improve access to the Airport can be met by a number of roadway improvements, one of which is the northerly extension of Woodson Road into the Airport. Doing so will reuse an existing (and paid for) investment in public infrastructure (namely, Woodson Road) and directly link Woodson Terrace (and other communities to the south of the Airport) to the Airport. This improvement will substantially enhance the accessibility of the Airport to this area. Such reuse of Woodson Road will positively impact the "urban quality" of such communities, and extend the full benefits of Airport modernization throughout the area.

7) Mitigation of adverse environmental impacts.

a. Refer to issue 1 above. As consistent with previous noise mitigation measures, we would like to be fully informed of, and included in discussions related to anticipated and actual increased noise levels that will occur with runway operations and enplanements, especially related to larger cargo planes anticipated by the Airport.

8) Applicable economic and technical considerations, including the economic benefits of the proposed action.

A NEPA assessment/analysis of the actions proposed in the plans for the modernization of the Airport must consider the economic impact (both beneficial and detrimental) of such action on a broad area, as the Airport is a significant engine for regional economic activities and a regional magnet for employment. A direct roadway connection between the Airport and Woodson Road will bring economic benefit, access to jobs and social stability to the communities south of the Airport, extending well-beyond the boundaries of the City of Woodson Terrace. To bypass such a connection to the Airport by not including it in the Airport's modernization efforts program will continue to exclude these communities from full participation in the publicly funded Airport Improvement Program.

In closing, we recognize that the FAA is the lead agency for conducting the NEPA review and EIS evaluation. However, it is our understanding from the public meeting that these responsibilities may be delegated to a consultant. The Airport indicated that they planned to recommend that their ALP Update consultant team also take on the responsibility of lead consultant for the NEPA EIS. We would appreciate a better understanding of how this decision to have the consultant team responsible for the ALP Update also serves as the unbiased lead consultant to assess the impacts of their recommendations on outside interests and possibly competing priorities.

What protections are in place ensure the EIS study will properly analyze, and disclose, potential significant individual and cumulative environmental impacts from the actions proposed in the ALP Update, as well as for the reasonable alternatives for such proposed actions. This airport and highway improvement opportunity will define the future of our communities. We ask the FAA to ensure the EIS clearly presents the information needed for the public to understand each action proposed by the ALP Update, its reasonable alternatives, and the potential environmental effects each action would cause. We believe that such impacts must be assessed from the perspective of both the Airport, as well as from that of the communities adjacent to the Airport.

It should be noted that at the public meeting my staff asked the Airport consultants to consider a scoping meeting with elected leaders of impacted communities, similar to a separate scoping meeting the Airport team held with utility and other business stakeholders. The Airport Director declined, indicating that the December 15, 2022 public meeting and written comment period ending January 16, 2023, was the "best" forum available for local community, including government entities, in the scoping process. It is unclear what steps the Airport took to notify and invite these impacted constituencies of the process underway. Therefore, we feel it is essential that the EIS scope of work includes a robust local government and community engagement element to receive their input, and fully consider potential individual and cumulative impacts of the proposed ALP Update.

If you have any questions about these comments, or would like additional information and input, please contact me or a member of my consultant team. Our lead representative for the NEPA review will be Doug Zaiz/City Administrator and Laura Madden/Consultant. Their contact information is included at the bottom of this page.

Thank you for your full consideration of this input.

Sincerely,

Lawrence Besmer

Mayor, City of Woodson Terrace

Attachments:

Feasibility Study: Woodson Road Airport Connection/Corridor Study

City of Woodson Terrace Comprehensive Plan

Gateway Community Corridors Strategy - Improving Linkages and Connectivity to St. Louis Lambert Airport, Metrolink and St. Louis Regional Growth Clusters

Municipal Resolutions and Letters of Support for Gateway Community Corridors Initiative

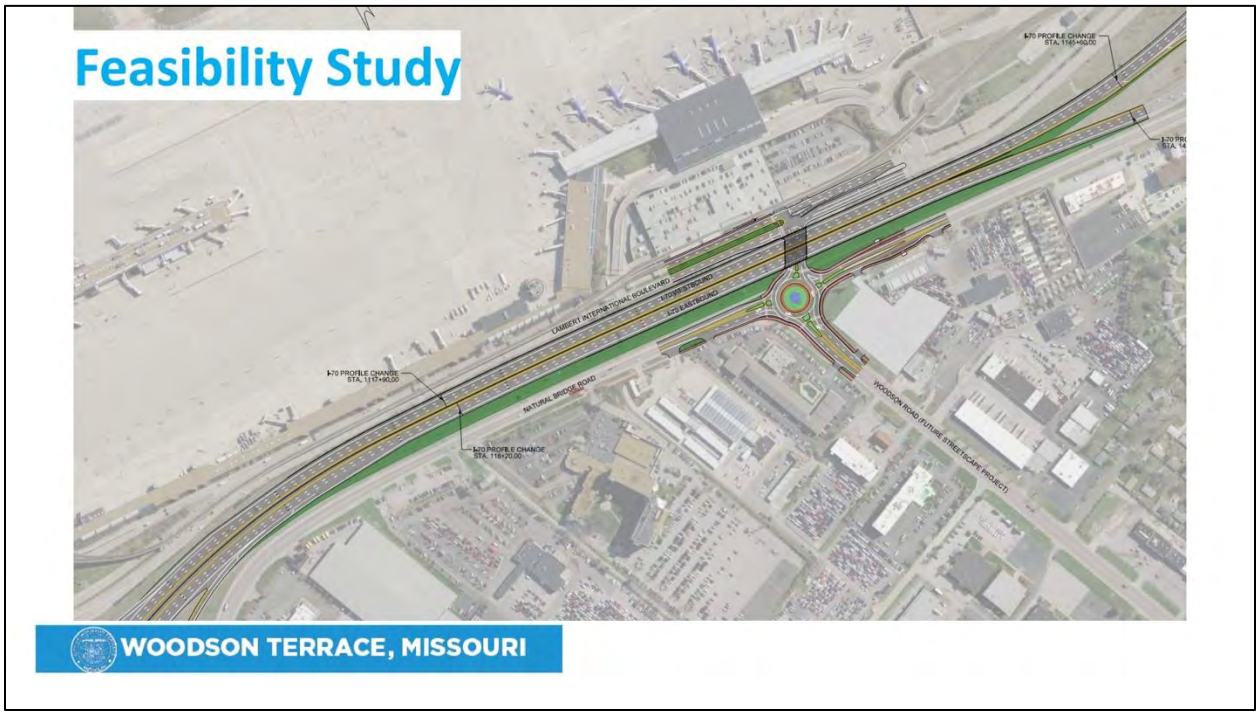
City of Woodson Terrace, City of Berkeley, City of Kinloch

Contact information:

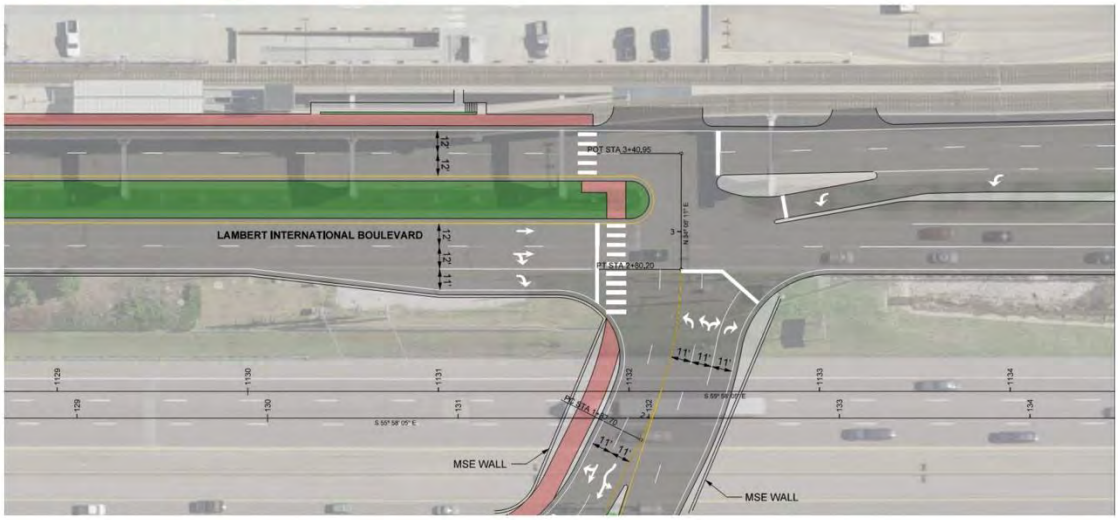
Doug Zaiz, City of Woodson Terrace City Administrator
dzaiz@woodsonterrace.net, phone: 314-427-2600

Laura Madden, Consultant, City of Woodson Terrace
laura@phoenixconsults.com, phone: 202-845-4503


WOODSON ROAD
AIRPORT
CONNECTION/
CORRIDOR STUDY
WOODSON TERRACE, MISSOURI
2021


Feasibility Study
WOODSON TERRACE, MISSOURI

Feasibility Study



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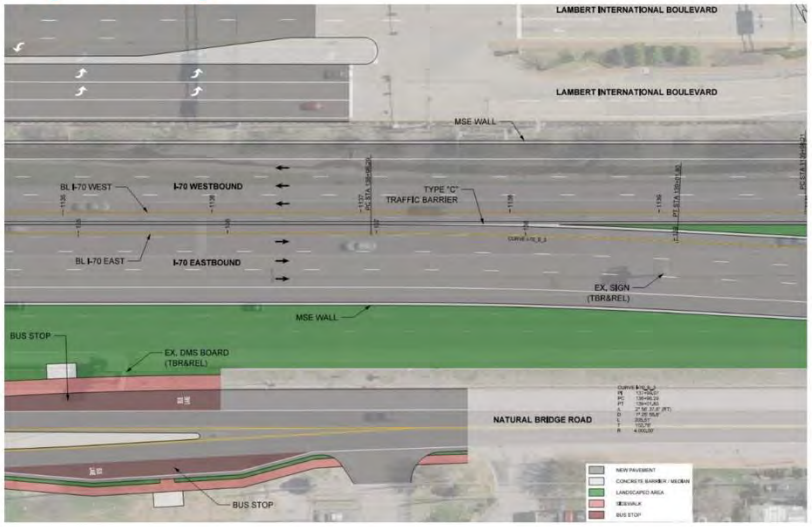
Feasibility Study

WOODSON TERRACE, MISSOURI

Feasibility Study



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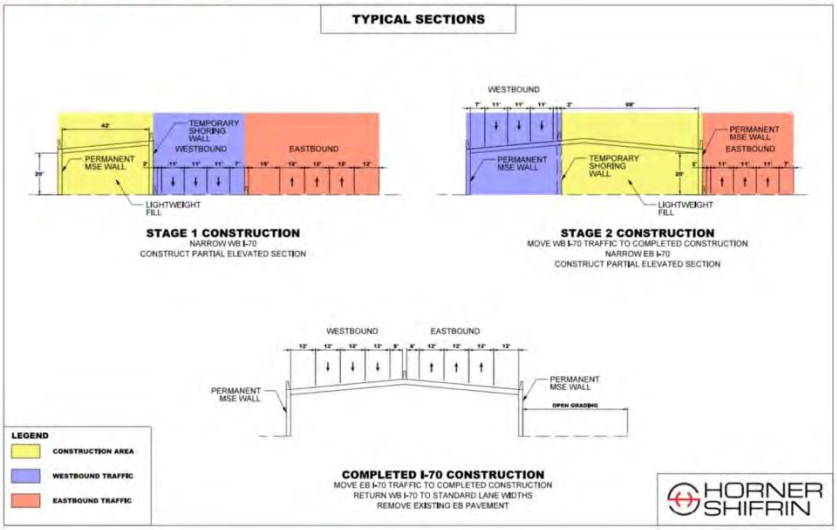

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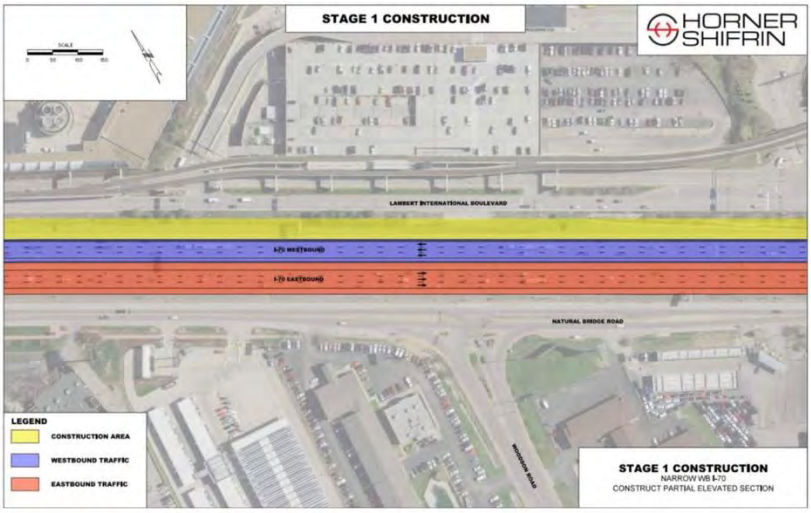

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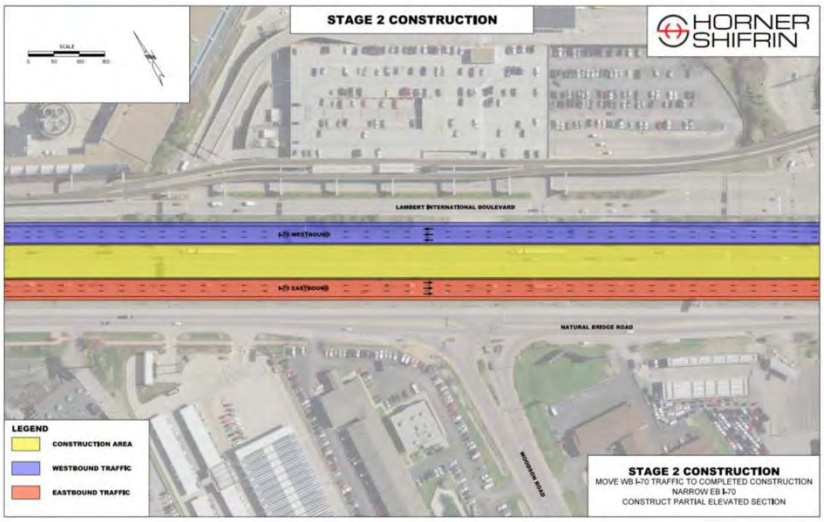

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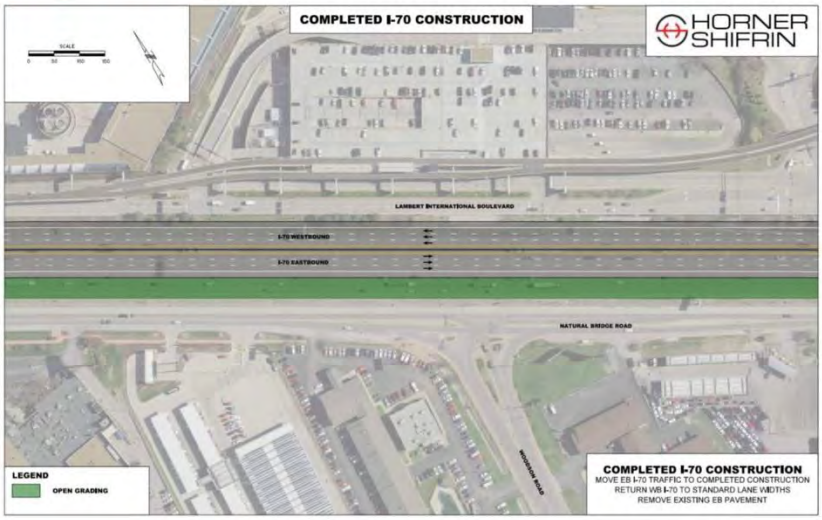
Feasibility Study



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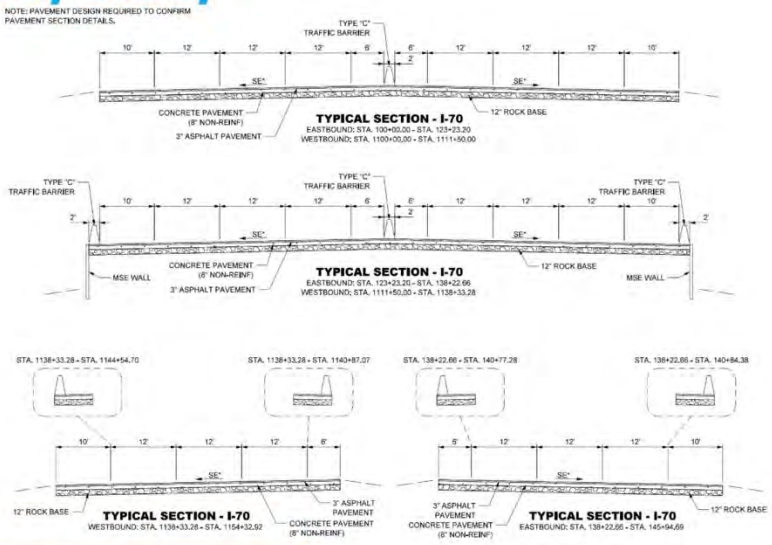
Feasibility Study



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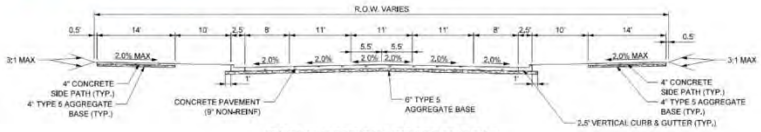
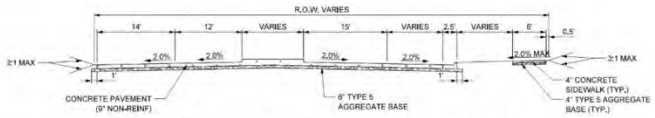
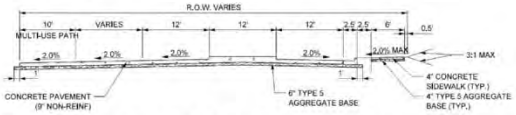
Feasibility Study



TYPICAL SECTION - WOODSON ROAD



TYPICAL SECTION - NATURAL BRIDGE ROAD (WEST LEG)



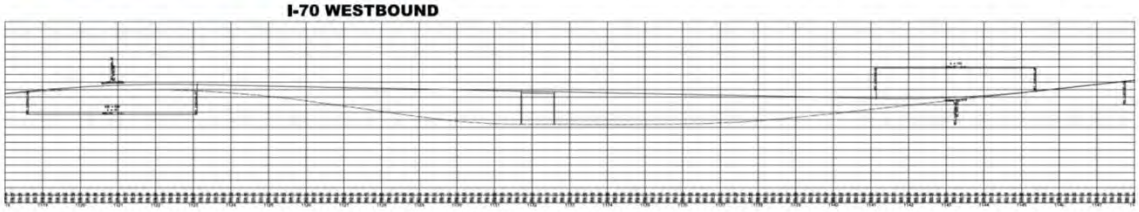
TYPICAL SECTION - NATURAL BRIDGE ROAD (EAST LEG)

WOODSON TERRACE, MISSOURI

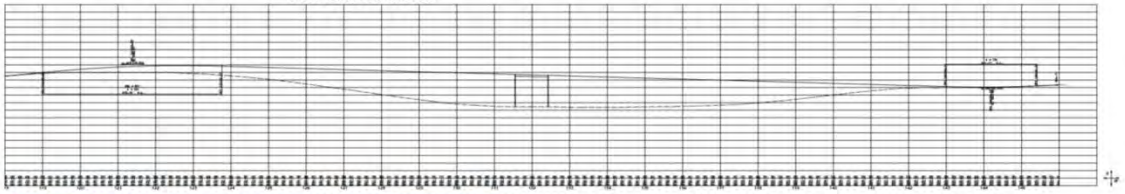
Feasibility Study

Conceptual Design Profiles

I-70 WESTBOUND



I-70 EASTBOUND

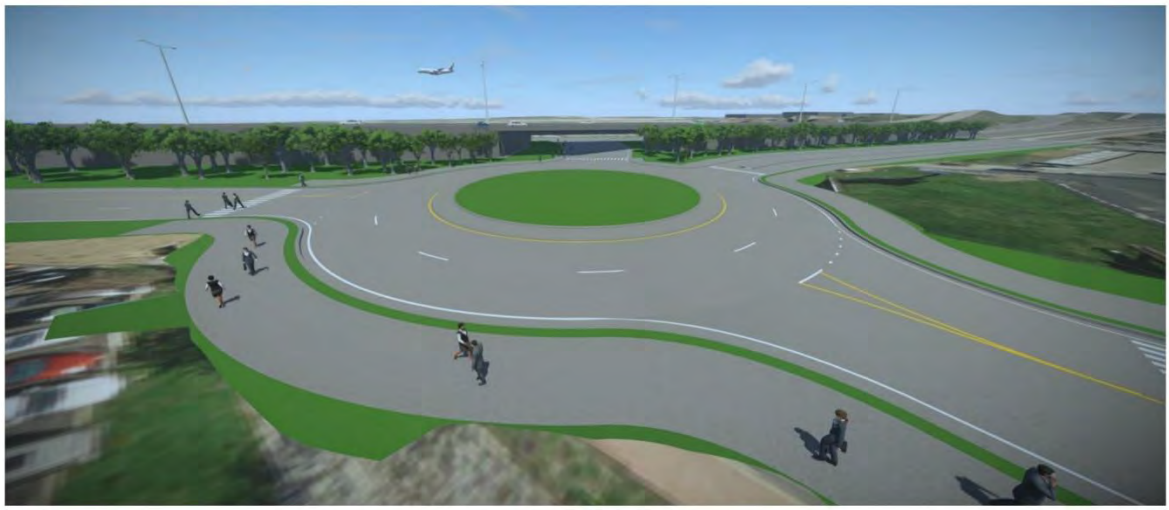


WOODSON TERRACE, MISSOURI

Feasibility Study

WOODSON TERRACE, MISSOURI

Feasibility Study



WOODSON TERRACE, MISSOURI

Traffic Study

- Convert the intersection of Woodson Rd and Natural Bridge Rd to a roundabout with two circulating lanes for northbound and southbound traffic and one circulating lane for eastbound and westbound traffic. The recommended lane configurations approaching the roundabout are as follows:
  - o The northbound and southbound approaches should be configured with one shared left-turn/through lane and one shared through/right turn lane;
  - o The eastbound approach should be configured with one shared left-turn/through lane and one right-turn lane with approximately 175 feet of storage plus taper; and
  - o The westbound approach should have a single left-turn/through/right-turn.
- Modify the intersection of Lambert International Blvd with the Terminal 2 Garage Exit to accommodate the Woodson Airport Connector as the south leg:
  - o Provide one dedicated left-turn lane and two dedicated right-turn lanes for the Woodson Airport Connector northbound approach to the intersection;
  - o Add one dedicated eastbound right-turn lane with approximately 150 feet of storage plus taper;
  - o Add one dedicated westbound left-turn lane with approximately 225 feet of storage plus taper; and
  - o Re-stripe the existing southbound approach to provide one dedicated right-turn lane, one through lane, and two dedicated left-turn lanes.
- Reconfigure the eastbound approach at the intersection of Lambert International Blvd with the Terminal 2 Entrance to provide two eastbound left-turn lanes and one through lane.

WOODSON TERRACE, MISSOURI

Traffic Study – 2030 Build (Very Good Operations)

Intersection & Movements	LOS (Delay, sec) [Queue Length, feet] <v/c ratio>		
	AM Peak Hour	MD Peak Hour	PM Peak Hour
Lambert International Blvd & Terminal 2 Entrance (signalized)			
Overall Intersection	**B (15.7)**	**B (14.5)**	**B (18.0)**
Eastbound Approach	B (12.0) [250] <0.55>	A (8.9) [113] <0.67>	B (14.6) [187] <0.73>
Westbound Approach	C (21.1) [203] <0.58>	C (23.1) [258] <0.63>	C (21.8) [386] <0.76>
Southbound Approach	B (19.8) [<25] <0.57>	C (21.5) [37] <0.58>	B (19.1) [26] <0.62>
Lambert International Blvd & Woodson Rd/Terminal 2 Parking Garage Exit (signalized)			
Overall Intersection	**B (14.6)**	**C (29.8)**	**B (17.3)**
Eastbound Approach	B (12.6) [286] <0.62>	D (36.9) [#517] <0.87>	B (19.0) [324] <0.67>
Westbound Approach	A (8.7) [160] <0.56>	B (19.8) [149] <0.87>	B (12.2) [180] <0.82>
Northbound Approach	C (21.7) [122] <0.59>	C (22.6) [142] <0.43>	C (22.6) [145] <0.47>
Southbound Approach	C (31.6) [36] <0.46>	D (37.2) [36] <0.60>	C (29.7) [36] <0.47>
Lambert International Blvd & Terminal 2 Exit (signalized)			
Overall Intersection	**C (20.0)**	**C (21.7)**	**B (15.4)**
Eastbound Approach	A (8.4) [131] <0.31>	B (11.2) [225] <0.42>	A (8.7) [162] <0.37>
Westbound Approach	A (3.0) [35] <0.24>	A (5.7) [55] <0.24>	A (2.2) [52] <0.44>
Southbound Approach	D (38.0) [189] <0.70>	D (37.4) [202] <0.72>	D (37.3) [166] <0.71>
Natural Bridge Rd & Woodson Rd (roundabout)			
Overall Intersection	***A (7.8)***	***A (8.8)***	***B (10.5)***
Eastbound Approach	A (6.9) [40] <0.35>	A (8.7) [51] <0.40>	B (13.0) [95] <0.55>
Westbound Approach	A (8.6) [27] <0.28>	A (9.8) [49] <0.40>	B (10.5) [55] <0.42>
Northbound Approach	A (8.8) [50] <0.41>	A (8.7) [47] <0.40>	A (9.5) [54] <0.41>
Southbound Approach	A (6.6) [25] <0.24>	A (8.3) [39] <0.35>	A (8.8) [44] <0.38>

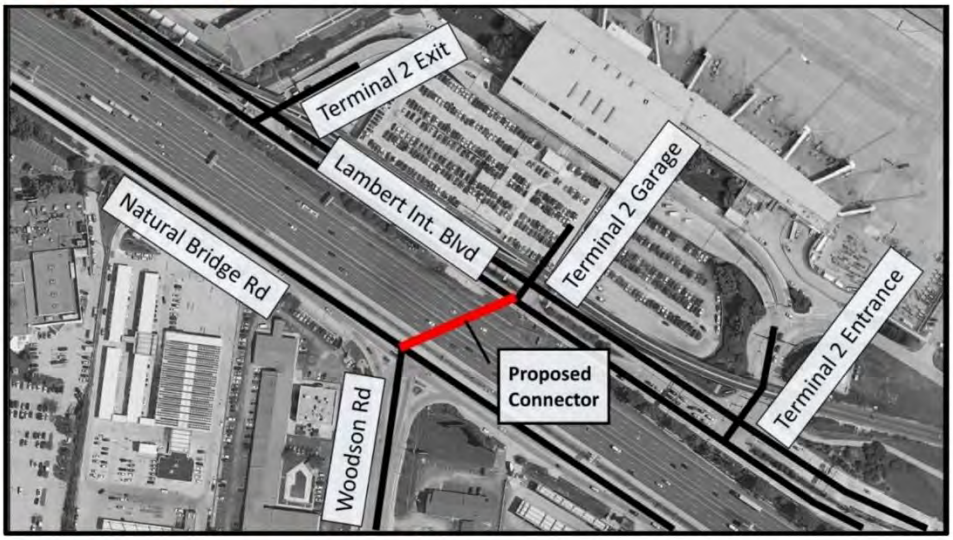
WOODSON TERRACE, MISSOURI

Traffic Study – 2050 Build (Very Good Operations)

Intersection & Movements	LOS (Delay, sec) [Queue Length, feet] <v/c ratio>		
	AM Peak Hour	MD Peak Hour	PM Peak Hour
Lambert International Blvd & Terminal 2 Entrance (signalized)			
Overall Intersection	**B (19.3)**	**B (19.7)**	**C (28.0)**
Eastbound Approach	B (16.4) [302] <0.71>	B (13.4) [m392] <0.83>	B (16.5) [m296] <0.83>
Westbound Approach	C (24.3) [251] <0.75>	C (30.2) [340] <0.81>	D (41.9) [#601] <1.00>
Southbound Approach	B (18.9) [<25] <0.62>	C (21.8) [39] <0.64>	C (22.1) [26] <0.71>
Lambert International Blvd & Terminal 2 Parking Garage Exit (signalized)			
Overall Intersection	**C (28.2)**	**D (46.6)**	**C (21.9)**
Eastbound Approach	C (28.7) [408] <0.84>	D (42.6) [#660] <1.02>	C (26.5) [307] <0.91>
Westbound Approach	C (23.5) [#263] <0.82>	E (62.4) [#466] <1.20>	B (15.9) [m#309] <1.00>
Northbound Approach	C (30.4) [#192] <0.77>	D (38.5) [#213] <0.89>	C (21.5) [160] <0.66>
Southbound Approach	C (34.4) [43] <0.59>	C (33.9) [42] <0.57>	D (36.1) [43] <0.66>
Lambert International Blvd & Terminal 2 Exit (signalized)			
Overall Intersection	**C (20.6)**	**C (21.2)**	**B (16.0)**
Eastbound Approach	B (11.5) [168] <0.38>	B (16.2) [324] <0.55>	B (11.9) [234] <0.49>
Westbound Approach	B (11.5) [162] <0.39>	A (4.4) [m105] <0.38>	A (2.4) [25] <0.59>
Southbound Approach	C (32.3) [210] <0.71>	C (33.7) [238] <0.74>	D (35.6) [206] <0.76>
Natural Bridge Rd & Woodson Rd (roundabout)			
Overall Intersection	**A (9.0)**	**B (11.5)**	**B (13.5)**
Eastbound Approach	A (8.3) [64] <0.45>	B (12.4) [91] <0.55>	C (18.6) [164] <0.72>
Westbound Approach	A (9.9) [34] <0.33>	B (13.9) [92] <0.55>	B (12.5) [69] <0.49>
Northbound Approach	B (10.2) [69] <0.46>	B (10.0) [63] <0.44>	B (11.3) [70] <0.47>
Southbound Approach	A (7.5) [33] <0.30>	B (10.9) [71] <0.47>	B (10.4) [70] <0.47>

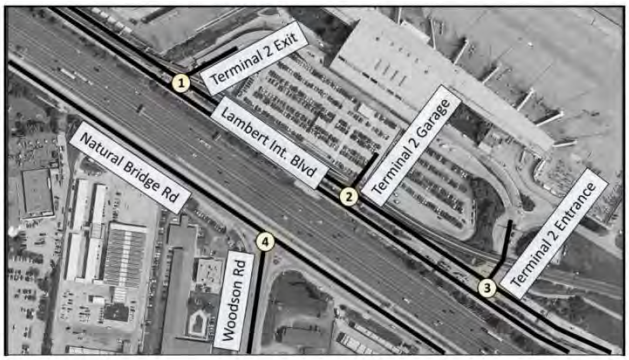
WOODSON TERRACE, MISSOURI

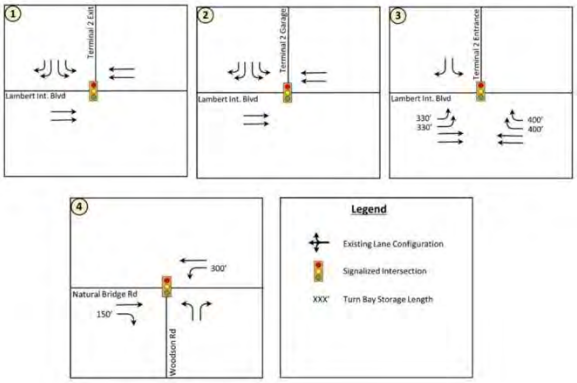
Traffic Study



WOODSON TERRACE, MISSOURI

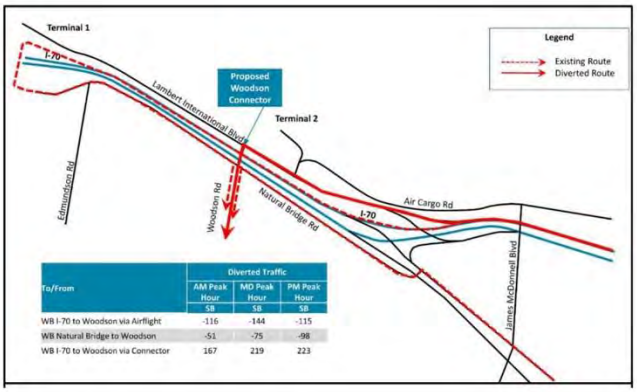
Traffic Study



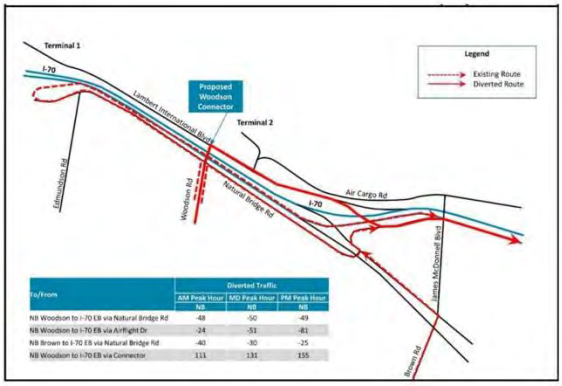


WOODSON TERRACE, MISSOURI

Traffic Study – Diversions to Connector from East



To/From	Diverted Traffic		
	AM Peak Hour	MD Peak Hour	PM Peak Hour
	SB	SB	SB
WB I-70 to Woodson via Airflight	-116	-144	-115
WB Natural Bridge to Woodson	-51	-75	-98
WB I-70 to Woodson via Connector	167	219	223



To/From	Diverted Traffic		
	AM Peak Hour	MD Peak Hour	PM Peak Hour
	NB	NB	NB
NB Woodson to I-70 EB via Natural Bridge Rd	-48	-50	-49
NB Woodson to I-70 EB via Airflight Dr	-24	-51	-41
NB Brown to I-70 EB via Natural Bridge Rd	-40	-30	-25
NB Woodson to I-70 EB via Connector	111	131	155

WOODSON TERRACE, MISSOURI

Woodson Road

WOODSON TERRACE, MISSOURI

Conceptual Design – Updated Cost Estimate

2021

I -70 and Tunnel to Natural Bridge	$23,437,000		
Natural Bridge at Woodson Road Roundabout		$ 2,640,000	
Utility Adjustment Costs	$ 1,150,000	$ 50,000	
Engineering	$ 2,813,000	$ 272,000	
ROW costs	$ 0	$ 50,000	
Construction Engineering	$ 1,875,000	$ 182,000	
Sub Totals:	***$29,275,000***	***$ 2,820,000***	
TOTAL COST for Airport Connection			**$32,095,000**
Woodson Road Corridor (Natural Bridge to St. CRR)	$13,000,000		
Engineering	$1,560,000		
Construction Engineering	$1,040,000		
TOTAL COST for Woodson Road			**$15,600,000**

- **TOTAL COST Projected Cost Estimate** **$48,467,000**

WOODSON TERRACE, MISSOURI

City of Kinloch

A Historic Community
www.kinlochmo.org

5825 Martin Luther King Blvd.
Kinloch, MO 63140

314-455-3198 (P)
314-455-3196 (F)

August 25, 2022

Laura Madden
VP for North County Community Betterment
6439 Plymouth Ave.
St. Louis, MO 63133

Dear Ms. Madden,

I am writing to indicate the City of Kinloch's plan to participate as part of a Gateway Community Corridors Planning and Technical Assistant grant project to be submitted for funding under the U.S. Department of Transportation Reconnecting Communities Pilot (RCP) grant program.

Our participation in this grant recognizes the benefit of coming together as a local community, and as part of a larger footprint of shared vision in a Gateway Community Coalition, to review our individual assets and challenges, and to communicate our priorities for roadways and other improvements that we would like to see considered collaboratively as part of major roadway and infrastructure projects slated for Interstate 70 and connecting roadways over the next three to five years.

One of the cornerstone goals noted under the RCP program is an Equity Strategic Goal that indicates an awareness of inequities across our transportation systems and the communities they affect. The RCP program describes a purpose to fund support planning and connectivity projects to mitigate harms caused by transportation infrastructure that "has created barriers to opportunity, displacement, damage to the environment and public health, limited access, and other hardships." This goal deeply resonates in our community, especially along those corridors directly adjacent to the airport and interstate.

We look forward to working as part of the coalition of communities to remove barriers that impede community connectivity, and enhance mobility, access, and economic development. We believe our co-existence with Lambert Airport and I-70 offers great opportunities to collaborate on ways to open access to these economic connectors, and especially to improve multimodal and community corridor connections that will allow our residents and businesses to participate in transformative change locally and regionally.

Sincerely,

J. W. Blue

Justine W. Blue, MPHil, MPA
City Manager

HOGAN
R5-2022

RESOLUTION OF THE CITYOF WOODSON TERRACE, MISSOURI, TO PARTICIPATE IN APPLICATION FOR FUNDING ASSISTANCE TO THE RECONNECTING COMMUNITIES PILOT PROGRAM – SO AS TO ENVISION AND PLAN FOR TRANSPORTATION CONNECTIVITY AND ECONOMIC DEVELOPMENT.

WHEREAS, the St. Louis Lambert International Airport is reviewing and preparing to present recommendations for major terminal and infrastructure modifications as part of its Airport Layout Plan and Master Plan update. The results of this plan "will allow the St. Louis airport to make informed decisions on potential development and be in the best possible position to address the future needs of our passengers," and

WHEREAS, the State of Missouri Department of Transportation (MO-DOT) has notified the public that they are beginning the process of design and engineering for highway improvements along Interstate 70 from the Missouri River to Hanley Road. As part of this process, MO-DOT will invite community engagement and stakeholder input to determine how millions of dollars of state and federal infrastructure dollars will be allocated to undertake improvements related to safety, pedestrian/bike and transit options, access and connectivity, both highway and arterial roadways, and other options, and

WHEREAS, the U.S. Department of Transportation has announced funding availability under the Reconnecting Communities Pilot (RCP) grant program. This grant program supports planning, capital construction, and technical assistance to restore community connectivity through the removal, retrofit, mitigation or replacement of eligible transportation infrastructure that creates barriers to connectivity and opportunity for citizens and communities, and

WHEREAS, the Reconnecting Communities Pilot program encourages and values meaningful community engagement and multi-jurisdictional planning initiatives, and

WHEREAS, the St. Louis Lambert International Airport is the central hub from which a vibrant, connected corridor network within the surrounding municipalities welcome visitors and facilitates the flow of commerce into the larger St. Louis region. Well-planned road and commercial connectivity, combined with innovative multi-modal air and rail alternatives, will enable transformational economic and community development along these corridors that will benefit Lambert Airport and support regional growth clusters that utilize the airport and its environs for travel, freight, hospitality, and other services, and

WHEREAS, in joining this Coalition, the City also intends to forge new connections within our community and to thereby enhance the community unity, building a better future by bridging the divides that separate us as individuals, thus enhancing our own resilience and community livability.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF ALDERMEN OF THE CITY OF WOODSON TERRACE THAT:

SECTION 1. The health, well-being, and future prosperity of our community is inseparable from the welfare of our neighboring communities and the Gateway St. Louis Region, which are the foundation of the City's history, culture and economy.

SECTION 2. The Board of Aldermen recognize the benefit of coming together as a local community, and as part of a larger footprint of shared vision in a Gateway Community Coalition to engage in dialogue and planning that will allow the City to provide input, plan and advocate for transformative change as part of ongoing initiatives for economic recovery and reinvestment, including:

- St. Louis Lambert International Airport Layout Plan and Master Plan for major terminal and

1

infrastructure modifications that will allow the airport to "make informed decisions on potential development and be in the best possible position to address the future needs of our passengers."

- The Missouri Department of Transportation Interstate 70 Improvements to review and undertake design and construction of improvements along Interstate 70 between the Missouri River and Hanley Road.
- The U.S. Department of Transportation Reconnecting Communities Pilot (RCP) grant program to restore community connectivity through the removal, retrofit, mitigation or replacement of transportation infrastructure that creates barriers for growth and opportunity in communities.

SECTION 3. The City of Woodson Terrace shall effectuate this participation by, among other things, agreeing to join as a stakeholder participant in the Gateway Community Corridor Coalition, and to participate in community engagement and planning activities associated with a grant application under the Reconnecting Communities Pilot program.

SECTION 4. The portions of this Resolution shall be severable. In the event that any portion of this Resolution is found by a court of competent jurisdiction to be invalid, the remaining portions of this Resolution are valid, unless the court finds the valid portions of this Resolution are so essential and inseparably connected with and dependent upon the void portion that it cannot be presumed that the Board would have enacted the valid portions without the invalid ones, or unless the court finds that the valid portions standing alone are incomplete and are incapable of being executed in accordance with the legislative intent.

SECTION 5: This Resolution shall be in full force and effect from and after its adoption and approval as provided by law.

ADOPTED BY THE BOARD OF ALDERMEN FOR THE CITY OF WOODSON TERRACE MISSOURI, THIS 18th DAY OF AUGUST, 2022.

APPROVED THIS 18th DAY OF AUGUST, 2022.

Lawrence P. Besmer, Mayor — Date 8/18/22

Attest:

Ellie Crane, City Clerk — Date 8/18/22

2

Gateway Community Corridors – Improving Linkages and Connectivity to Lambert Airport, Metrolink and Regional Growth Clusters

Contacts: Laura Madden - laura@phoenixconsults.com

VISION: *Lambert Airport is the central hub from which a vibrant, connected corridor network within the Gateway Community Corridors welcomes visitors and facilitates the flow of commerce into the larger St. Louis region. Well-planned road and commercial connectivity, combined with innovative multi-modal air and rail alternatives, will strengthen and support regional growth clusters that utilize Lambert St. Louis International Airport for travel, freight, hospitality, and other services.*

In 2019, Lambert International Airport completed its fifth year of passenger growth with 15.9 million passengers and a 6.7% increase in total cargo (mail and freight) due to the addition of Amazon Prime flights. *Reference: flystl.com media release 1/28/2020.* While that growth was paused due to the COVID-19 shutdown of travel, the airport is progressing upward and is expected to recover to, at least, its 2020 enplanements. Even before reaching its highest passenger volumes, the municipalities adjacent to the airport had begun to experience marked disinvestment due to physical disconnection from Interstate 70 and the once active flow of traffic to/from the airport along arterial roadways that had served to connect communities to each other, the highway and airport. Because of modifications made to create a direct airport exit, highway access was eliminated and diverted in several places which greatly impacted the ability of the communities most adjacent to the airport to benefit from the airport activity or its connectivity to regional growth. While mitigation was proposed as part of the last Master Plan, it has not been forthcoming. In fact, significant land was purchased around the airport for the purpose of runway expansion and was not used. It remains dormant while the communities have suffered a great loss of local tax revenues.

To meet this challenge, we must recognize and invite our connectivity as an Airport Gateway Communities partnership to undertake a coordinated planning strategy. We can work together to identify the priorities, impacts and benefits that support and align with the St. Louis Lambert Airport's Airport Layout Plan and Master Plan Update, and as part of the MO-DOT's Interstate 70 improvement responsibility. This approach also aligns with the U.S. Department of Transportation's Reconnecting Communities Program which recognizes the need to work with state and local governments to remove, retrofit or mitigate highways and other transportation facilities, that create barriers to community connectivity, including mobility, access or economic development.

Improved connections to the airport will enable transformational economic and community development along these Corridors that will benefit Lambert Airport and enhance regional growth clusters. For example, the City of Woodson Terrace, located immediately south of Lambert Airports' Terminal 2, has completed a feasibility study for a new **Woodson Road Gateway Airport Connection** at Woodson Road to extend under Interstate 70 to Lambert International Drive, providing vehicular, bicycle and pedestrian connectivity to the airport and Metrolink station. The project identifies and advances infrastructure and mobility improvements to allow better access and opportunities for economic recovery and growth in adjacent communities. This project is intended to open economic and restorative benefits for other airport-impacted communities adjacent to the airport. Communities surrounding the airport, including but not limited to the City(s) of Berkeley, Bridgeton, Edmundson, Hazelwood, Kinloch and Woodson Terrace have experienced significant disinvestment because of the past airport and highway modifications that have created barriers to access for our residents and business centers. The opportunity is before us to regenerate prosperity by recognizing that the non-highway transportation corridors radiating from the Airport can, if supported, contribute to transformative recovery in each community.

Objectives

Build economic diversity and resiliency to mitigate the impacts of future economic disasters. Presently, most of the commercial activity in communities surrounding Lambert Airport is directly connected to airport operations (hotels, rental cars, warehouse and distribution). Proximity to the airport and airport commerce is necessary for these businesses to succeed, as well as to the airport which relies on efficient access for cargo and travelers. They also provide much-needed revenue for local governments seeking to expand economic opportunities benefiting the local quality of life and community services. Local planning to diversify the economy is proven infeasible given the condition of local infrastructure and the lack of efficient flow of traffic to/from the airport and other regional centers of growth. These conditions were further exacerbated during the COVID-19 pandemic when air travel was virtually shut down, and businesses in these communities reported ***suffering an 80% loss of tax revenue***.

Understanding community needs and priorities in mapping strategies for recovery and growth. Trusted community-based outreach and engagement that can work in a coordinated approach with municipal leaders, local businesses, community action and service

organizations, and local citizens is needed to refine and communicate a unified vision for quality of life, and accessibility to jobs, goods and services. This approach seeks to recognize and strengthen our local and regional connectivity and collaboration on economic recovery and resilience for these communities that have been deeply impacted by systemic disinvestment and decline.

Advance equity (racial, gender, economic) in the region. Transportation and economic development decisions over the years, including and specifically related to airport expansion and land buyouts in the 1990s, served to shut off and bypass local roadways and properties in adjacent communities. Airport and transportation planners then and now emphasize designs that move people OUT of the airport onto highways or dedicated transit stations disconnected from the adjacent municipalities. Past promises to mitigate these buyouts and decisions that destroyed entire communities, most notably the historic Black cities of Kinloch and Robertson, as well as the City of Bridgeton, have not materialized. The blight created by airport buyouts and roadway disconnection has left too many people and businesses with few options. Yes, each city holds precious memories of once vibrant marketplaces that hosted businesses and services that prioritized community connected by family, faith and greater well-being.

The disinvestment experienced is the result of ***choices*** made by transportation and development planners to prioritize moving traffic out of these communities into prosperous wealth centers along the I-170 and I-270 corridors, primarily to the south and west. Those decisions removed highway exits that connected to arterial roadways serving economic opportunity centers in adjacent cities, imposed development restrictions, and bought properties that removed revenue from the tax base of the small cities. Much of this history is deeply rooted in racist policies that segregated opportunity, and denied homeownership and financial backing for wealth-building for Black citizens. Renewed efforts to reinvest in North St. Louis County must be supported to build shared economic prosperity and improve the quality of life in all communities in order to build a stronger St. Louis region.

Create and grow regional growth clusters. Regional planners and decision-makers, including St. Louis City and County, the East-West Gateway Coordinating Council, and Greater St. Louis Inc. are looking at ways to strengthen a strong transportation and freight system that can support the development of regional growth clusters. The success of these growth centers for advanced manufacturing, bioscience and geospatial industries will be enhanced by improved road, air and transit connectivity needed for the efficient flow of workforce, goods, and services to and from our region.

Benefit regional workforces and residents through the creation of high-quality jobs, increased wages, and revitalized communities. Lambert International Airport is the "Gateway City Airport" – both a cargo and transportation hub – that is the linchpin to the success of any emerging industry cluster. Efficient air, roadway and rail links are key to transporting goods and services, but also to any growth opportunity neighboring centers of commerce and community hope to achieve. These goals are intertwined - focused on equity and recovery from the losses caused by barriers to growth and economic opportunity. With the many rental car and hotel locations, as well as airport, highway and transit facilities, there is a prime opportunity to develop a multi-modal transit hub that would include an electric charging hub, as well as bike and pedestrian access to the metro and local bike trails.

Provide transformational economic development strategies. Gateway transportation corridors extending from Lambert Airport in the City-County region offer transformational economic development opportunities through resource center linkages and improved connectivity for business and workforce partnerships. Engagement with community stakeholders will allow the Gateway Airport Community's priority corridor projects to be identified as part of the design and planning for major infrastructure investment at Lambert Airport and along I-70 that will also provide social and economic benefits to the surrounding community that will enhance the visitor experience, and provide physical linkages to commerce activity, residential neighborhoods, and job opportunities.

Regional Impact

Following the completion of its feasibility study for a Woodson Road airport connection, the City of Woodson Terrace met with planning and development agencies, receiving positive input and feedback. The project study focused a great deal of attention on St. Louis Lambert Airport's current work on an updated Master Plan for future modifications both airside and landside. The Woodson Terrace plan seeks to provide better access to, and thereby strengthen, Bi-State metro stations at the airport to make them more available directly to residents and businesses in adjoining communities. At the same time, MO-DOT is beginning a $1.6 million STP planning effort to study I-70 from Route 141 to I-170 to address overall corridor planning. We seek to work with the FAA and MO-DOT to improve roadway and highway connections for municipalities in the airport and I-70 vicinity that will be impacted by these major infrastructure investments.

"These stark inequities do not only hold back individuals and families living in this geography, they hold back the entire region." – St. Louis Anchor Action Network

RESOLUTION # 3657 2022

Introduced by: Assistant City Manager Chief Jackson
of the City of Berkeley, MO

A RESOLUTION OF THE COUNCIL OF THE CITY OF BERKELEY TO PARTICIPATE IN THE APPLICATION FOR FUNDING ASSISTANCE TO THE RECONNECTING COMMUNITIES PILOT PROGRAM – SO AS TO ENVISION AND PLAN FOR TRANSPORTATION CONNECTIVITY AND ECONOMIC DEVELOPMENT

WHEREAS, the St. Louis Lambert International Airport is the central hub from which a vibrant, connected corridor network within the surrounding municipalities welcome visitors and facilitates the flow of commerce into the larger St. Louis region; and

WHEREAS, well-planned road and commercial connectivity, combined with innovative multi-modal air and rail alternatives, will enable transformational economic and community development along these corridors that will benefit transportation efficiency that supports local and regional growth for business and people wo utilize the airport and its environs for travel, freight, hospitality, and other services; and

WHEREAS, the U.S. Department of Transportation has announced funding availability under the *Reconnecting Communities Pilot (RCP)* grant program. This grant program supports planning, capital construction, and technical assistance to restore community connectivity through the removal, retrofit, mitigation or replacement of eligible transportation infrastructure that creates barriers to connectivity;

WHEREAS, a cornerstone of the RCP program is DOT's Equity Strategic Goal to reduce inequities across our transportation systems and the communities they affect. The RCP Program seeks to redress the legacy of harm caused by transportation infrastructure, including barriers to opportunity, displacement, damage to the environment and public health, limited access, and other hardships. In pursuit of these goals, the accessible, and multimodal access to daily destinations like jobs, healthcare, grocery stores, schools, places of worship, recreation, and park space; and

WHEREAS, the Reconnecting Communities Pilot program encourages and values meaningful community engagement and multi-jurisdictional planning initiatives. It would be beneficial to strengthen the voices of communities at the most local level to engage North St. Louis County airport-impacted communities in a coalition seeking to improve access, linkages and connectivity to essential infrastructure, jobs, and opportunity; and

WHEREAS, in joining this Gateway Community Corridors Coalition, the City of Berkeley also intends to forge new connections within our community and to thereby enhance the community unity, building a better future by bridging the divides that separate us as individuals, thus enhancing our own resilience and improving people's lives.

NOW THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF BERKELEY, MISSOURI AS FOLLOWS**:**

SECTION 1. The health, well-being, and future prosperity of our community is inseparable from the welfare of our neighboring communities and the Gateway St. Louis Region, which are the foundation of our history, culture, and economy.

SECTION 2. The Berkeley City Council therefore recognize the benefit of coming together as a local community, and as part of a larger footprint of shared vision in a Gateway Community Coalition to engage in dialogue and planning that will allow us to provide input, plan, and advocate for transformative change as part of ongoing initiatives for economic recovery and reinvestment, including:

- St. Louis Lambert International Airport Layout Plan and Master Plan for major terminal and infrastructure modifications that will allow the airport to "make informed decisions on potential development and be in the best possible position to address the future needs of our passengers."
- The Missouri Department of Transportation Interstate 70 Improvements to review and undertake design and construction of improvements along Interstate 70 between the Missouri River and Hanley Road.

- The U.S. Department of Transportation *Reconnecting Communities Pilot (RCP)* grant program to restore community connectivity through the removal, retrofit, mitigation or replacement of transportation infrastructure that creates barriers to community connectivity, including to mobility, access, or economic development.

SECTION 3. The City of Berkeley shall effectuate this participation by, among other things, agreeing to join as a stakeholder participant in the Gateway Community Corridor Coalition, and to participate in community engagement ad planning activities associated with a grant application under the Reconnecting Communities Pilot program.

SECTION 4. This Resolution shall be in full force and effect from and after the date of its passage.

PASSED this **15th day of August 2022**

Mayor Babatunde Deinbo

ATTEST:

Deanna Jones, City Clerk

Approved as to Form:
Donnell Smith, City Attorney

Final Roll Call:

Councilwoman Verges	Aye ___	Nay X	Absent ___	Abstain ___
Councilwoman Williams	Aye X	Nay ___	Absent ___	Abstain ___
Councilman Hoskins	Aye X	Nay ___	Absent ___	Abstain ___
Councilwoman Anthony	Aye ___	Nay ___	Absent X	Abstain ___
Councilman Hindeleh	Aye X	Nay ___	Absent ___	Abstain ___
Councilwoman-at-Large Crawford-Graham	Aye X	Nay ___	Absent ___	Abstain ___
Mayor Deinbo	Aye X	Nay ___	Absent ___	Abstain ___

August 9, 2022

Deanna L. Jones
City Clerk, City of Berkeley
8425 Airport Road
Berkeley, Missouri 63134

Dear Ms. Jones:

I am writing to invite participation of the City of Berkeley as part of a coalition of North St. Louis County airport-impacted communities, i.e. a Gateway Community Corridor Coalition, seeking to improve access, linkages and connectivity to essential infrastructure, jobs and opportunity necessary to recover and regenerate our economies and quality of life for our citizens. A priority objective of this coalition is to increase awareness of the impacts and priorities of the communities where we live and work as it relates to major infrastructure and economic development investments in and around Lambert Airport. It is also to invite your participation in drafting and implementation, if funded, of a grant project that will include community engagement and planning to advance infrastructure and economic reinvestments under federal Build Back Better strategies.

As requested, I share a draft Resolution for consideration by the City Council to affirm the City's participation in the grant and planning process.

VISION: *Lambert Airport is the central hub from which a vibrant, connected corridor network within the Gateway Community Corridors welcomes visitors and facilitates the flow of commerce into the larger St. Louis region. Well-planned road and commercial connectivity, combined with innovative multi-modal air and rail alternatives, will strengthen and support regional growth clusters that utilize Lambert St. Louis International Airport for travel, freight, hospitality, and other services.*

Development of this Coalition is motivated by three significant opportunities to engage in collaborative community planning and advocacy on this vision:

1. Lambert Airport is developing recommendations for major terminal and infrastructure modifications as part of its Airport Layout Plan and Master Plan update. The results of this plan "will allow STL to make informed decisions on potential development and be in the best possible position to address the future needs of our passengers." Lambert Airport will be undertaking some form of community engagement as part of this process.
2. The Missouri Department of Transportation has published a notice that they are beginning the process of design and engineering for I-70 Corridor Improvements for Segment 4 from the Missouri River to Hanley Road. Robust community and stakeholder input is needed as they determine and pursue options for improvements that will improve safety, add bike/ped options, improve intersection flow, wayfinding and other upgrades.
3. The U.S. Department of Transportation has announced funding availability under the Reconnecting Communities Pilot (RCP) grant program. This grant program supports planning, capital construction, and technical assistance to restore community connectivity *through the removal, retrofit, mitigation or replacement of eligible transportation infrastructure that creates barriers to connectivity, including to mobility, access, or economic development.* The program encourages and values meaningful community engagement and multi-jurisdictional planning initiatives.

The St. Louis County Economic Development Partnership (the Partnership) has conditionally agreed to serve as the lead fiduciary entity to apply for funding under the Reconnecting Communities Pilot program to support planning and

technical assistance for local governments and communities in the vicinity of the airport. Such application depends on the confirmation of interest to participate by the communities and other stakeholders in the envisioned grant project area. The requested funds will be used to undertake community engagement and corridor planning for transportation connectivity and corridor improvements in those communities surrounding the airport that have experienced significant disinvestment because of past airport and highway development. Principal city participants would include Woodson Terrace, Edmundson, Bridgeton, Berkeley and Kinloch. As these major infrastructure projects advance, it is essential that the voices of communities at the most local level are heard, and that the benefits of these public investments serve as pathways, rather than barriers, for communities to achieve recovery and opportunity for resilient life.

The grant application will be developed in collaboration, and must be submitted by October 13, 2022. As a Gateway Community Corridor Coalition we will also look at other opportunities to strengthen our collective voice to advocate for multi-modal connections within and between communities and employment centers located on either side of the airport and I-70.

Please feel free to contact me with any questions related to this letter, attached draft Resolution and grant proposal outline.

Sincerely,

Laura Madden
Vice President, North County Community Betterment, (an initiative of A Red Circle)
Principal, Phoenix Consults (consultant to the City of Woodson Terrace)
laura@phoenixconsults.com
202-845-4503

Gateway Community Corridors – Improving Linkages and Connectivity to Lambert Airport, Metrolink and Regional Growth Clusters

July 2022_updated

Contacts: Laura Madden - laura@phoenixconsults.com
Laurel Harrington - lsharrington@hornershifron.com

Project Description

Funding is needed to undertake a Gateway Community Corridors Engagement and Planning Project to identify, plan and report on the priorities, impacts and regional benefits associated with improving linkages and connectivity of roadways, jobs and essential services associated with anticipated airport and I-70 modifications, and to assure equitable growth and opportunity for adjacent municipalities that are essential providers of airport-related business and traveler services.

VISION: *Lambert Airport is the central hub from which a vibrant, connected corridor network within the Gateway Community Corridors welcomes visitors and facilitates the flow of commerce into the larger St. Louis region. Well-planned road and commercial connectivity, combined with innovative multi-modal air and rail alternatives, will strengthen and support regional growth clusters that utilize Lambert St. Louis International Airport for travel, freight, hospitality, and other services.*

Improved connections to the airport will enable transformational economic and community development along these Corridors that will benefit Lambert Airport and enhance regional growth clusters. For example, the **Woodson Road Gateway Airport Connection** would extend Woodson Road under Interstate 70 to connect directly to Lambert International Drive and provide vehicular, bicycle and pedestrian connectivity. The project identifies and advances infrastructure and mobility improvements to allow better access and opportunities for economic recovery and growth in adjacent communities. The current connection strategy extends from a feasibility study completed for a **Woodson Road Airport Connection** undertaken by the City of Woodson Terrace to demonstrate the resilience and positive impacts such a Connection will have for the city and the region.

The Gateway Community Corridors connectivity project is focused on the communities adjacent to Lambert International Airport on the north/south "east end" of the airport along the I-70 corridor between Air Flight Drive and Hanley Road. Part of the vision is to engage with a coalition of "**Gateway Airport Communities**," inviting participation in planning from local governments and stakeholders within communities surrounding the airport that have experienced significant disinvestment because of past airport and highway projects, including Woodson Terrace, Edmundson, Hazelwood, Berkeley and Kinloch. The project boundaries are defined by key, non-highway transportation corridors radiating from the Airport that have the potential to contribute to transformative economic development in each community. Once identified, the grant funding will also support a transportation connectivity and corridor planning for the Gateway Community Corridor(s), the airport, highway and transit infrastructure.

Approximate overall project cost: $500,000

Objectives

Build economic diversity and resiliency to mitigate impacts of future economic disasters. Presently, most of the commercial activity in communities surrounding Lambert Airport is directly connected to airport operations (hotels, rental cars, warehouse and distribution). Proximity to the airport and airport commerce is necessary for these businesses. Other economic opportunities that can benefit quality of life and community needs – and to diversify the economy - are not feasible given the condition of local infrastructure and lack of efficient flow of traffic to/from the airport and other regional centers of growth. ***During the COVID-19 pandemic, when air travel was virtually shut down, businesses in these communities reported suffering an 80% loss of revenue.***

In 2019, Lambert International Airport completed its fifth year of passenger growth with 15.9 million passengers and a 6.7% increase in total cargo (mail and freight) due to the addition of Amazon Prime flights. *Reference: flystl.com media release 1/28/2020.* Since even before the highest passenger volumes in 2000, the municipalities adjacent to the airport had experienced marked disinvestment due to their physical disconnection from the airport's operations and the flow of traffic to/from the airport. These communities are handicapped in their capacity to contribute to, or benefit from, the airport activity or its regional growth partners in the St Louis region. Currently, the Airport is undertaking a comprehensive master plan to study both the air side and land site connections and synergies that will support a recovered and resilient airport footprint. With this work underway, planning work will both influence and collaborate with these master concepts.

Understanding community needs and priorities in mapping strategies for recovery and growth. This will include community-based outreach and engagement, working with municipal leaders, local business and community action and services organization and local populations to refine and communicate their plans for quality of life, accessibility to jobs, goods and services. The goal is to engage in a dialogue that will maximize connectivity and collaboration on economic recovery and resilience for these communities who have been deeply impacted by disinvestment and decline.

Create and grow regional growth clusters. A strong multimodal transportation and freight system supports the development of regional growth clusters. The St Louis region's advanced manufacturing, bioscience and geospatial industries need enhanced connectivity to Lambert Airport to contribute to the efficient flow of talent, goods, and services to and from our region. The proposed project reviews both the transportation elements to sustain growth and connectivity as well as the economic benefits.

Provide transformational economic development strategies. Gateway transportation corridors extending from Lambert Airport in the City-County region offer transformational economic development opportunities through resource center linkages and improved connectivity for business and workforce partnerships. Engagement with community stakeholders will allow the Gateway Airport Community's priority corridor projects to be determined, and will demonstrate locations for key infrastructure investment, social and economic benefits, and visitor experiences, as well as physical linkages to commerce activity, residential neighborhoods, and job opportunities.

Benefit regional workforces and residents through creation of high-quality job, increased wages, and revitalized communities. Lambert International Airport is the "Gateway City Airport" – both a cargo and transportation hub – that is the linchpin to the success of any emerging industry cluster. Efficient air, roadway and rail links are key to transporting goods and services, but also to any growth opportunity we, as neighboring centers of commerce and community, hope to achieve. These goals are intertwined focus on equity and recovery from the losses we all shared from economic isolation. In Woodson Terrace, there is a natural place for a multi-modal transit hub on Natural Bridge near the point where Woodson Road could extend under Interstate 70 to the airport. This hub would showcase innovation by providing electric car charging for travelers as well as the concentration of rental car operations.

Advance equity (racial, gender, economic) in the region. Transportation and economic development decisions over the years shut off and bypassed local roadways and properties in adjacent communities – favoring strategies that quickly move people OUT of the airport onto highways or to transit disconnected from the adjacent municipalities. The communities surrounding the airport were once vibrant marketplaces that hosted active business, retail services, and a ready workforce for community and regional business. Today, these same communities have closed storefronts, reduced job opportunities and a declining quality of services for their residents.

The zip code 63134, that surrounds the airport on the east end, has a population of over 73% Black or African American residents and over 80% minority residents overall. The disinvestment is not related to capacity, property, safety, or workforce. It is caused by transportation and development investment directed out of these communities into new, previously undeveloped areas. The project vision is distinctly tied to creating opportunities for the airport, its resilience and connectivity both geographically and economically to the Gateway Communities. The Project's influence extends out to support the flow of commerce and access throughout the region. Alignment with Lambert recovery and resilience plans, both airside and landside, are essential for regional and/or community recovery and resilience to work. Projects like the Woodson Road connection to the airport, and others we would anticipate under the planning grant, are designed to improve flow of goods, services and people to and from the airport, open up centers of employment in under-resourced communities that have suffered significant disinvestment, support local businesses and create new commerce, and allow pedestrian and bicycle access to the Airport metro station.

Regional Impact

Following completion of its feasibility study for a Woodson Road airport connection, the City of Woodson Terrace met with planning and development agencies, receiving positive input and feedback. The project study focused a great deal of attention on St. Louis Lambert Airport's current work on an updated Master Plan for future modifications both airside and landside. The Woodson Terrace plan seeks to provide better access to, and thereby strengthen, Bi-State metro stations at the airport to make them more available directly to residents and businesses in adjoining communities. At the same time, MO-DOT is beginning a $1.6 million STP planning effort to study I-70 from Route 141 to I-170 to address overall corridor planning. We seek to work with MO-DOT to improve roadway and highway connections for municipalities in the airport and I-70 study corridor. The project will identify ways to link workforce and business with opportunities for jobs and commercial relationships in Gateway Communities.

APPENDIX U: EMAILED COMMENT 4 AND SUPPORTING DOCUMENTS

Greetings,

Osage Nation received and reviewed the Section 106 project notification regarding FAA, St. Louis Lambert International Airport: Consolidated Terminal Program (CTP) and West Airfield Program (WAP), St. Louis County, Missouri. Attached, please see the response letter from ONHPO.

Should you have any questions or need any additional information please feel free to contact Luke Morris via email at luke.morris@osagenation-nsn.gov. Thank you for consulting with the Osage Nation on this matter.

Best regards,

Luke Morris

Archaeologist, MA

Osage Nation Historic Preservation Office

627 Grandview Avenue,

Pawhuska, OK 74056

Fax: (918) 287-5376

Supporting document:

- Letter from Andrea A. Hunter, Director of the Osage Nation Historic Preservation Office and Luke A. Morris, Archaeologist

Osage Nation Historic Preservation Office

Date: January 18, 2023 **File: 2223-4404MO-12**

FAA, St. Louis Lambert International Airport: Consolidated Terminal Program (CTP) and West Airfield Program (WAP), St. Louis County, Missouri

Federal Aviation Administration, Central Region
Scott Tener
901 Locust
Kansas City, MO 64106

Dear Mr. Tener,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project listed as FAA, St. Louis Lambert International Airport: Consolidated Terminal Program (CTP) and West Airfield Program (WAP), St. Louis County, Missouri. **The Osage Nation requests copies of archaeological survey reports for ST-158 and PU-206, two former surveys within the APE performed by Rex Walters.**

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation anticipates reviewing and commenting on the archaeological survey reports for ST-158 and PU-206.**

Should you have any questions or need any additional information please feel free to contact Luke Morris at luke.morris@osagenation.nsn.gov. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.
Director, Tribal Historic Preservation Officer

Luke A. Morris, MA
Archaeologist

1

627 Grandview Ave. * Pawhuska, OK 74056 Telephone 918-287-5328 * Fax 918-287-5376
www.osagenation-nsn.gov/who-we-are/historic-preservation * HistoricPreservation@osagenation-nsn.gov

APPENDIX V: TABLE OF EMAILED COMMENTS CATEGORIZED BY THEME

Comment Number	Theme(s)
Comment 1	Connectivity to MetroLink station
Comment 2	No adverse effect or endangerment of tribal cultural history Tribe and state agency consultation
Comment 3	Adverse economic effects to adjacent communities Adverse environmental effects (noise, pollution, etc.) to adjacent communities City of Woodson Terrace Comprehensive Plan Collaboration and alignment of goals Community and local government engagement Connections to the airport Cultural, historic, tourism, and business preservation and recruitment Duel jurisdictional context Economic revitalization Energy and natural or depletable resources Land use MetroLink connectivity and access from neighboring communities Negative impact of severed communities due to roadway development Noise mitigation studies Partnership with neighboring communities Public engagement Redevelopment of airport-adjacent communities Redevelopment of commercial corridors Review impact on neighboring communities Roadway connectivity and access to neighboring communities Urban quality, historic and cultural resources USDOT Reconnecting Communities Program Woodson Road Gateway Airport Connection feasibility study
Comment 4	Archaeological survey reports Tribe and state agency consultation

Gateway Coalition Briefing Presentation

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

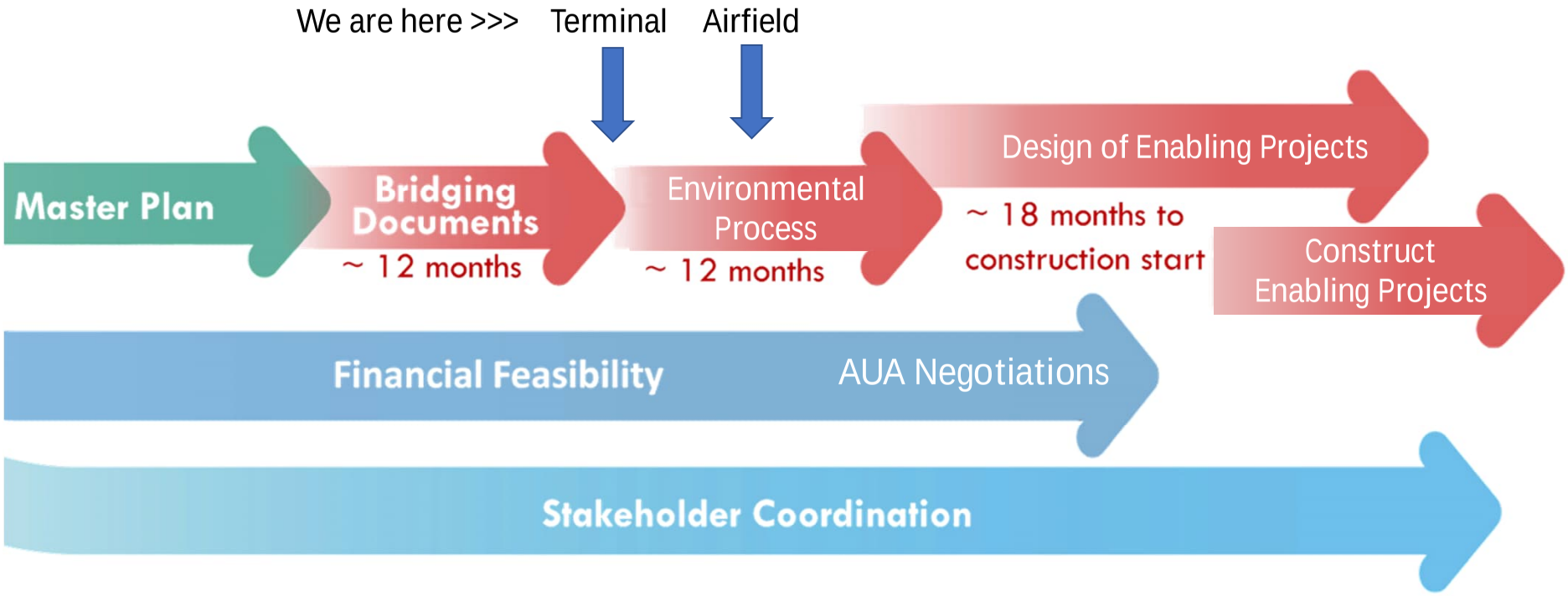
Gateway Coalition Briefing

Date: November 21, 2023

Agenda

- Purpose:
  - Gateway Coalition Briefing
- Airport Planning Recap
  - Airport Planning Requirements
  - Status of Airport Planning Process
- Airport access plan evolution
    - Woodson Terrace Project
    - Community Concerns
  - Travel Time and Distance Comparisons
  - What's Next

Status of STL Planning & Development Process



Need for STL Improvements

BACKGROUND

- Forecast

↑~34%
passenger demand
from 2019 to 2040

- Meet customer expectations
- STL's contribution to regional economy

FACILITIES

- Terminal
- Landside
- Airfield
- Cargo and Support Facilities

REQUIREMENTS

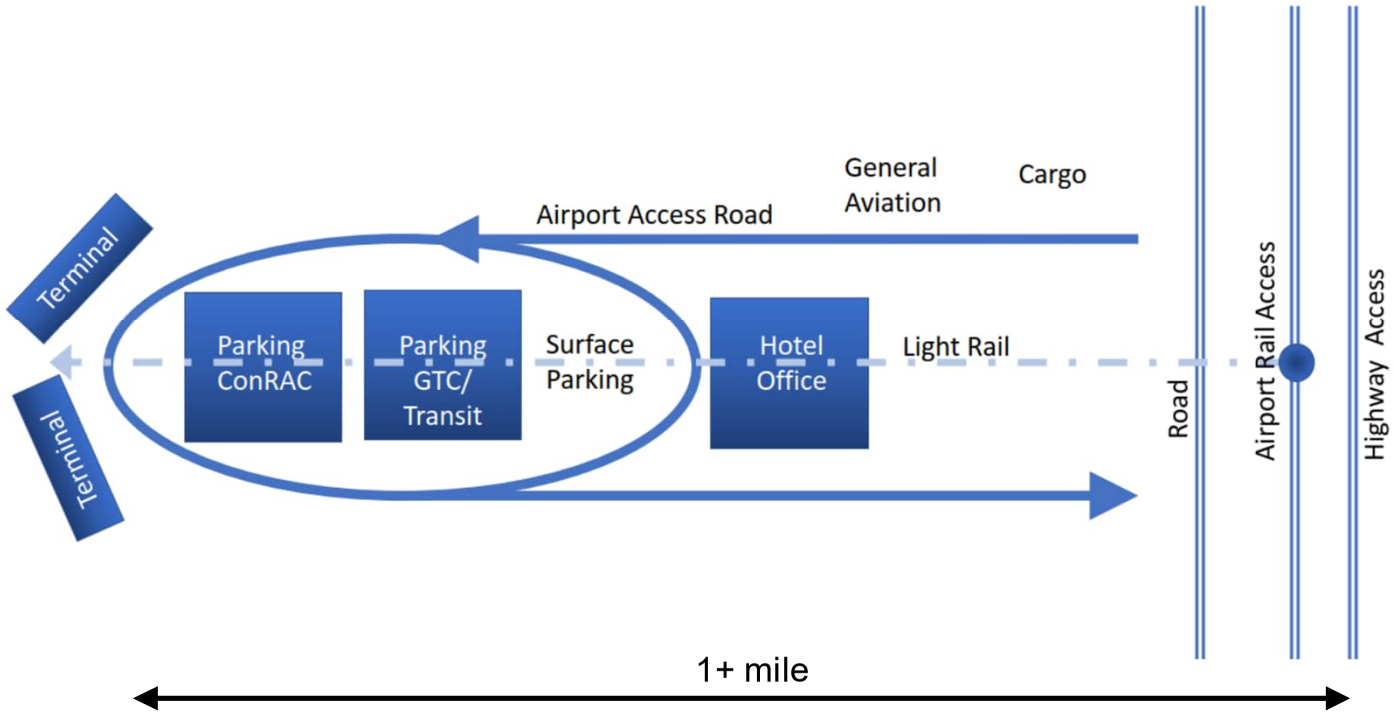
- Improved Airport access and circulation:
  - lengthen terminal area approach road
  - easy decision-making
  - simple, free-flowing
  - maintain local access
- More close-in parking

Ideal Terminal Access

List of Priorities:
- Passengers
- Employees
- Shuttles

Goals:
- Easy decision-making
- Minimal weaving
- Simple, free-flowing

Musts:
- Maintain or improve access
- Maintain or improve safety



Initial Landside Master Plan Concept

Where We Left Off (NEPA Scoping Exhibit)

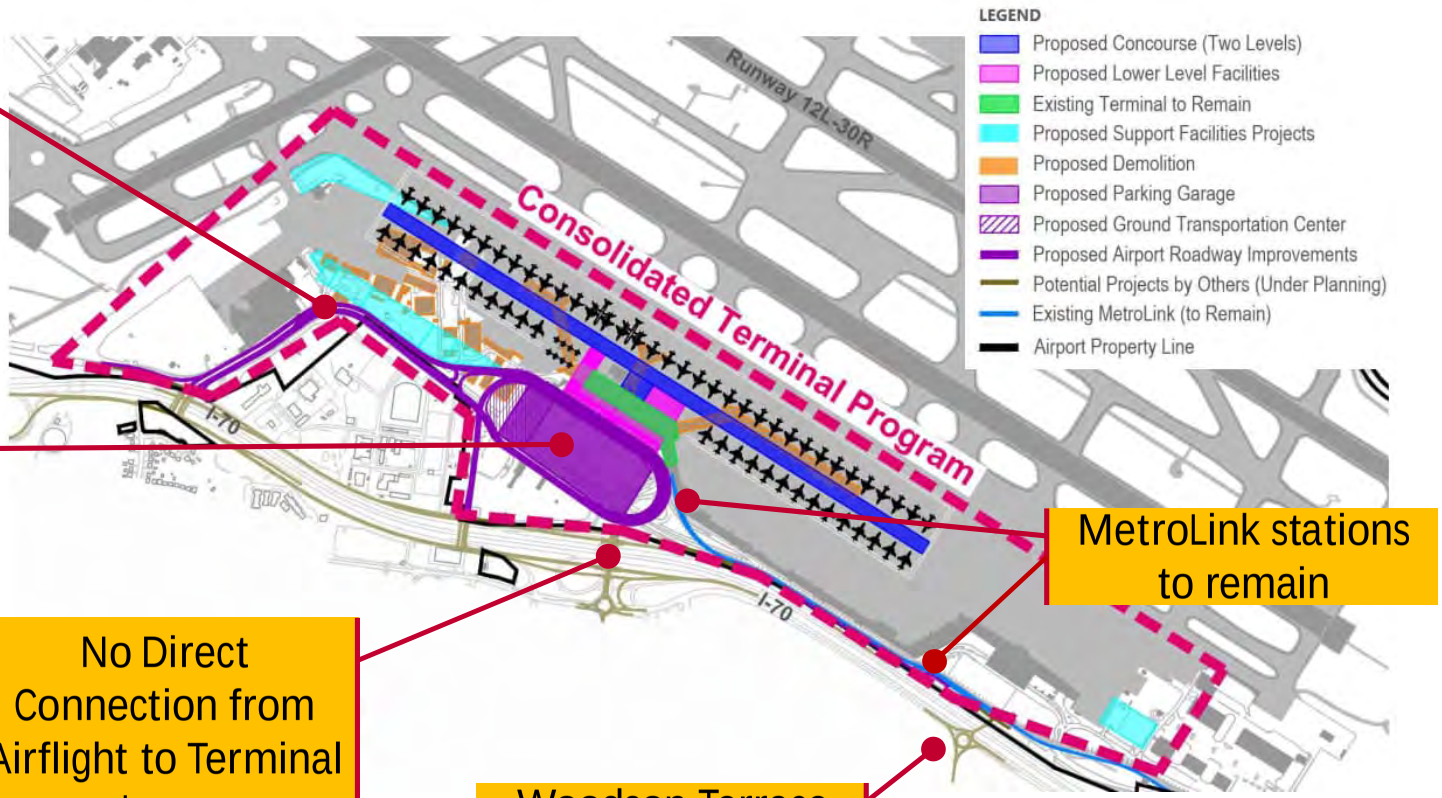
Terminal Loop & Entrance/Exit Drive

Larger Parking Garage with Ground Transportation Center

No Direct Connection from Airflight to Terminal Loop

Woodson Terrace Project

MetroLink stations to remain



Comments Provided

summary of comments

Woodson Terrace

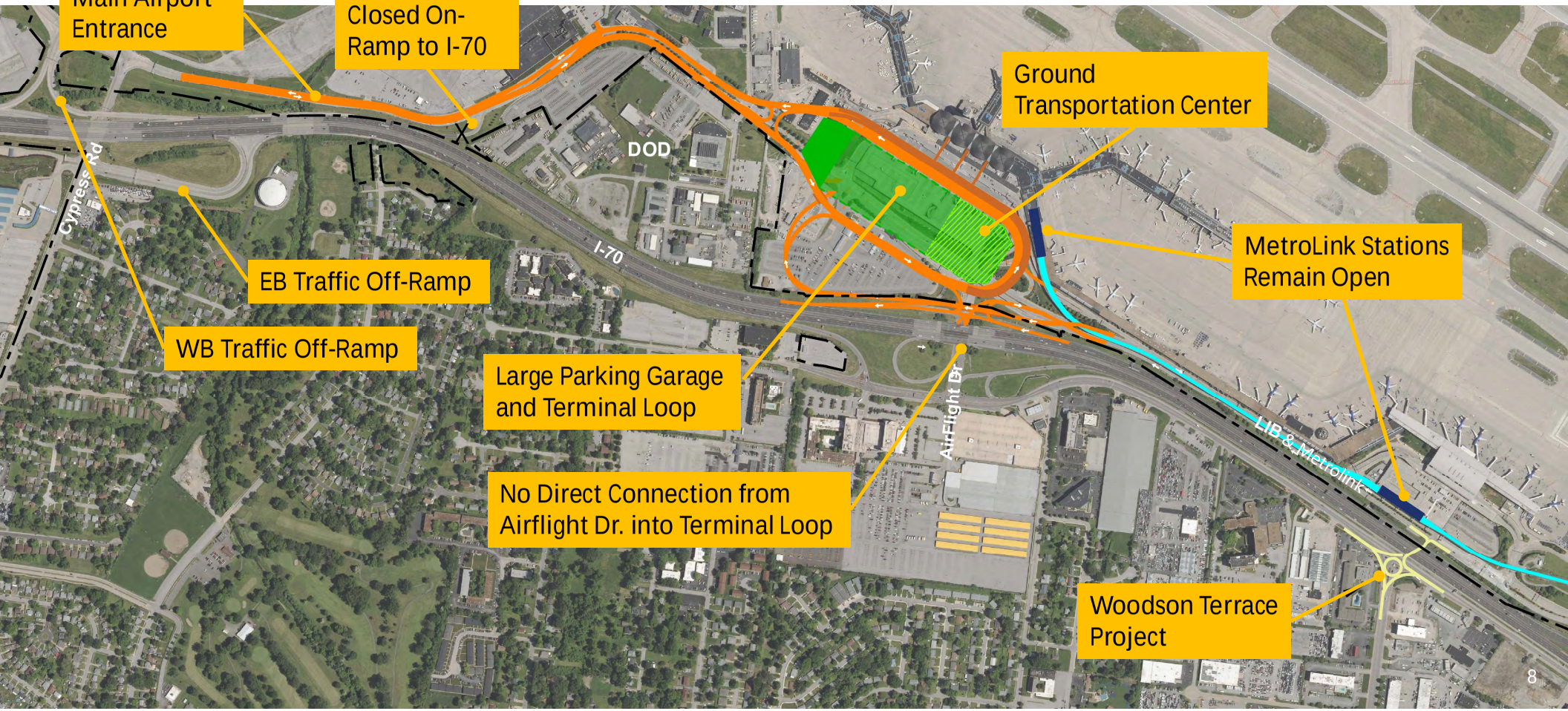
1.	Local access maintained
2.	WT project considered
3.	Preserve Metrolink access at T1 and T2
4.	Future parking demand
5.	Future of Terminal 2
6.	Consider bicycle & pedestrian safety

Others

1.	Highway related planning
2.	Excessive Driving Distance

Landside Preferred Alternative

Where We Are Now



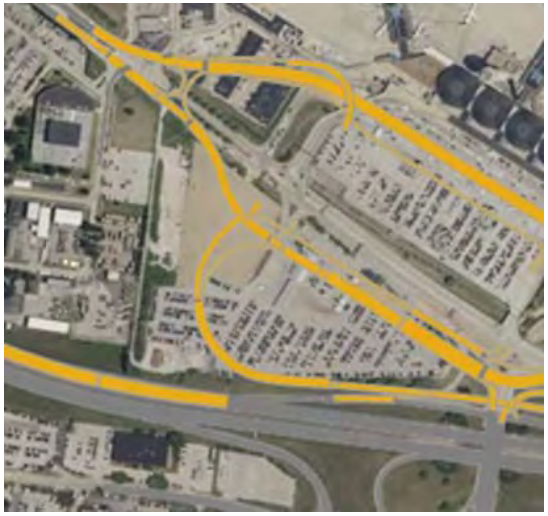
Landside Preferred Alternative

Where We Are Now

Traffic Models in Review

Cypress Interchange

- Restripe or add pavement for additional lanes
- Maintain existing access



Airflight Interchange - West

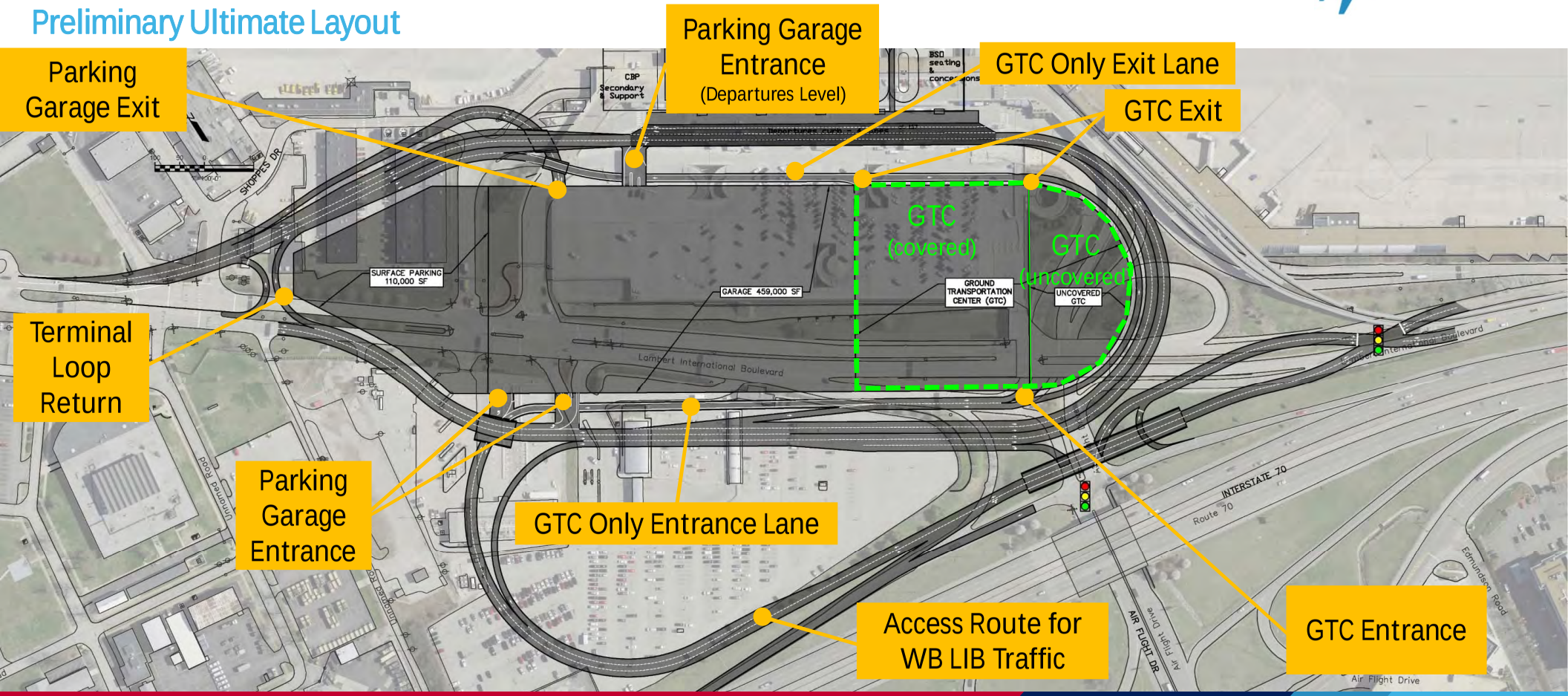
- Maintain access to/from I-70
- Add I-70 Auxiliary (WB) lane
- No Direct NB Access to Loop

Airflight Interchange - East

- Maintain access to/from T2
- Maintain T1/T2 access
- Maintain access to/from I-70

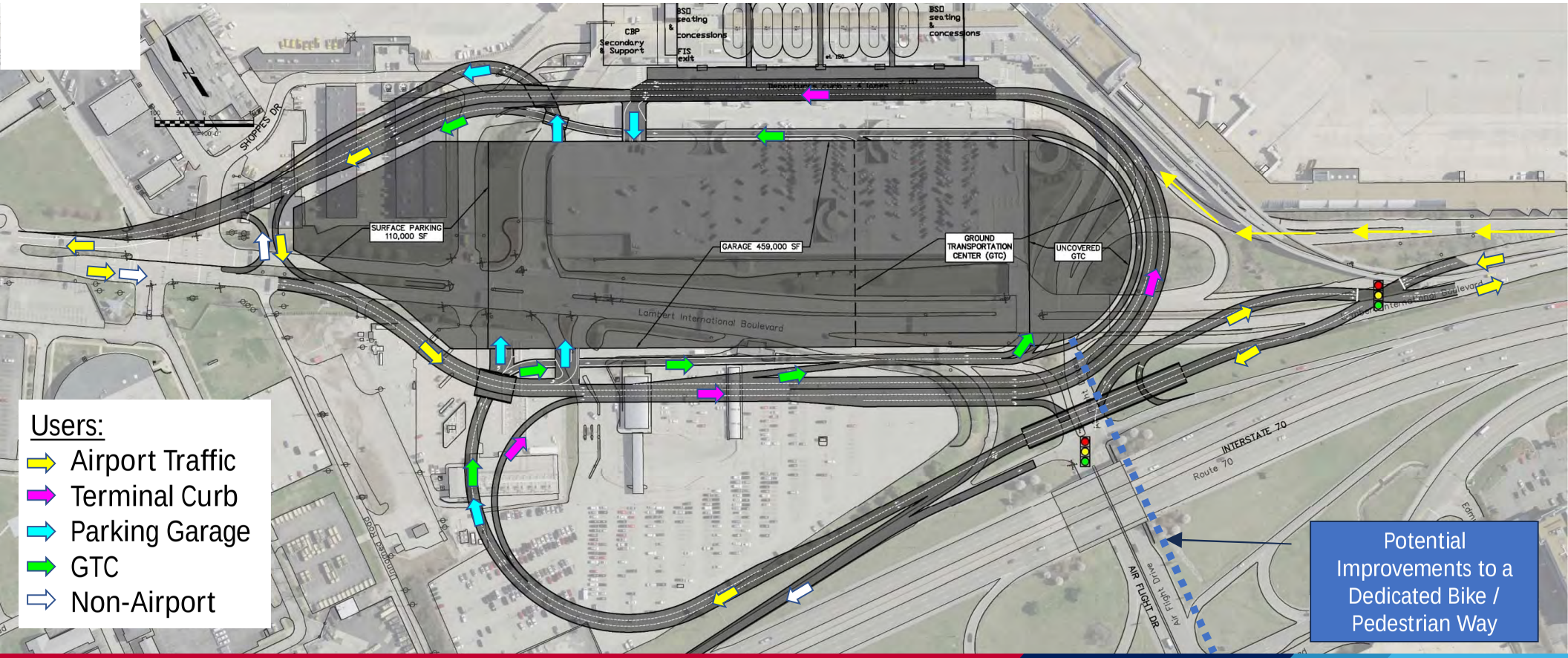
ROADWAY / PARKING GARAGE

Preliminary Ultimate Layout



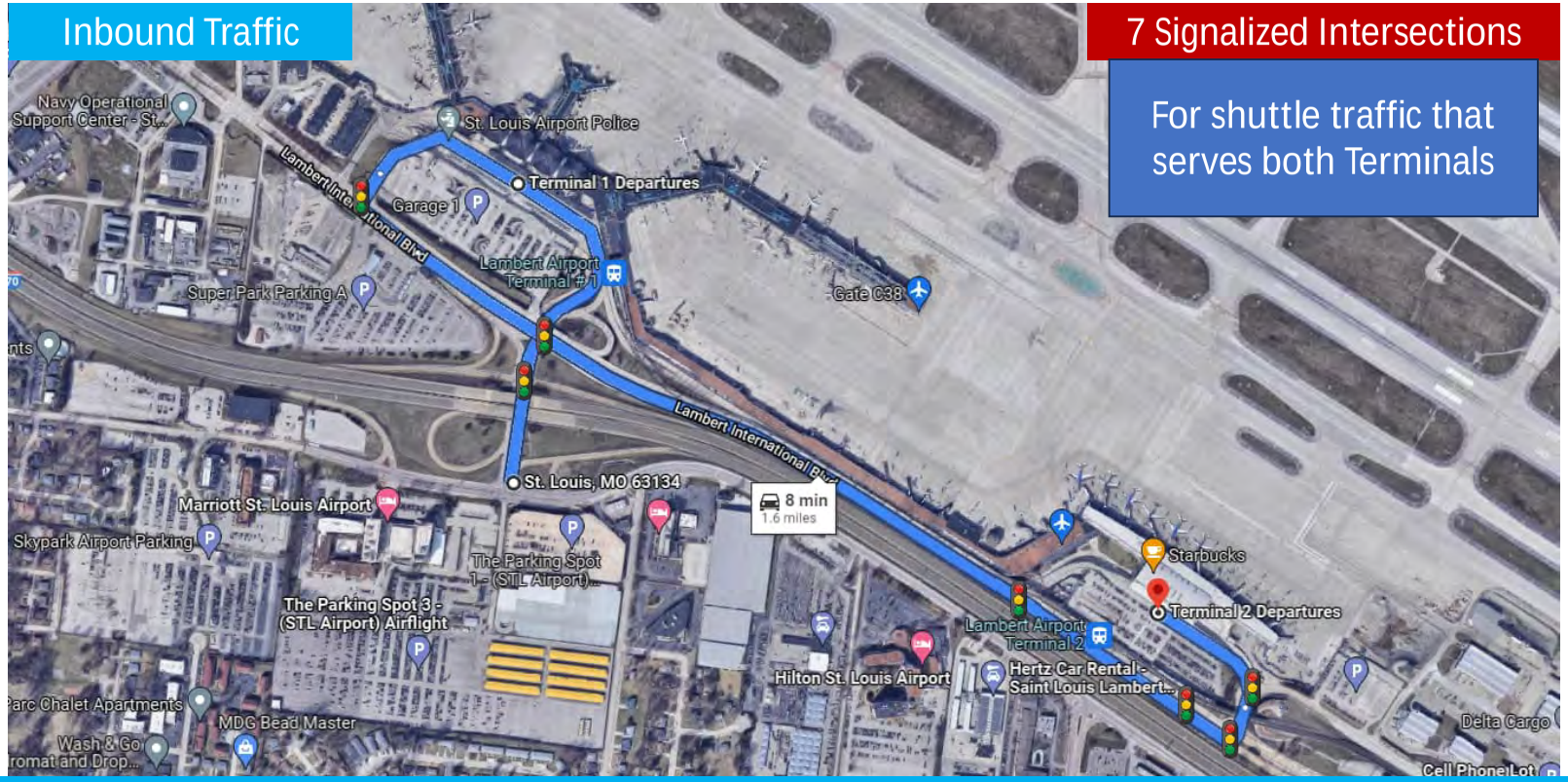
AIRPORT ACCESS ROAD

Preliminary Ultimate Layout



Communities South of I-70 Time/Distance

Southside Terminal Core Access – Shuttle Drop Off



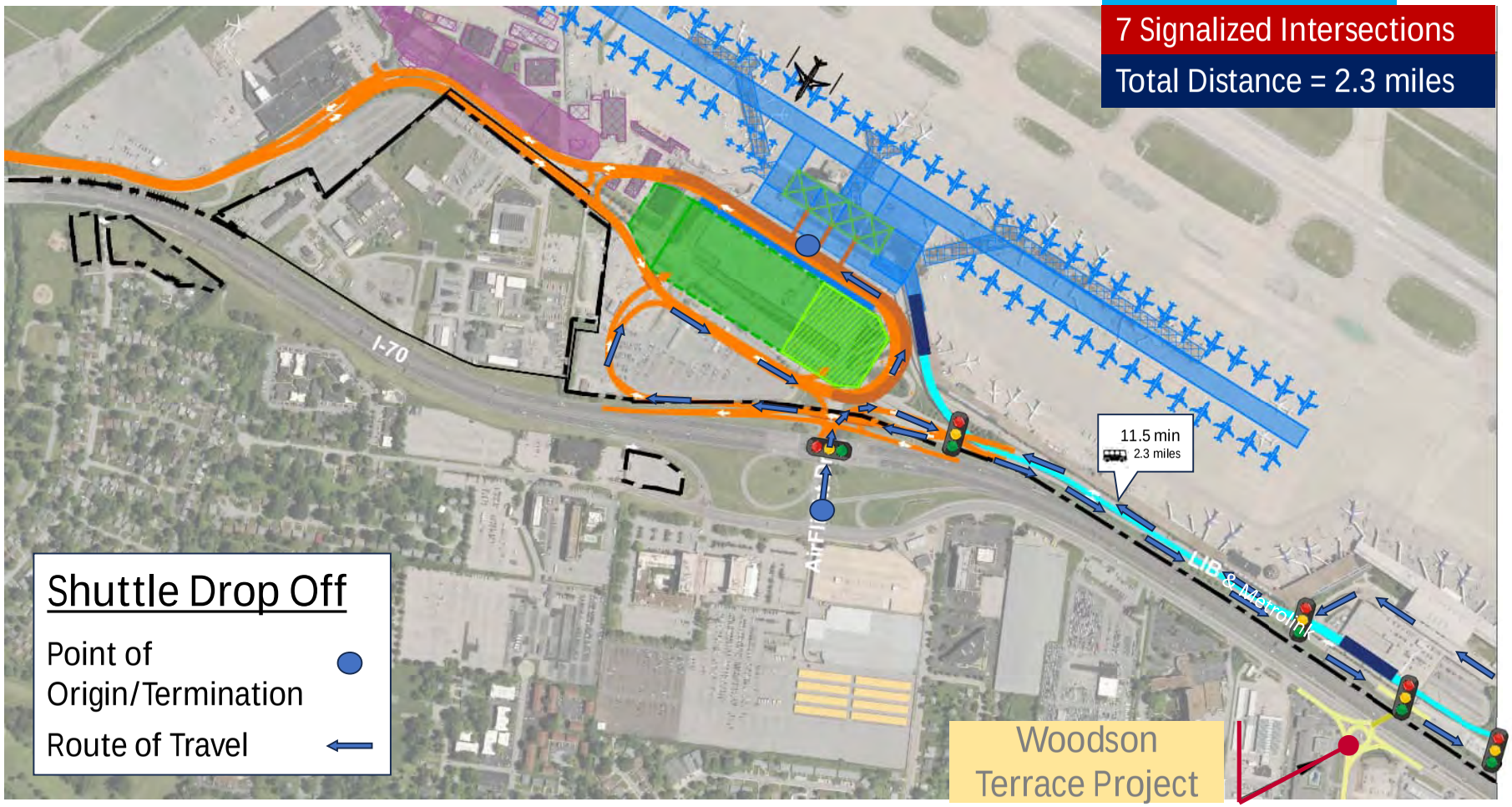
Total Travel Distance from Airflight to T1 then T2 is 1.6 miles (include passing through 7 Signalized Intersections)

Southside Terminal Core Access – Shuttle Pick Up

Total Travel Distance from T2 to T1 back to Airflight is 1.3 miles (include passing through 3 Signalized Intersections)

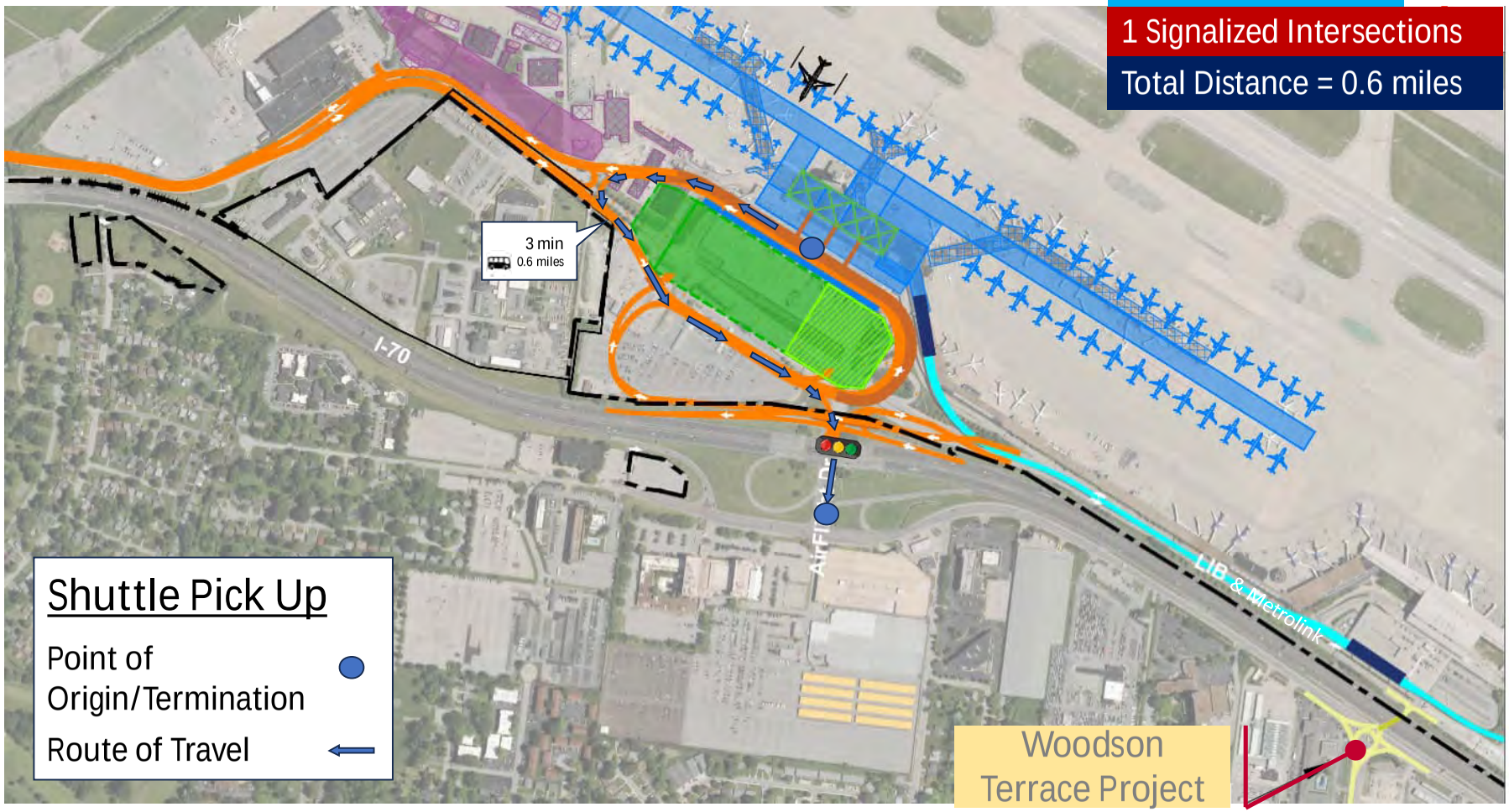
Landside Preferred Alternative: Shuttle Drop Off

Southern Community Access



Landside Preferred Alternative: Shuttle Pick Up

Southern Community Access



Southside Terminal Core Access Preferred Concept

The proposed access roadways between Airflight Dr and the Consolidated Terminal results in less disrupted travel, safer free flow movement and a similar length in travel distance and duration

Inbound Traffic		
	From Airflight Dr to T1 then T2 - Existing	Airflight to Consolidated Terminal - Proposed
Total Travel Distance	1.6 miles	2.3 miles
Number of Signalized Intersections	7	7
Outbound Traffic		
	From T2 to T1 back to Airflight Dr- Existing	Consolidated Terminal back to Airflight Dr - Proposed
Total Travel Distance	1.3 miles	0.6 miles
Number of Signalized Intersections	3	1

14.5 min
2.9 miles

14.5 min
2.9 miles

Comments Provided

Woodson Terrace

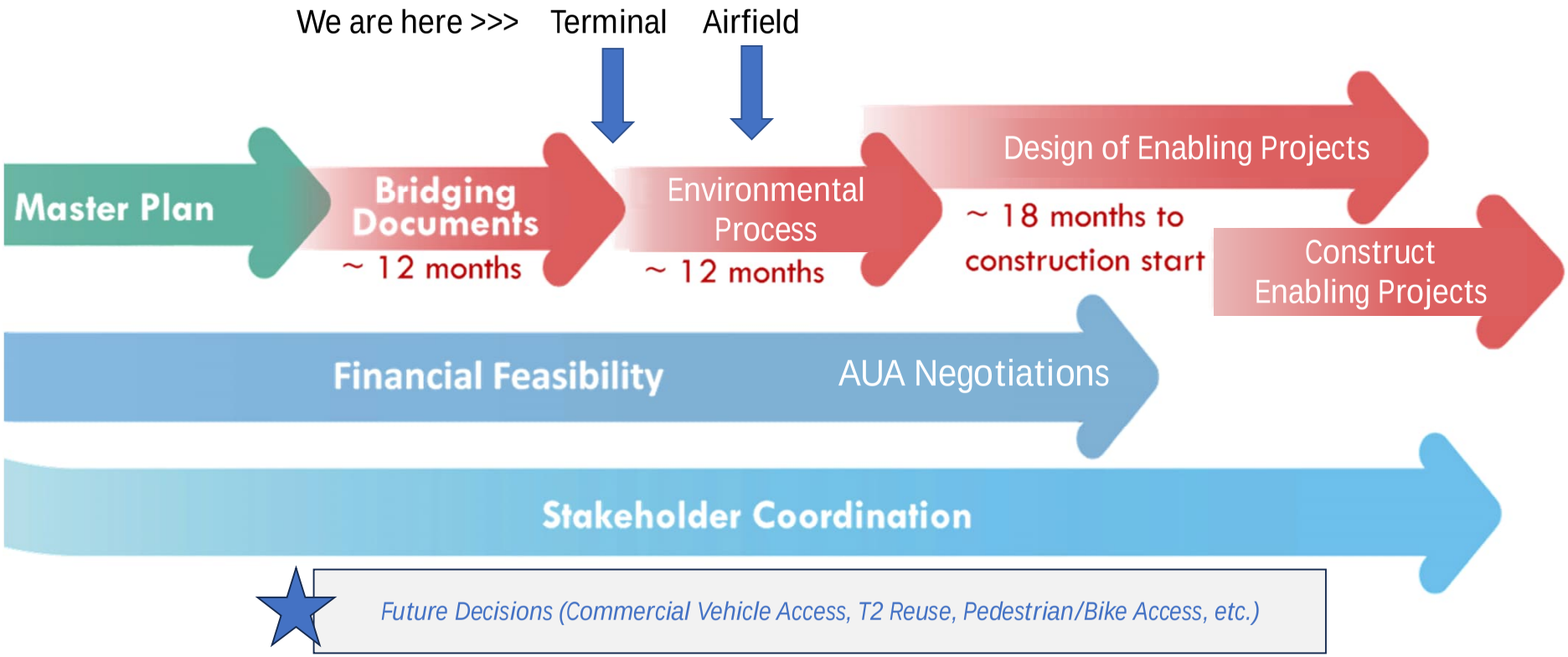
1.	Local access maintained	*Yes, and in fact, travel times have improved*
2.	WT project considered	*Yes, Airport project does not preclude*
3.	Preserve Metrolink access at T1 and T2	*Access preserved/improved; includes Ground Transportation Center at Consolidated Terminal*
4.	Future parking demand	*Demand exceeds supply = opportunities*
5.	Future of Terminal 2	*Gateway Coalition to be at the table*
6.	Consider bicycle & pedestrian safety	*Greatly improved access and safety*

Others

1.	Highway related planning	*Safety & Capacity maintained. Design to further modeling*
2.	Excessive Driving Distance	*Yes, and in fact, reduced*

Additional concerns? Questions? Comments?

Next Steps of the Development Process



Contact:
Jim Neidel
Airport Planning Manager
jrneidel@flystl.com

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Gateway Coalition Briefing Memo

MEMO

TO: Jerry Beckmann, Jay Christians, Jim Neidel (STLAA)

FROM: John van Woensel, Dan DeArmond, Mike Dolde, Jennifer Kuchinski, Doug Gregory (CMT), Nicole Young (Lion)

SUBJECT: **ST. LOUIS LAMBERT INTERNATIONAL AIRPORT**
Consolidated Terminal Program: 2023 11 21 – Gateway Airport Communities Coalition Briefing at Woodson Terrace Community Center (10:30am – 12:15pm)

DATE: **December 28, 2023**

This memo summarizes the Gateway Airport Communities Coalition briefing at the Woodson Terrace Community Center on November 21, 2023.

ATTENDANCE:

Lawrence Besmer, Mayor, City of Woodson Terrace

Doug Zaiz, City Administrator, City of Woodson Terrace

Laura Madden, Consultant to Woodson Terrace

Jacque Wellington CED Solutions, City of Woodson Terrace

John Gwaltney, Mayor, City of Edmundson

Marlene Hoehn, Alderman City of Edmundson

Matt Conley, City Administrator, City of St. Ann

Matt Zimmerman, City of Hazelwood

Representative Raychel Proudie, Missouri House District 73

Deborah Rice-Carter, West Ferguson Community Association

Elliot Liebson, Director of Planning, City of Berkeley

Tony Schneller, T&T Logistics

Ivy Crigler, Columbia College

Randall Phillips, Enterprise Holding

Karen Lombardo, Lombardo's Restaurant

Allison Pacifico, McKee Realty

Justin Murray, Hilton Hotel

Benjamin Fair, Wallis Co (On the Run)

Travis Pfeiffer, HNTB

Tabitha Locke, MoDOT

Lisa Kuntz, MoDOT

Ryan, Hertz

Jack, Hertz

Andy Patel, Best Western Plus

Gerald Beckmann, Airport

Jay Christians, Airport

Jim Neidel, Airport

John van Woensel, WSP

Mike Dolde, WSP

Dan DeArmond, WSP

Jennifer Kuchinski, WSP

Nicole Young, Lion CSG

SUMMARY OF OPENING COMMENTS

MAYOR LAWRENCE BESMER, CITY OF WOODSON TERRACE. Mayor Lawrence Besmer provided opening remarks. Woodson Terrace is a municipality located to the immediate south of St. Louis Lambert International Airport. Since its incorporation in 1946, Woodson Terrace has valued their relationship with the Airport. Woodson Terrace supports a strong and vibrant Lambert Airport and commends the forward thinking approach the Airport is taking to modernize its facilities. Woodson Terrace welcomes a true Federal, State, and local collaboration that recognizes the Airport's importance to the surrounding communities and understands that new public investment in the Airport itself, as well as concomitant investment in the regional highway, local roadway, and public transit systems, will have a profound impact not only the Airport - but on all adjacent municipalities as well. Woodson Terrace also recognizes that more efficient roadway connectivity in the future, for personal and business travelers, as well as for freight, is important to the modernization of the Airport. Woodson Terrace also understands (because of existing impacts) that past public investment in such connectivity has physically separated communities close to the Airport and has, instead of linking the communities to the Airport, severed as a connection to this important economic and job-creating engine. Unfortunately, our highways and roadways are not designed to provide access to the community centers. This greatly impacts the opportunity for prosperity and well-being for the residents and businesses. The Mayor expressed his thanks for the Airport for the meeting, and stated that he looks forward to discussing how proposed highway and roadway improvements will support the modernization of the Airport while also focusing on how these investments will also align with the Airport-adjacent communities plans and visions for growth and connectivity. The Gateway Airport Communities Coalition (7 municipalities consisting of the City(s) of Berkeley, Edmundson, Hazelwood, Kinloch, Overland, St. Ann and Woodson Terrace) have joined to discuss how they can work together to benefit all the communities through well-planned road and commercial connectivity for the area in proximity to the Airport and Interstate 70. Positive input has been received.

MAYOR JOHN GWALTNEY FROM CITY OF EDMUNDSON. Mayor Gwaltney extended his thanks to the Airport for being at the meeting. Mayor Gwaltney has been the mayor of Edmundson since 2007 and was on the Board of Aldermen prior to that. The Airport is the major economic generator of Edmundson. The Airport supplies customers for the businesses in the community. “So goes our businesses, so goes our communities.” Due to these businesses, Edmundson is able to make investments in the community. Edmundson is the front door to the Airport, and many residents work at the Airport. Edmundson is gladly joining the other communities to discuss the impact of the Airport project. Any diversion of traffic from the community will have a great impact.

JERRY BECKMANN OF ST. LOUIS LAMBERT INTERNATIONAL AIRPORT. Thanks to the communities on behalf of the Airport and the City of St. Louis for coordinating the meeting. It is important to the Airport to hear from the people who live and work near the Airport. The Airport met with Woodson Terrace on several occasions and is glad to see increased stakeholder engagement at this meeting. The City of St. Louis no longer requires its employees to live in the City, so you will probably see more Airport employees living in your communities near the Airport. This will be a multi-billion Dollar investment funded by reimbursable bonds paid for by the Airport user rates and charges to our airlines. The Airport will also continue to compete for grant funding. The improvements being discussed here are not yet designed, but we are here to confirm the validity of the program. The redevelopment is necessary to modernize the facility

and solve the Airport's issues. The current roadway is outdated and needs to be improved for a competitive configuration for the region. We've previously heard from Woodson Terrace about concerns regarding business access at Airflight Drive, and we'll cover that in the presentation.

BRIEFING PRESENTATION AND DISCUSSION

Mr. van Woensel of WSP provided a briefing to the Gateway Airport Communities Coalition. WSP shared a recap of the Airport planning requirements that led to the consolidated terminal proposal and the status of the planning process. WSP provided a history of the access plan evolution with discussion of the Woodson Terrace tunnel project and the community concerns received to date. Travel time and distance comparisons were presented for local access to the Airport. The focus of the briefing was on the terminal project and the planning of the roadways. Some of the comments that have been provided by the communities to date have already been incorporated into the project, but the Airport will continue listening for comments and concerns that can be incorporated into the project, either at this time or during future engineering design.

The following discussion topics were covered as part of the briefing:

- **Review of the Status of STL Planning & Development Process.** The advanced planning is in progress. The West Airfield Program is separate from the terminal program and is currently moving through the environmental planning process. The terminal and roadway access environmental planning process as part of the terminal program has not yet started. Once underway, the terminal and roadway access environmental process will last about 1 year, during which draft documents will be provided for public review. Only then, once the environmental planning process is complete and finalized by the FAA is design allowed to begin. The first steps will be designing demolition for some of the buildings to make way for the new projects associated with the terminal and roadway access improvements. The construction will take many years to complete. Stake holder engagement will continue throughout design as well as construction of these improvements.
- **Need for Improvements.** The airlines have much larger aircraft now than when the Airport terminals were first designed in the late 1950s and again in the late 1990s. There are significantly more people coming in and out of the Airport and the terminals than there were previously. The Airport terminals, garage and roadways are functionally obsolete at this point. The improvements needed for the Airport access road and circulation are to lengthen the terminal area approach road to create more distance for users (in reading signage for wayfinding) to make decisions and allow for a safer flow of traffic.
- **Ideal Terminal Access.** The ideal distance for Airport access roads is one mile, to allow for free-flowing traffic on a simple layout. The goals for the project are to maintain or improve access and maintain or improve safety.
- **Landside Master Plan Concept.** The initial landside master plan concept was presented by WSP. The initial plan has changed since originally developed and presented in 2022. Comments on the initial plan received to date from Woodson Terrace include: desire for local access to be maintained or improved, consideration for the proposed Woodson Terrace tunnel project, retaining or improving access to the Metrolink stations at Terminal 1 and Terminal 2, consideration for future parking demand, a plan for the future use of Terminal 2, and consideration for bicycle and pedestrian

access and safety. Comments from others to date have included highway related planning and concern about excessive driving distances from I-70 westbound.

- **Landside Preferred Alternative.** The current Landside Preferred Alternative was presented by WSP. This plan has a main Airport entrance on the west side of the Airport. It also includes closing the Westbound on-ramp to I-70 near the Coldwater Creek bridges (near the American Airlines hangar and Interstate I-70 Mile Marker 235). This plan includes a terminal loop with a large parking garage. No direct connection from Airflight Drive is provided into the Terminal Loop. A Ground Transportation Center is provided. MetroLink access remains open at Terminal 1 and Terminal 2. The Cypress Interchange is restriped or added pavement for additional lanes maintaining existing access. The Airflight Drive interchange maintains access to/from I-70. An auxiliary lane on the highway (westbound) is added to provide more acceleration and weave distance for vehicles entering the highway. Also, at the Airflight Drive interchange eastbound access to/from Terminal 2 is maintained. A modification to the early landside concept, based upon input from Woodson Terrace and others, is that now westbound traffic on I-70 can now exit earlier at the Airflight Drive interchange in order to enter into the terminal loop and does not have to drive past the terminal to enter into the terminal loop road at Cypress Road.

ADDITIONAL DISCUSSIONS (COMMENTS/RESPONSES)

Comment 1: Suggestion to use the Department of Defense (DoD) federal facility that is run down with most of the buildings old and outdated and in need of a lot of maintenance. Why isn't the Master Plan considering taking the DoD property? What could that property be used for?

Response 1: The Airport has looked into the process and timeline to obtain this property, but there isn't an option for the 2040 horizon. The Master Plan has to move forward. The Airport has been careful to not make this a requirement for the project, but the City has made it clear in early discussions with DoD, that the Airport would like to acquire this property in the long term. If the Airport had this area, it would be ideal to straighten out Lambert International Boulevard (LIB) and I-70. This would need coordination because the interstate is MoDOT and the inner roads are City (City is City of St. Louis or Airport unless otherwise noted). MoDOT hasn't looked at the future of the interstate as yet, and they are just starting to begin their process.

Comment 2: What is happening to local access at Natural Bridge? What is the plan for Airport traffic to gain access to the businesses along Natural Road?

Response 2: Dan DeArmond from WSP presented a slide showing local access and stated that the access from Airflight would not change for access to/from the businesses to the South. The intersection at Airflight and Natural Bridge/Pear Tree Dr will remain the same and have access to/from I-70. However, that traffic pattern will not have direct access into the new Terminal Loop. There is consideration ongoing for how to allow limited commercial-only access directly into the Loop which would decrease the drive time for commercial vehicles. For instance, there are potential considerations for allowing shuttle busses to have a shorter turnaround on LIB to get into the Terminal Loop.

Comment 3: What is happening to Terminal 2? It seems that a plan for Terminal 2 is necessary for the communities to understand how a repurpose or demolition may affect the communities. It doesn't help to push the decision making for Terminal 2 too far down the road. There is a lot of distrust in the community on Terminal usage.

Response 3: Terminal 2 is expected to be repurposed because it is in good shape and has a good parking garage, however it isn't yet determined what the repurpose would be. It is not expected that Terminal 2 would be torn down. It could be used for Airport administrative offices. It has been considered to put an Airport hotel within Terminal 2. Commercial uses have also been considered, but the space doesn't lend itself well to those uses. FAA would like to see aviation-related functions there, such as administrative offices for the Airport. The Airport has committed to have the communities and stakeholders at the table during the discussion and planning for the repurposing of Terminal 2. Presently, the Airport's focus is on completing the planning for the consolidated terminal. Planning for the Terminal 2 repurposing will begin after planning for the consolidated terminal is complete. Communications with the communities and stakeholders will continue on roads associated with Terminal 2 as they are an important egress from the East, and for Metrolink access. Also, Terminal 2 needs to function as a terminal the next 8 years or until a point when the terminal program is complete and the airlines have moved to the consolidated terminal.

Comment 4: It is important to note that the community wants not just transit but the ability to access Metrolink. The community is asking for access that they do not have currently. Having walking and community access for the Metrolink is important for both sides of the communities for Woodson Terrace and the other communities of the Coalition. How will the communities have access to public transit?

Response 4: Community desire for access to transit was noted by the consultant.

Comment 5: What is the meaning of "future parking demand?"

Response 5: The Airport received a lot of feedback from the public survey that more parking is wanted. It is clear that parking will remain in high demand at the Airport, especially close in parking.

Comment 6: What is the access to the Airport from Westbound I-70 getting off at Cypress?

Response 6: This would remain how it is today.

Comment 7: Concern was expressed that if Airport traffic doesn't go through the commercial area it will have a negative effect on the businesses and communities that are south of the Airport. There are a lot of people that use Airflight to get to the commercial district. Was it considered to look at Natural Bridge for direct Airport access?

Response 7: From Airflight, there will be a turn around on LIB eastbound to access the lane that enters the consolidated terminal loop road. In the short term the turnaround would be at Terminal 2. In the future, the turnaround feature could be located closer to Terminal 1 and the proposed terminal loop. The implementation of a dedicated terminal access road and not being able to shortcut into the terminal loop is to give the needed access driving distance to spread the volume out and give drivers time to make the decisions. This greatly increases the safety and efficiency of the landside access system. Civilian cars will still access the businesses to the south for parking and other services from Airflight, and these

cars can still get to the Airport from the Airflight access. Full access is still provided with the turnaround.

Comment 8: Will commercial vehicles still have direct access to the terminal? The desire is to make the journey for shuttle busses shorter.

Response 8: We have several slides that compare the access for shuttles today with the future. What is being contemplated is an access control lane dedicated for shuttles only to access into the terminal loop. With a dedicated, controlled-access shuttle lane into the terminal loop, congestion can be controlled on the curbside and into the loop drive while still allowing shuttle busses into the Airport terminal loop quicker than private vehicles. This type of concept will be explored further in the design phase of the terminal project.

Comment 9: Are there traffic counts for the flow of traffic into the commercial district that show how this will affect the communities? Did your traffic model consider traffic south of I-70? The communities would feel more comfortable if there was a plan for Terminal 2. What are the bottom line economic impacts for this project on District 73?

Response 9: Yes, our model did include traffic on the roads south of I-70. There is still a significant amount of traffic going to Natural Bridge from Airflight Drive that is being served for the commercial needs (air traffic passenger parking, rent-a-car customers, related shuttles, hotel guests, restaurant clientele, cars needing gas, etc.). An economic development entity for the region, Greater St. Louis Inc. (GSL), will be soon publishing an economic impact study that the Airport has on the region and the state. This will be publicly available.

Comment 10: Can the City look at the economic impacts of the local communities, especially my District?

Response 10: It is not known how granular the Airport economic impact study, being completed by GSL, will go or whether it will document impacts to specific communities around the Airport.

Comment 11: Are you looking at the grander strategic direction of the community? The City's population is declining, and how is that impacting this project? How is that being considered?

Response 11: The Airport Master Plan included an extensive air traffic forecast. For Airports, traffic is largely driven by business activity, not population. The Airport is tracking close to the recovery that was expected after the COVID downturn. FAA has approved the forecast for this planning and it is available on the FLYSTL website. This is the data that is put into the traffic models (specific to Origin/Destination traffic, not connecting traffic) and blended with MoDOT traffic sources. Chapter 3 of the master plan is the Forecast and it includes a lot of economic and other specific information.

Comment 12: What is "GTC?"

Response 12: GTC is the Ground Transportation Center which includes a higher level of service for all modes of traffic including busses, commercial vehicles, parking shuttles, Uber/Lyft and other transit.

Comment 13: Will the signage at the Airport be updated? What will signage look like for the community? Will signs indicate where the businesses are or just the Airport?

Response 13: Yes – signage will look like other Airports to guide drivers. There will be signs for businesses, for instance for Enterprise Rental Cars or Hilton Hotel. The Airport is currently working with MoDOT to improve rental car return signage with Airport-approved signs.

Comment 14: If the community (Woodson Terrace) puts in the tunnel, would it provide access to Terminal 1? The intention of building a tunnel was to have the option for traffic to enter north under the highway from the communities to the south.

Response 14: Yes, the Woodson Terrace project (the tunnel under the highway), if built, would provide that access from the south side of the highway to the north side (airport side) of the highway.

Comment 15: To emphasize the need for community engagement, there is one shot with limited resources for MoDOT to put in roadway modifications. At some point there are irreversible expenditures. There is an opportunity to improve traffic flow and access for all the communities. Cypress road is also an essential feeder not only for the Airport but for all the communities. The Woodson Terrace tunnel could improve access for many of the communities.

Response 15: The traffic model performed for the Airport plan includes modeling at Cypress and it is understood that it, as a feeder not only to the Airport but all communities it connects to, must be maintained if not improved as a result of the Airport project. In addition, MoDOT is just starting an undertaking to look at the segment of highway immediately in front of the Airport and the Coalition communities. MoDOT's study will look at the traffic flow as well. MoDOT will conduct a separate NEPA environmental process. While MoDOT and the FAA (as the Federal authority with jurisdiction to the Airport) won't combine NEPA efforts, there is coordination between MoDOT and FAA. The Airport is including MoDOT as a stakeholder.

Comment 16: Are there options for the communities to collaborate on solutions?

Response 16: When the tunnel project was started by Woodson Terrace, there was outreach to the other communities. This is a continuation of that process and for this project the stakeholder engagement will continue.

Comment 17: The smaller communities don't have specialized staff or consultants that are able to look at these options or develop their own proposals, and doing regional planning is very costly. How can all of the surrounding communities get on the same page?

Response 17: Communities are encouraged to continue working together and work with the metropolitan planning organization (MPO) to make sure their ideas and plans are included in the regional plans. There may be additional opportunities under the MoDOT process. In addition, the Airport will continue with stakeholder engagement activities such as this throughout the environmental review process and during the design and construction processes.

Comment 18: The Woodson Terrace project is trying to help with the Airport traffic flow, so why isn't this not a part of the plan? Woodson Terrace invested $1M into a feasibility study.

Response 18: The proposed Woodson Terrace project was considered in the planning process and can be incorporated into the plan. It is not being precluded from the Airport plan and is shown

on several of the slides. If funding is available for the Woodson Terrace project, it can be incorporated into MoDOT's project and the Airport project. Design is still not started for the Airport project, so there is time for the communities to advance the tunnel project.

Comment 19: The Airport is advocating for changes on the highway – so the Airport is advocating for projects not on their property that do benefit the Airport.

Response 19: Community desire for the Woodson Terrace project to be considered during the Airport project was noted. The consolidated terminal program will be funded by user rates and charges paid for by our airlines. All costs to the program must be agreeable to the airlines. The proposed landside concept for the consolidated terminal focuses on access which benefits the greatest number of airport users.

Comment 20: To be clear and upfront about the Airport project: the communities to the south will stop the project if it is negatively impacting businesses in the area. There are a lot of vacant parcels that are currently not being taken care of. There is a lot of distrust of the Airport. The constituents need more communication on how this is community improvement to the district.

Response 20: An element of NEPA is looking at land use planning specific to adjacent communities and future realization of those communities' goals. This concern was raised, by way of comments to the FAA NEPA Scoping process back in January of 2023. Because NEPA for the consolidated terminal has not begun, those comments have not been formally addressed or responded to yet.

Comment 21: Where in all of this are community plans being considered?

Response 21: The Airport planning documents were shared with FAA. But, NEPA has not yet started. If the communities have plans, they will be considered during NEPA. Part of the answer is that there is a need for regional planning to be done, in collaboration with the MPO. There is time now for the communities to do regional planning.

Comment 22: The Airport is undertaking a major project in the community, and the community is stating that the Airport has a responsibility to consider the communities ability to thrive. Historically, the Airport has made changes that have had negative impacts on the communities. For instance, there used to be a connection Westbound from the from City of St. Louis to Woodson Terrace. There used to be an exit at Brown Road, which was eliminated to accommodate Airport direct access. The only other way to get in is to go to Airflight drive. This was done at the time of the last expansion. It was then that the Airport project wiped out the City of Bridgeton and Kinloch. The communities were told that the Airport was supposed to be doing a lot of community building. In the 1990s, the communities were wiped out. It is desired for the Airport to uplift the communities that they have depressed in the past. There is a lot of remembrance of what used to be there, and now there is nothing except overgrown properties and it's depressing. There is a lot of dumping because there isn't value seen in the communities. The dumping continues and the community tries to clean it up, but it continues.

Response 22: The consulting team is documenting all the comments as FAA prepares for NEPA. All the comments will be included for the NEPA documentation.

Comment 23: Local access is not just the local access to the Airport. It is the need for the Airport passengers to have access to the communities and the businesses. The desire is to have access restored.

Response 23: This is by design a long and thoughtful process and this will not be the last time that we sit down together. At the top of the Airport website, there is a banner for the planning documents. The current project is accessible on FlySTL.com in the Planning Documents.

CONCLUSION

- Mayors of the Cities of Woodson Terrace and Edmundson and attendees expressed their desire for this project to integrate the communities surrounding the Airport via revised traffic patterns and uplift the communities via increased connectivity and business activity.
- Attendees expressed distrust for the project due to the perceived impact of a previous projects.
- It was suggested that the community distrust may be ameliorated by providing concrete plans for the usage of Terminal 2.
- Attendees requested walking access to the MetroLink.
- Attendees provided substantial input on their ideas regarding traffic patterns and specific roads and exits, as well as inquiring about Airport signage that may lead travelers to the local businesses.
- Some attendees want to see incorporation of the Woodson Terrace Tunnel Project into the planning process.
- NEPA process will require further engagement.

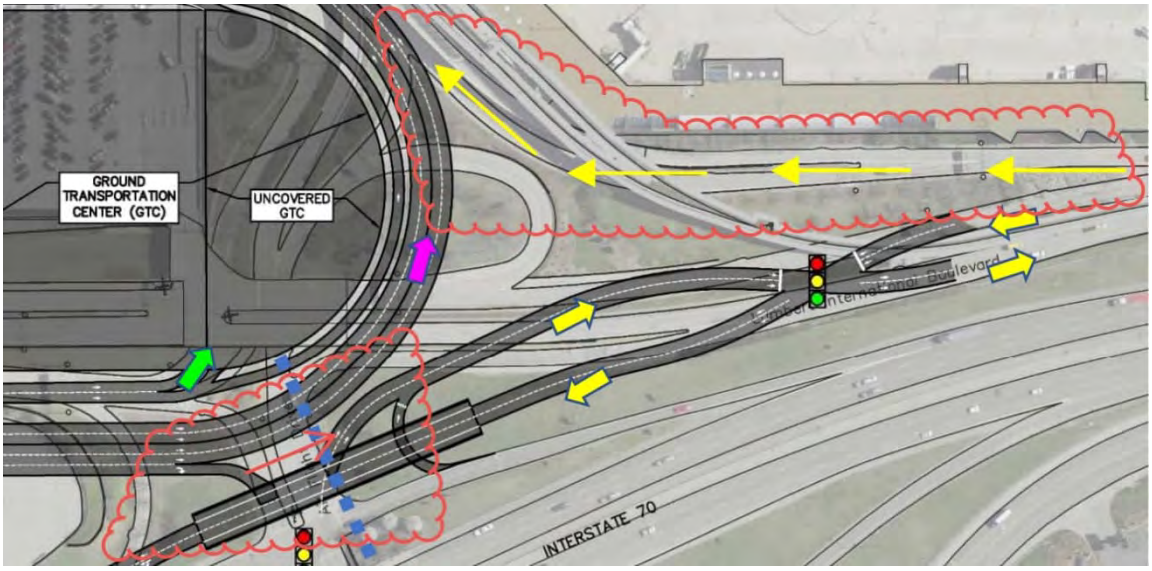
POST-MEETING CLARIFICATION

Three concepts were discussed during the briefing but did not have illustrations in the shared visual materials (slide deck). To clarify and document the discussion, the following exhibit illustrates the concept of an access-controlled shuttle bus lane into the terminal loop and maintaining Eastbound flow through the Airflight intersection north of the highway.

These two concepts have not been modeled or analyzed in the Airport planning efforts to date; but these concepts, as a function of the engagement activity, are being documented now so that they can be later shared with a future designer for consideration then and potential adoption into the overall landside design.

The third concept discussed is providing a turnaround nearer to the consolidated terminal loop (instead of having drivers go all the way to Terminal 2 to turnaround and take Westbound LIB to enter back into the loop road). The turnaround is not shown but would be located in the vicinity of cross-over intersection shown just East of the terminal loop. This turnaround will be studied further by a future designer. See following exhibit.

Exhibit 1



Description of Exhibit 1

- Yellow arrows from LIB east to west represent a potential lane to enter into terminal loop nearer the curbside and will be explored during design for controlled commercial vehicle traffic-only as a means to shorten the distance of travel to the terminal curbside and/or GTC for shuttle buses.
- Single red arrow going east across Airflight Drive will be explored to allow vehicles traversing easterly from west of terminal area to T2 area along LIB.

Notice of Availability

Notice of Public Meeting and Notice of Availability for Public Comment for Proposed Consolidated Terminal Program

The St. Louis Airport Authority (STLAA) intends to undertake the following proposed actions, referred to as the Consolidated Terminal Program, at the St. Louis Lambert International Airport (STL):

- **Enabling Projects**: Demolish various structures to accommodate the new consolidated terminal, including the former Missouri Air National Guard (MoANG) Campus, South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities, phased demolition of existing Concourses A, B, C and D, and other support facilities.
- **Consolidated Terminal/Airside Components**: Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2, including reconfigured terminal passenger ticketing and baggage claim areas; new security screening and Federal Inspection Services (customs); relocation and upgrading utilities; construct replacement airline and airport support facilities, stormwater collection system improvements, terminal apron infill including proposed Coldwater Creek enclosure, reconstruction of apron and taxilanes in the vicinity of the new consolidated terminal, converting Taxilane C to Taxiway C, and close Terminal 2 and mothballing until a potential reuse is identified.
- **On-Airport Roadway and Landside Components**: Reconfigure terminal access road system to improve driver wayfinding and decision making, construct replacement two-level passenger drop-off and pick up curb, construct new parking garage and ground transportation center directly across from the terminal.
- **Connected Actions – Other Roadway Access Improvements**: Construct other roadway and intersection improvements along Interstate 70 and other potential access improvements as identified and refined during the detailed design phase of the project.

We are providing notice of a Public Meeting where we will address the proposed action's potential economic, social, and environmental impacts. In addition, we will address the project's consistency with the goals and objectives of the affected area's land use or planning strategy.

The Public Meeting will be held at the following time and place:

Tuesday, August 6, 2024, 4:00 to 7:00 p.m., with presentations at 4:45 p.m. and 5:45 p.m.
St. Louis Lambert International Airport
Terminal 1, Concourse B
Note: Parking will be validated; MetroLink light rail service is also available.

The Draft Environmental Assessment (EA) evaluates the potential for impact on environmental resources including: air quality; biological resources; greenhouse gas and climate change; historic, architectural, archaeological, and cultural resources; Department of Transportation Act, Section 4(f); hazardous materials, solid waste, and pollution prevention; natural resources and energy supply; noise and noise-compatible land use; socioeconomics, environmental justice, and children's environmental health and safety risks; visual effects; and water resources, including wetlands and waters of the U.S. Adverse effects on historic properties are proposed to be mitigated through a Memorandum of Agreement (MOA) per Section 106 of the National Historic Preservation Act. The proposed action is anticipated to encroach on a FEMA proposed floodplain located on the St. Louis Lambert International Airport. Impacts are anticipated to be minor. The

proposed action conforms to applicable state and/or local floodplain protection standards and all measures to minimize harm will be included in the project.

The Draft EA, Draft MOA, and Draft Section 4(f) Evaluation evaluating the proposed action's impacts will be available for public review beginning July 3, 2024 through August 16, 2024. The Draft EA will be available for online viewing at https://www.flystl.com/civil-rights/public-notices-and-reports with hard copies available at the following libraries: Bridgeton Trails, Oak Bend Branch (temporary St. Louis County Library headquarters) and Rock Road. A hard copy or CD of the Draft EA may be mailed upon request. Those wishing to provide comments must do so by email or letter to the address below no later than Friday, August 16, 2024.

Jim Neidel
St. Louis Lambert International Airport
10701 Lambert International Blvd
St. Louis, MO 63145
jrneidel@flystl.com

or

Scott Tener
Federal Aviation Administration, ACE-611F
901 Locust St.
Kansas City, MO 64106-2325
scott.tener@faa.gov

Written and presentation materials at the public meeting will be provided in English and all facilities are compliant with the Americans with Disabilities Act. If other special assistance is necessary, please contact Jim Neidel at (314) 551-5027 or via email at jrneidel@flystl.com. All special assistance requests must be made no later than 4:00 p.m. on July 30, 2024.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask in your comment to withhold from the public your personal identifying information, we cannot guarantee that we will be able to do so.

Draft EA Distribution List

Email Cover Memo to Agency Recipients:

Subject: St. Louis Lambert International Airport
Proposed Consolidated Terminal Program (CTP)
Draft Environmental Assessment

The Federal Aviation Administration (FAA) is considering a proposal by the St. Louis Airport Authority (STLAA), referred to as the Consolidated Terminal Program (CTP). The CTP project includes terminal, roadway and parking improvements to enhance the passenger experience and ensure continued safe, secure and efficient operations at the St. Louis Lambert International Airport.

A Draft Environmental Assessment has been prepared to evaluate the proposed action's impacts. An electronic copy of this Draft Environmental Assessment Report and the Notice of Availability is available for downloading at the following website: https://www.flystl.com/civil-rights/public-notices-and-reports.

At the request of STLAA and FAA, please forward any comments you may have by email or letter to the address below no later than August 16, 2024.

Jim Neidel
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10701 Lambert International Blvd
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jrneidel@flystl.com

or

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Thank you for your consideration in this matter.

CC:

Scott Tener, Federal Aviation Administration
Jerry Beckmann, St. Louis Airport Authority
Jim Neidel, St. Louis Airport Authority
Jennifer Kuchinski, WSP
Heather Lacey, CMT

St. Louis Lambert International Airport
CTP Draft EA Distribution List – To be sent via email

Agency	Contact Name(s)/Position	Email Address
Federal Highway and Transportation Administration	Missouri Division Felix Gonzalez Tayor Peters Natalie Roark Dawn Perkins	Missouri.FHWA@dot.gov felix.r.gonzalez@dot.gov taylor.peters@dot.gov natalie.roark@dot.gov dawn.perkins@dot.gov
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Gateway Coalition	Laura Madden	laura@phoenixconsults.com

Draft EA
Public Meeting Summary Report

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

DRAFT ENVIRONMENTAL ASSESSMENT PUBLIC MEETING SUMMARY REPORT

AUGUST 2024

Prepared by

VECTOR COMMUNICATIONS
1998 25 YEARS 2023

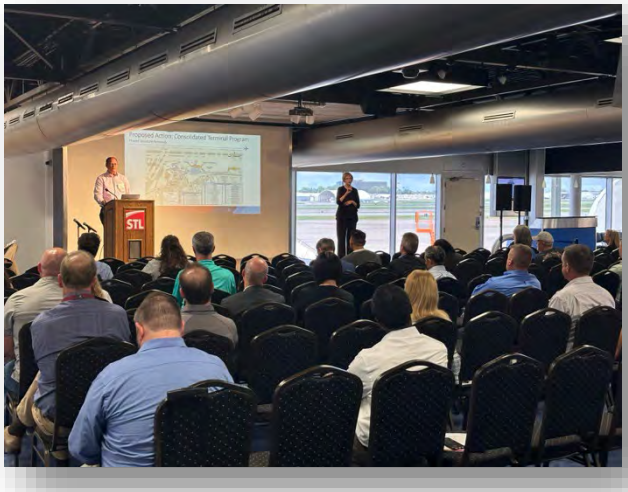
Table of Contents

Overview

The St. Louis Airport Authority (STLAA) recently completed an update to the Airport Layout Plan and Master Plan (ALP Update/MP) for the St. Louis Lambert International Airport (STL). This update included a proposed Consolidated Terminal Program (CTP), which combines the two existing passenger terminals into a single terminal, streamlining security screening and passenger experience. The program must undergo review standards outlined by the National Environmental Policy Act (NEPA) to seek federal funding.

The environmental review process kicked off with a public scoping meeting in December of 2022, which introduced the environmental review process. An environmental review was conducted that resulted in a Draft Environmental Assessment (EA), which evaluates the potential environmental impacts of the proposed CTP. As part of federal requirements, the Draft EA was made available for public review and a public meeting was held to present the results of the environmental review process and seek feedback on the Draft EA.

August 6, 2024, Draft Environmental Assessment Public Meeting



A Draft Environmental Assessment Public Meeting was held on Tuesday, August 6, 2024, from 4-7 p.m. in STL's Concourse B. The purpose of this meeting was to present the Draft EA findings and recommendations to the public for comments before it is finalized. Representatives from the FAA, STL, MoDOT and the consulting team were present to answer questions and hear comments. 41 people attended the meeting.

During the meeting, two presentations with Q&A sessions were conducted at 4:45 and 5:45 p.m. American Sign Language translators provided interpretation during both presentations. These presentations were taped live and made available on the FlySTL.com website with captions. Laurna Godwin of Vector Communications began the presentation with welcome remarks and introduced Rhonda Hamm-Niebruegge, STL Director and CEO, who spoke on the future of air travel in St. Louis. Next, Doug Gregory of CMT, John Van Woensel of WSP, and Jerry Beckmann, STL Deputy Director Planning & Development, presented plan specifics, environmental assessment results, mitigation measures, and the importance of this plan for the future of regional air travel.

Around the room, visual boards displayed plan details. Attendees were given a station guide handout to describe the stations' contents. The Draft EA document was available on-site and on the FlySTL.com website.

Attendees were encouraged to visit the comment table station and leave comments via a paper comment form or online comment form, accessible via QR code and link. A microphone and recording device were available for verbal comments; no attendee utilized the verbal comment station. A demographic form was also available; three attendees filled out the paper demographic form, and 35 people completed at least some questions on the online demographic form.

The comment form link was sent via postcard to all addresses within one mile of STL, so residents could provide online feedback. The comment form was open until midnight on Friday, August 16, 2024.

For the visual display boards, station guide, presentation slides, comment and demographic forms, please see Appendices A, B, C, D and E, respectively.

Public Meeting Notifications

Notification of the August 6, 2024 public meeting was provided using the following outreach methods:

Newspaper Legal Notice

A Legal Notice of Availability (NOA) announcing the availability of the Draft EA and associated documentation, and a Notice for a Public Meeting was published in the St. Louis Post Dispatch, a newspaper of general circulation, on July 3, 2024, as required by FAA.

A copy of the Public Notice Affidavit of Publication is included in Appendix F.

Postcard

A postcard was sent to all addresses (13,926) within a one-mile radius of STL. The postcard promoted the public meeting and had a QR code that directed recipients to the online comment form.

For an image of the postcard, see Appendix G.

Community Notifications

Direct email correspondence with a copy of the postcard notice was also sent to municipalities and community groups within and adjacent to the project study limits.

Demographic Form Results

There were 35 respondents that filled out at least some questions on the demographic form. Most respondents identified as White (85%) and primarily English-speaking (96%), with 1-2 people in their homes (67%) ages 19-44 (40%). Most respondents have an annual household income of $150,000 + (58%), completed college or university (88%) with a graduate or professional degree (50%), and do not have a disability (85%). Additionally, most respondents are ages 46-75 (75%), male (63%), and married or in a domestic partnership (73%).

Respondents also suggested ways to improve the inclusiveness of public outreach efforts. Some suggestions included outreach that had occurred to promote the meeting, like sending out a mailer to residences and posting the public meeting on the STL website and local news. Other suggestions included posting the meeting on community billboards at city halls, outreach to colleges and universities, returning information in a timely fashion, conducting the meeting in a different space with closer ADA parking spots, and avoiding scheduling on voting days.

For the demographic form result table, see Appendices H.

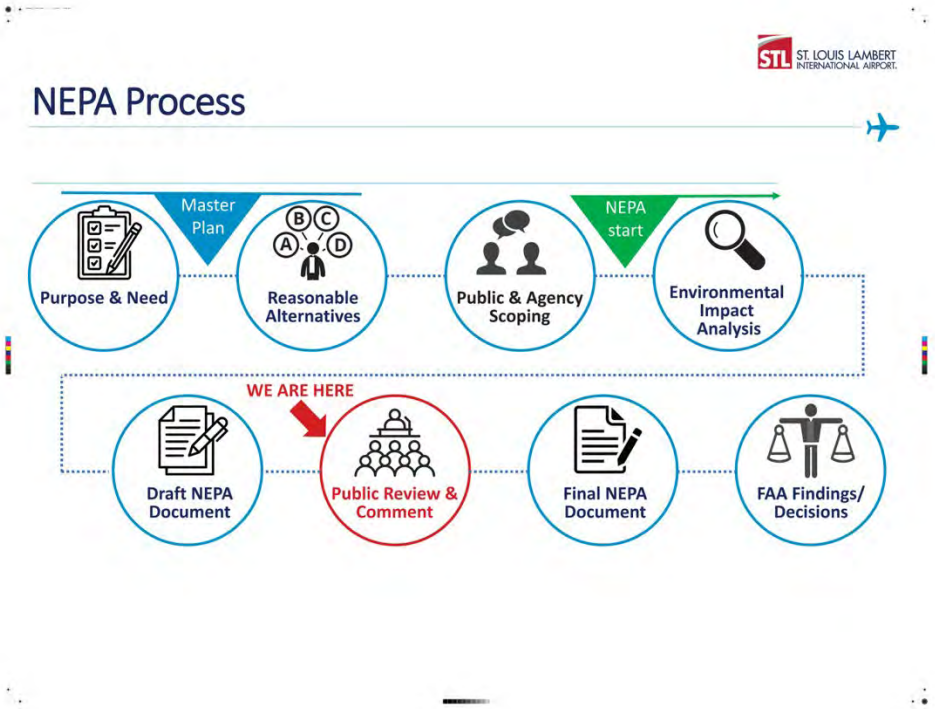
Public Comments and Responses

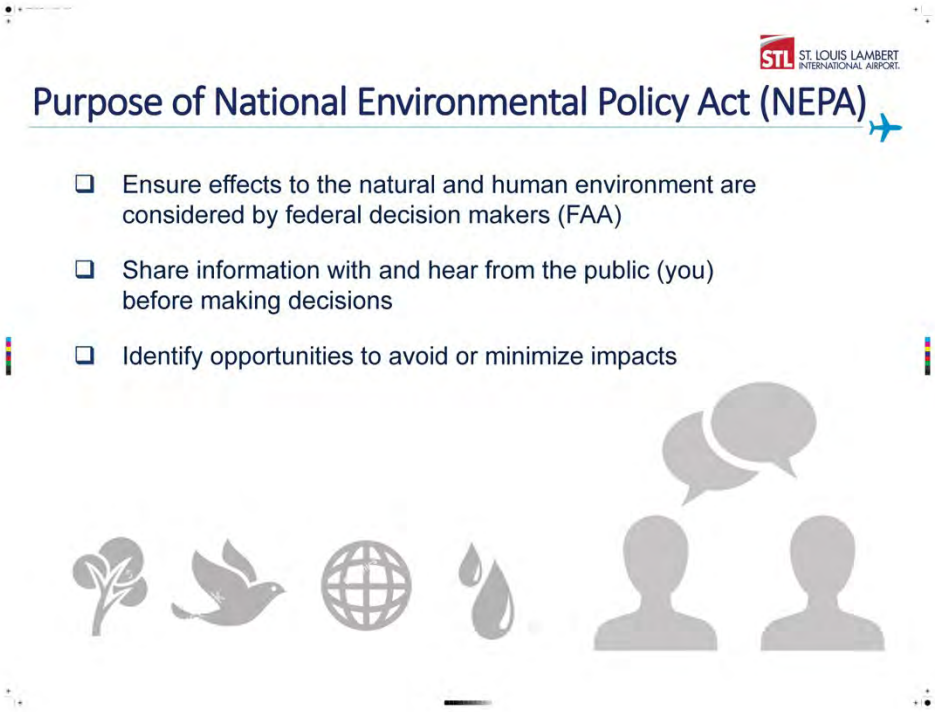
Public comments were received on a paper form, email, and an online comment form. A total of 34 comments were received via the online comment form and one via the paper comment form. Following the public meeting, additional comments were sent to STL and/or FAA via email.

A summary of the comments received and responses to substantive comments is included in Appendix I.

Appendices

Appendix A: Visual Display Boards





NEPA Roles and Responsibilities

Local Officials, Political Leaders, and the Public (You)

- In the Draft NEPA Document, comment on:
  - Accuracy of information and assumptions
  - Adequacy of methodology
  - New information relevant to the analysis

Substantive comments on the Draft Environmental Assessment will be addressed in the Final NEPA Document.

Federal, State, and Local Agencies with Relevant Expertise and Jurisdiction

- Identify potentially-affected resources under their jurisdiction that may be affected
- Work with FAA and STL to resolve impacts and concerns
- Identify permit requirements

NEPA Roles and Responsibilities

Federal Aviation Administration (FAA)

- Responsible for NEPA compliance and decisions:
  - Is there an aviation need for the project?
  - Have reasonable alternatives been considered?
  - What type of analysis is required?
  - Is mitigation required for significant impacts?
- Oversees and approves analysis and documentation
- Seeks input from public and agencies with relevant expertise

St. Louis Lambert International Airport (STL)

- Proposes projects for FAA consideration
- Provides planning, design and other information needed for evaluation
- Manages consulting team that provides technical and logistical assistance to FAA in conducting outreach, analyzing impacts, and documentation

Federal Highway Administration/Missouri Department of Transportation (FHWA/MoDOT)

- Cooperating agency on the NEPA process
- Provides input and review on the evaluation of roadway components and potential impacts that could occur within MoDOT right-of-way

Terminal Needs vs. Solutions

Need	Solution
Growth in Passengers	Accommodate up to 62 aircraft gates Right-size terminal & concourse space Accommodate modern aircraft
Old/Aging Facilities	Upgrade customer experience Reduce O&M costs Improve resiliency/reliability
Inadequate Concessions	Increase customer choices Upgrade customer experience
Insufficient Revenue Opportunities	Provide more garage parking Enhance revenues

Consolidated Terminal Program

Proposed Concept

- ✓Passenger convenience
- ✓Customs accessible to all carriers
- ✓Single efficient security checkpoint
- ✓Gates on both sides (shorter walks)
- ✓New roadways & entrance
- ✓Concourse can expand further
- ✓Right-sized space

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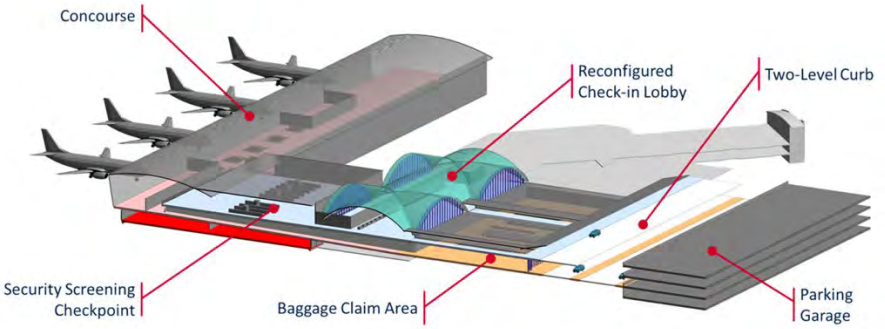
Consolidated Terminal Program

Concept Overview



Up to 62 gates to accommodate larger modern aircraft	~1.5M SF building space Larger concourses and circulation areas with right-sized holdrooms (larger)	1 Consolidated Security Screening Checkpoint	60% increase in secure-side concessions

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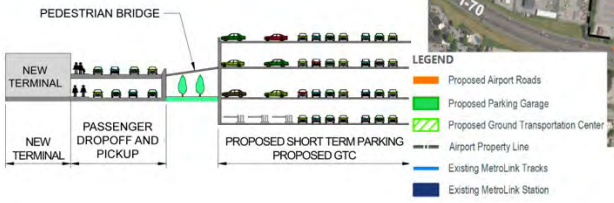
Terminal Access / Parking & Ground

Transportation Center Concept

New Garage with Ground Transportation Center (GTC)	Up to 7,200 Spaces
Total On-Airport Parking Supply	13,260 spaces
Increase in On-Airport Parking Supply	~47% increase



Consolidated Terminal Program Timeline

- Planning and requirements documents (complete)
- Airline negotiations (continuing)
- Environmental Assessment – Finding anticipated 3Q 2024 (in progress)
- Professional Services contracting – 2024/2025 (designers, program management, surveyors, etc.)
- Anticipated construction starts
  - Enabling: 2025 / Terminal, Garage: 2026

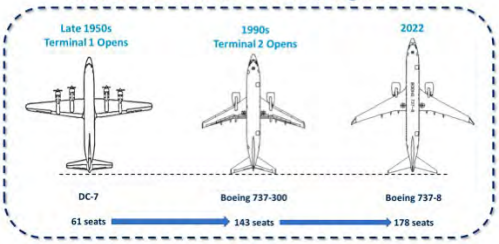
Purpose and Need: Consolidated Terminal Program

Congested concourse and hold rooms

Congested passenger pick up area

By 2040 STL expects to see growth to 21 million passengers

Need to accommodate modern, larger aircraft



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Purpose and Need: Consolidated Terminal Program

Existing Terminal Roadway and Parking Deficiencies

Congested passenger pick up areas

Short decision-making distances on terminal roadways

- Insufficient distance for decision making
- Inadequate number of arrival curb lanes
- Shortage of garage parking (revenues)
- Terminal 1 Garage inefficient & reaching end of useful life

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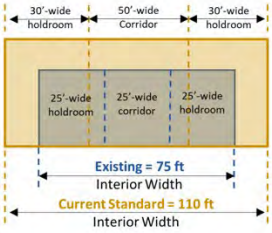
Purpose and Need: Consolidated Terminal Program

Undersized boarding area holdrooms

Congested and narrow terminal concourse



Narrow security screening checkpoint

Congested ticketing and bag check in area

Terminal Needs: Enhance Customer Experience

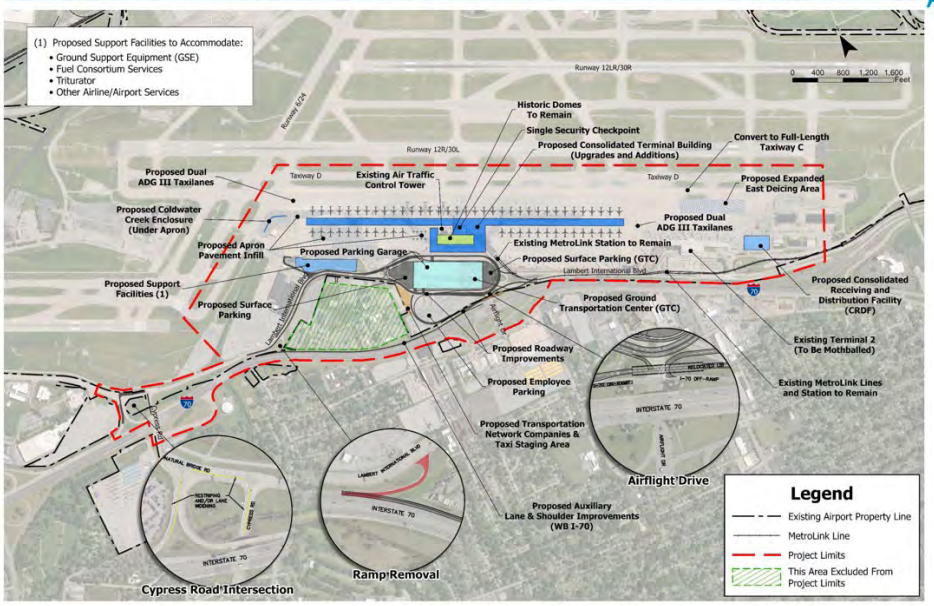
Aging and Obsolete Facilities

- Undersized passenger areas (hold rooms, restrooms, corridors)
- Lack of functionality (security checkpoints)
- Insufficient concessions (revenues & customer choices)
- Reliability, resiliency, maintenance costs

Growth in Passengers

- Need for up to 62 aircraft gates
- Insufficient terminal and concourse space
- Need to accommodate modern, larger aircraft
- Customs cannot be accessed by all carriers

Proposed Action: Consolidated Terminal Program



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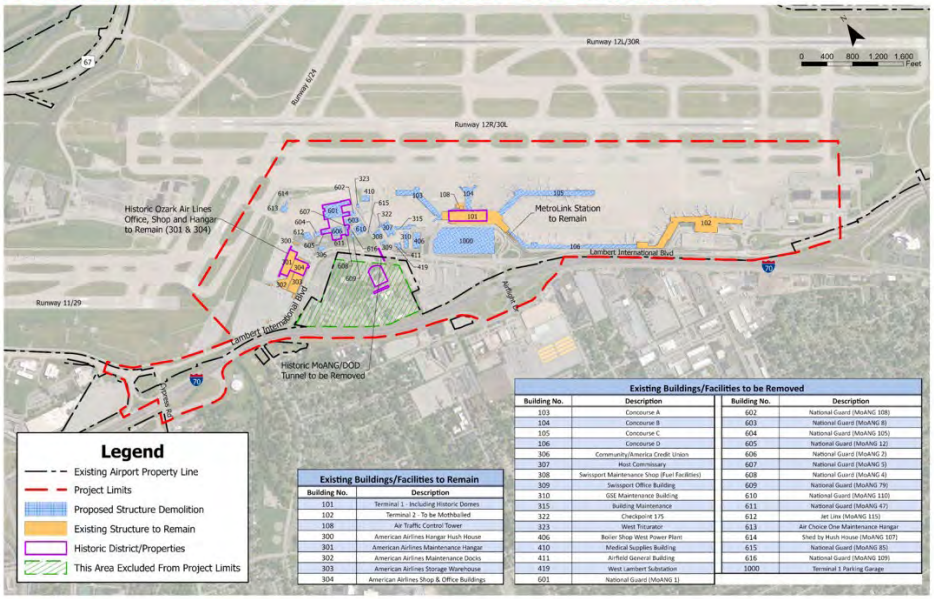
Proposed Action: Consolidated Terminal Program

Phased Structure Removals to Accommodate CTP Construction



Existing Buildings/Facilities to Remain

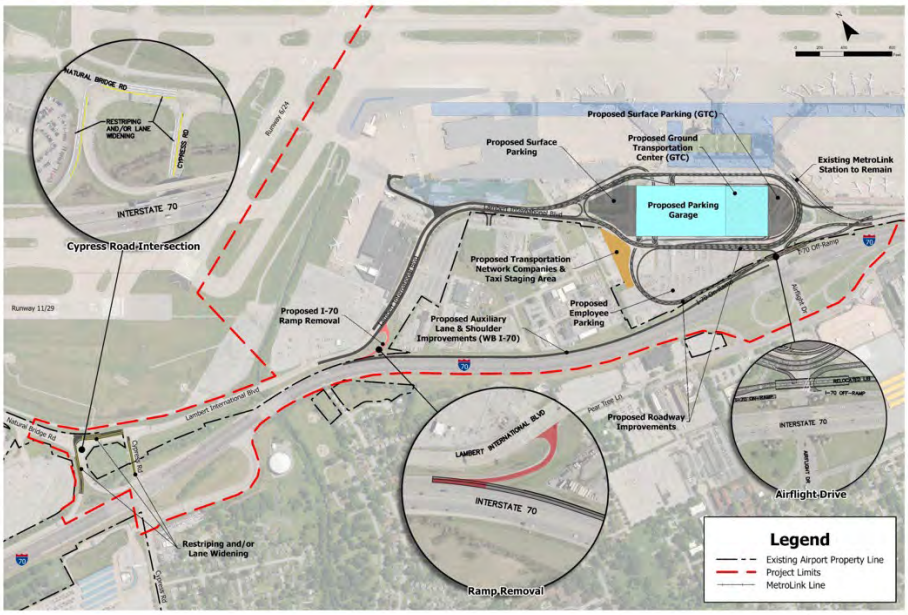
Building No.	Description
101	Terminal 1 - Including Historic Domes
102	Terminal 2 - To be Mothballed
108	Air Traffic Control Tower
300	American Airlines Hangar Hush House
301	American Airlines Maintenance Hangar
302	American Airlines Maintenance Docks
303	American Airlines Storage Warehouse
304	American Airlines Shop & Office Buildings

Existing Buildings/Facilities to be Removed

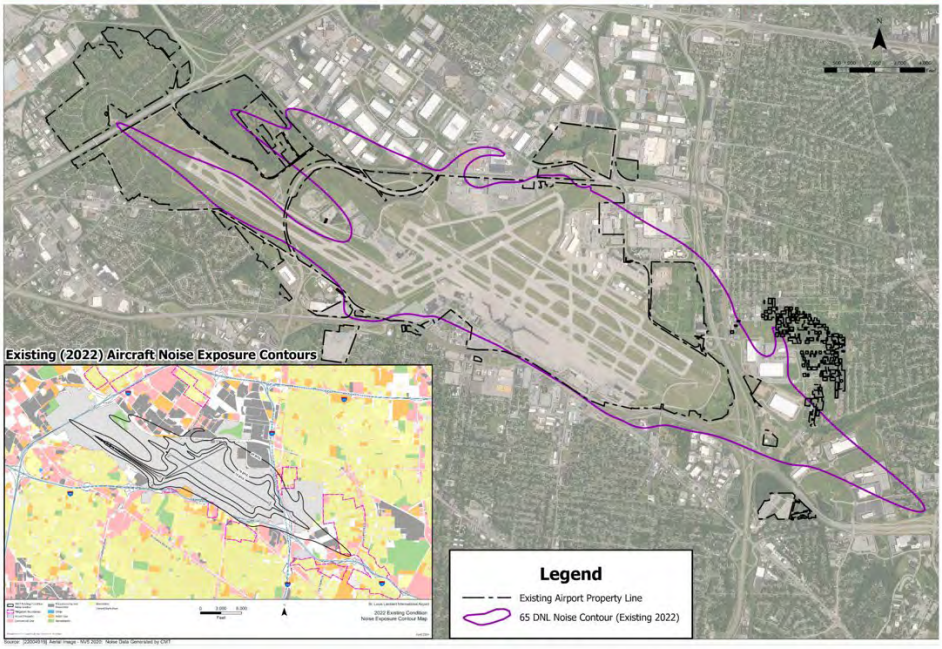
Building No.	Description
103	Concourse A
104	Concourse B
105	Concourse C
106	Concourse D
306	Community/America Credit Union
307	Host Commissary
308	Swissport Maintenance Shop (Fuel Facilities)
309	Swissport Office Building
310	GSE Maintenance Building
315	Building Maintenance
322	Checkpoint 1/5
323	West Triturator
406	Boiler Shop West Power Plant
410	Medical Supplies Building
411	Airfield General Building
419	West Lambert Substation
601	National Guard (MoANG 1)
602	National Guard (MoANG 108)
603	National Guard (MoANG 8)
604	National Guard (MoANG 105)
605	National Guard (MoANG 12)
606	National Guard (MoANG 2)
607	National Guard (MoANG 5)
608	National Guard (MoANG 4)
609	National Guard (MoANG 79)
610	National Guard (MoANG 110)
611	National Guard (MoANG 47)
612	Jet Linx (MoANG 115)
613	Air Choice One Maintenance Hangar
614	Shed by Hush House (MoANG 107)
615	National Guard (MoANG 85)
616	National Guard (MoANG 109)
1000	Terminal 1 Parking Garage

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT.

Access, Roadway and Parking Improvements

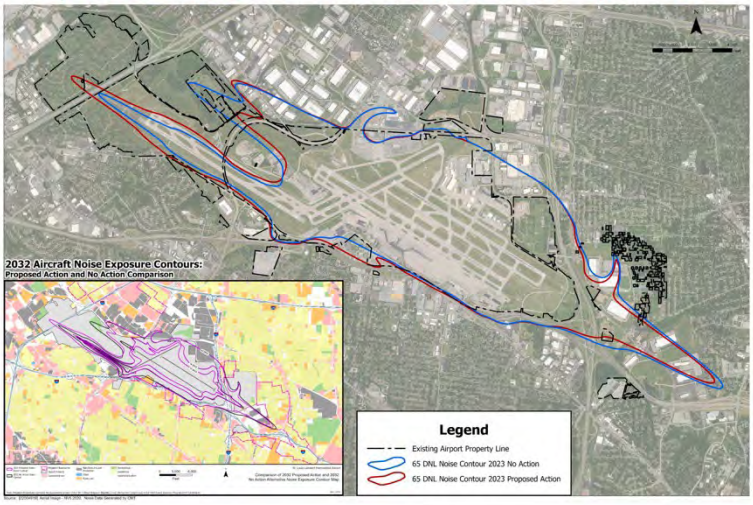


Existing Aircraft Noise Exposure Contours



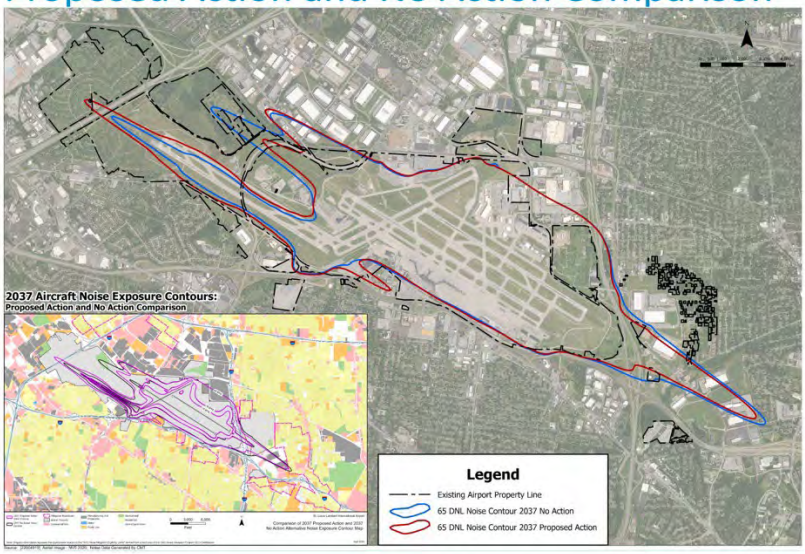
2032 Aircraft Noise Exposure Contours

Proposed Action and No Action Comparison

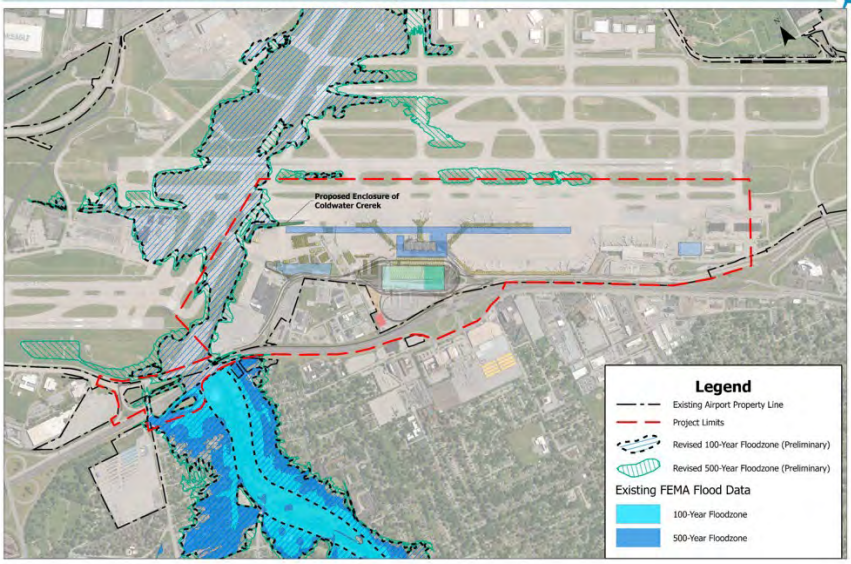


2037 Aircraft Noise Exposure Contours

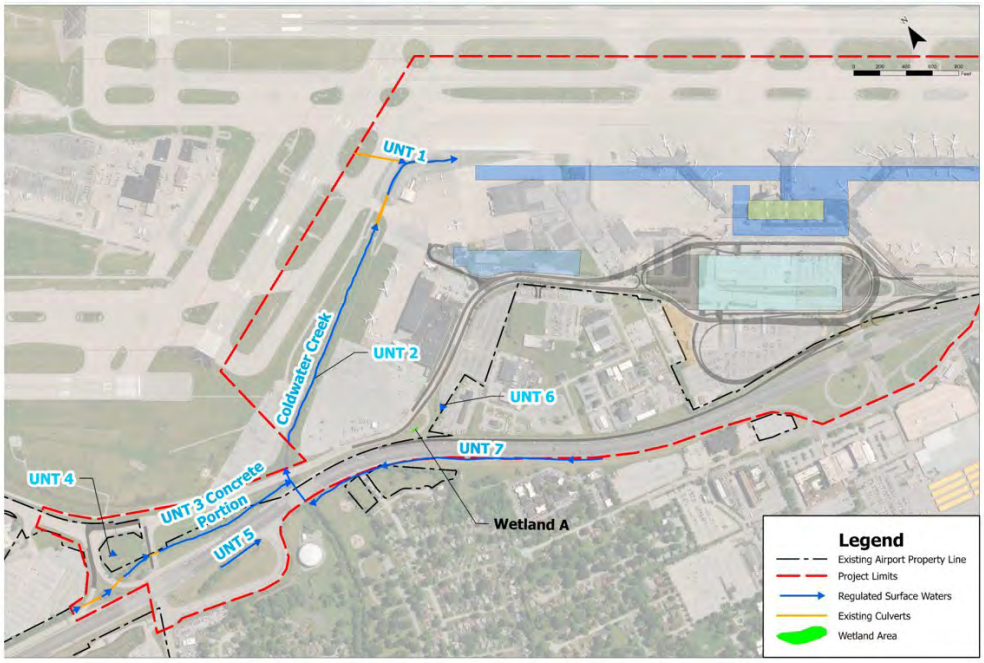
Proposed Action and No Action Comparison



Water Resources: Floodplains



Water Resources: Wetlands and Waters of the US

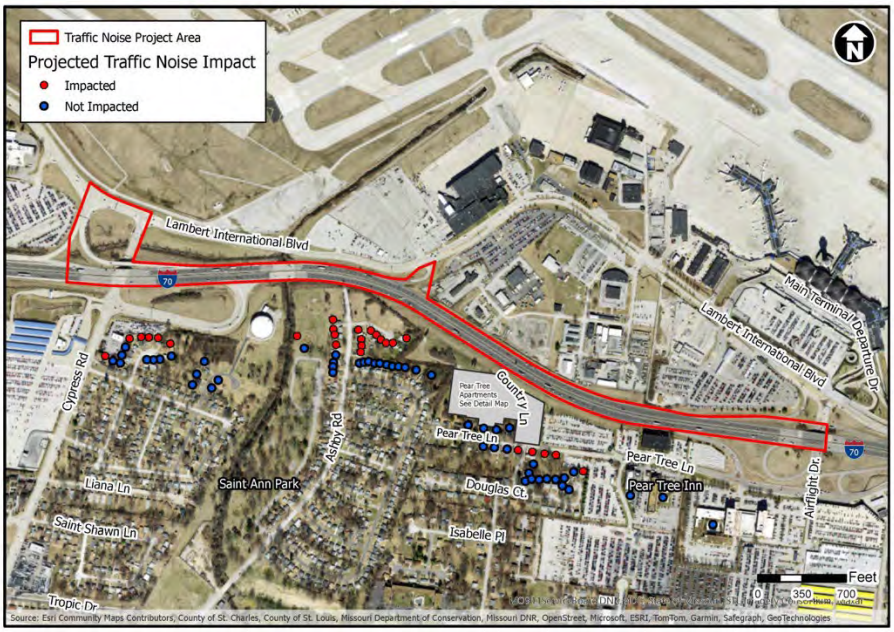


Historic and Section 4(f) Resources

Terminal 1 Historic Domes (to remain)

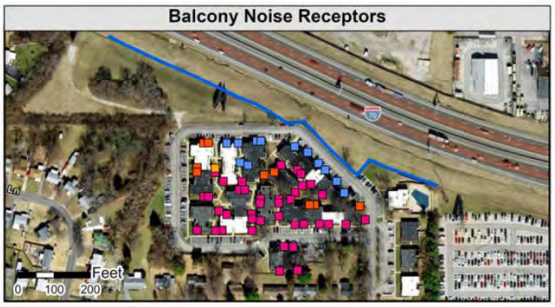
Lambert Field Historic District – Former MoANG Campus (to be removed and mitigated as outlined in the Section 106 MOA)

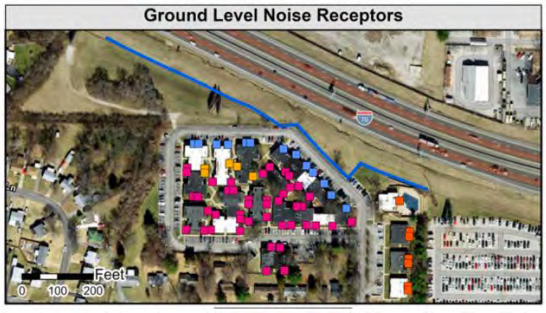
Environmental Results: Roadway Noise

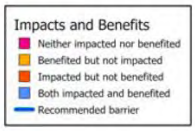


Environmental Results: Roadway Noise

Pear Tree Apartment Complex







Summary of Environmental Impacts and Mitigation Commitments

Environmental Resource	Impacts	Mitigation Commitments
Air Quality	Temporary construction emissions	Implement Best Management Practices (BMPs) during construction activities to reduce fugitive dust emissions.
Biological Resources	May Affect, Not Likely to Adversely Affect federally listed species	Seasonal tree clearing; nesting bird surveys and structure inspections before tree removals and demolition.
Department of Transportation Section 4(f)	Physical use of a Section 4(f) resource due to demolition of buildings and a tunnel within the Lambert Field Historic District	Mitigation measures as stipulated in the Section 106 Memorandum of Agreement.
Hazardous Materials, Solid Waste and Pollution Prevention	Potential to encounter hazardous soils and materials during construction Increase in construction and demolition debris Net increase in impervious surfaces of approximately 6 acres	Soil and groundwater testing to identify if mitigation is required; hazardous materials, if encountered, to be handled in accordance with federal and state regulations. stormwater collection improvements; design and permitting to be coordinated with federal, state and local agencies, as required; implement best management procedures to limit runoff and erosion.
Historical, Architectural, Archeological, and Cultural Resources	Adverse effect on historic properties due to demolition of structures in the Lambert Field Historic District	Mitigation measures as stipulated in Section 106 Memorandum of Agreement. Before any ground disturbing work in MoDOT right-of-way (ROW), work must be first cleared through MoDOT's Historic Preservation office.
Socioeconomic, Environmental Justice, & Children's Health & Safety Risks	Improved safety, reduced congestion and improved transit on airport access roadways Change in access to STL in the area of Pear Tree Drive and the Airflight Drive intersection with minor increase in travel distance	Improvements to the I-70 interstate system to be designed and approved in coordination with MoDOT/FHWA. Complete Traffic Safety & Operations (TS&O) Report, Traffic Management Plan (TMP), and an Access Justification Report (AJR), if required, to be approved in coordination with MoDOT/FHWA. Upgrade existing pedestrian facilities to be ADA compliant and provide additional pedestrian and bicycle connectivity where reasonable and appropriate. STL will continue collaborating with stakeholders during landside access improvement design efforts.
Surface Transportation Noise	Traffic noise impacts on south side of I-70	Conduct noise public involvement during the design phase to determine if a noise barrier is desired. Construct a noise barrier at the Pear Tree Apartments if determined reasonable and feasible.
Water Resources: Wetlands, Floodplains and Surface Waters	Up to 4,018 feet (1.4 acres) of stream impacts and 0.01-acre non-jurisdictional wetland impact Enclosure of a portion of Coldwater Creek with up to 3 acres of encroachment within 100-year floodplain and up to 5 acres within 500-year floodplain	Obtain Section 404/401 permits and mitigate impacts of jurisdictional wetlands and regulated surface waters as determined during design. Obtain floodplain development permit. Adhere to the requirements of 23 CFR 650 for floodplain encroachments within MoDOT ROW. Implement best management practices to limit runoff and erosion. Adhere to MoDOT's State Operating Permit within MoDOT ROW.

Notes:

- No significant impacts or mitigation commitments were identified for the following resources: climate, coastal resources, farmland, land use, natural resources and energy supply, noise and noise compatible land use, visual effects, ground water, wild and scenic rivers and cumulative impacts.
- Please refer to Chapter 3 of the Draft Environmental Assessment for further information on the evaluation of environmental impacts and mitigation commitments.
- Please refer to Chapter 4 of the Draft Environmental Assessment for further information on the evaluation of environmental impacts and commitments applicable within the existing MoDOT right-of-way, as required by Federal Highway Administration NEPA requirements.

We want to hear from you!

Public Comment Period is open

Share your feedback about the NEPA process today:

- Scan the QR code below to complete an online comment form on your phone
- Submit a paper comment form in the Public comment area or mail it in
- Record a verbal comment in the Public Comment Area

E-mail or Mail your comments to:

Jim Neidel
St. Louis Lambert International Airport
10701 Lambert International Blvd
St. Louis, MO 63145
jrneidel@flystl.com

or

Scott Tener
Federal Aviation Administration, ACE-611F
901 Locust St.
Kansas City, MO 64106-2325
scott.tener@faa.gov

Comments must be received by Friday, August 16, 2024.

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Appendix B: Station Guide

Consolidated Terminal Program Draft
Environmental Assessment Public Meeting

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

August 6, 2024
Station Guide

Welcome!

Thank you for attending today's Public Meeting. This guide provides an overview of the information presented at each station. Subject matter experts from the airport and consultant team members are at each station to answer your questions.

Presentation - A formal presentation will occur at 4:45 p.m. and be repeated at 5:45 p.m.

Hear an overview of this project and participate in a Q&A with project team members.
A recording of this presentation will be available on the project website.

Station #1 - NEPA Purpose and Process

Learn more about the National Environmental Policy Act (NEPA) purpose, process, and the roles and responsibilities of agencies and stakeholders.

Station #2 - Consolidated Terminal Program

Learn more about the Consolidated Terminal Program (CTP) concept and Transportation Center concept and timeline.

Station #3 - Purpose and Need

Learn more about the purpose and need for the proposed terminal and roadway improvements.

Station #4 - Proposed Action

Learn more about the key project components included in the Consolidated Terminal Program.

Station #5 - Environmental Results

Learn more about the environmental results evaluated in the Draft Environmental Assessment, including a summary of environmental impacts with mitigation commitments.

Station #6 - Public Comment

Learn how to comment on the NEPA process. Submit a comment form at the station or scan the below QR code.

Comment here!

Pick up a parking validation ticket at the check-in table. Parking validation is available for the Terminal 1 Garage, Lots A, B, C, and D. Shuttles to & from Lots A-D are available every 10 minutes from the SuperPark shuttle pick-up.

www.flystl.com/civil-rights/public-notices-and-reports

Appendix C: Presentation Slides

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Director's Welcome

Date: August 6, 2024 3

Director Hamm-Niebruegge's Welcome

State of STL

- New Service – Direct Flights
- Passenger Traffic Rebound

2019 → 2023

- Commercial Developments
  - Boeing expansion
  - Out-parcel developments

Direct Flights began May 2

AIR CANADA

MONTREAL

avelo

Date: August 6, 2024 4

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

The Consolidated Terminal Program: Our Future

The CTP is a Key Element to Achieving our Strategic Plan and Mission

New Terminal Concept Rendering

Airport Development Initiatives Update

- Independent Projects
  - West Airfield Program (WAP)
    - Finding of No Significant Impact (FONSI) Issued
    - Airfield Maintenance Facility – Under Design
    - West Deice Pad – Scoping with Design Team
  - Central Utilities Plant – Under Design
  - West Electrical Substation – Under Design
- Construction: 2025 – 2027

NEPA Environmental Review Process

What is the National Environmental Policy Act (NEPA)?

Federal law that requires federal agencies to consider environmental, social and economic impacts of projects before making decisions about them:

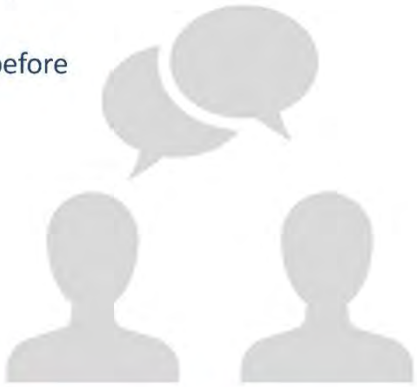
FAA approval required for changes that affect aviation activity and safety

STL will seek FAA grants for Consolidated Terminal Program (CTP)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

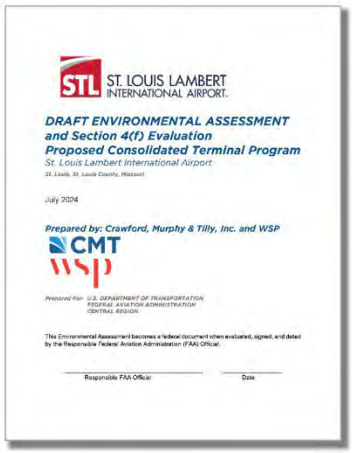
The Purposes of NEPA

- Ensure effects to the natural and human environment are considered by federal decision makers (FAA)
- Share information with and hear from the public (you) before making decisions
- Identify opportunities to avoid or minimize impacts



What is in the NEPA Document?

- **Documents Purpose and Need (Justification for project)**
- **Considers reasonable alternatives to STL proposal**
- **Analyzes environmental, social and economic impacts**
- **Identifies ways to mitigate significant impacts**


ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

DRAFT ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation
Proposed Consolidated Terminal Program
St. Louis Lambert International Airport

July 2024

Prepared by: Crawford, Murphy & Tilly, Inc. and WSP

CMT WSP

Prepared For: U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION CENTRAL REGION

This Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible Federal Aviation Administration (FAA) Official.

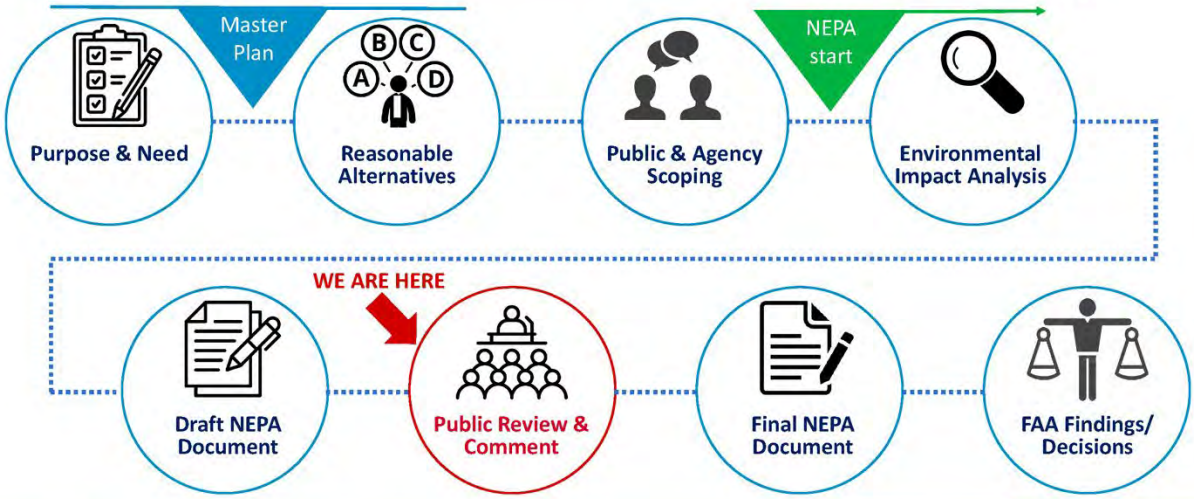
Responsible FAA Official Date

Draft EA Document Available:

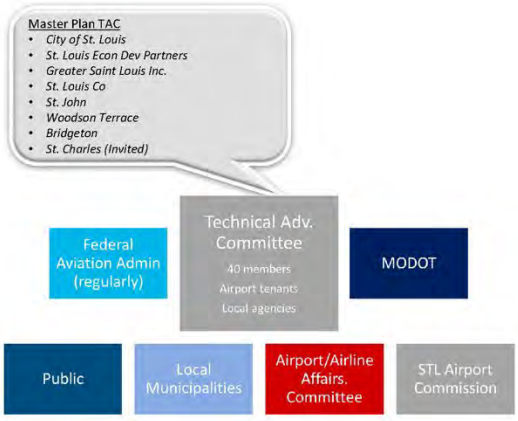
- FlySTL Website
- Airport Administration Office (Terminal)
- Airport Operations Building (AOB)
- Local Libraries
  - Bridgeton Trails
  - Oak Bend Branch
  - Rock Road

Comment Period Open till August 16, 2024

NEPA Process



Stakeholder Engagement – Input is Important



Master Plan Efforts:

- 3 public surveys:
  - 2,948 total responses
- 33 meetings with over 1,000 total attendees

Post-Master Plan Efforts:

- CTP Public Scoping Meeting: Dec 2022
- CTP Agency Scoping Meeting: Dec 2022
- CTP Public Meeting: Aug 2024
- Bi-weekly coordination with FAA
- Monthly coordination with MODOT
- Regular coordination with airlines
- Coordination with tribes
- Project website at flystl.com (updates in Nov 2022, Jun 2023, Sep 2023, May 2024)
- Briefings to STL Commission (Nov 2022 & Jul 2023)
- Briefings to neighboring communities, including the Gateway Coalition
- Briefings to local/industry organizations (STL Partnership, MS&T ASCE Student Chapter)

NEPA Process – Public Comment Period (Open till August 16, 2024)

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Consolidated Terminal Program Goals and Details

The Overall CTP Goal

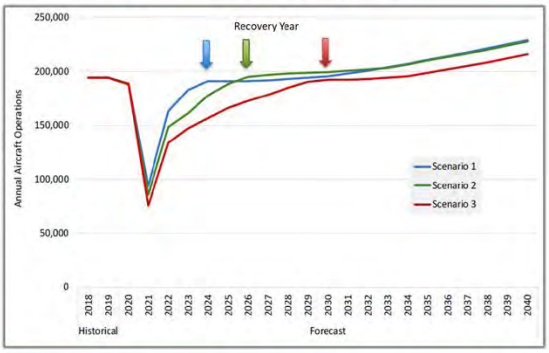
- Improved customer experience
- Modern facility to accommodate growth
- Integrate facility resiliency
- Vision for the next 40+ Years
- Full implementation by 2031

Functionally Modern	Cost Efficient
Reliable & Resilient	Customer Centric

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Purpose and Need: Consolidated Terminal Program

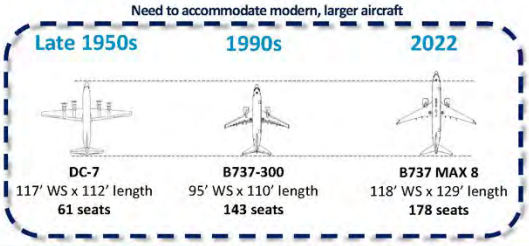
By 2040 STL expects to see growth to
21 million passengers



Congested concourse and hold rooms

Congested passenger pick up area

Need to accommodate modern, larger aircraft



Terminal Needs vs. Solutions

Need	Solution
Growth in Passengers	Accommodate up to 62 aircraft gates Right-size terminal & concourse space Accommodate modern aircraft
Old/Aging Facilities	Upgrade customer experience Reduce O&M costs Improve resiliency/reliability
Inadequate Concessions	Increase customer choices Upgrade customer experience
Insufficient Revenue Opportunities	Provide more garage parking Enhance revenues

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

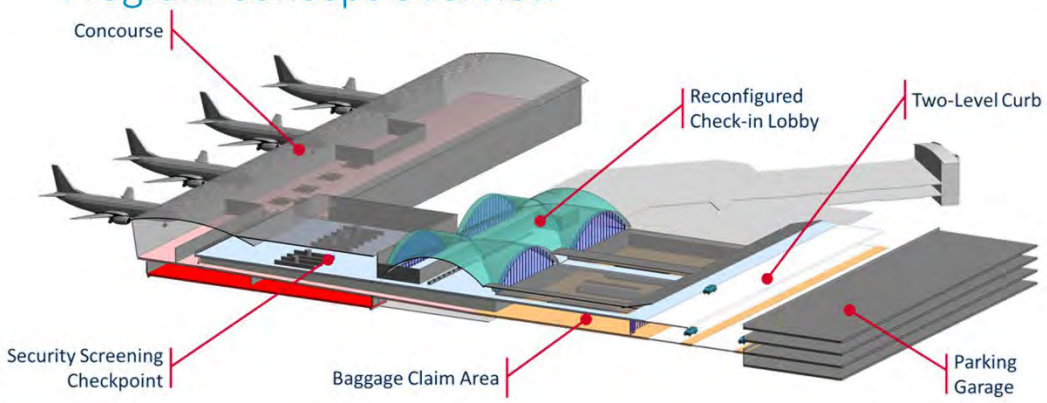
Consolidated Terminal Program

Proposed Concept

- ✓ Passenger convenience
- ✓ Customs accessible to all carriers
- ✓ Single efficient security checkpoint
- ✓ Gates on both sides (shorter walks)
- ✓ New roadways & entrance
- ✓ Concourse can expand further
- ✓ Right-sized space

Consolidated Terminal Program

Program Concept Overview

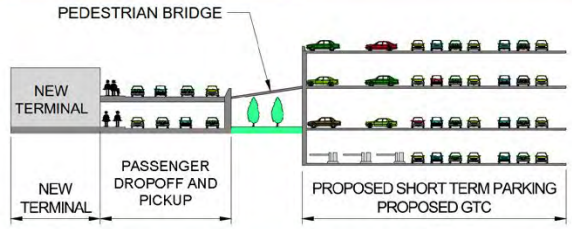


- Up to 62 gates to accommodate larger modern aircraft
- ~1.5 M SF building space
  Larger concourses and circulation areas with right-sized holdrooms (larger)
- 1 Consolidated Security Screening Checkpoint
- 60% increase in secure-side concessions

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Terminal Access / Parking & Ground Transportation Center Concept

New Garage with Ground Transportation Center (GTC)	Up to 7,200 Spaces
Total On-Airport Parking Supply	13,260 spaces
Increase in On-Airport Parking Supply	~47% increase



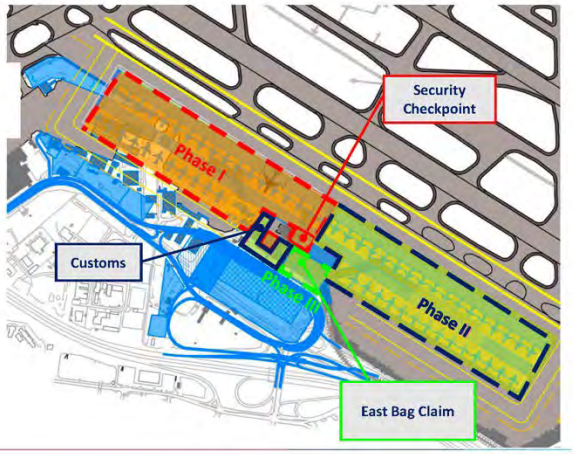
Date: August 6, 2024 19

The CTP Conceptual Phasing

Phase I –
Construction Complete: Late 2028

Phase II –
Construction Complete: Late 2030

Phase III –
Construction Complete: Late 2031



Date: August 6, 2024 20

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

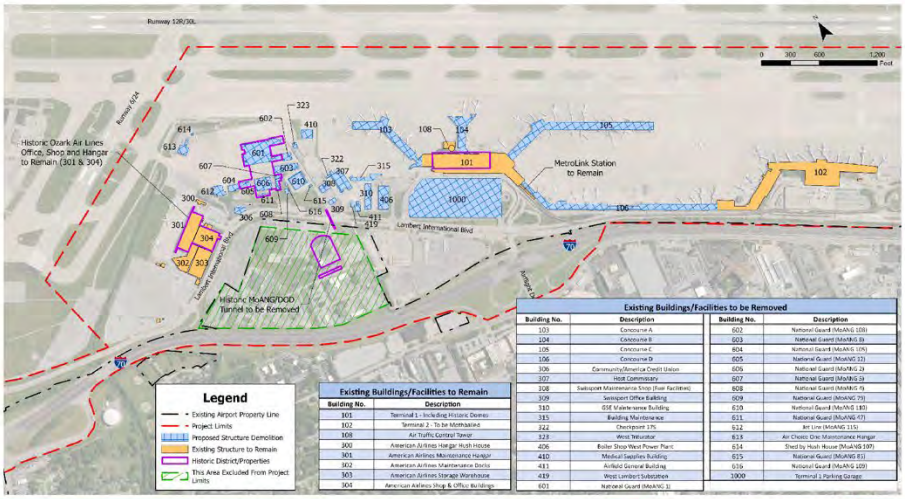
The CTP Timeline

- Planning & requirements documents (complete)
- Airline negotiations (continuing)
- Environmental Assessment – Finding anticipated 3Q 2024
- Professional Services contracting – 2024/2025 (designers, program management, surveyors, etc.)
- Anticipated construction starts
  - Enabling: 2025 / Terminal, Garage: 2026

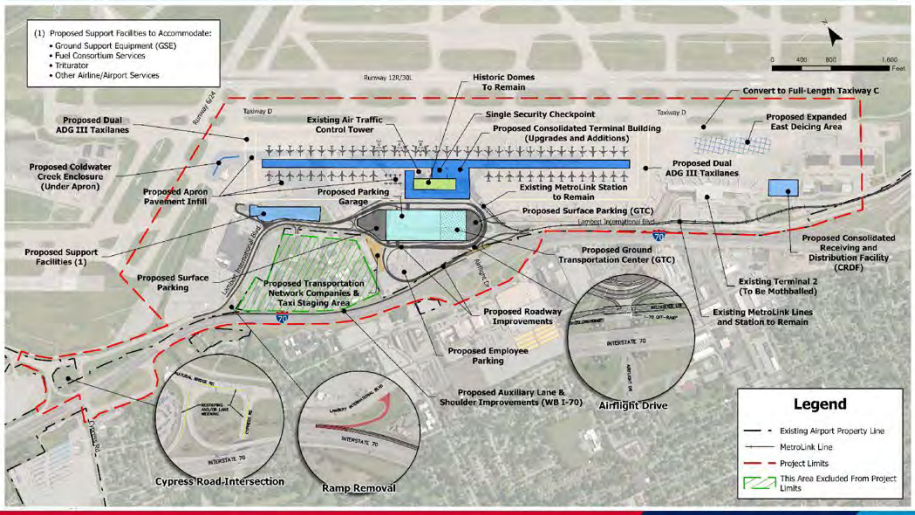
Purpose and Need & Project Description

Proposed Action: Consolidated Terminal Program

Phased Structure Removals to Accommodate CTP Construction



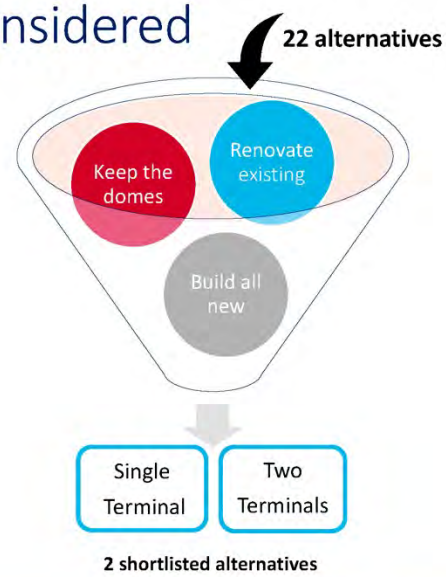
Proposed Action: Consolidated Terminal Program



Alternatives

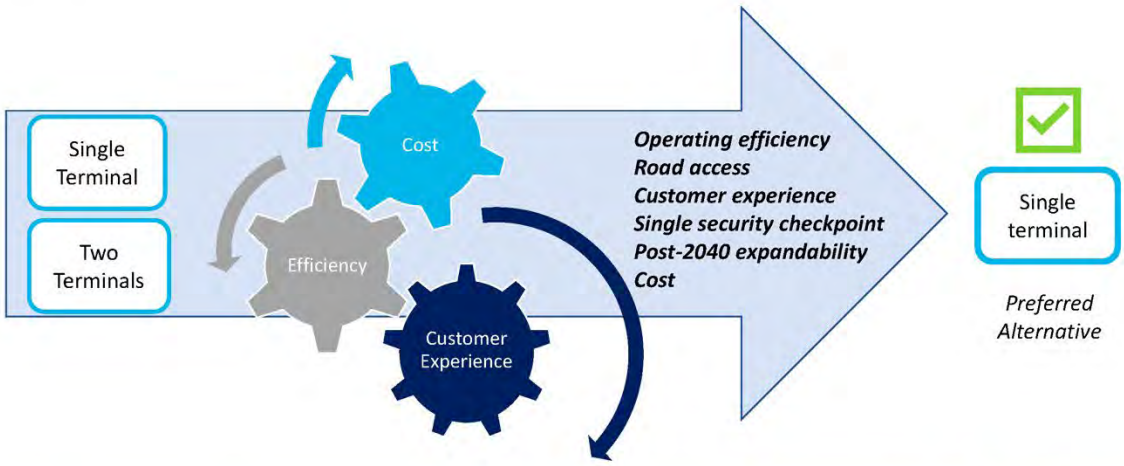
Terminal Alternatives Considered

- Terminal sites across entire airport property considered; due to cost and landside access, only the existing site is feasible
- 22 terminal alternatives considered at existing site, including variations of:
  - Renovate existing terminals
  - Retain domes
  - Airline terminal swap
  - Reopen Concourse D
  - Two new terminals
  - Single terminal



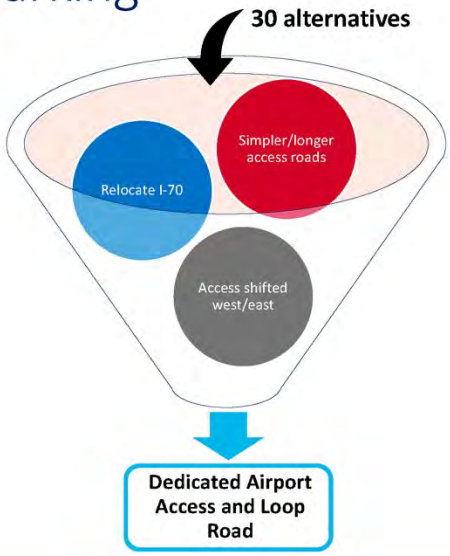
ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Terminal Alternatives Evaluation



Terminal Roadways and Parking Alternatives Considered

- ~~Relocate I-70~~
- ~~Convert LIB and Natural Bridge Road to one-way~~
- One main airport access road
- Access shifted west/east
- Simpler/longer access to terminal



Environmental Resource Categories Evaluated

Environmental Resource Categories

- ❑ Air quality
- ❑ Biological resources (fish, wildlife and plants)
- ❑ Climate
- ❑ Section 4(f) - Parks, other recreational resources and preserves, historic sites
- ❑ Hazardous materials, solid waste, and pollution prevention
- ❑ Historical, architectural, archaeological and cultural resource
- ❑ Land Use
- ❑ Natural resources and energy supply
- ❑ Noise
- ❑ Socioeconomics, environmental justice and children's environmental health and safety risks
- ❑ Surface Transportation Noise
- ❑ Visual effects (including light)
- ❑ Water resources (wetlands, floodplains, surface waters, and groundwater)
- ❑ Cumulative Impacts

Board Stations

Board Stations

- Various study elements presented:
  - Purpose & Need
  - Alternatives
  - Proposed Action
  - Environmental Results & Mitigation
- Stations will have an airport representative to answer questions

Insert Vector Room Layout

How to Provide Comments & Next Steps

We want to hear from you!

Share your feedback about the NEPA process today :

- Scan the QR code on your Welcome Handout to complete an online comment form on your phone
- Submit a paper comment form in the Public Comment area or mail it in
- Record a verbal comment in the Public Comment area

E-mail or Mail your comments to:

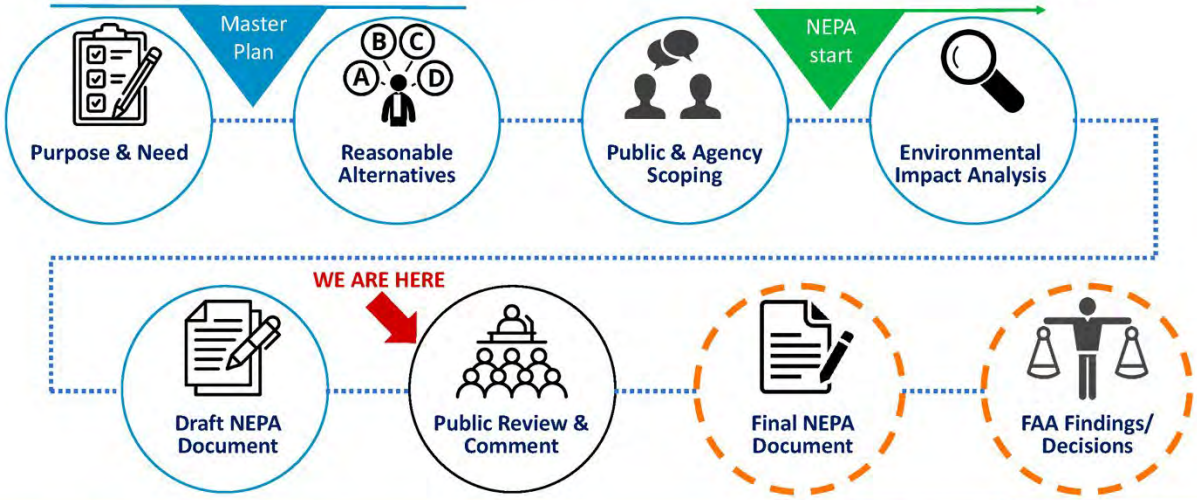
Jim Neidel
St. Louis Lambert International Airport
10701 Lambert International Blvd
St. Louis, MO 63145
jrneidel@flystl.com

or

Scott Tener
Federal Aviation Administration, ACE-611F
901 Locust St.
Kansas City, MO 64106-2325
scott.tener@faa.gov

Comments must be received by Friday, August 16, 2024.

Next Steps



CONSOLIDATED TERMINAL PROGRAM

Thank You for your interest and support!

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Appendix D: Comment Form

WRITTEN COMMENT FORM
PUBLIC MEETING
AUGUST 6, 2024

St. Louis Lambert International Airport
Consolidated Terminal Program Draft Environmental Assessment

Thank you for attending this public meeting. Our purpose in hosting this meeting is to give you an opportunity to comment on the Draft Environmental Assessment, which was prepared to consider the social, economic, and environmental effects of the proposed developments and their consistency with the goals and objectives of area planning agencies. If you wish to provide written testimony, you may submit a letter or fill out this sheet and deposit in the appropriate box on the registration table here today. Otherwise, you may e-mail or mail this form to one of the contacts below no later than Friday, August 16, 2024.

PLEASE PRINT:

NAME

STREET ADDRESS CITY STATE ZIP

Please email or mail this form to the address below:

Jim Neidel
St. Louis Lambert International Airport
10701 Lambert International Blvd
St. Louis, MO 63145
jrneidel@flystl.com

Scott Tener
Federal Aviation Administration, ACE-611F
901 Locust St.
Kansas City, MO 64106-2325
scott.tener@faa.gov

Appendix E: Demographic Form

St.Louis Lambert International Airport
Consolidated Terminal Program

Demographics Form

Thank you for taking a few minutes to complete this survey. **Answering the following questions is optional** but your response will be extremely helpful in ensuring the fairness and equity of public involvement process. Submissions will be kept confidential and separate from any personally identifiable information so that respondents will remain anonymous. These questions are not listed in any particular order.

What is your race?

□ Black or African American □ American Indian or Alaskan Native □ Asian □ Hispanic or Latino
□ White □ Native Hawaiian or Other Pacific Islander
□ I prefer to self-describe: _____

What is the primary language spoken in your home?

□ English □ Spanish □ Other (Please specify): _____

How many people live in your household?

□ 1 - 2 □ 3 - 5 □ 6 +

What are the age ranges of those living in your household? *(Check all that apply.)*

□ Under 18 □ 19 - 44 □ 45 - 64 □ 65 +

What is your annual household income?

□ Less than $10,000 □ $10,000 - $24,999 □ $25,000 - $49,999 □ $50,000 - $74,999
□ $75,000 - $99,999 □ $100,000 - $149,999 □ $150,000 +

What is the highest level of education completed by members of your household?

□ No □ Elementary school □ Middle school □ High school □ College/university
□ Other: _____

Do any individuals living in your home have a physical or mental impairment which substantially limits one or more major life activities?

□ Yes □ No

Please suggest additional ways you think can improve the inclusiveness of our public outreach efforts.

_____

_____

_____

Thank you for helping STL
improve its public involvement
practices!

Appendix F: Public Notice Affidavit of Publication

ST. LOUIS POST-DISPATCH

AFFIDAVIT OF PUBLICATION

Crawford, Murphy & Tilly Engineers & Consultants
4513 Orchid Blvd
Cape Coral, FL 33904
Attn: Laura Sakach (Affidavit Enclosed)

Ad Number – 134094 – PO# LAURA SAKACH – Description: St. Louis Airport Authority…Consolidated Terminal Program…

THE ATTACHED ADVERTISEMENT WAS PUBLISHED

In the St. Louis Post-Dispatch on the following date(s): 7/3/2024

A version of the ad also appeared on STLtoday.com Starting: 7/3/2024

Notice of Public Meeting and Notice of Availability for Public Comment for Proposed Consolidated Terminal Program

The St. Louis Airport Authority (STLAA) intends to undertake the following proposed actions, referred to as the Consolidated Terminal Program, at the St. Louis Lambert International Airport (STL):

- **Enabling Projects**. Demolish various structures to accommodate the new consolidated terminal, including the former Missouri Air National Guard (MoANG) Campus, South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities, phased demolition of existing Concourses A, B, C and D, and other support facilities.
- **Consolidated Terminal/Airside Components**: Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2, including reconfigured terminal passenger ticketing and baggage claim areas; new security screening and Federal Inspection Services (customs); relocation and upgrading utilities; construct replacement airline and airport support facilities, stormwater collection system improvements, terminal apron infill including proposed Coldwater Creek enclosure, reconstruction of apron and taxilanes in the vicinity of the new consolidated terminal, converting Taxilane C to Taxiway C, and close Terminal 2 and mothballing until a potential reuse is identified.
- **On-Airport Roadway and Landside Components**. Reconfigure terminal access road system to improve driver wayfinding and decision making, construct replacement two-level passenger drop-off and pick up curb, construct new parking garage and ground transportation center directly across from the terminal.
- **Connected Actions – Other Roadway Access Improvements**. Construct other roadway and intersection improvements along Interstate 70 and other potential access improvements as identified and refined during the detailed design phase of the project.

We are providing notice of a Public Meeting where we will address the proposed action's potential economic, social, and environmental impacts. In addition, we will address the project's consistency with the goals and objectives of the affected area's land use or planning strategy.

The Public Meeting will be held at the following time and place:

Tuesday, August 6, 2024, 4:00 to 7:00 p.m., with presentations at 4:45 p.m. and 5:45 p.m.
St. Louis Lambert International Airport
Terminal 1, Concourse B
Note: Parking will be validated; MetroLink light rail service is also available.

The Draft Environmental Assessment (EA) evaluates the potential for impact on environmental resources including: air quality; biological resources; greenhouse gas and climate change; historic, architectural, archaeological, and cultural resources; Department of Transportation Act, Section 4(f); hazardous materials, solid waste, and pollution prevention; natural resources and energy supply; noise and noise-compatible land use; socioeconomics, environmental justice, and children's environmental health and safety risks; visual effects; and water resources, including wetlands and waters of the U.S. Adverse effects on historic properties are proposed to be mitigated through a Memorandum of Agreement (MOA) per Section 106 of the National Historic Preservation Act. The proposed action is anticipated to encroach on a FEMA proposed floodplain located on the St. Louis Lambert International Airport. Impacts are anticipated to be minor. The proposed action conforms to applicable state and/or local floodplain protection standards and all measures to minimize harm will be included in the project.

The Draft EA, Draft MOA, and Draft Section 4(f) Evaluation evaluating the proposed action's impacts will be available for public review beginning July 3, 2024 through August 16, 2024. The Draft EA will be available for online viewing at https://www.flystl.com/civil-rights/public-notices-and-reports with hard copies available at the following libraries: Bridgeton Trails, Oak Bend Branch (temporary St. Louis County Library headquarters) and Rock Road. A hard copy or CD of the Draft EA may be mailed upon request. Those wishing to provide comments must do so by email or letter to the address below no later than Friday, August 16, 2024.

Jim Neidel
St. Louis Lambert International Airport
10701 Lambert International Blvd.
St. Louis, MO 63145
jneidel@flystl.com

or

Scott Tener
Federal Aviation Administration, Central Region
901 Locust St., Room 364
Kansas City, MO 64106-2325
scott.tener@faa.gov

Written and presentation materials at the public meeting will be provided in English and all facilities are compliant with the Americans with Disabilities Act. If other special assistance is necessary, please contact Jim Neidel at (314) 551-5027 or via email at jneidel@flystl.com. All special assistance requests must be made no later than 4:00 p.m. on July 30, 2024.

Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask in your comment to withhold from the public your personal identifying information, we cannot guarantee that we will be able to do so.

COMPANY REPRESENTATIVE

SWORN TO AND SUBSCRIBED BEFORE ME THIS July 8, 2024

NOTARY PUBLIC, CITY OF ST. LOUIS

901 N. TENTH ST., ST LOUIS MO 63101

PHONE 314-340-8000

WHITNEY M. DONOVAN
Notary Public, Notary Seal
State of Missouri
St. Louis County
Commission # 15633211
My Commission Expires 02-25-2027

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Appendix G: Postcard

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

P.O. Box 10212, St. Louis, MO 63145-00212

Presorted
First Class
U.S. Postage
PAID
St. Louis MO
Permit 221

Return Service Requested

Please provide your comments on the Draft EA by **August 16** using one of the options below:

- Scan the QR code to access the online comment form
- Attend the Public Meeting on August 6, 2024 at STL's Terminal 1, Concourse B from 4-7 p.m. Stop by anytime. Presentations at 4:45 p.m. and 5:45 p.m.
- Contact: Jim Neidel, STL Airport Planning Manager by email at **jrneidel@flystl.com** or regular mail at Jim Neidel, St. Louis Lambert International Airport, 10701 Lambert International Blvd., St. Louis, MO 63145-0212
- Contact: Scott Tener, FAA Environmental Protection Specialist by email at **scott.tener@faa.gov** or regular mail at Scott Tener, Federal Aviation Administration, ACE-611F, 901 Locust Street, Kansas City, MO 64106

1**********AUTO**SCH 5-DIGIT 63028
OCCUPANT
11140 SAINT CHARLES ROCK RD
SAINT ANN MO 63074-1000

Appendix H: Demographic Form Results

What is your race?	Percent	Count
White	89%	31
Black/African American	6%	2
I prefer to self-describe	6%	2

What is the primary language spoken in your home?	Percent	Count
English	96%	23
Other (Please specify)	4%	1

How many people live in your household?	Percent	Count
1-2 people	63%	17
3-5 people	30%	8
6+ people	7%	2

What are the age ranges of those living in your household? Check all that apply.	Percent	Count
19-44	40%	14
45-64	26%	9
65+	23%	8
Under 18	11%	4

What is your annual household income?	Percent	Count
150,000+	58%	14
75,000-99,999	13%	3
100,000-149,999	13%	3
10,000-24,900	8%	2
25,000-49,999	4%	1
50,000-74,999	4%	1

What is the highest level of education completed by members of your household?	Percent	Count
College/University	88%	22
Other	8%	2
High School	4%	1

Middle School	4%	1

Do any individuals living in your home have a physical or mental impairment which substantially limits one or more major life activities?	Percent	Count
No	85%	23
Yes	15%	4

What is your age?	Percent	Count
46-55	25%	4
56-65	25%	4
66-75	25%	4
26-35	13%	2
36-45	6%	1
Over 75	6%	1

What is your gender?	Percent	Count
Male	63%	10
Female	38%	6

What is your highest formal education level?	Percent	Count
Graduate or Professional Degree	50%	7
High School/GED	21%	3
Bachelor's Degree	21%	3
Some College	7%	1

What is your marital status?	Percent	Count
Married or Domestic Partnership	73%	11
Never Married	13%	2
Widowed	13%	2

Please suggest additional ways you think STL can improve the inclusiveness of our public outreach efforts. (Verbatim Comments)

Post on community billboards at City Halls that are impacted by airport business or Facebook sites of upcoming public meetings in their area.
More updates/news on your website
POSTAL SERVICE DELIVERY NOTICE OF THESE MEETINGS TO ALL AFFECTED SURROUNDING THE AIRPORT. OR AT MINIMUM A DELIVERY SERVICE HAD DELIVERING THEM WHICH IS CHEAPER TO DO. THESE ARE THE TYPES OF THINGS PEOPLE DONT EXPECT SO THEY DONT GO LOOKING AT AN AIRPORT WEBSITE TO LEARN OF THEM. THE ONLY THING PEOPLE WOULD LOOK AT THE AIRPORT WEBSITE FOR IS TO LEARN ABOUT PARKING. EVEN FLIGHTS ARE SCHEDULED ON CARRIERS NOT THE AIRPORT WEBSITE. WE IN GOVERNMENT MUST THINK TO THE MOST COMMON DENOMENATOR.
Go to community meetings! https://slaco-mo.org/ can give you information
I think the efforts to reach a broader audience should include colleges and universities, both public and private.
Get back with us in a reasonable time!
News tv.
The meeting should have been at a location where people (ADA) didn't have to walk and park so far. Should of not been on a voting day.

Appendix I: Summary of Comments and Responses

Frequently Asked Questions

Frequently Asked Questions

The draft Environmental Assessment analyzed the proposed Consolidated Terminal Program at St Louis Lambert International Airport (STL). The following provides a summary of the frequently asked questions and comments that were submitted during the public comment period, which ended on August 16, 2024 and following the public meeting held on August 6, 2024. The comments below are separated into 16 categories or themes along with a response to each.

Project Support (22 comments received): A modern, single terminal will allow the airport to continue to grow air service and passenger volume through 2040 and beyond, while also providing a modern, efficient passenger experience. Expanded parking, an enhanced roadway system, more concession options, and additional upgrades will enhance the travel experience considerably. The consolidated terminal project is vital to the continued economic resurgence of the St. Louis metro area.

Thank you for your feedback on the proposed consolidated terminal program at St. Louis Lambert International Airport.

Water Resources-Floodplain (7 comments received): Will this project result in upstream or downstream flooding from Coldwater Creek?

Evaluation of Coldwater Creek during planning was conducted. This evaluation included an engineering hydraulic model that demonstrated the proposed project, which includes constructing flood storage basins, will result in no change to the upstream or downstream floodplain surface elevations. The proposed enclosure of a portion of the creek immediately around the aircraft apron area will require a floodplain development permit, which will be conducted during engineering design efforts and require the St. Louis County floodplain administrator and State Emergency Management Authority approvals. See Section 3.18 of the Final EA for discussion regarding Floodplains.

Noise and Noise Compatible Land Use-Aviation Noise (6 comments received): How will this project affect noise in the area and is noise abatement going to be offered? Noise from aircraft is an issue in our community.

There would be changes in how the airlines utilize the runways when the consolidated terminal is completed. Based on the noise analysis, which compares the No Action to the Proposed Action, there would be no existing or new noise-sensitive land uses that would be subject to significant noise levels (as defined in FAA Order 1050.1F, Exhibit 4-1) as a result of the proposed project; therefore, no mitigation is required. See Section 3.13 of the Final EA for discussion regarding aircraft Noise and Noise Compatible Land Use.

Noise mitigation was completed as part of a previous project under a program established under a Part 150 Study. Mitigation was conducted voluntarily by homeowners in exchange for deed restrictions. Under this program, homeowners are responsible for the continued maintenance and upkeep of their property. A Part 150 study is outside of the scope of the proposed action.

If residents have a noise complaint, they may contact the STL Airport (by phone at 314-551-5070, by email at NoiseHotline@flystl.com or the FAA's noise complaint portal (https://noise.faa.gov/noise/pages/noise.html).

Socioeconomic-Community Impacts and Landside Access (5 comments received): The project eliminates or modifies traditional access points for airport traffic to flow to and from Woodson Terrace and St. Ann and will impact businesses on the south side of I-70. The pedestrian access to the MetroLink is currently inefficient and unsafe and the Woodson Terrace Airport Connection Concept should be constructed. Pedestrian access to the airport from Woodson Terrace and St. Ann should be improved.

The traffic patterns will change for local businesses on the south side of I-70 (within the communities of Woodson Terrace and St. Ann) as a result of the proposed project. The majority of the businesses in this area are airport user-based businesses, such as hotels, rental car facilities airport parking lots, gas stations and restaurants, which will continue to serve airport users under the Proposed Action. Therefore, while the Proposed Action would slightly alter the travel time and distance, and would be an adverse economic impact on Pear Tree Drive area businesses and residences, the impact is not significant (as defined in FAA Order 1050.1F, Exhibit 4-1) as compared to the No Action alternative.

STL is aware of the Woodson Terrace Airport Connection concept. While it is outside the scope of the Airport project's purpose and need, the Airport has evaluated the concept and finds the proposed Consolidated Terminal Program does not preclude the Woodson Terrace concept. The Airport commits to collaborating with MoDOT, MetroLink and other stakeholders to look at ways to improve access to and from the Airport and MetroLink stations.

The airport commits to collaborating with MoDOT to look at making improvements along existing pedestrian and bicycle paths along Airflight Drive. Additional pedestrian and bicycle connectivity will be evaluated in coordination with MoDOT. Recognizing the economic impact the Airport has on the surrounding communities and region, STL will continue collaborating with stakeholders for continued input during landside access improvement design efforts. See Section 3.14 of the Final EA for more information on proposed roadway configurations and community impacts.

Socioeconomic-Land Acquisition (2 comments received): Will the consolidated terminal program include any property acquisition?

No property is to be acquired as part of the proposed Consolidated Terminal Project.

Socioeconomic-Landside Access (1 comment received): It appears there is no easy direct access to the terminal loop/garage from I-70 westbound (from STL, going west) without the additional drive time to pass the entire terminal and enter at the Natural Bridge entrance (where the main roadway terminal loop will start).

The proposed roadway configuration retains the I-70 westbound exit (Exit 238A) at Lambert International Boulevard and will allow traffic to join the terminal loop road system. In addition, the Natural Bridge Road exit (Exit 235C) would be retained as another access point for westbound I-70 traffic. The proposed terminal loop road system retains the southbound exit at Airflight Drive and retains the I-70 eastbound on-ramp from Airflight Drive. Vehicles exiting the new parking garage will be able to access I-70 via Airflight Drive. See Section 3.14 of the Final EA discussing proposed roadway configurations.

Socioeconomic-Travel Time Changes (1 comment received): Will the travel times or trip lengths increase under the proposal consolidated terminal program?

The estimated travel time using the new proposed terminal loop to and from the area south of I-70 is projected to be similar to existing routes. The existing and proposed routes are similar in length; however, the proposed route encounters less signalized intersections (see Section 3.14 in the Final EA).

Hazardous Materials (3 comments received): Will this project result in contamination of soils or groundwater, or be improperly disposed? Why was the Formerly Utilized Sites Remedial Action Program (FUSRAP) site contamination not addressed in the EA?

Any hazardous materials encountered in site soils or groundwater would be managed and disposed of, if applicable in accordance with federal and state regulations. Transportation routes, disposal sites, and recycling facilities that will be used during construction of the proposed action, as applicable, will be in accordance with federal and state regulations. See Section 3.9 of the Final EA discussing Hazardous Materials, Solid Waste, and Pollution Prevention.

The FUSRAP site is not within the limits for the consolidated terminal program. More information on the status of the FUSRAP site can be found at:
https://www.mvs.usace.army.mil/Missions/FUSRAP/SLAPS/

Surface Transportation Noise-Traffic Noise (2 comments received): How will this project affect noise in the area and is a noise barrier going to be provided?

The evaluation of surface transportation noise for the program looked at noise barriers along the south side of I-70 between Cypress Road and Pear Tree Apartments. Federal Highway Administration (FHWA) and MoDOT rules require barriers to be feasible and reasonable before they can be approved for development. "Feasible" and "reasonable" are defined in the rules and have to do with how effective a proposed barrier is and its cost in comparison to its benefits, as well as whether members of the public who would benefit from it desire it. For most of the length of the evaluated area, the barriers failed the feasible and reasonable tests, either because of the distance between the residences and the available barrier location, or because development was not dense enough to make the barrier cost-reasonable. A barrier at Pear Tree Apartments was determined to meet the requirements that have been evaluated to date. If more detailed design, in cooperation with MoDOT, continues to support this barrier being feasible and reasonable, it will be brought to Pear Tree Apartments owners and residents for their consideration. See Section 4.11 of the Final EA for discussion regarding Surface Transportation Noise.

Pollution Prevention-Glycol Contamination in Coldwater Creek (2 comments received): Is there an alternative location for the proposed Deicing Pad further away from the Coldwater Creek floodplain? Will deicing fluid (glycol) impact Coldwater Creek?

The proposed deicing facilities included as a part of the CTP are located on the terminal apron, outside of the Coldwater Creek floodplain. There is a proposed West Deicing Pad that was evaluated in the West Airfield Program (WAP) Environmental Assessment (available for review at https://www.flystl.com/uploads/documents/public-notices-and-reports/Final-EA-and-FONSI-ROD-for-West-Airfield-Program.pdf). The purpose of the WAP is to remove equipment and deicing materials out of the floodplain. Multiple alternatives for the location of the West Deicing Pad were considered as a part of the WAP Environmental Assessment. While a portion of the West Deicing Pad would be located within the floodplain, the pad would be raised above the flood elevation and all equipment and structures would be removed from the floodplain. Additionally, a glycol collection and containment system will be installed as part of the West Deicing Pad project. Therefore, the WAP would reduce the potential for glycol, fuel or other contaminant runoff entering Coldwater Creek. See Section 3.9 of the Final EA for further discussion of the glycol collection and pollution prevention measures implemented at STL.

Air Quality (1 comment received): How will this project affect air quality in the project area?

The USEPA designates St. Louis County as being in attainment for particulate matter. Air quality analysis determined that neither the No Action nor the Proposed Action would result in significant air

quality impacts and no mitigation is required. See Section 3.5 of the Final EA for discussion regarding Air Quality.

Public Involvement-Notification (1 comment received): There was not adequate public notification of the public meeting so that surrounding communities could provide feedback in the decision making process.

Notification of the August 6, 2024 Public Meeting was provided using several outreach methods including 1) legal notification in the St. Louis Dispatch, 2) direct email correspondence to municipalities within and adjacent to the study limits, 3) direct email correspondence to regulatory agencies, and 4) mailing of a post-card providing notification to residential and business addresses within 1-mile of the airport (approximately 13,900 post cards sent). Further information regarding the public meeting outreach can be found in the Public Meeting Summary Report included in Appendix A of the Final EA. The information from the public meeting is available on the STL website at https://www.flystl.com/about-us/stl-airport-layout-plan/ctp-public-meeting-and-public-comment.

Historical-Terminal Domes (1 comment received): The terminal domes are ugly and should be demolished as part of this terminal consolidation.

The domes are a historic property protected under the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to consider the impact of their actions on historic properties. The NHPA also encourages the preservation and utilization of all usable elements of the Nation's historic built environment. Coordination with the State Historic Preservation Office (SHPO) resulted in a Memorandum of Agreement to preserve and protect the domes. Further information regarding the domes and the coordination process can be found in Section 3.10 of the Final EA.

Deficient Existing Airport Facilities (1 comment received): The existing airport passenger pickup and parking areas are inadequate.

The proposed consolidated terminal program would improve the length of the entrance roadways and the passenger pickup. It will also provide a new parking garage with an improved configuration.

Biological Resources (1 comment received): The airport's proposed mitigation for gray bat presence on airport property targeted for development is inadequate.

The environmental assessment documented that while potential suitable habitat for bats was found within the project action area, no bats or signs of bats were found to be present within the proposed action area. Many of the potentially suitable habitat trees within the proposed action area were in highly disturbed areas, such as on roadsides which are not preferred by bats. According to the U.S. Fish and Wildlife Service (USFWS) gray bats occupy caves or cave-like structures year-round. No caves are known to be present in the proposed action area, therefore no suitable habitat for the gray bat is expected to be available within the proposed action area. All cave-like structures such as the underside of bridges and concrete box-culverts within the project action area were inspected and no bats or signs of bats were found within the proposed action area. On April 19, 2024, the USFWS agreed to the determination that the proposed action is not likely to adversely affect federally listed species. Further information on biological resources is available in Section 3.6 of the Final EA.

Visual Effects-Light Pollution (1 comment received): We recommend a partnership with Dark Sky Missouri in the review and design of lighting options as part of the terminal facilities and infrastructure elements.

It is anticipated that the proposed consolidated terminal program would be illuminated by the same basic types of lighting currently used on the existing terminals. Outdoor lighting from the Proposed Action when compared to the No Action Alternative would not significantly increase

overall light pollution. Lighting would not be directed toward residential areas and would be designed in compliance with St. Louis County ordinances and FAA lighting requirements. Light emissions from the Proposed Action are not expected to be significant, interfere with normal activities, affect airport operations, or create a potential for annoyance for surrounding areas or nearby uses. See Section 3.16 of the Final EA for further discussion.

Appendix B:
Consolidated Terminal Program Phasing

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

ADVANCED PLANNING TECHNICAL MEMO #2

CONSOLIDATED TERMINAL PROGRAM PHASING

This technical memo, along with the other technical memos prepared as part of this Advanced Planning task, represents the **Program Criteria Document** for the St. Louis Lambert International Airport **Consolidated Terminal Program**. Each standalone technical memo provides additional information to support the National Environmental Policy Act (NEPA) and design processes.

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Purpose of this Memo:

In the Advanced Planning task, the Master Plan projects and connected projects/actions were combined into two programs that are not connected, the Consolidated Terminal Program (CTP) and the West Airfield Program (WAP). This memo provides a description and depiction of high-level construction phasing of the CTP projects, outlining the timeline from 2024 to 2031.

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

ADVANCED PLANNING TECHNICAL MEMO #2

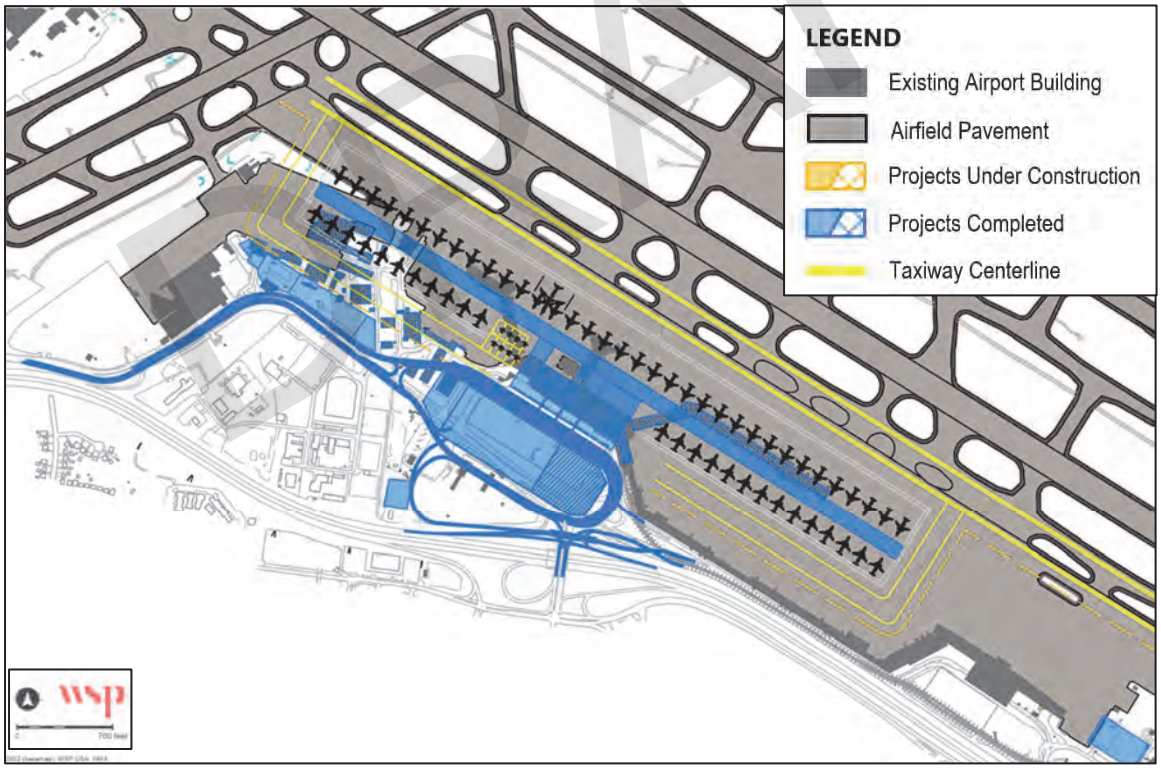
CONSOLIDATED TERMINAL PROGRAM PHASING

1 EXECUTIVE SUMMARY

In the Advanced Planning task, the Master Plan projects and connected projects/actions were combined into two programs, the Consolidated Terminal Program (CTP) and the West Airfield Program (WAP). This memo provides a description and depiction of high-level construction phasing of the CTP projects by year.

Figure 1-1 depicts the CTP layout after the completion of the program in late 2031. Note that the planned terminal size of 62 gates represents the higher end of the planning need. This conservative approach ensures there is sufficient space for the terminal. The plan will likely change as actual by-airline needs are established in the Airline Use Agreement and architectural design.

Figure 1-1: Consolidated Terminal Program Projects



Source: WSP USA, 2023.

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2 BACKGROUND

The CTP was developed to enhance the passenger experience, increase airport revenue, eliminate duplication of services, eliminate aging and redundant building systems, ensure continued safe, secure, and efficient operations at STL, by providing sufficient space and facilities for current and forecast passenger demand and aircraft operations. Construction of the CTP is planned to span from 2024 to 2031. **Table 2-1** outlines the schedule for the CTP.

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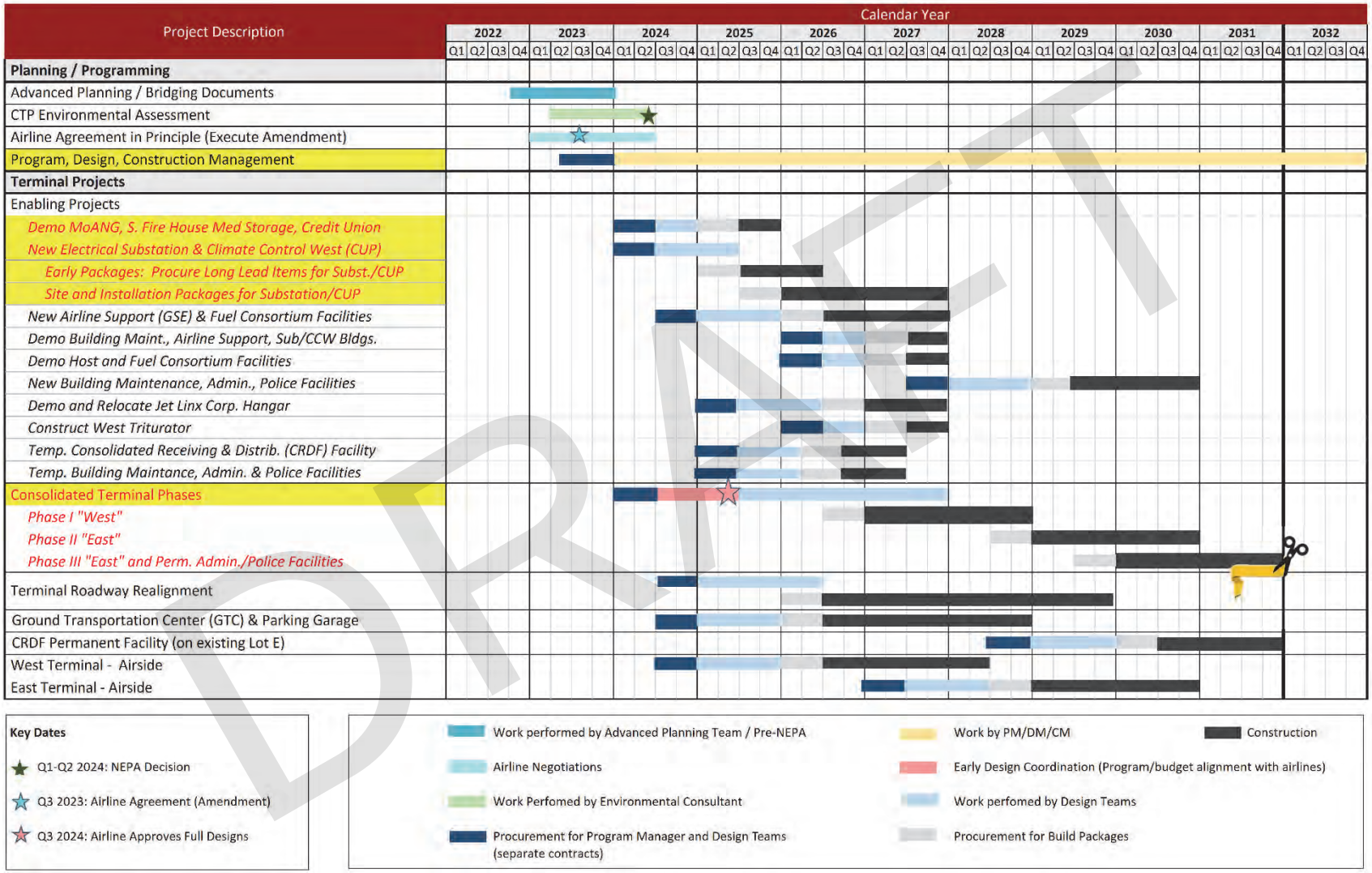
Table 2-1: Consolidated Terminal Program Schedule



Source: WSP USA, 2023.

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3 PROJECTS BY YEAR

This section provides a list and depiction of CTP projects based on construction years.

3.1 2025 PROJECTS

The following are projects scheduled for 2025:

- Demolishing of the MoANG Buildings (2024-2025)
- Demolishing of the South Fire House Medical Storage (2025)
- Demolishing of the credit union building (2025)
- Procurement of long lead items for West (Lambert) Electrical Substation and Central Utility Plan (2025-2026)

Figure 3-1 depicts the construction projects in 2025.

3.2 2026 PROJECTS

The following are projects scheduled for 2026:

- Procurement of long lead items for West (Lambert) Electrical Substation and Central Utility Plan (2025-2026)
- Reactivate Concourse D and portion of Concourse C (2026)
- Site and Installation packages for West (Lambert) Electrical Substation and Central Utility Plan (2026-2027)
- Construction of New Airline Support (GSE) facility (2026-2027)
- Construction of Fuel Consortium facility (2026-2027)
- Constructing a temporary Consolidated Receiving & Distribution Facility (CRDF) (2026-2027)
- Constructing a temporary Building Maintenance Facility (2026-2027)
- Constructing a temporary Airport Administration space (2026-2027)
- Constructing a temporary Airport Police space (2026-2027)
- Realign the Terminal roadway (2026-2029)
- Construct the Ground Transportation Center (GTC) and Parking Garage (2026-2028)
- Construct the apron for the West Terminal side (2026-2028)

Figure 3-2 depicts the construction projects in 2026.

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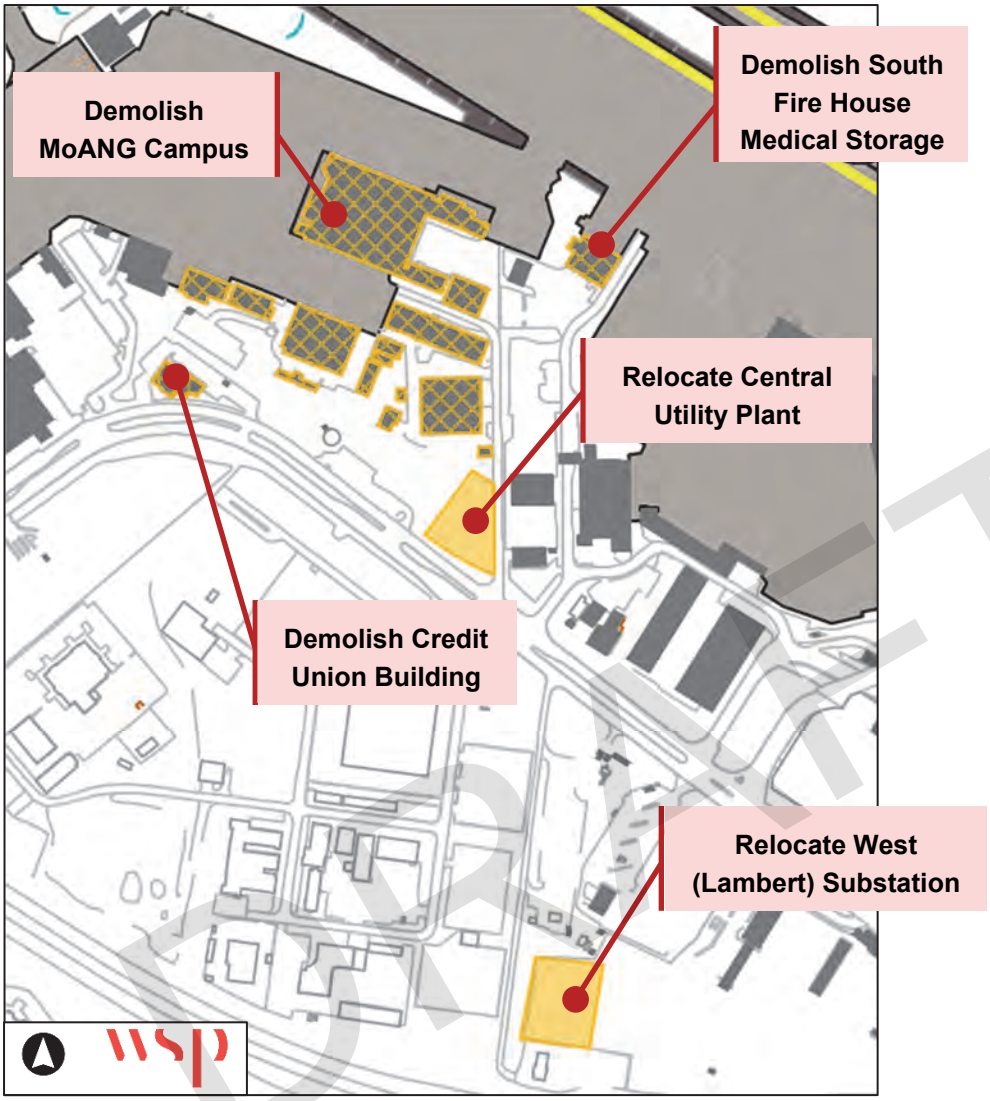
Figure 3-1: 2025 Construction Projects



Source: WSP USA, 2023.

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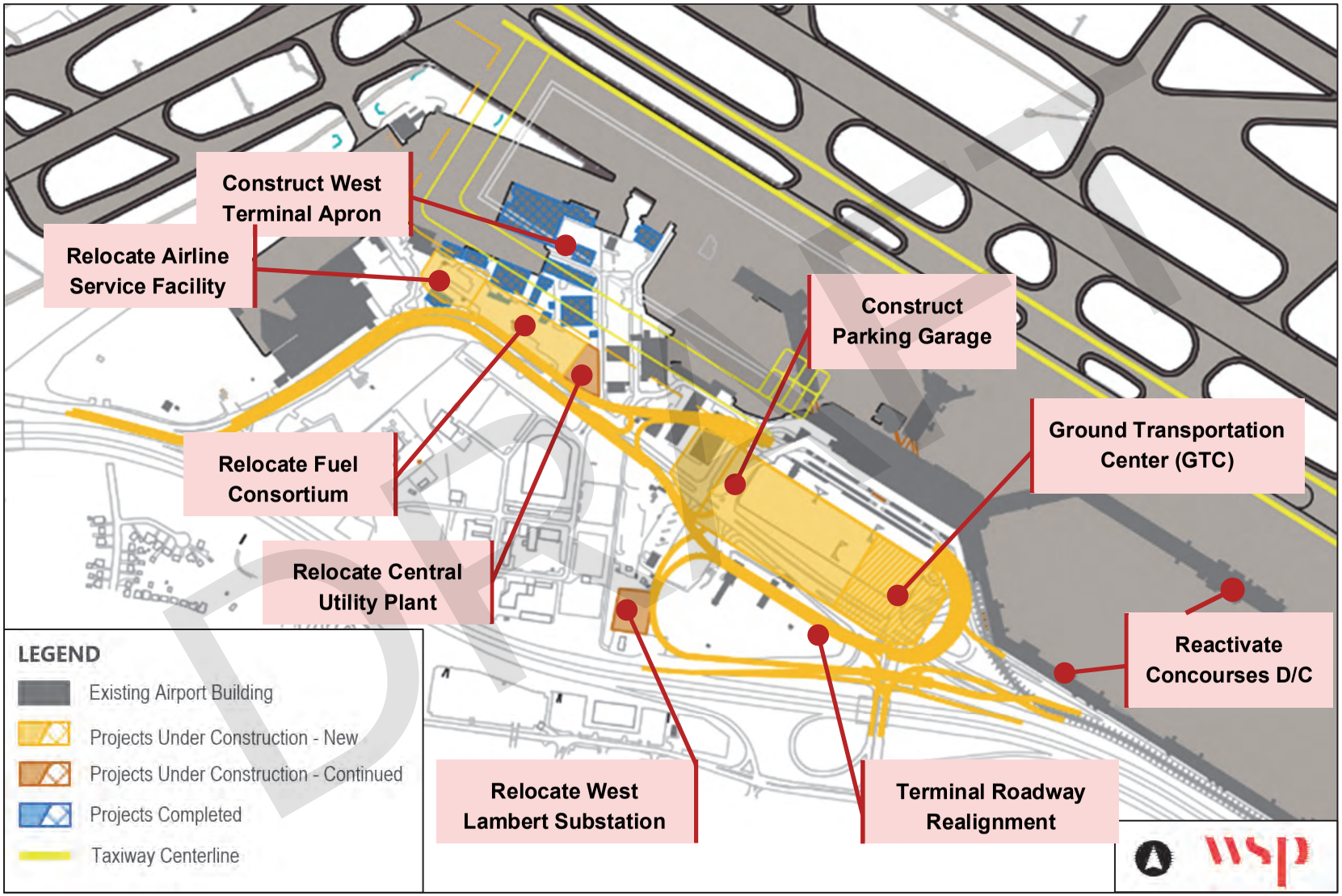
Figure 3-2: 2026 Construction Projects



Source: WSP USA, 2023.

3.3 2027 PROJECTS

The following are projects scheduled for 2027:

- Site and Installation packages for West (Lambert) Electrical Substation and Central Utility Plant (2026-2027).
- Construction of New Airline Support (GSE) facility (2026-2027)
- Construction of Fuel Consortium facility (2026-2027)
- Construction of a temporary CRDF (2026-2027)
- Construction of a temporary Building Maintenance Facility (2026-2027)
- Construction of a temporary Airport Administration space (2026-2027)
- Construction of a temporary Airport Police space (2026-2027)
- Construction of the Ground Transportation Center (GTC) and Parking Garage (2026-2028)
- Construction of the apron for the West Terminal side (2026-2028)
- Realigning the Terminal roadway (2026-2029)
- Demolition of existing Building Maintenance facility (2027)
- Demolition of existing Airline Support facility (2027)
- Demolition of existing West (Lambert) Electrical Substation facility (2027)
- Demolition of existing Central Utility Plant (2027)
- Demolition of Host Commissary (2027)
- Demolition of existing Fuel Consortium facility (2027)
- Terminal Phase 1 (2027-2028):
    - Demolition of Concourse A and B (requires relocation of Concourse B Operations Center and staff training stations)
    - Relocation of Building Maintenance Facility
    - Relocation of West Triturator
    - Construction of West Concourse (up to 31 Nominal Gates)
    - Construction of Apron inside West Terminal Area
    - Construction of SSCP/CBIS
    - Reconfiguration of ticketing lobby under the west dome
    - Construction of Stacked Arrivals & Departures Curb Drives

Figure 3-3 depicts the construction projects in 2027.

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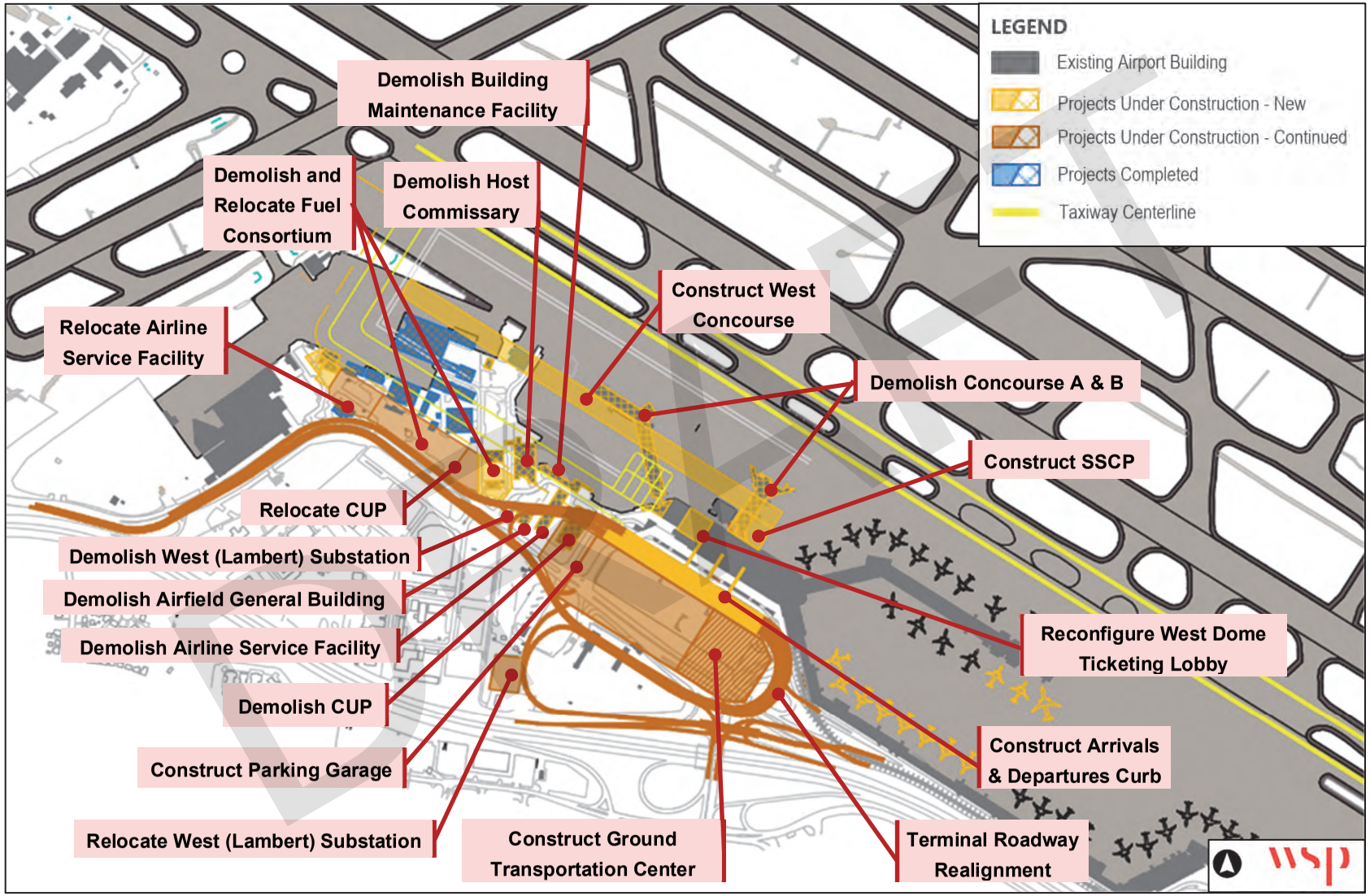
Figure 3-3: 2027 Construction Projects



Source: WSP USA, 2023.

3.4 2028 PROJECTS

The following are projects scheduled for 2028:

- Construction of the Ground Transportation Center (GTC) and Parking Garage (2026-2028).
- Construction of the apron for the West Terminal side (2026-2028)
- Realignment of the Terminal roadway (2026-2029)
- Terminal Phase 1 (2027-2028):
  - Demolition of Concourse A and B
  - Relocation of Building Maintenance Facility
  - Relocation of West Triturator
  - Construction of West Concourse (up to 31 Nominal Gates)
  - Construction of Apron inside West Terminal Area
  - Construction of SSCP/CBIS
  - Reconfiguration of the western portion of domes for Ticketing
  - Construction of Stacked Arrivals & Departures Curb Drives

Figure 3-4 depicts the construction projects in 2028.

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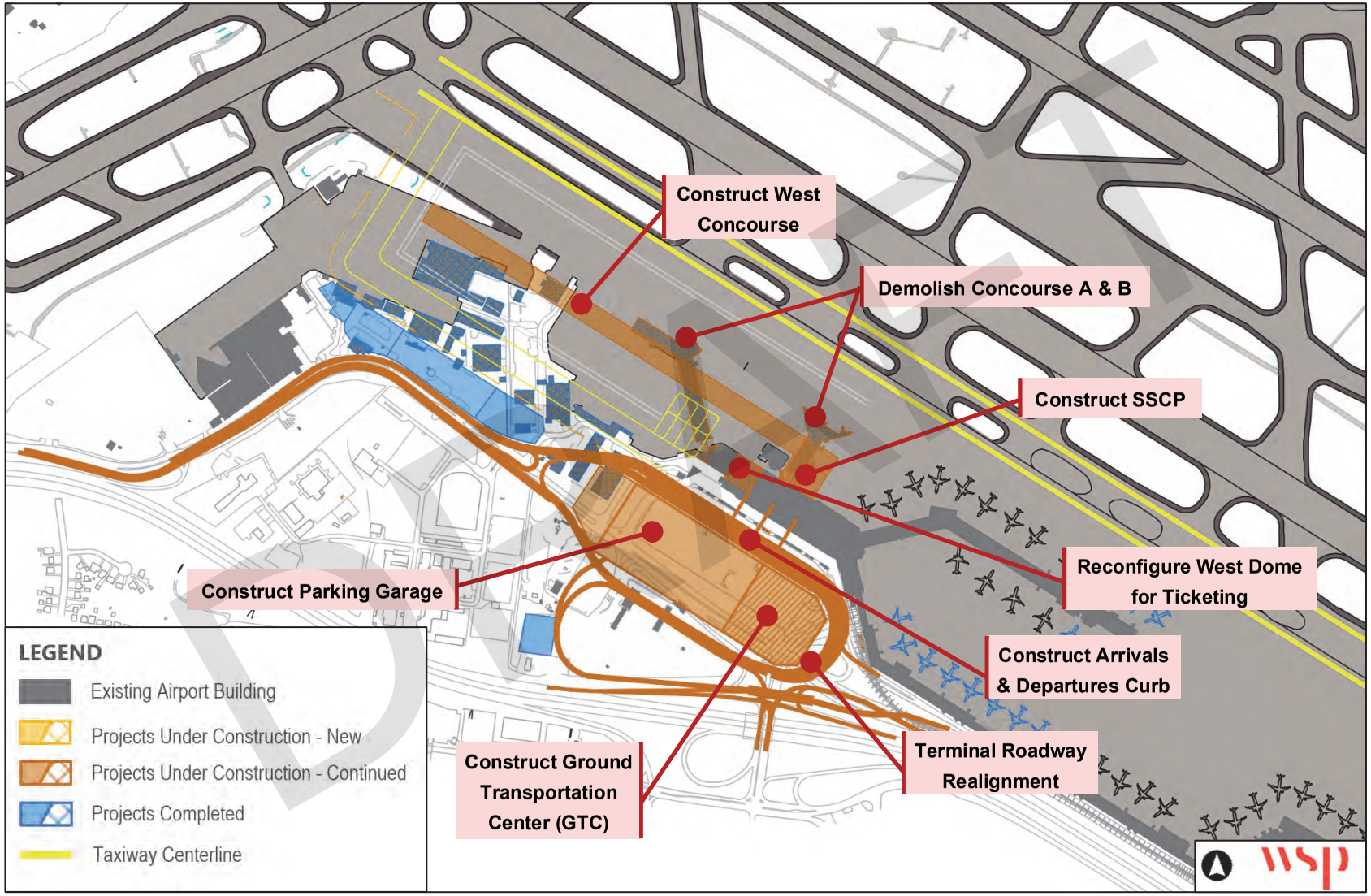
Figure 3-4: 2028 Construction Projects



Source: WSP USA, 2023

3.5 2029 PROJECTS

The following are projects scheduled for 2029:

- Realign the Terminal roadway (2026-2029)
- Construction of New Building Maintenance facility (2029-2030)
- Construction of New Airport Administration space (2029-2030)
- Construction of Airport Police space (2029-2030)
- Construct the apron for the East Terminal side (2029-2030)
- Terminal Phase 2 (2029-2030):
  - Demolition of Concourse C
  - Construction of East Concourse (up to 31 Nominal Gates)
  - Construction of western half of Baggage Claim
  - Construction of new Federal Inspection Service (FIS)[1]
  - Reconfiguration of center portion of domes for Ticketing

Figure 3-5 depicts the construction projects in 2029.

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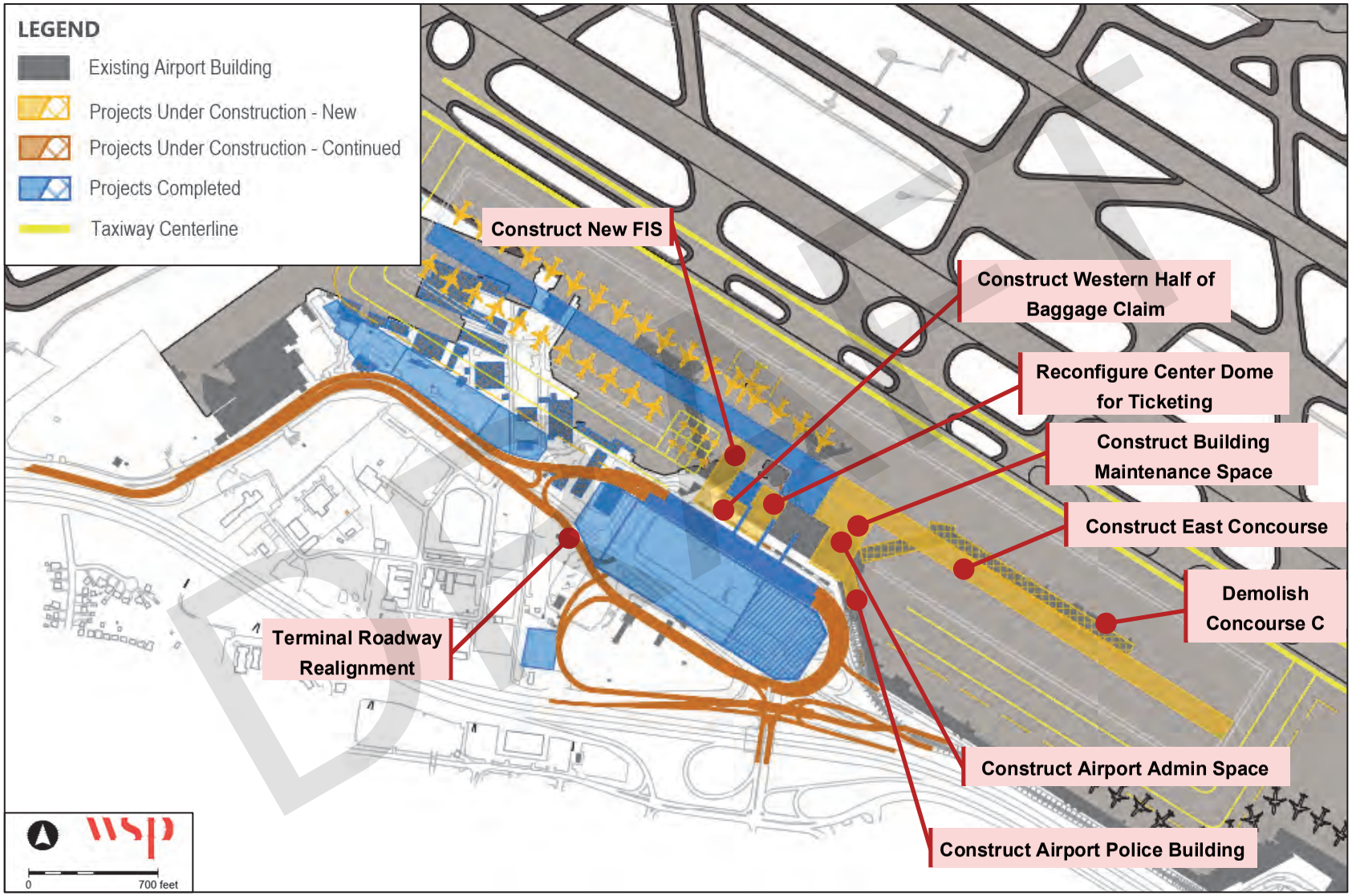
[1] The new FIS is planned to be constructed in Terminal Phase 2, for the following reasons:

- In order to build the new FIS and bag claim area, the existing departures roadway has to be demolished, which requires the new terminal curbs to be built and operational (scheduled completion in 2028).
- Additionally, the Meeter/Greeter lobby and bag recheck for the FIS are within the new bag claim area, which can also only be built in 2029, once the new terminal curbs are complete. If the FIS were built before 2029, arriving passengers would have to go through a temporary facility in the existing bag claim area, which has no room. Then, when tearing down and rebuilding the west end of the bag claim area, these arriving passengers would need to be accommodated elsewhere or be worked around. This is undesired for both passenger experience and construction efficiency. The FIS building could be redesigned to include the Meeter/Greeter lobby and recheck functions. However, this would add area and cost, compared to integrating these functions into the domestic bag lobby.

Figure 3-5: 2029 Construction Projects



Source: WSP USA, 2023.

3.6 2030 PROJECTS

The following are projects scheduled for 2030:

- Construction of New Building Maintenance facility (2029-2030)
- Construction of New Airport Administration space (2029-2030)
- Construction of Airport Police space (2029-2030)
- Construction of the apron for the East Terminal side (2029-2030)
- Terminal Phase 2 (2029-2030):
  - Demolition of Concourse C
  - Construction of East Concourse (up to 31 Nominal Gates)
  - Construction of west half of Baggage Claim
  - Construction of new FIS
  - Reconfiguration of center portion of domes for Ticketing
- Terminal Phase 3 (2030-2031):
  - Construction of eastern half of Baggage Claim
  - Reconfiguration of eastern portion of domes for Ticketing
- Construction of a permanent CRDF on existing Lot E (2030-2031)

Figure 3-6 depicts the construction projects in 2030.

3.7 2031 PROJECTS

The following are projects scheduled for 2031:

- Terminal Phase 3 (2030-2031):
  - Construction of eastern half of Baggage Claim
  - Reconfiguration of eastern portion of domes for Ticketing
- Construction of a permanent CRDF on existing Lot E (2030-2031)

Figure 3-7 depicts the construction projects in 2031.

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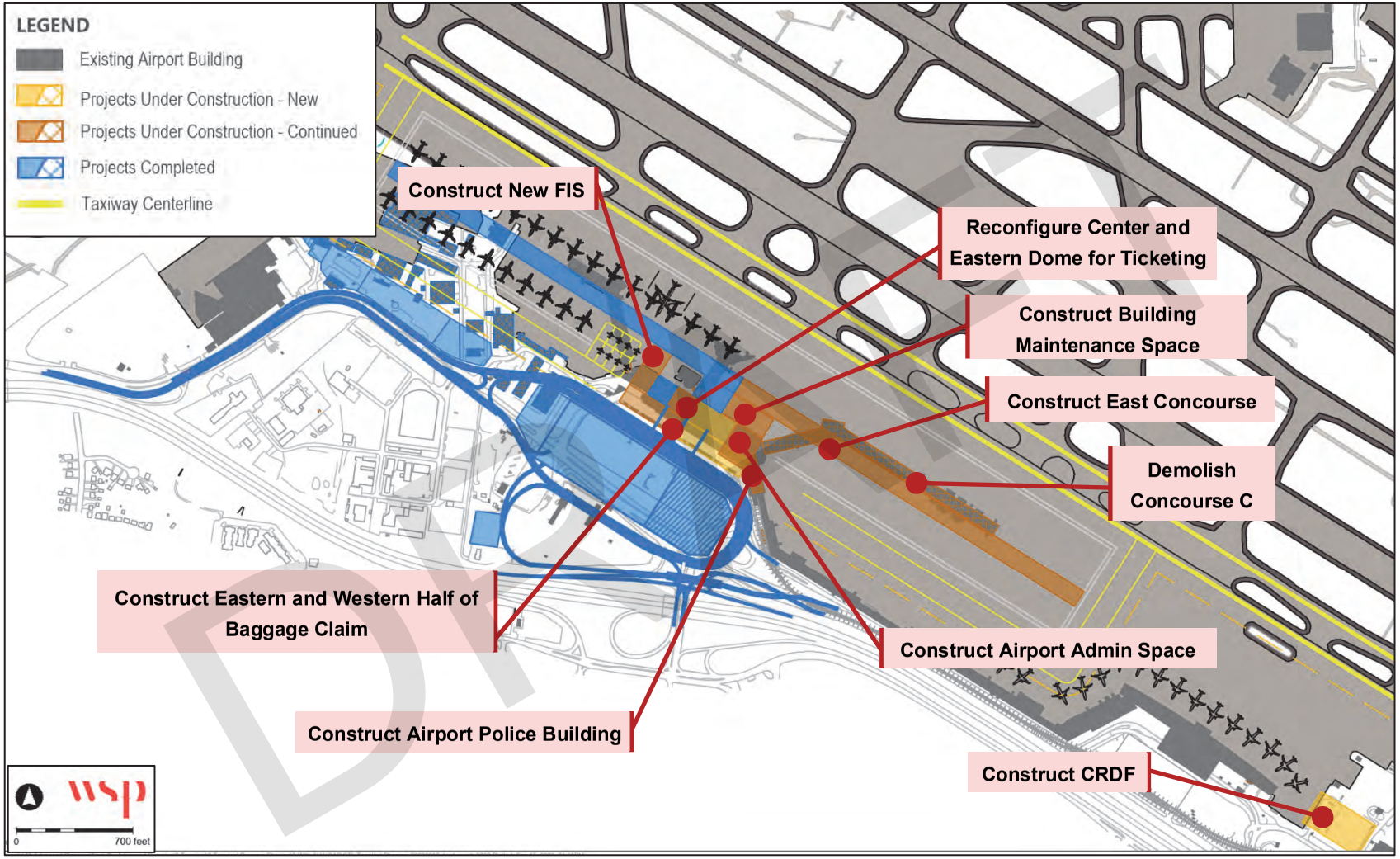
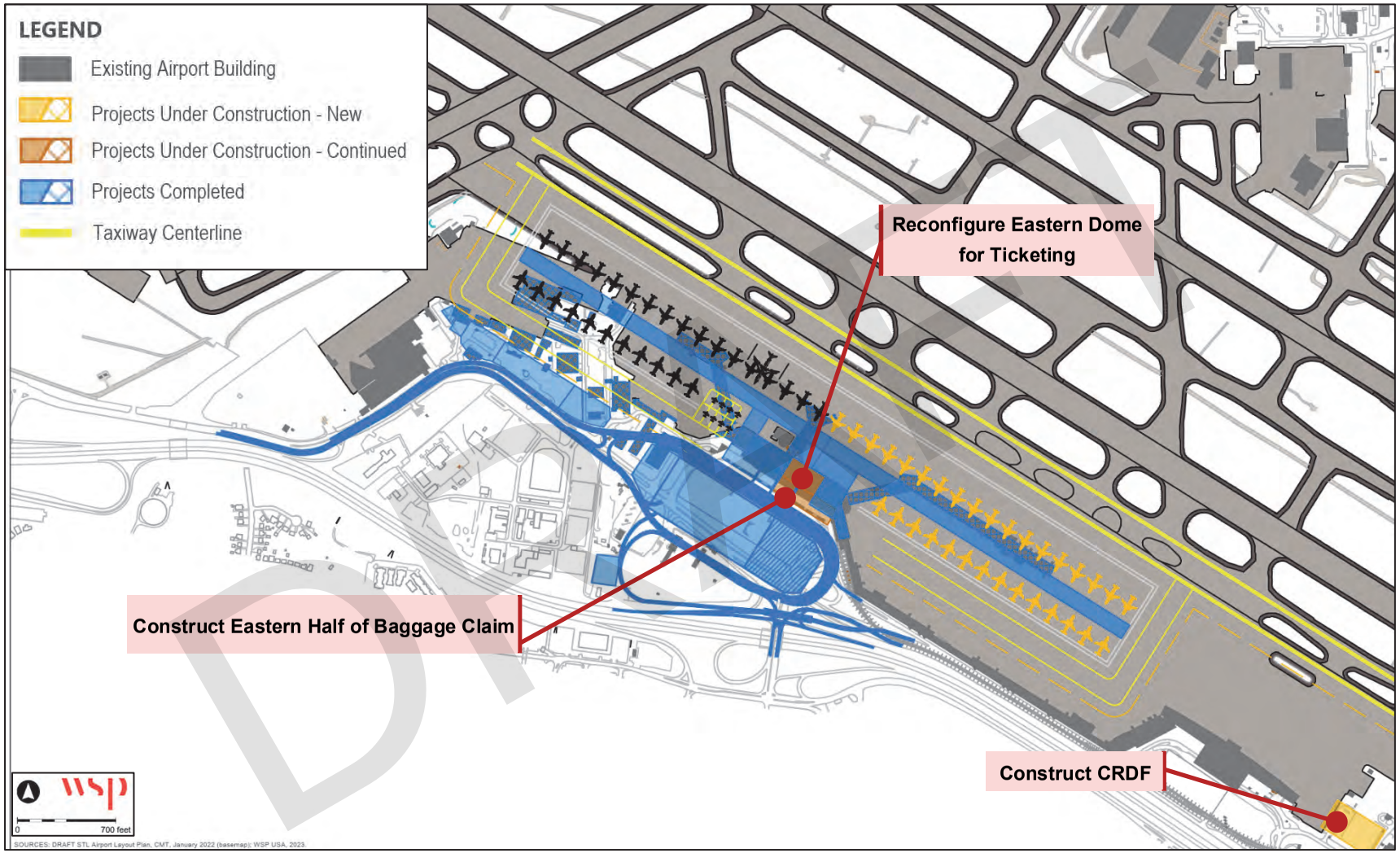
Figure 3-6: 2030 Construction Projects



Source: WSP USA, 2023

Figure 3-7: 2031 Construction Projects



Source: WSP USA, 2023

4 CONSTRUCTION STAGING

This section identifies potential sites for contractor staging areas throughout the construction of the CTP and associated projects. Actual staging and layout down areas will be defined during the Program Management/Construction Management phase.

4.1 METHODOLOGY

The Kansas City International Airport (MCI) terminal construction project was used as a benchmark to determine the size of required staging areas. Based on aerial images of the construction areas, MCI had approximately 7.5 acres of staging for a 42-gate terminal project, including landside access and a 7,000-space parking garage. As such, STL's 62-gate terminal project is assumed to require a construction staging area of approximately 11 acres.

4.2 ENABLING, WEST CONCOURSE AND LANDSIDE CONSTRUCTION STAGING

To accommodate staging needs for Phase 0 (enabling projects) and Phase 1 (construction of the West Concourse) of the CTP, two site options were explored. These sites allow for efficient utilization of space while minimizing disruption to surrounding areas.

4.2.1 OPTION 1

Option 1 is located in the old fuel farm next to Lot A, which offers approximately 3 acres of space for landside and garage construction staging, as seen in

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Figure 4-1. The cons associated with this option are:

- Insufficient staging space available.
- Construction vehicles would utilize Lambert International Boulevard, causing heavy traffic.

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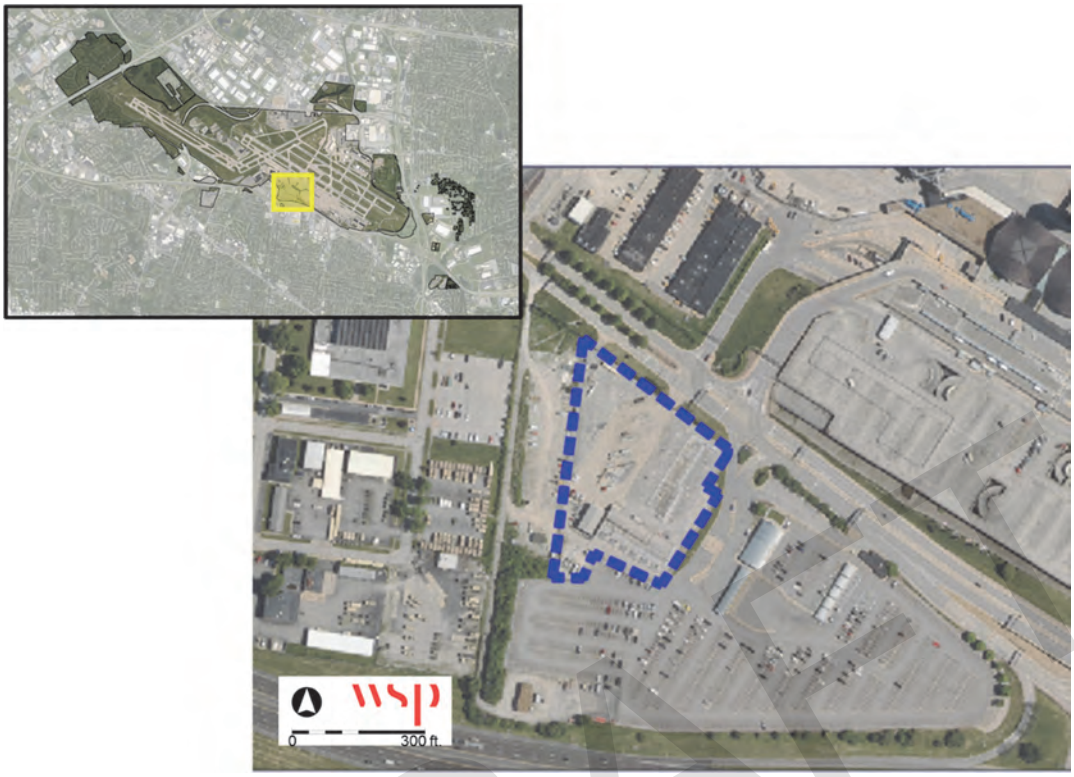
Figure 4-1: Option 1 Site - Lot A



Source: WSP USA, 2023.

4.2.2 OPTION 2

Option 2 consists of using the MoANG area as the construction staging area, with approximately 14 acres of space available after existing buildings are demolished, as depicted in **Figure 4-2**. The staging at the MoANG site will not impact the existing Medical Supplies Building, Fuel Consortium, Host Commissary, credit union, or airport support buildings.

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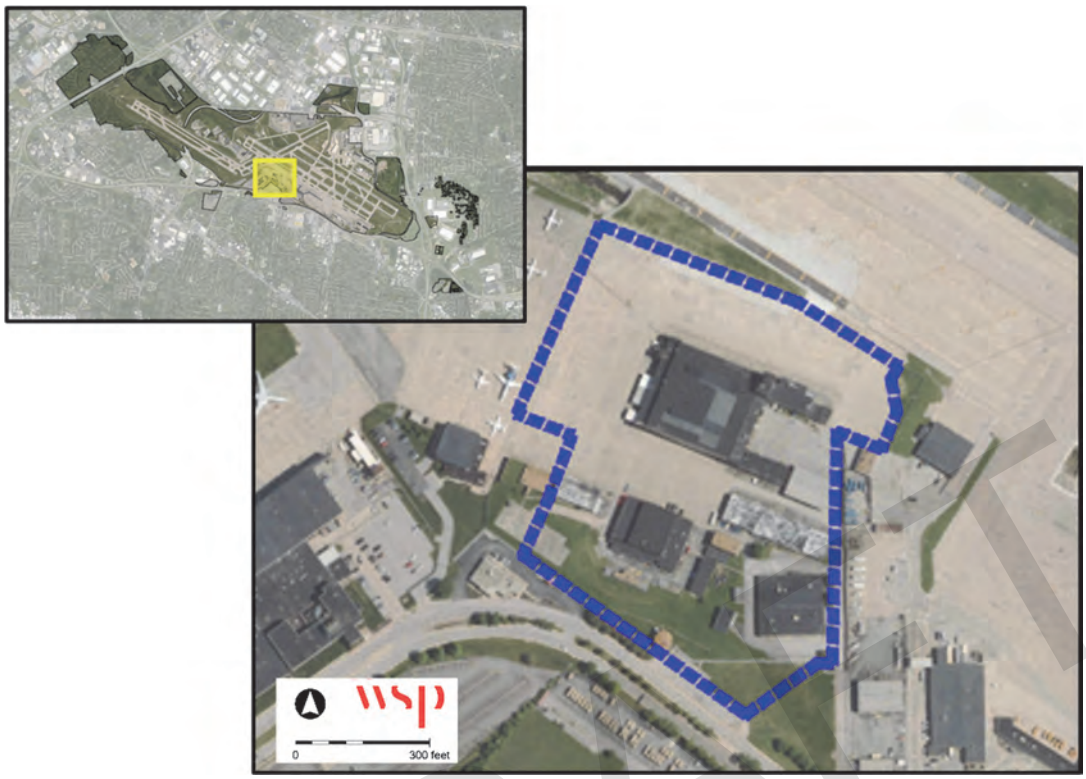
Figure 4-2. Option 2 Site - MoANG Facility



Source: WSP USA, 2023.

4.3 EAST CONCOURSE CONSTRUCTION STAGING

During Phase 2 (construction of the East Concourse), the staging area on the site of the demolished MoANG facilities will no longer be available, since the West Concourse and airport support buildings along the west LIB corridor will be constructed and in service. Although Lot A is still available, the space will not be sufficient to meet the staging area needs. Accessibility of the lot to/from the East Concourse construction area would also be challenging. To accommodate staging needs for Phase 2 of the CTP, two other site options were explored.

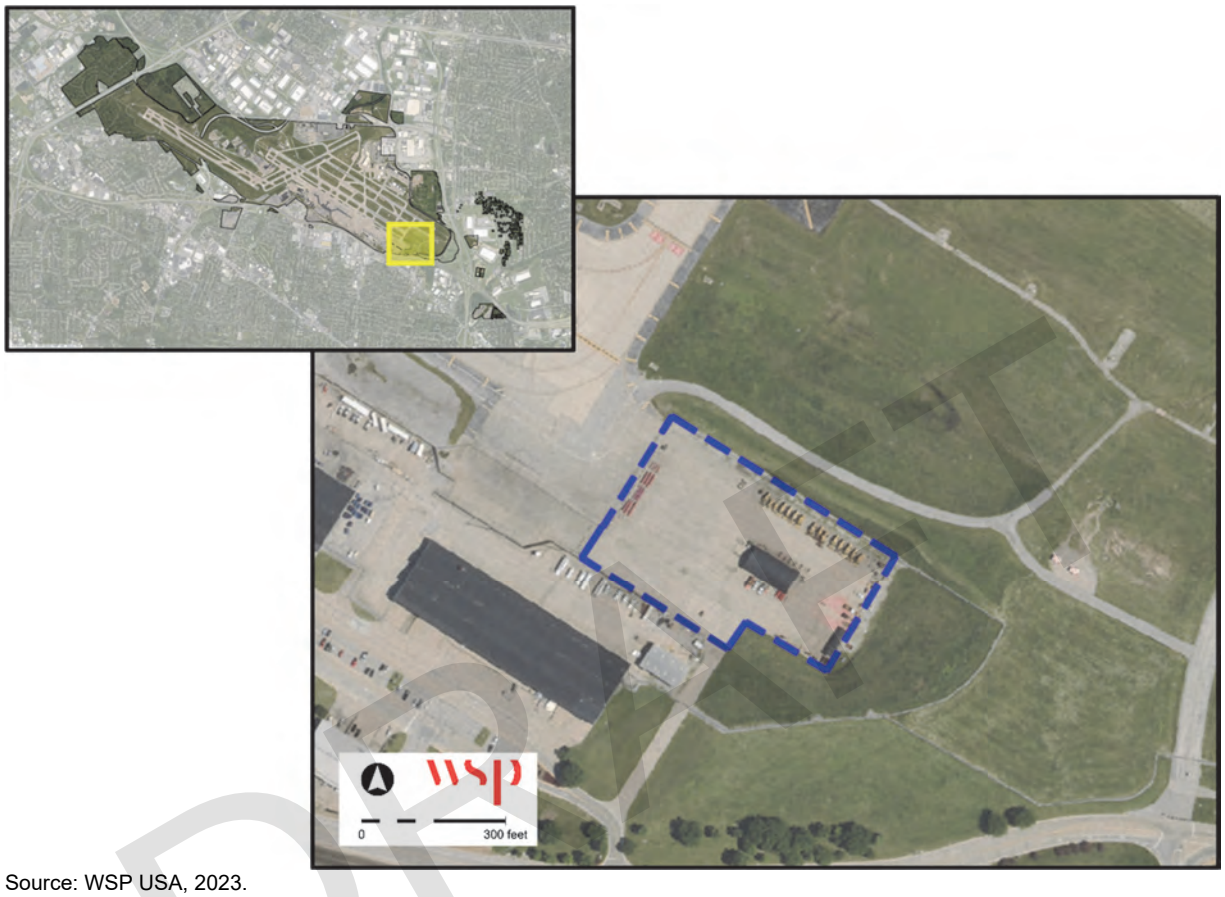
4.3.1 OPTION 1

Option 1 consists of designating the existing 3.5-acre Snow Removal Equipment Area, as shown in **Figure 4-3**, as the construction staging area. There are several cons associated with this option including:

- Hauling construction materials and equipment past Terminal 2 active operations areas, which may pose safety concerns and impede efficient operations
- Long hauling distance from staging site to the construction area
- Requires Security Identification Display Area (SIDA) escorts
- Insufficient staging space available

- Additional costs may be incurred to provide construction traffic access around Terminal 2 to access the East Concourse construction site, as shown in

Figure 4-3. Option 1 Site – Snow Removal Equipment Area



Source: WSP USA, 2023.

Table 4-1: East Concourse Haul Route around Terminal 2

ITEMS	COST [1]
Gate Guard (assume 2 at $75/hr for 10 hours per day)	$600,000
Escorts (assume 4 vehicles at $125/hr for 10 hours per day)	$2,000,000
Sweepers (assume 2 vehicles at $250/hr for 10 hours per day)	$2,000,000
Total	**$5,000,000** [2]

Note:

1/ Cost estimate assumes construction period of 2 years (or 200 active construction days per year).

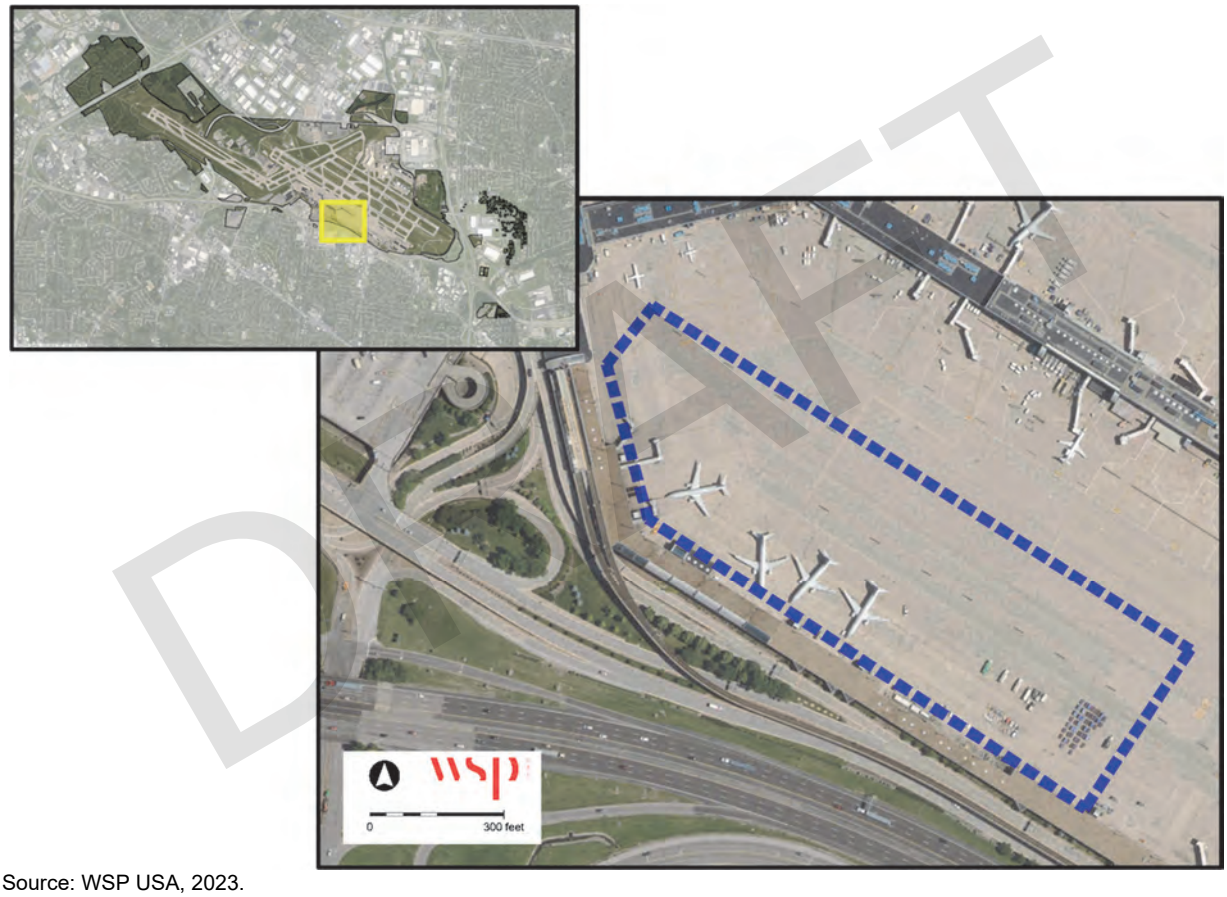
2/ Total cost rounded up to nearest million.

4.3.2 OPTION 2

Option 2 consists of an 11-acre portion of the existing Concourse D apron, as depicted in **Figure 4-4**, for the construction staging area. Part of Concourse D would need to be demolished to provide non-SIDA access to the construction site. The cons associated with this option are:

- Partial demolition of Concourse D may impact the utilidor (utility corridor between Terminals 1 and 2) and result in costly updates to modify utility runs, such as two 14" water lines
- Construction vehicles would utilize Lambert International Boulevard, increasing traffic

Figure 4-4: Potential Site at Concourse D



Source: WSP USA, 2023.

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Appendix C:
NEPA Alternatives Development and Evaluation

Terminal Alternatives

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

CONSOLIDATED TERMINAL PROGRAM

NEPA ALTERNATIVES DEVELOPMENT AND EVALUATION

JULY 2023 – FINAL DRAFT

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1 INTRODUCTION

This section describes the process by which alternatives were developed and evaluated, resulting in the selection of the proposed Consolidated Terminal Program (CTP) as the St Louis Airport Authority's (STLAA's) Preferred Alternative and the Proposed Action. This analysis was conducted as part of the recent STL Master Plan process and meets the requirements of NEPA to rigorously explore and objectively evaluate all reasonable alternatives.

The goal of the alternatives development and evaluation process was to identify a range of alternatives that could achieve the purpose and need and are reasonable. Reasonable alternatives include those that are feasible and are practical from a technical and economic standpoint and using common sense.[1] An alternative is not feasible if it cannot be built as a matter of sound engineering judgment, and only feasible alternatives were developed and included in the STL Master Plan process.

Once a range of preliminary alternatives was established, a multi-step alternatives evaluation process was applied. These steps were referred to in the STL Master Plan as "rounds." The development and evaluation of the preliminary alternatives are summarized in Sections 2 and 3, respectively.

2 PRELIMINARY ALTERNATIVES DEVELOPMENT

The initial analysis considered relocating the terminal(s) and identified 15 potential sites on the Airport property. This exercise revealed that relocating the terminals away from the existing site would require the relocation of I-70, the relocation or decommissioning of runways, and/or construction of new landside access from a highway. All of these factors were considered cost prohibitive and therefore, not practical. Thus, relocation of the terminal(s) was not advanced and only preliminary alternatives in the general area of the existing terminals between the airfield to the north and I-70 to the south were considered.

Preliminary alternatives in the area of the existing terminals (referred to as "concepts" in the STL Master Plan) were developed to achieve the project purpose and need and to avoid impacts to the airfield, I-70,[2] and Coldwater Creek, as well as to accommodate the types of aircraft in the forecast and to maintain MetroLink transit access at STL. To the greatest extent possible, the alternatives avoid impacts to the National Register of Historic Places (NRHP) eligible Lambert Field Historic District, the NRHP-eligible iconic 1956 domes of the existing main terminal ticket lobby, the NRHP-eligible Ozark Air Lines Office, Shop, and

1 Council on Environmental Quality, *Memorandum to Agencies: Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, Answer to Questions 1a and 2A, March 23, 1981
2 While MoDOT is studying improvements to I-70 in the vicinity of the airport, it is likely that only minor shifts to I-70 would occur as a result of MoDOT improvements.

Hangar, and the 34-acre Department of Defense property between Lambert International Boulevard and I-70.[3,4]

Two "families" of preliminary alternatives were developed: consolidating the two existing terminals into one terminal and maintaining two separate terminals. Although the initial focus was on the concourse (gate) areas, the STL Master Plan also identified and evaluated three preliminary alternatives for passenger processing (referred to as "processors"), which contain functions such as ticketing, baggage claim, and security screening, and which would be paired later in the screening process with a concourse alternative. The STL Master Plan identified 22 preliminary alternatives: 11 one-terminal concepts, 8 two-terminal concepts, and 3 processor concepts. Included among the two-terminal alternatives were the preferred alternatives from the STL *2012 Master Plan*[5] and the City Airport Advisory Working Group *2019 Due Diligence Report.*[6] The 22 preliminary alternatives developed are illustrated in **Figure 2-1**.[7]

3 The Lambert Field Historic District is comprised of a part of the former Missouri Air National Guard campus (MoANG) northwest of Terminal 1 and it is eligible to the National Register of Historic Places (NRHP). The terminal domes were designed by an important architect, are eligible to the National Register, and are architecturally symbolic of STL. Under Section 4(f) of the U.S. Department of Transportation Act, recodified as Section 303(c), the Secretary of Transportation may approve a transportation project requiring the use of certain resources, including properties listed or eligible for listing on the NRHP, if, after a full evaluation, there is no feasible and prudent alternative to using that resource and the project includes all possible planning to minimize harm resulting from the use. ; thus, the STL Master Plan ensured at least some of the preliminary alternatives avoided these properties.

4 The STL Master Plan ensured at least some of the preliminary alternatives do not require acquisition of the Department of Defense property because acquiring the property and relocating the military uses on the site would be costly, complex, and time-consuming.

5 Landrum & Brown, *Lambert-St. Louis International Airport Master Plan Update*, November 2012.

6 Ricondo on behalf of City Airport Advisory Working Group, *St. Louis Lambert International Airport Vendor Due Diligence Report*, December 2019.

7 Figure 2-1 does not depict Alternatives 21 and 22, which alter the internal use of existing structures.

Figure 2-1: Initial Preliminary Alternatives

Note: Alternatives 10, 11 and 12 are processor alternatives that were paired with concourse alternatives later in the screening process. Alternative 21 (Swap Airline Locations in Existing Terminals) and Alternative 22 (Reopen Entire Concourse D to Connect Terminals 1 and 2), which only alter the internal use of existing structures, are not depicted here.

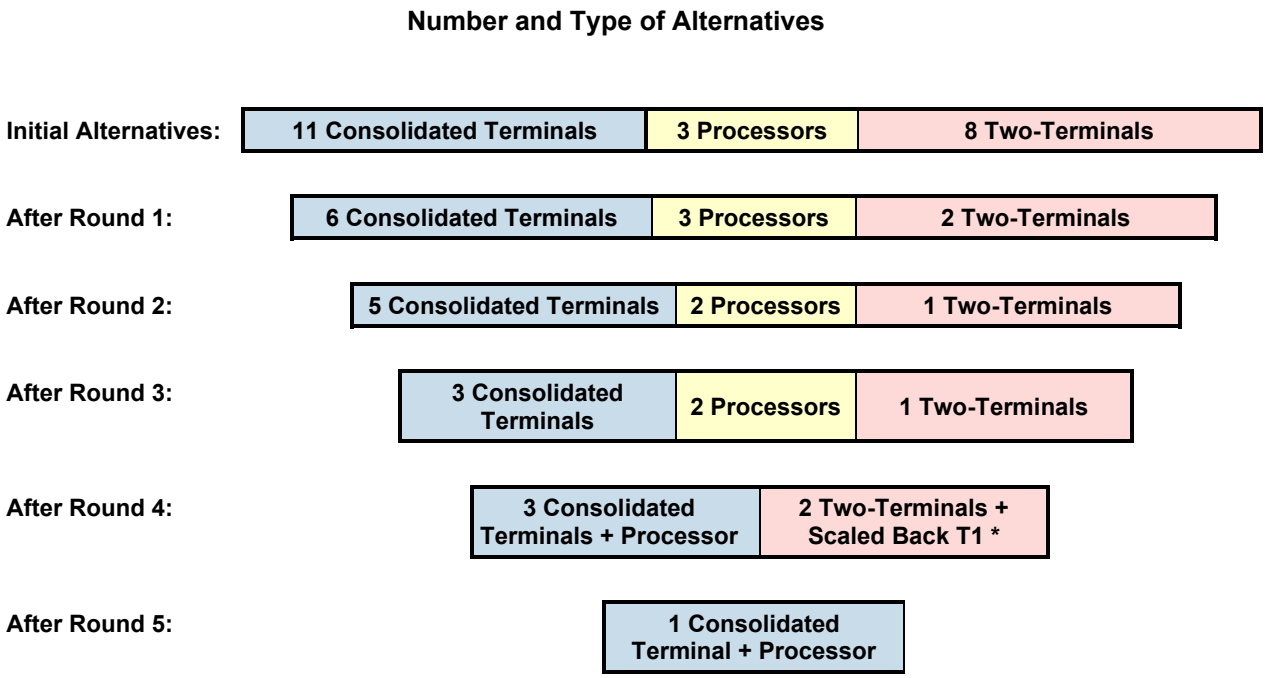
Source: WSP USA, *STL Master Plan*, 2023. WSP USA, *STL Master Plan*, 2023.

3 PRELIMINARY ALTERNATIVES EVALUATION PROCESS AND RESULTS

In the STL Master Plan, the preliminary alternatives were screened in a five-step process, in which a set of screening criteria were applied at each step to narrow the range of preliminary alternatives to be evaluated in more detail in the subsequent step. These steps were referred to in the STL Master Plan as "rounds." In each round, the screening criteria address, in different ways, whether each preliminary alternative achieves the project purpose and need and whether it is practical.

Figure 3-1 illustrates the results of the preliminary alternatives screening process.

Figure 3-1: Alternatives Screening Process



* The one remaining two-terminal alternative was paired with two different scaled-back one-terminal options.

Source: WSP USA, 2023.

The sections below report the results of applying the screening criteria to the preliminary alternatives in the five screening rounds described in the STL Master Plan. The alternatives that did not advance to the subsequent round are identified and the reasons for their elimination from further consideration are provided. **Table 3-1** lists the screening criteria applied in each round and summarizes the results of applying the criteria to each of the preliminary alternatives. As summarized in Table 3-1, Rounds 1, 2 and 3 focused on broad-scale terminal configurations. Round 4 focused on whether each remaining preliminary alternative could, in the limited envelope available between the terminal area and I-70, accommodate the roadway safety and efficiency improvements and parking capacity enhancements required to achieve the purpose and need on the landside. The optimum location of the parking garage is within walking distance from the terminal, both for passenger convenience, and to reduce roadway congestion from parking shuttles; therefore, the garage was maintained in its existing location for the Round 4 analysis.

During the alternatives evaluation process, some of the preliminary alternatives were refined to address particular issues, as reflected in Table 3-1. For example, during Round 2, two variations with an aboveground APM (Alternatives 8A and 8B) were introduced to mitigate the high cost of Alternative 8's underground APM, and Alternative 14 was refined to retain the iconic terminal domes (Alternative 14A). After Round 3, complete alternatives were formed by pairing Alternative 5 (consolidated terminal) with each of the two remaining processors and pairing Alternative 18 with each of two scaled-down single terminal alternatives to form two-terminal alternatives. These four paired alternatives, shown in **Figure 3-2**, as well as Alternative 8A, were advances from Round 4 to the final round of alternatives screening. In Round 5, Alternative 5-P1 was selected as the Preferred Alternative, because it is practical and would achieve the project purpose and need. The other remaining alternatives have one or more of the following limitations: they would be less convenient for some passengers; be more costly to construct, operate and maintain; provide less flexibility for or cost more to address future needs; and/or could result in fewer concession choices for passengers and less non-aeronautical revenue to STL.

Table 3-1: Summary Results of Alternatives Screening

Rounds and Criteria	Alternatives																					
	One Linear Terminal									Processor Only			One Pier or Satellite Terminal		Two Terminals							
Round 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Provides sufficient gate/aircraft parking positions to meet forecast need through 2040																X					X	
Meets industry standards for walking distance, has balanced walking distance to all gates	X	X				X									X						X	X
Provides dual ADG III taxilanes around concourses	X																			X		
Provides workable landside access to curb front																			X			
Avoids Navaid impacts							X															
Results	**X**	**X**	**X**[1]	**A**	**A**	**X**	**X**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**X**	**X**	**A**	**A**	**X**	**X**	**X**	**X**
Round 2				4	5		8	8A[2]	8B[2]	9	10	11	12	13	14		17[3]	18				
Construction Period																						
Reasonable duration for enabling projects																						
Maintains reasonable passenger experience				X																		
Ease of phasing and constructability				X								X										
Maintains safe and efficient operations (terminal, airside, landside)																						
Maintains flexibility to respond to demand																						
End State																						
Provides optimum passenger experience								X														
Relative cost compared to other alternatives								X														
Creates safe and efficient operations (terminal, airside, landside)																	X					
Avoids unacceptable impacts to other facilities																						
Provides flexibility and future expansion potential (beyond 2040)													X									
Results				**X**	**A**			**A**	**X**	**A**	**A**	**A**	**A**	**X**	**X**	**A**			**X**	**A**		
Round 3					5		8		8B	9	P1[4]	P2[4]			14	14A[5]						
Relative cost compared to other alternatives							X			X												
Acceptable walking distance																						
Acceptable level of Passenger Convenience																						
Maintains STL's image (keep domes)															X							
Results					**A**		**X**		**A**	**X**	**A**	**A**			**X**	**A**						

(continued on next page)

Rounds and Criteria	Alternatives											
	One Linear Terminal						Processor Only		One Pier or Satellite Terminal		Two Terminals	
Round 4		5[6]		8B			P-1	P-2		14A		18[7]
Fluid, independent roadway traffic flows (separate terminal traffic from non-terminal uses)												
Adequate roadway distance for decision-making and signage												
Prioritizes inbound over outbound roadway improvements (getting to terminal quickly)												
Reserves space for potential future CONRAC												
Keep roads and auto parking out of Runway Protection Zone												
Results		A		A			A	A		X[8]		A
Round 5		5		8B			P-1	P-2				18
Adequate space to address landside issues and for future facilities (e.g., CONRAC)								X				X
Relative cost compared to other alternatives				X				X				X
Passenger experience and convenience												X
Results		PA		X			PA	X				X

Notes:

A Alternative advanced to next round.

X Alternative does not achieve the criteria or is not advanced to next round.

PA Advanced for detailed analysis of environmental impacts as the Proposed Action.

1 Alternative 3 is not advanced because it is very similar to Alternative 5.

2 Two variants of Alternative 8 were introduced to reduce the cost of the Automated People Mover (APM): Alternative 8A moves the APM aboveground on the MetroLink track and Alternative 8B moves the APM aboveground along Lambert International Boulevard.

3 Alternative 17 is not advanced because it is similar to Alternative 18, and in its end state, would have substantial operational issues that Alternative 18 would not have.

4 In Round 3, the two remaining processor alternatives (10 and 11) are renamed P1 and P2, respectively.

5 A variant of Alternative 14 was introduced (14A) to retain the unused domes and repurpose them for non-terminal functions.

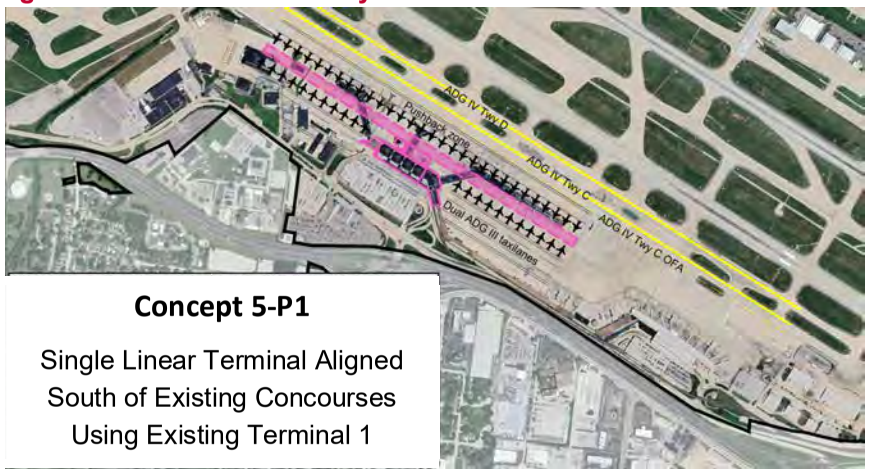
6 Alternative 5 can be paired with either P1 or P2 to make a complete alternative.

7 Alternative 18 can be paired with scaled back version of Alternatives 5 or 14 to make a complete alternative.

8 Alternative 14A was not advanced due to landside access and other problems that cumulatively cause unique problems and impacts of substantial magnitude.

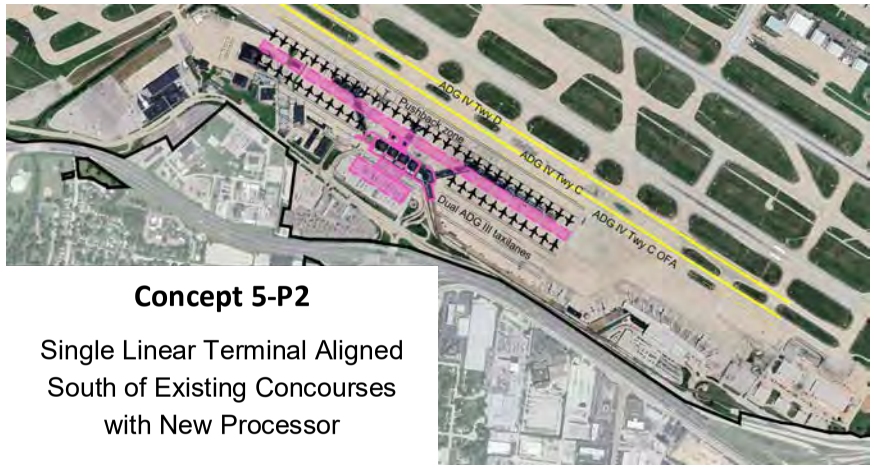
Source: WSP USA, *STL Master Plan*, 2023.

Figure 3-2: Paired Preliminary Alternatives Evaluated in Final Screening Round



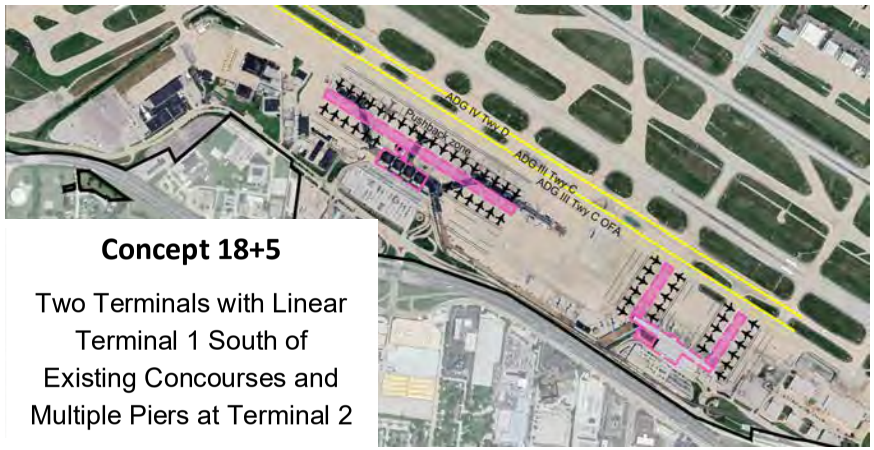
Concept 5-P1

Single Linear Terminal Aligned South of Existing Concourses Using Existing Terminal 1



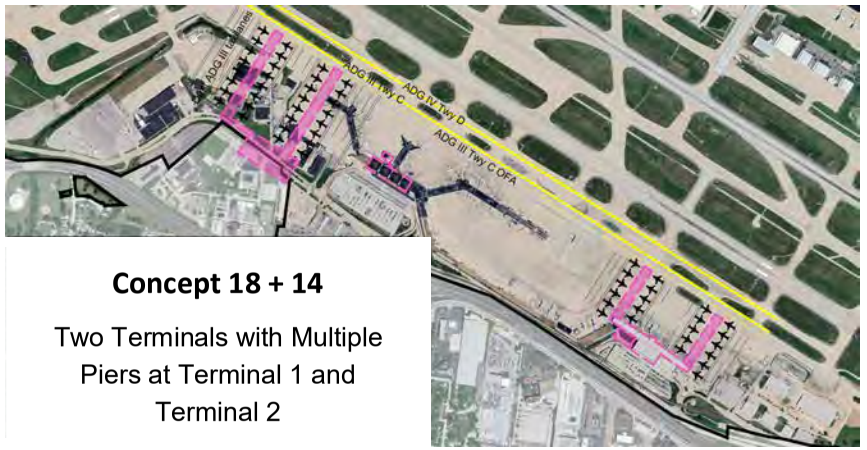
Concept 5-P2

Single Linear Terminal Aligned South of Existing Concourses with New Processor



Concept 18+5

Two Terminals with Linear Terminal 1 South of Existing Concourses and Multiple Piers at Terminal 2



Concept 18 + 14

Two Terminals with Multiple Piers at Terminal 1 and Terminal 2

Note: Alternative 8B, which did not require pairing, was also considered in Round 5.
Source: WSP USA, *STL Master Plan*, 2023.

3.1 TERMINAL ALTERNATIVES SCREENING ROUND 1

In Round 1, the 22 initial preliminary alternatives were evaluated to identify "fatal flaws", using the screening criteria shown in Table 3-1. Eleven preliminary alternatives meet all of the requirements of Screening Round 1 and were advanced to Round 2:

- Six consolidated terminal alternatives: 4, 5, 8, 9, 13 and 14
- Three processor alternatives: 10, 11 and 12
- Two two-terminal alternatives: 17 and 18

Ten preliminary alternatives were not advanced to the next round for the following reasons:

- Alternative 1 would not meet industry standards for walking distances and would not provide dual taxilanes around concourses.
- Alternatives 2, 6, 15, and 22 do not meet industry standards for walking distances and/or do not have balanced walking distance to all gates.
- Alternative 3 is nearly identical to Alternative 5.
- Alternative 7 would have unacceptable impacts to navigation aids (NAVAIDs).
- Alternative 16 would not provide sufficient gate/aircraft parking positions to meet forecast need.
- Alternative 19 would not provide workable landside access to the curb front.
- Alternative 20 would not provide dual taxilanes around concourses.
- Alternative 21 would not provide sufficient gate/aircraft parking positions to meet forecast need and does not have balanced walking distances to all gates.

3.2 TERMINAL ALTERNATIVES SCREENING ROUND 2

In Round 2, the 11 preliminary alternatives advanced from Round 1 were refined and further evaluated. Alternatives 8A and 8B with aboveground APMs were added in Round 2, and with these new variants, a total of 13 preliminary alternatives were evaluated in Round 2. In addition to evaluating the "end state" result of the preliminary alternatives, Round 2 evaluated the impacts on passengers and airport operations during construction, using the screening criteria shown in Table 3-1.

Five preliminary alternatives meet all of the requirements of Screening Round 2 and were advanced to Round 3. Although the two-terminal alternatives are challenging with regard to cost, passenger convenience, and future incremental expansion potential, one of them, Alternative 18, was advanced for refinement and more detailed evaluation at the request of the airlines. In addition, because an APM provides a very high level of passenger comfort, it was decided to advance two APM alternatives, despite the high cost. Therefore, a total of eight preliminary alternatives were advanced to Round 3:

- Five consolidated terminal alternatives: 5, 8, 8B, 9, and 14
- Two processor alternatives: 10 and 11 (hereafter referred to as P1 and P2, respectively)
- One two-terminal alternative: 18

Five preliminary alternatives were not advanced to the next round for the following reasons:

- Alternative 4 is similar to Alternative 5, except it has greater impacts during construction to walking distances and wayfinding and it would be difficult to phase the construction because it would be built over Terminal 1.
- Alternative 8A, in its end state, would not meet industry standards for customer experience and has a very high cost, as it would require building a new MetroLink terminus with processor and security capabilities.
- Processor Alternative 12 would be difficult to phase and construct because it requires building the processor on top of the existing terminal.
- Alternative 13 would be difficult to incrementally add gates as needed, because expansion would require a new pier; it also requires demolishing the terminal domes.
- Alternative 17 is similar to Alternative 18, and in its end state, would have substantial operational issues (gate access congestion inside the piers), which Alternative 18 would not have.

3.3 TERMINAL ALTERNATIVES SCREENING ROUND 3

Six terminal alternatives and two processor-only alternatives advanced from Round 2 and were refined and further evaluated. Alternative 14A was derived to retain the terminal domes with a pier alternative; with this new variant, a total of nine preliminary alternatives were evaluated in Round 3 using the screening criteria shown in Table 3-1.

Six preliminary alternatives meet all of the requirements of Screening Round 3 and were advanced to Round 4, and Alternative 18 is advanced for refinement and more detailed analysis to maintain the option of two terminals:

- Three consolidated terminal alternatives: 5, 8B, and 14A
- Two processor alternatives: P1 and P2
- One two-terminal alternative: 18

Three preliminary alternatives were not advanced to the next round because they are not practical for the following reasons:

- Alternative 8 would have a very high cost to construct the underground APM.
- Alternative 9 would have a very high cost to construct the underground APM and acquire the Department of Defense property, as well as an uncertain time frame to acquire the Department of Defense Property.
- Alternative 14 would have a very high cost and uncertain time frame to acquire the Department of Defense property.

3.4 TERMINAL ALTERNATIVES SCREENING ROUND 4

Four terminal alternatives (5, 8B, 14A and 18) and two processor alternatives (P1 and P2) advanced from Round 3 and were refined and further evaluated in Round 4. Alternative 5 must be paired with a processor and Alternative 18 must be paired with a scaled-down version of a single terminal alternative. Thus, alternatives were paired as follows:

- Consolidated terminal alternatives: 5 with P1 or P2 (5-P1 and 5-P2)
- Two-terminal alternatives: 18+5 and 18+14

These four pairings, along with Alternative 14A and Alternative 8B, are the six preliminary alternatives evaluated in Round 4.

Round 4 was a fatal-flaw assessment of whether practical landside improvements necessary to achieve the project purpose and need could be implemented with each of the preliminary alternatives. Several high-level landside improvement concepts were developed to conduct this assessment, and the preliminary alternatives were assessed, using the criteria in Table 3-1, to determine if they could be successfully paired with at least one of the landside concepts. Five preliminary alternatives that were successfully paired were advanced to Round 5:

- Three consolidated terminal alternatives: 5-P1, 5-P2, and 8B
- Two two-terminal alternatives: 18+5 and 18+14

Alternative 14A was not advanced to the next round because it does not achieve the purpose and need for the following reasons:

- It could not be successfully paired with a landside concept without causing substantial problems, including limited roadway queuing space before the terminal curbside, limited parking and roadway options in front of the terminal, and limited potential for future gate expansion.
- It would require acquisition of the entire Department of Defense property before construction is started, which would be costly, complex, and time-consuming to acquire the property and relocate the military uses, delaying implementation.
- It would position two aircraft parking positions inside the Runway Protection Zone.

3.5 TERMINAL ALTERNATIVES SCREENING ROUND 5

In Round 5, five preliminary alternatives were refined and further evaluated. Alternative 5-P1 is the Preferred Alternative, because it is practical and would achieve the project purpose and need.

The other one-terminal alternatives were not advanced for the following reasons:

- Alternative 5-P2 was not advanced because the location of the processor would reduce the potential for addressing existing landside issues and limit future landside expansion potential. In addition, while this alternative retains the terminal domes, they would serve only as a pass-through area and the cost of operating and maintaining them for this purpose is an inefficient use of airport revenue.

- Alternative 8B was not advanced because it is substantially more costly than other alternatives, because it includes an APM, which is costly to install and maintain and would require additional cost for a tunnel for baggage conveyance between the terminal processor and the concourses.

The two-terminal alternatives (5+18 and 5+14) were not advanced because:

- Two terminals are less convenient for passengers who have connecting flights in different terminals and for some international passengers, because the Federal Inspection Service/U.S. Customs (FIS) would be located in one terminal, requiring them to travel between the terminals and recheck bags.
- Two terminals would likely provide a narrower range of post-security concession choices to passengers, due to duplication of concessions in each of the two terminals; this could also result in less non-aeronautical revenue to STL.
- There are substantial space challenges on the landside in the vicinity of Terminal 2, with limited space to improve roadway and curb access and potentially requiring tradeoffs between addressing future development and parking needs.
- Construction and operation and maintenance costs for two terminals are notably higher than for one terminal because more total space is needed, and services and resources must be duplicated.
- The incremental cost of adding new gates beyond the planning period is orders of magnitude higher at Terminal 2 because it would require a new pier, whereas a consolidated terminal could be incrementally expanded.

4 ALTERNATIVES ADVANCED FOR ENVIRONMENTAL EVALUATION

Two alternatives advanced for detailed evaluation of environmental consequences, the No Action Alternative and the Proposed Action, are described below.

4.1 NO ACTION ALTERNATIVE

While a No Action Alternative does not meet the project purpose and need, it is required by NEPA and the regulations of the Council on Environmental Quality to be carried forward for analysis of environmental consequences. With the No Action Alternative, the Proposed Action would not be constructed, and the STL terminals would continue to operate as they currently do. The No Action Alternative serves as a baseline against which to evaluate the impacts of the Proposed Action.

4.2 PREFERRED ALTERNATIVE (ALTERNATIVE 5-P1)

Alternative 5-P1 would:

- Enhance the passenger experience by providing an optimum level of passenger service.
- Enhance the passenger experience and airport revenue by increasing space for concessions, and therefore the variety of concessions, on the post-security screening side.
- Reduce operating and maintenance costs by eliminating aging and redundant building systems and duplication of services in two terminals.
- Ensure continued safe, secure, and efficient operations by providing sufficient space and facilities for current and forecast passenger demand and aircraft operations.

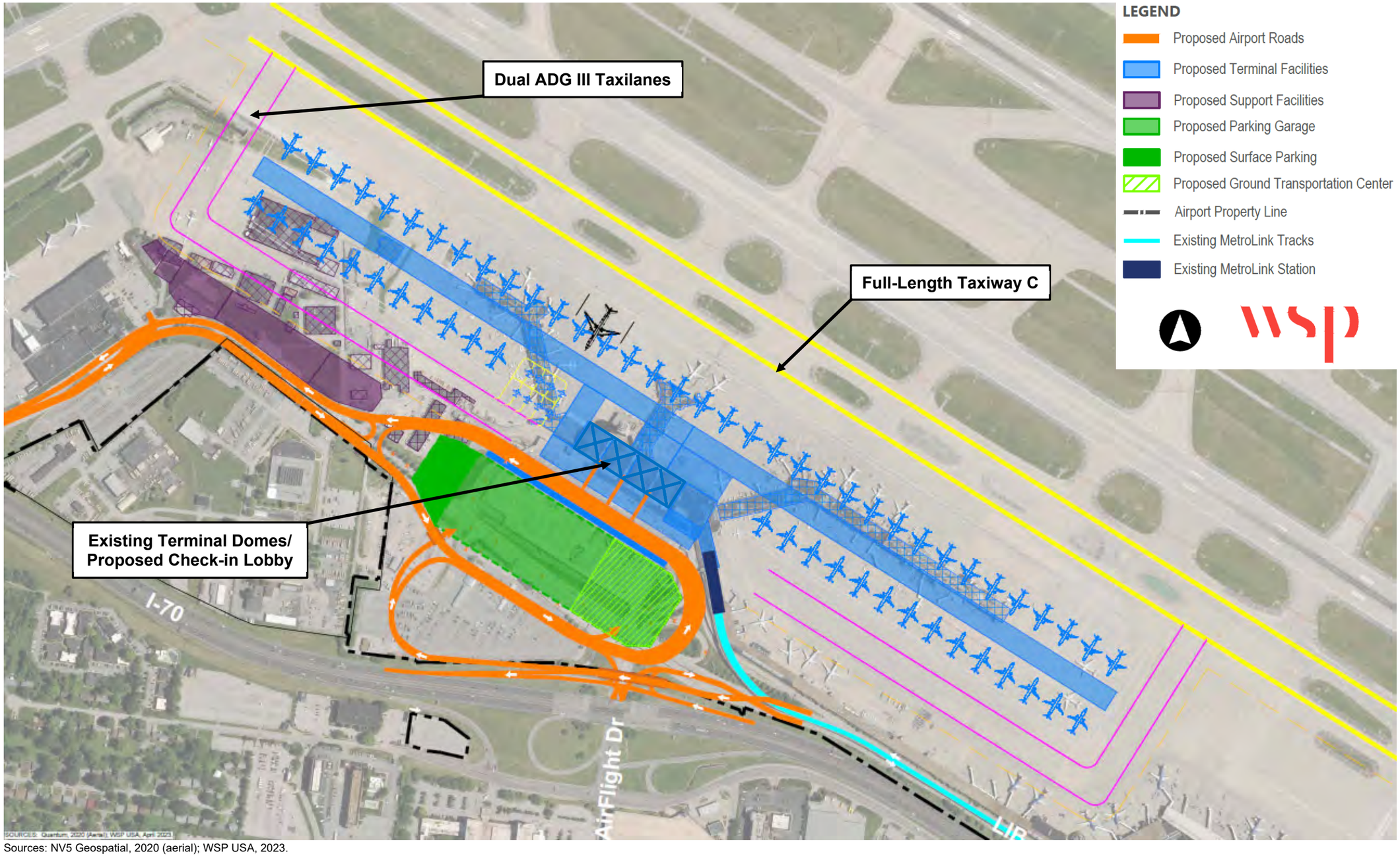
Additional benefits of the Preferred Alternative include:

- Improved airfield operations because it accommodates a full-length Taxiway C, Airplane Design Group (ADG) III dual taxilanes around the concourse, and it avoids aircraft pushing back onto Taxiway C;
- The ability to accommodate future incremental concourse expansion;
- Preservation and use of the terminal domes, which are architecturally symbolic of STL and eligible for listing on the National Register of Historic Places; and
- The opportunity to provide a new airport entrance.

The Preferred Alternative replaces the existing Terminals 1 and 2 with a consolidated terminal centered on the location of the existing Terminal 1, as depicted in **Figure 4-1.** It includes:

- A new, 110-foot-wide linear concourse, with potential for up to 62 gates in 2040 and a maximum walking distance of 2,500 feet from the security checkpoint to the farthest gate (up to 29 narrowbody gates are planned to be available upon opening in 2029);
- A full-length Taxiway C, and ADG III dual taxilanes around the concourse;
- A reconfigured check-in lobby that incorporates the terminal domes;
- New consolidated security screening centered between the check-in lobby and the concourse;
- A Federal Inspectional Service (customs) accessible to all carriers;
- A new baggage claim area on the lower level;
- A two-level passenger drop-off and pick-up curb with departures on the upper level and arrivals on the lower level;
- A new parking garage and ground transportation center directly across from the terminal;
- Space on the landside to improve driver wayfinding and decision making in the terminal roadway system and airport access; and
- Closing Terminal 2 and mothballing until a potential reuse of Terminal 2 is identified.

Figure 4-1: Sponsor's Preferred Alternative



Sources: NV5 Geospatial, 2020 (aerial); WSP USA, 2023.

Roadway Access Alternatives

5.4.1 AIRPORT ACCESS ROADS

The focus of landside improvements was to simplify the flow of traffic, reduce weaving and provide for easier decision-making while also handling the new traffic patterns. The main terminal access issue includes short decision distances that don't provide enough time for drivers to safely and efficiently move from the highway to either the curbside or parking facilities. Ideally, a single entrance to the airport would be used as the airport gateway. The airport entrance must be simple, allow free flow of traffic (no, or few, intersections and traffic signals ideally) and provide people plenty of decision time.

Ideally, airport access provides plenty of distance between the highway and the airport facilities. Figure 5.3-13 shows an ideal generic terminal access configuration. This configuration provides about a one-mile access road off the highway. This configuration simplifies traffic flow and provides ample distance for decision-making.

SUMMARY OF PASSENGER ROADWAY REQUIREMENTS

The following issues and requirements were identified for the STL roadway facilities through 2040:

- Simplify access to/from the Airport
- Provide a dedicated approach road to the airport terminals and related facilities, in order to:
  - Provide a world-class driver experience
  - Allow better decision distances
  - Minimize confusion and lead to more driver-intuitive roads
  - Reduce conflict points and congestion

Goals for terminal access prioritized passengers, employees and shuttles.

INITIAL CONCEPTS DEVELOPMENT

Thirty initial high-level roadway access concepts were developed, without cost being a key factor, and therefore consisted of several direct connectors to the interstate to provide for improved traffic flow.

Figures 5.4-1 through **5.4-12** summarize the 30 initial concepts, including the "No Build" concept and a "Minor Improvements" concept. Some concepts dramatically improve access to/from the Airport, but includes several major roadway reconstructions, elevated structures and potential right-of-way (ROW) requirements.

Figure 5.4-1: No-Build and Minor Improvement Concepts

Source: WSP USA, 2022.

Figure 5.4-2: Concept 1 - One-way Outer Roads with Slip Ramps

Source: WSP USA, 2022.

Figure 5.4-3: Concept 2 - Realign I-70 to the North

Source: WSP USA, 2022.

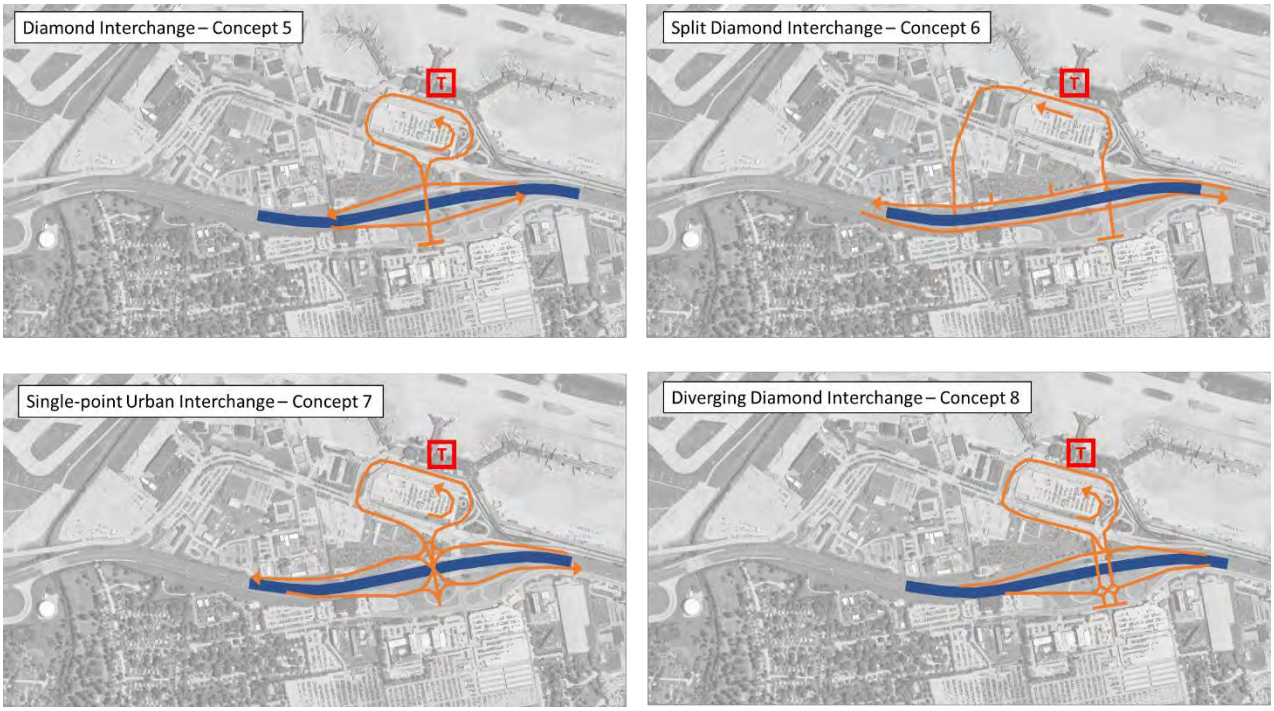
Figure 5.4-4: Concept 3 - Major Re-alignment of I-70 to the North with Tunnel

Source: WSP USA, 2022.

Figure 5.4-5: Concept 4 - Depress or Elevate I-70 Mainline

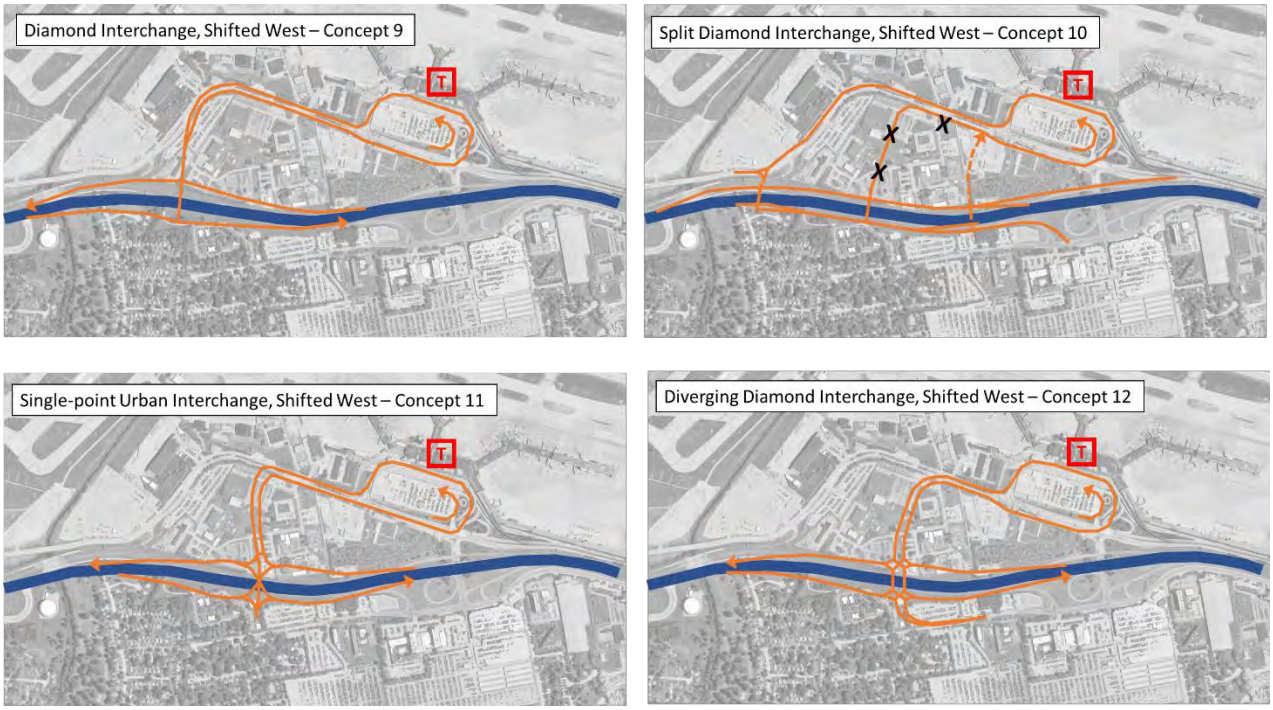
Source: WSP USA, 2022.

Figure 5.4-6: Concepts 5, 6, 7 and 8 - Various Interchange Types at Airflight Drive



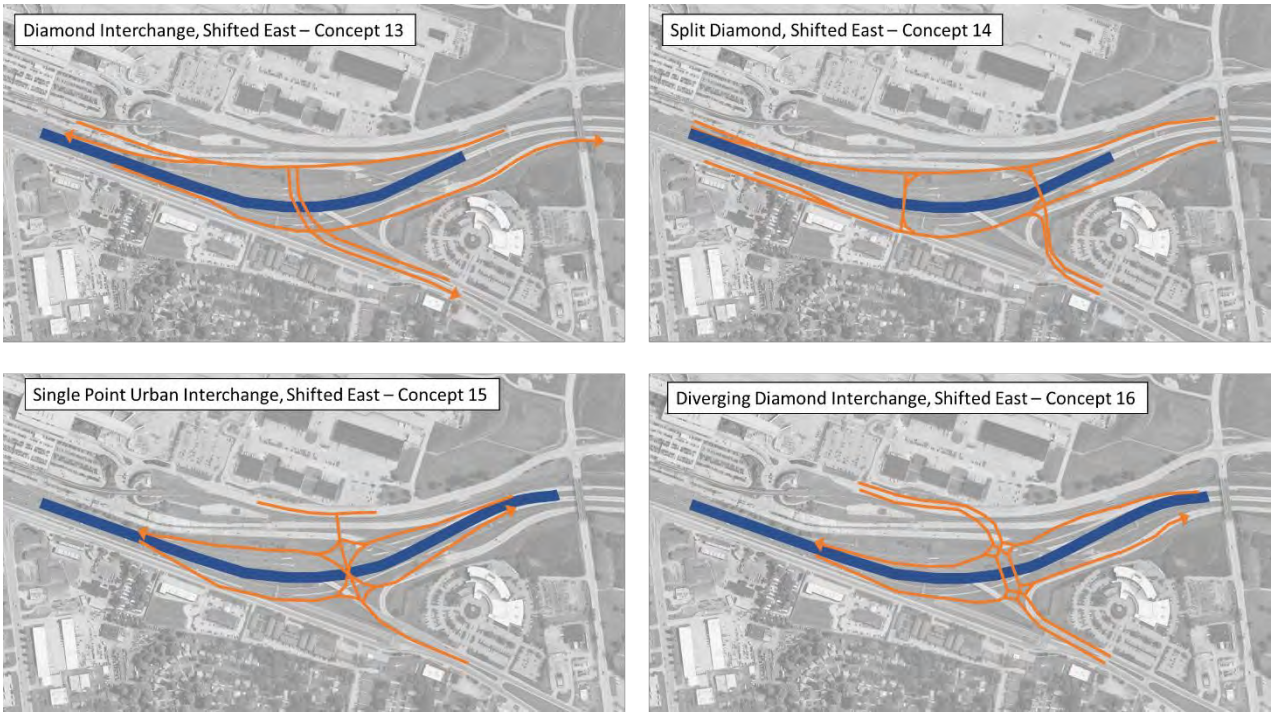
Source: WSP USA, 2022.

Figure 5.4-7: Concepts 9, 10, 11 and 12 - Various Interchange Types West of Airflight Drive



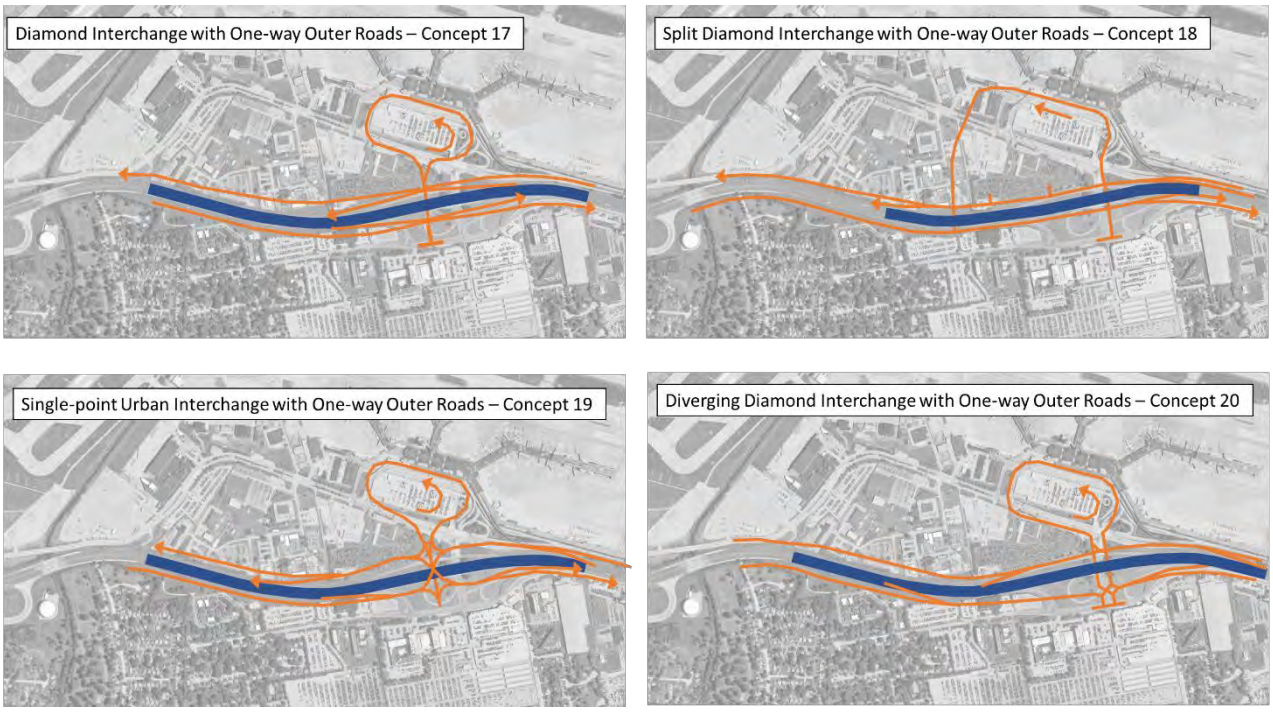
Source: WSP USA, 2022.

Figure 5.4-8: Concepts 13, 14, 15 and 16 - Various Interchange Types East of Airflight Drive



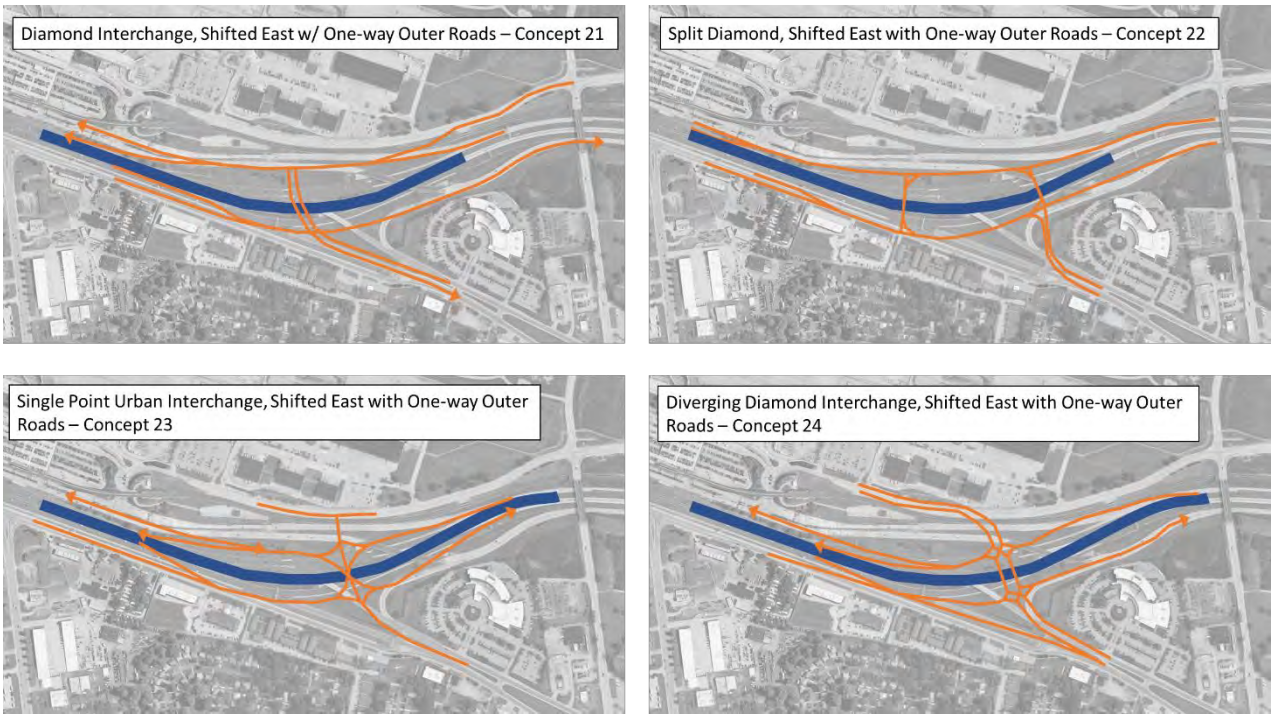
Source: WSP USA, 2022.

Figure 5.4-9: Concepts 17, 18, 19 and 20 - Various Interchange Types at Airflight Drive Combined with One-way Outer Roads



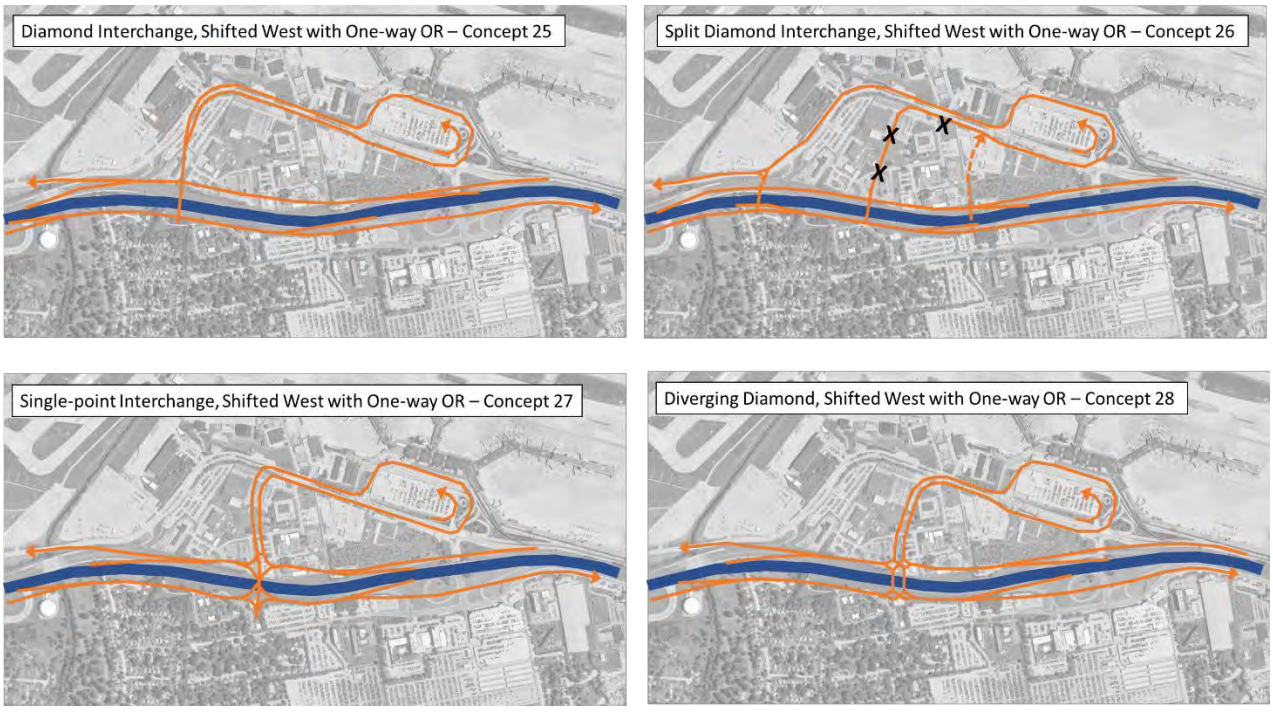
Source: WSP USA, 2022.

Figure 5.4-10: Concepts 21, 22, 23 and 24 - Various Interchange Types East of Airflight Drive Combined with One-way Outer Roads



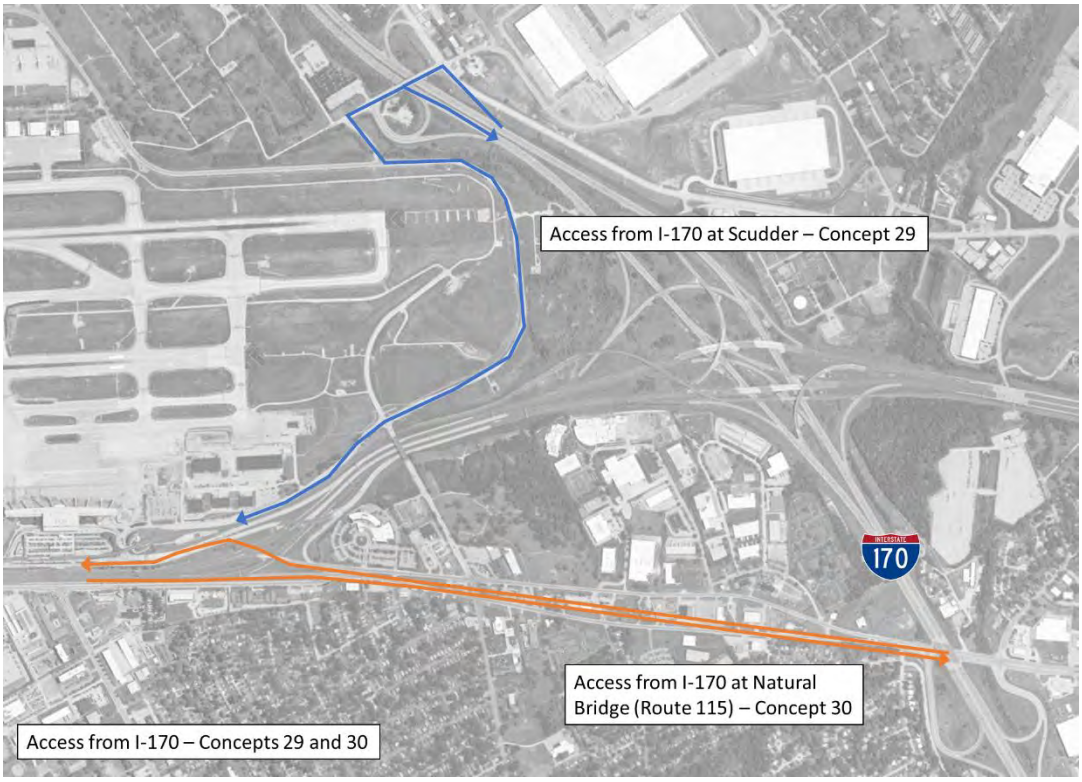
Source: WSP USA, 2022.

Figure 5.4-11: Concepts 25, 26, 27 and 28 - Various Interchange Types West of Airflight Drive Combined with One-way Outer Roads



Source: WSP USA, 2022.

Figure 5.4-12: Concepts 29 and 30 - Access from I-170



Source: WSP USA, 2022.

CONCEPT SCREENING

Each of the 30 roadway access concepts were evaluated through an initial screening process. Screening criteria were developed, weighted and applied to each of the 30 concepts. The screening criteria are:

- Access is simple/simplified
- Full access is provided (to and from EB and WB I-70)
- Access provides ample decision-making time/distance
- Sufficient capacity is provided
- Connectivity to local roads is available
- Opportunity for a grand entryway to STL and the region
- Improved north-south connectivity
- Improved bicycle and pedestrian access
- Avoids Runway Protection Zone
- Provides access to parking
- Avoids DOD property
- Order of magnitude cost (high, medium, low; noted for reference)

Table 5.4-1 summarizes the results of the initial screening. Each screening criteria was weighted on a scale of 1 to 3 scale. Several roadway planners individually screened each concept against the criteria, by allocating a score of 0, 1 or 2 (low, medium or high) to each screening criteria. Screening results from each planner were then consolidated, reviewed and finalized.

Table 5.4-1: Results of Initial Roadway Concepts Screening

Concept No.	Alternative	Alt Description	Simplified Access	Symmetrical (Full) Access	Long Decision Making	Sufficient Capacity	Good Local Access	Gateway (Grand) Entry	Improved North-South Connectivity	Improved Bike/Ped Circulation	New Roadway Alignment Inside RPZ	Good Access to Parking Options	Avoids DOD Property	TOTAL	Order of Magnitude Cost
0	No-build	Existing ramp/access configuration	0	2	0	0	0	0	0	0	2	1	2	10	L
1	One-way outer roads, slip ramps	Ramp locations variable	0	2	1	2	0	0	0	1	2	1	0	16	M
2	I-70 Realignment to the North	Combine with Alts 5 thru 8												NA	M
3	Major realignment of I-70, Tunnel	Combine with Alts 5 thru 8	2	0	2	1	0	1	0	0	1	2	0	16	H
4	Depress or Elevate I-70	Combine with any other Alts												NA	H
5	Diamond Interchange	at Airflight	2	2	1	0	0	0	0	1	2	1	1	14	L
6	Split Diamond Interchange	at Airflight	2	1	1	1	0	0	0	2	2	1	0	16	M
7	Single point Urban Interchange	at Airflight	2	2	1	0	0	0	0	1	2	1	1	14	L
8	Diverging Diamond Interchange	at Airflight	2	2	1	0	0	0	0	1	2	1	1	14	L
9	Diamond Interchange	Towards or at Cypress	2	2	2	1	1	2	0	0	1	1	1	22	M
10	Split Diamond Interchange	Towards or at Cypress	2	1	2	2	1	2	1	2	2	1	1	31	M
11	Single point Urban Interchange	Towards or at Cypress	2	2	2	1	1	2	1	1	2	1	0	25	M
12	Diverging Diamond Interchange	Towards or at Cypress	2	2	2	1	1	2	1	1	2	1	0	25	M
13	Diamond Interchange	Towards or at Natural Bridge	2	2	2	1	1	2	1	1	2	1	2	29	M
14	Split Diamond Interchange	Towards or at Natural Bridge	2	1	2	2	2	2	1	2	2	1	2	35	M
15	Single point Urban Interchange	Towards or at Natural Bridge	2	2	2	1	0	2	1	1	2	1	2	27	M
16	Diverging Diamond Interchange	Towards or at Natural Bridge	2	2	2	1	0	2	1	1	2	1	2	27	M
SCORE WEIGHTING			1	1	2	3	2	2	2	2	1	2	2		

Source: WSP USA, 2022.

Concepts 17 through 30 were scored with similar results. The addition of one-way outer roads to Concepts 5 through 16 resulted in no change to the scoring relative to each other. For example, Concept 22 (split diamond towards cypress with one-way outer roads) and Concept 26 (split diamond towards Natural Bridge with one-way outer roads), both scored highest in comparison to all other alternatives with one-way outer roads.

Concepts 10 and 14 scored the highest overall and were retained for further evaluation and refinement. Note that Concept 10 performs similarly with or without one-way outer roads; it was decided that this concept, without corridor-wide outer road assumptions, was carried forward (i.e., with Natural Bridge and Lambert International Boulevard remaining with two-way operation).

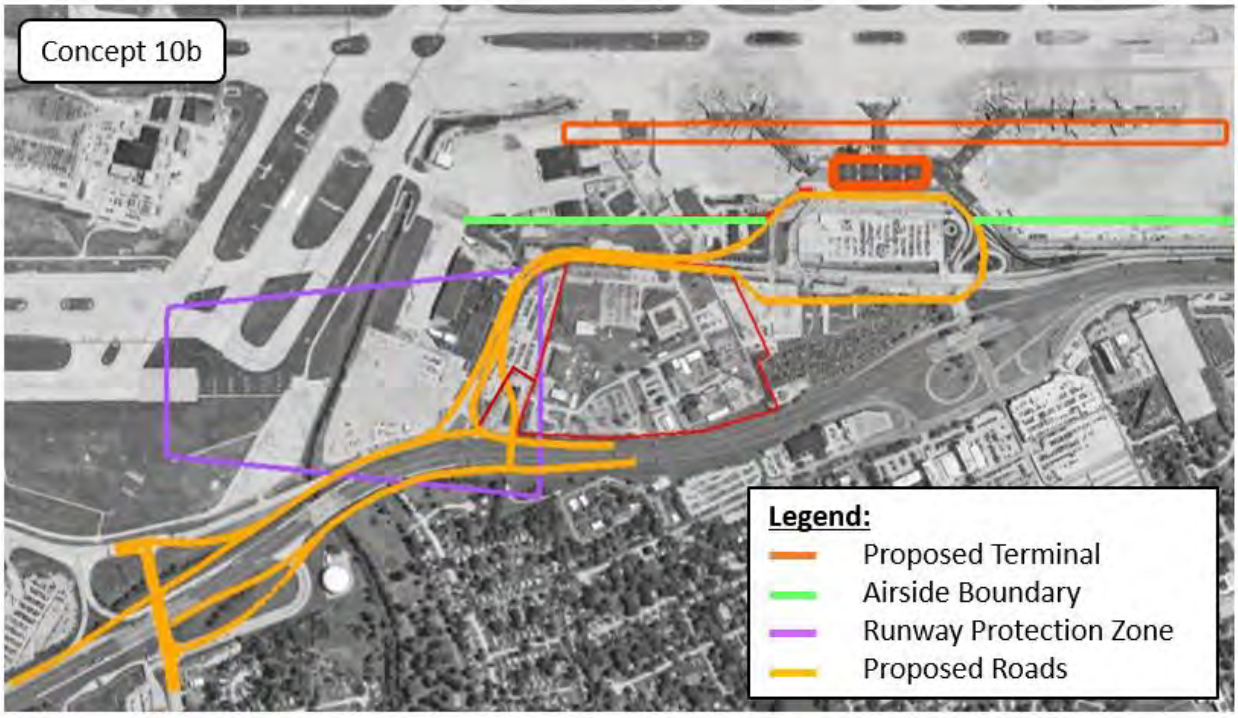
CONCEPT REFINEMENT

Refinement of shortlisted Concepts 10 and 14 resulted in Alternatives 10b and 10c, as well as Alternative 14b.

ALTERNATIVE 10B

Alternative 10b, depicted on **Figure 5.4-13**, is a modified split diamond configuration with one crossover at Cypress Road and a new crossover to the east, near Lamber International Boulevard (LIB). Access to and from the terminal loop road is via LIB. Access from I-70 in this concept is just east of Cypress (from eastbound I-70) and just east of the new crossover (from westbound I-70). Access to I-70 is provided just east of Cypress (to westbound I-70) and just east of the new crossover (to eastbound I-70).

Figure 5.4-13: Roadway Alternative 10b – Split Diamond to the West

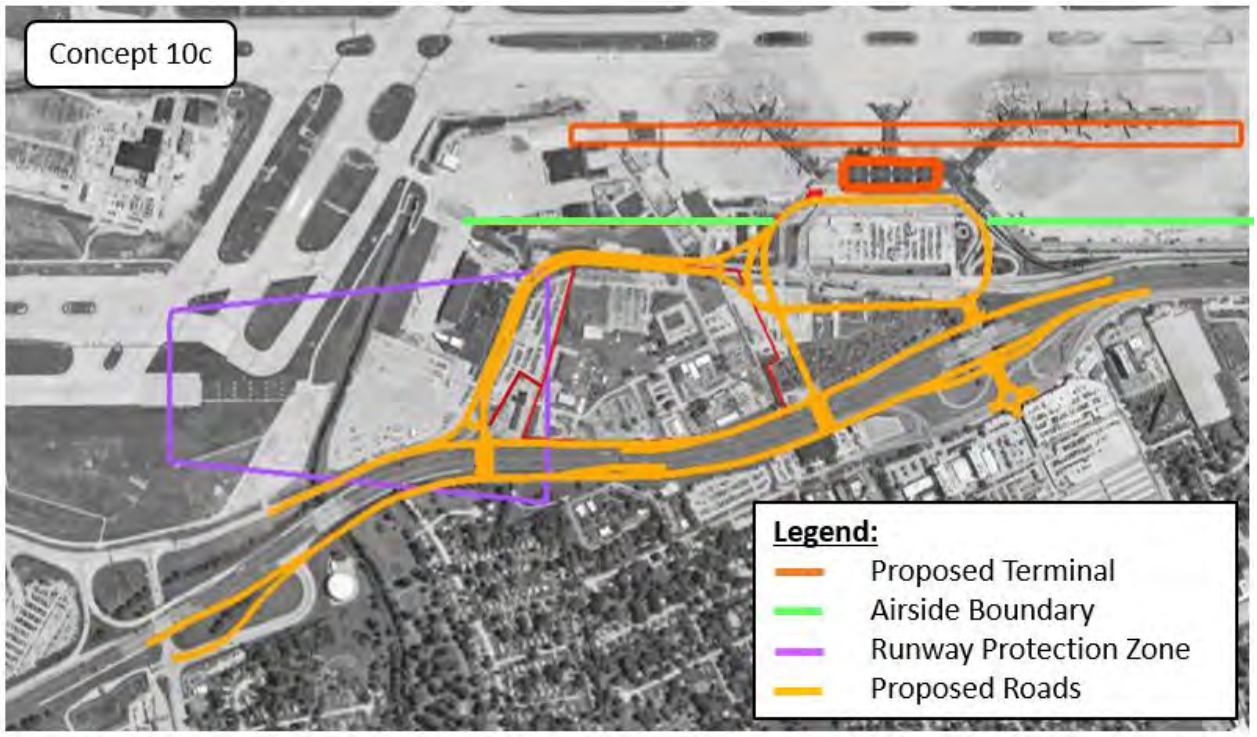


Source: WSP USA, 2022.

ALTERNATIVE 10C

Alternative 10c, depicted on **Figure 5.4-14**, is another variation of a modified split diamond configuration with two new crossovers of I-70; one near LIB and the other west of Airflight Drive. Access to the terminal loop road is provided via LIB. Access from the loop road back to the interstate is via LIB or via a new direct access that is grade-separated from the inbound movements just west of the terminal loop. Access from I-70 is provided just east of Cypress (from eastbound I-70) and east of Airflight (from westbound I-70). Access to I-70 is provided between the two crossovers (to westbound I-70) or east of Airflight (to eastbound I-70). A secondary westbound I-70 access is also available via LIB and Cypress Road.

Figure 5.4-14: Roadway Alternative 10c – Split Diamond West of Airflight

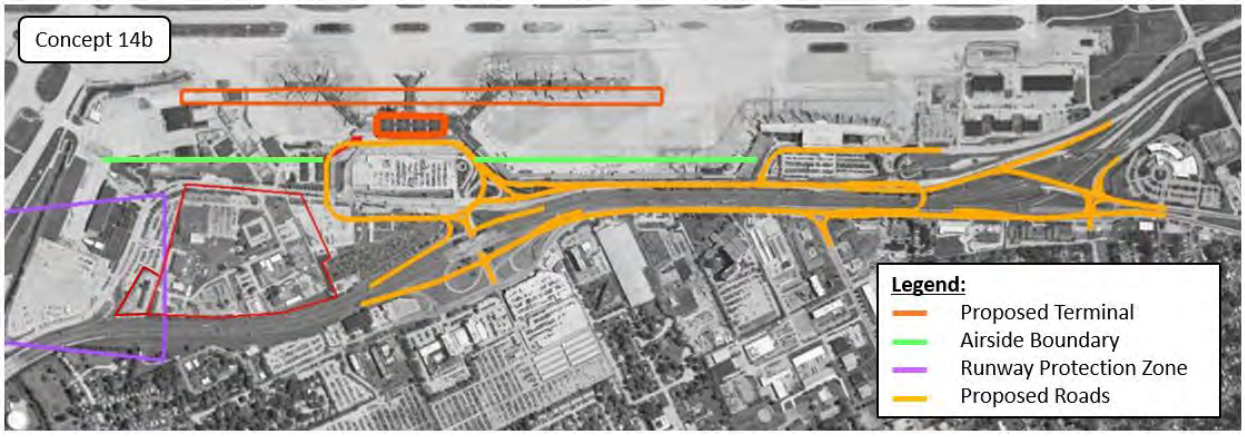


Source: WSP USA, 2022.

ALTERNATIVE 14B

Alternative 14b, depicted on **Figure 5.4-15**, is a modified split diamond between Airflight Drive and Natural Bridge Road to the east, with crossovers at Airflight and a new overpass between Woodson Road and Natural Bridge. Access to and from the terminal loop is via LIB (converted to westbound) and via Natural Bridge (converted to eastbound) between the two crossovers. Access from I-70 is provided west of Airflight (from eastbound I-70) and east of Natural Bridge (from westbound I-70). Access to I-70 is provided at Airflight (to both eastbound and westbound I-70).

Figure 5.4-15: Roadway Alternative 14b – Split Diamond East of Airflight



Source: WSP USA, 2022.

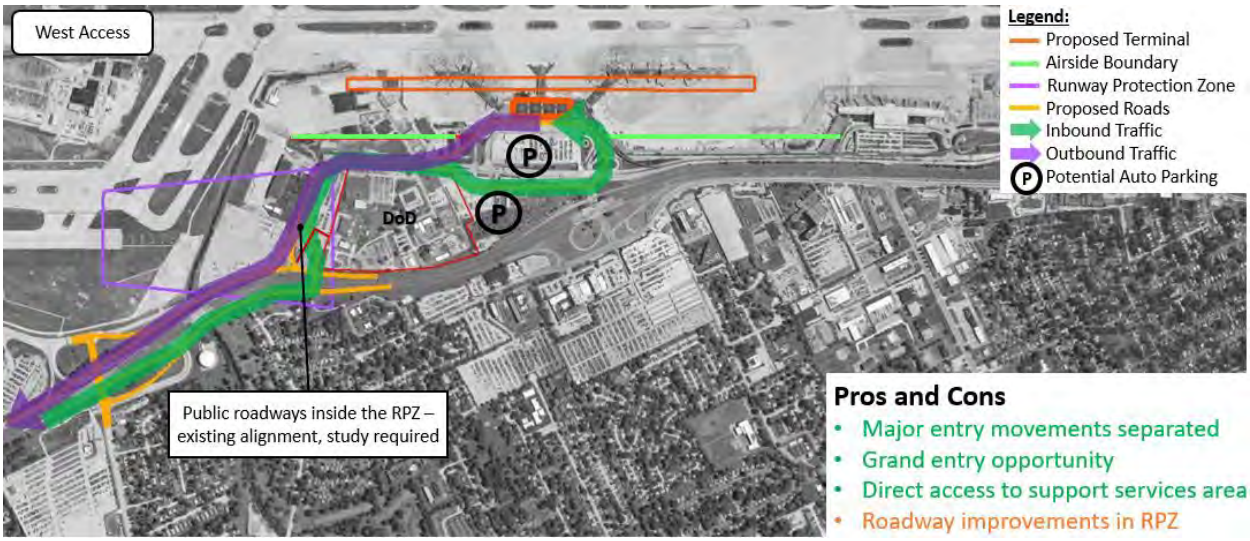
EVALUATION OF REMAINING ACCESS ROAD ALTERNATIVES

AIRPORT ACCESS

Access to and from the east and west was reviewed for each alternative. **Figures 5.4-16** to **5.4-21** summarize access and pros and cons for Concepts 10b, 10c and 14b.

In each scenario, primary ingress and egress access is provided. Factors evaluated included the length of each route, redundancy of adjacent alternative routes, and visibility of the airport destination for each approach.

Figure 5.4-16: East/West Airport Access

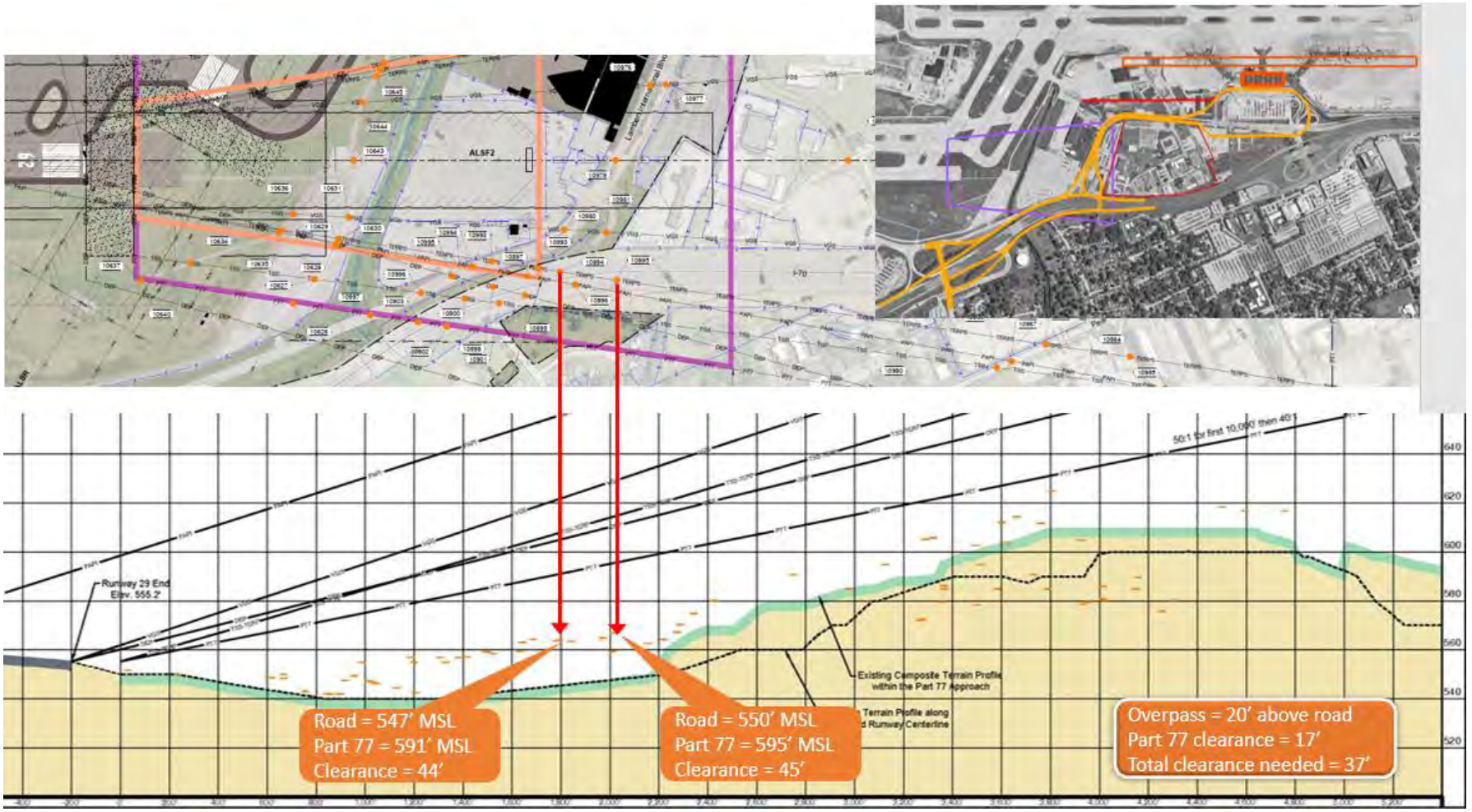


Source: WSP USA, 2022.

Figure 5.4-17: East Access for Concept 10b

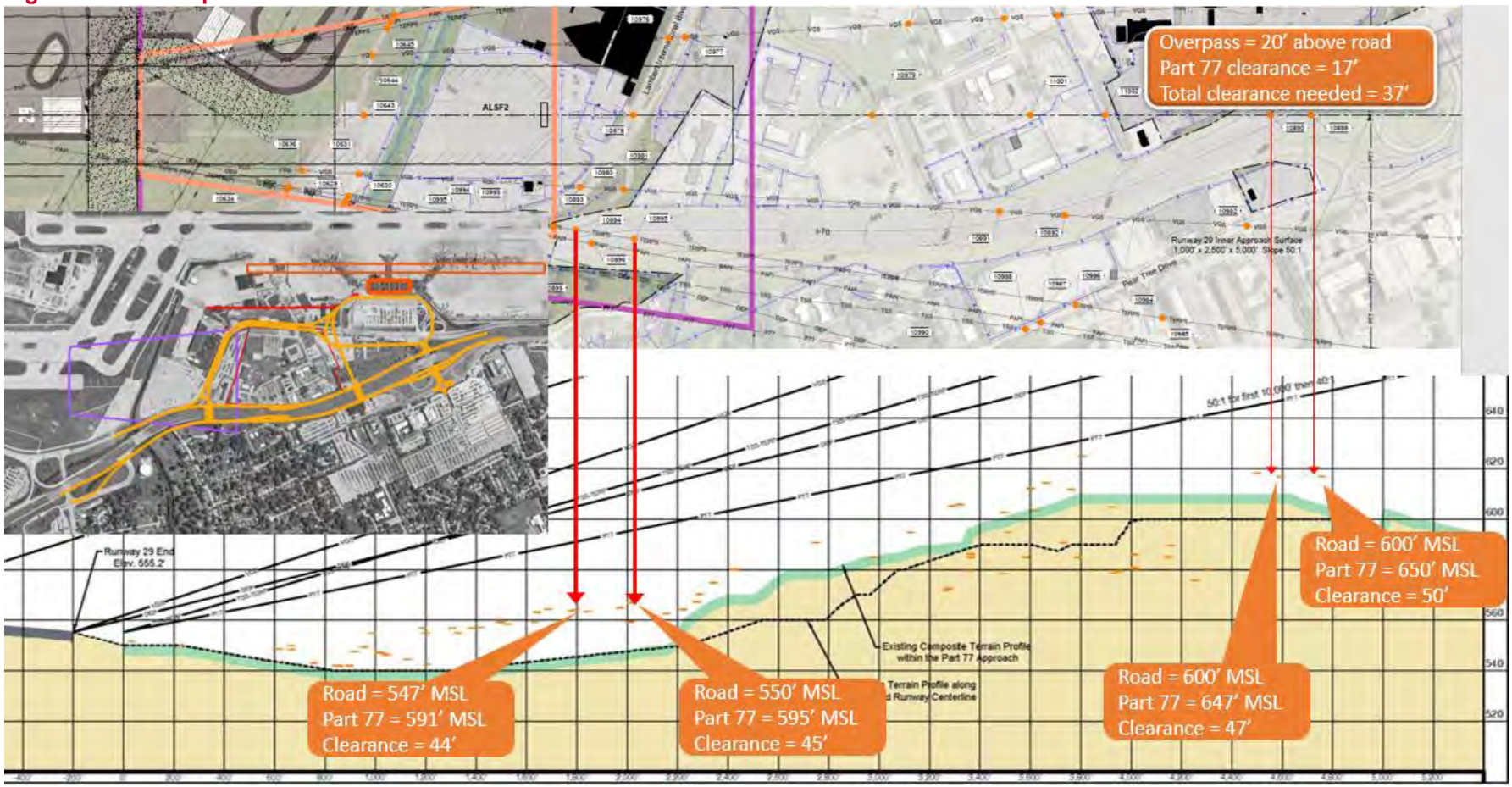
Source: WSP USA, 2022.

Figure 5.4-22: Airspace Considerations for Alternative 10b



Sources: WSP USA, 2022; CMT, 2022.

Figure 5.4-23: Airspace Considerations for Alternative 10c



Sources: WSP USA, 2022; CMT, 2022.

PREFERRED ACCESS ROAD ALTERNATIVE

ULTIMATE PREFERRED ALTERNATIVE

Concept 10b was removed due to the proximity and overlapping traffic patterns with the Cypress and Lindbergh Boulevard interchange. Concepts 10c and 14b were then evaluated and compared, based on the ingress and egress pros and cons and access configuration for all modes. Results are summarized in **Table 5.4-2**.

Table 5.4-2: Summary of Ingress and Egress Opportunities for Concepts 10c and 14b

CATEGORY	ALTERNATIVE 10C	ALTERNATIVE 14B
VEHICULAR ACCESS		
Terminal Access from the West	Exit near Cypress, new crossover of I-70 to reach LIB; route length of 1.3 miles.	Exit near Airflight, double back on north outer road; route length of 2.0 miles.
Terminal Access from the East	Exit near Airflight, outer road access to LIB; route length of 1.8 miles.	Exit near McDonnell Boulevard and follow north outer road; route length of 1.3 miles.
Exit to the West	Fast direct access; route length of 0.9 miles.	Fast direct access; route length of 0.6 miles.
Exit to the East	Fast direct access; route length of 0.9 miles.	Fast direct access; route length of 1.1 miles.
Local Access at Cypress	Unchanged	Unchanged
Local Access at Airflight Drive	Full access; must double-back 0.5 miles to access from the East; must exit at Cypress to access from the West	3/4 access - NB Airflight has to double back 1.6 miles to access Terminal or WB I-70
Local Access at Natural Bridge	Unchanged	Mostly unchanged; removed left side entrance to WB I-70
Redundancy to/from the West	Redundancy to Terminal; three routes to exit to the West	Redundancy to Terminal provided at Natural Bridge; two routes to exit to the West
Redundancy to/from the East	Redundancy to Terminal provided at Cypress; three routes to exit to the East	Redundancy to Terminal provided at Airflight (requires double-back on north outer road); two routes to exit to the East
Capacity Pinch Points	North (WB) Collector/Outer Road at Exit Route	Exiting traffic at Airflight
BIKE & PEDESTRIAN ACCESS		
North-South at Cypress	Unchanged	Unchanged
North-South at Airflight	Greatly improved	Greatly improved
North-South at Natural Bridge	Unchanged	Greatly improved
New overpass East of Cypress	New potential route	Not applicable
ENTRYWAY AND DEPARTURE EXPERIENCE		

Location	West side of loop road; also, opportunity near I-70 east of Cypress	I-70 near Airflight and LIB
Visibility	Good visibility to both locations noted above	Limited, screened by MetroLink
Arriving at the Terminal Experience	Simple and long arrival experience; some doubling back for arrivals from the East	Not as simple but adequate in length; long double-back for arrivals from the West
Leaving the Terminal Experience	Relatively short, simple and redundant	Possibly too short; congestion pinch point possible at Airflight (especially for EB traffic)

Source: WSP USA, 2022.

Alternative 10c, depicted in **Figure 5.4-24**, was selected as the preferred Airport access road alternative for the following reasons:

- Drivers are provided improved traffic flow and ample decision-making time arriving predominantly via eastbound and westbound I-70. Ingress and egress routes are relatively simple and not excessively circuitous.
- Connectivity to local roadway network is improved, including for bicycles and pedestrians. Transit access is maintained at current levels.
- Traffic volumes are distributed across ingress and egress movements in order to provide adequate peak capacity through foreseeable future scenarios.
- North-south connectivity to the community and adjacent businesses

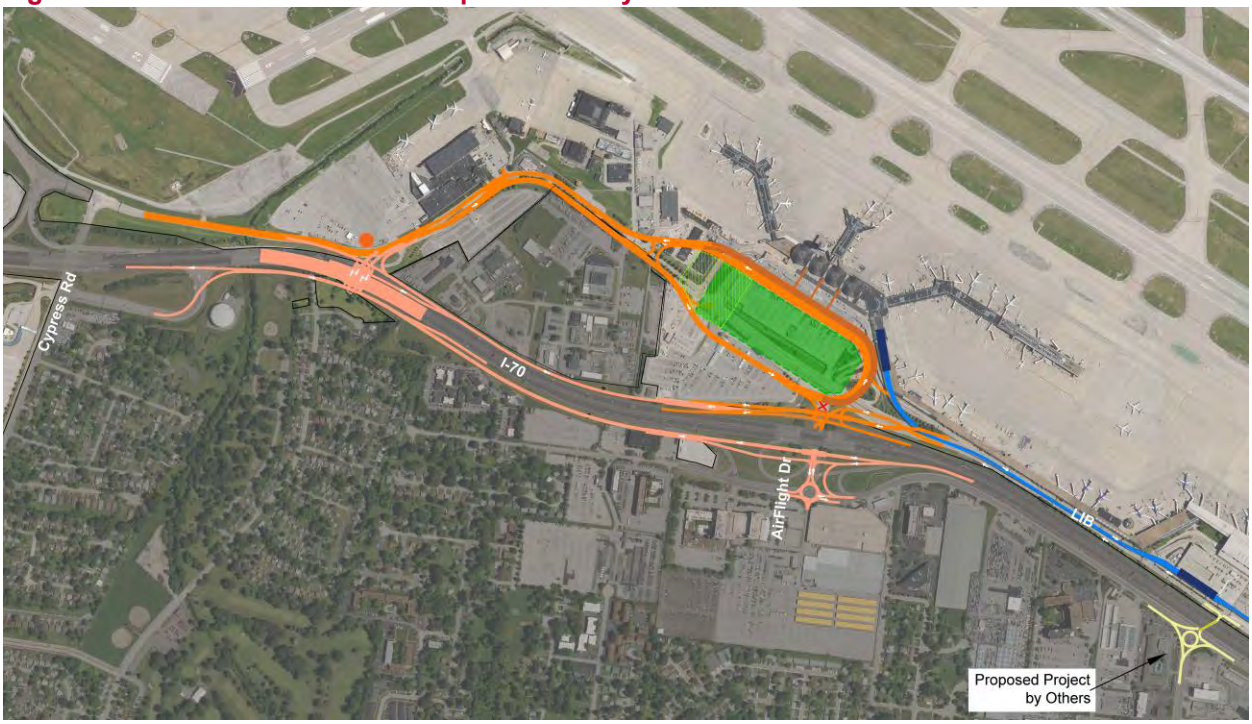
Refinements to accommodate shuttle access and circulation at Airflight Drive and to and from LIB, east of the terminal loop, will be considered in Advanced Planning. Coordination with Missouri Department of Transportation (MoDOT) and other third-party agencies will continue for further analysis and implementation.

INTERIM PREFERRED ALTERNATIVE

The preferred ultimate roadway alternative requires several connections to MODOT roadways, as well as improvements/new sections of road by MODOT. Until MODOT completes its analysis of the roadway network around the airport and defines how to best connect with the Master Plan's preferred alternative, an interim roadway access plan will be implemented, based on the current 2040 plan. The interim airport roadway access is depicted on **Figure 5.4-25**.

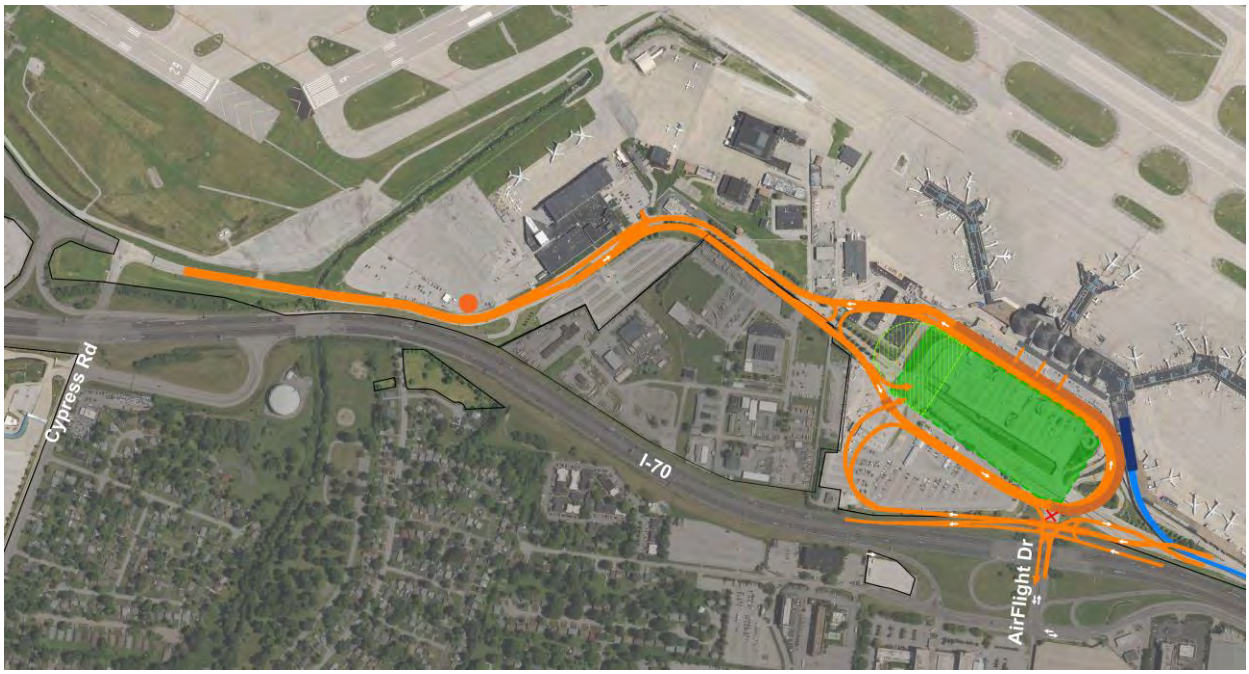
Both the interim and ultimate plans are still evolving, and will be refined in Advanced Planning.

Figure 5.4-24: Preferred Ultimate Airport Roadway Alternative



Source: WSP USA, 2023.

Figure 5.4-25: Interim Airport Roadway Access Plan



Source: WSP USA, 2023.

Appendix D:
Air Quality and Climate Assessment

Air Quality and Climate Assessment Appendix

The National Ambient Air Quality Standards (NAAQS) and their averaging periods are provided in Table D-1.

Table D-1: NAAQS

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
CO	primary	8 hours	9 ppm	Not to be exceeded more than once per year
CO	primary	1 hour	35 ppm	Not to be exceeded more than once per year
Pb	primary and secondary	Rolling 3-month average	0.15 µg/m^3	Not to be exceeded
NO_2	primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
NO_2	primary and secondary	1 year	53 ppb	Annual Mean
O_3	primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM	$PM_{2.5}$ primary	1 year	9.0 µg/m^3	annual mean, averaged over 3 years
	$PM_{2.5}$ secondary	1 year	15.0 µg/m^3	annual mean, averaged over 3 years
PM	PM_{10} primary and secondary	24 hours	35 µg/m^3	98th percentile, averaged over 3 years
PM	PM_{10} primary and secondary	24 hours	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years
SO_2	primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
SO_2)	secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

Notes : CO = Carbon Monoxide, Pb = Lead, NO_2 = Nitrogen Dioxide, O_3 = Ozone, PM = Particle Pollution, and SO_2 = Sulfur Dioxide.

Source: EPA NAAQS Table, https://www.epa.gov/criteria-air-pollutants/naaqs-table.

Emission factors for off-road construction equipment and on-road vehicles were developed using MOVES, version 4. The model input data were developed based on specific information (e.g., vehicle/fuel mix, fuel specifications, inspection maintenance program, meteorology data, etc.) related to the Proposed Action. Table D-2 summarizes the inputs to MOVES used to estimate worst-case emission rates for the emission sources associated with the Proposed Action.

Table D-2: MOVES Inputs – Off-road Equipment and On-road Vehicles

Parameter	Input Data
Evaluation Year(s):	2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, and 2037
Location:	St. Louis County, Missouri
Evaluation Month(s):	December (Winter) and July (Summer)
Days:	Weekdays
Evaluation Hour(s):	7:00-8:00 AM (Hour 8) – January 3:00-4:00 PM (Hour 16) – July
Level of Analysis:	Nonroad Model/Default Scale/Inventory Onroad Model/ Default Scale (National Level MOVES Defaults for Vehicle Age Distribution, I/M Programs, etc.)/Inventory
Source Type:	Off-road Equipment: Agriculture, Construction, and Industrial Sectors (Diesel Fuel) On-road Vehicles: 21 – Passenger Car (Gasoline Fuel) 31- Passenger Truck (Diesel Fuel) 52 - Single Unit Short-haul Truck (Diesel Fuel) 61 - Combine Short-haul Truck (Diesel Fuel)
Roadway Type:	Rural Unrestricted
Temperature:	Winter – 22.7°F (AM) Summer – 88.5°F (PM)
Relative Humidity:	Winter – 79.1% Summer – 52.7%
Criteria/Precursor Pollutants:	CO, VOC, NO_x, SO_2, PM_{10}, and $PM_{2.5}$
GHGs:	CO_2, N_2O, and CH_4

Source: EPA MOVES, Version 4.

Table D-3 lists the construction projects needed to implement the Proposed Action and the schedule. Construction is assumed to begin in the spring of 2025 and be completed by the fall of 2027.

Table D-3: Construction Schedule and Projects

Demolition/ Construction	Project Type	Project Description	Start Date	End Date
Demolition	Building/Structure	MoANG Buildings (All)	Feb -26	Oct -26
Demolition	Building/Structure	Credit Union	Feb -26	Oct -26
Demolition	Building/Structure	South Firehouse Medical Storage	Feb -26	Oct -26
Demolition	Building/Structure	Landside and Parking Garage Demolition (Phase 1) (Buildings/Structures)	Jan-27	Apr-27
Demolition	Building/Structure	Jet Linx Building	Jan-27	Dec-27
Demolition	Building/Structure	West Tritorator	Jun-29	Dec-29
Demolition	Building/Structure	Fuel Consortiums	Jun-29	Dec-29
Demolition	Building/Structure	HMS Host Facilities	Jun-29	Dec-29
Demolition	Building/Structure	Building Maintenance Facility	Jun-29	Dec-29
Demolition	Building/Structure	West Lambert Substation	Jun-29	Dec-29
Demolition	Building/Structure	Airfield General Building	Jun-29	Dec-29
Demolition	Building/Structure	Airline Service Facility	Jun-29	Dec-29
Demolition	Building/Structure	Central Utility Plant	Jun-29	Dec-29
Demolition	Building/Structure	Concourse A	Jan-27	Apr-27
Demolition	Building/Structure	Concourse B	Jan-27	Apr-27
Demolition	Building/Structure	Landside Demolition - Phase 3 (Structures)	Jul 27	Oct-27
Demolition	Building/Structure	Concourse C	Jan-29	Apr-29
Demolition	Building/Structure	Concourse D	Jan-29	Apr-29
Demolition	Road/Surface	Phase 1 Demolition (Roads/Surfaces)	Jul-26	Feb-27
Demolition	Road/Surface	Phase 3 Demolition (Roads/Surfaces)	Jul-27	Dec-28
Demolition	Road/Surface	Phase 4 Demolition (Roads/Surfaces)	Jan-29	Dec-29
Demolition	Airfield/Surface	West Concourse Apron	Jan-27	Jul-27
Demolition	Airfield/Surface	East Concourse Apron	Jan-29	Jul-29
Construction	Building/Structure	Central Utility Plant	Jul-26	Apr-27
Construction	Building/Structure	West Lambert Substation	Jul-26	Apr-27
Construction	Building/Structure	Fuel Consortium Services	Aug-26	Feb-28
Construction	Building/Structure	Airline Service Facility and Extension	Aug-26	Feb-28
Construction	Building/Structure	Landside Phase 1 Construction (Buildings/Structures)	Apr-27	Dec-27
Construction	Building/Structure	West Tritorator	Jul-27	Dec-27
Construction	Building/Structure	Security Screening Checkpoint	July-27	Dec-28
Construction	Building/Structure	West Concourse	Jan-27	Dec-28

Demolition/ Construction	Project Type	Project Description	Start Date	End Date
Construction	Building/Structure	Phase 3 Construction (Roadway Structures)	Oct-27	Dec-28
Construction	Building/Structure	FIS	Jan-27	Dec-28
Construction	Building/Structure	West Baggage Claim	July-27	Dec-28
Construction	Building/Structure	Center Ticketing Reconfiguration	Jan-27	Dec-28
Construction	Building/Structure	Airport Police Building	July 29	Dec-30
Construction	Building/Structure	Airport Administration Space	July 29	Dec-30
Construction	Building/Structure	Building Maintenance Space	July 29	Dec-30
Construction	Building/Structure	East Concourse	Jan-29	Dec-30
Construction	Building/Structure	Phase 4 Construction (Buildings/Structures)	Jan-29	Dec-29
Construction	Building/Structure	East Bagage Claim	Jan-29	Dec-30
Construction	Building/Structure	CRDF	Jul-30	Dec-31
Construction	Road/Surface	Phase 1 Construction (Roads/Surfaces)	Jul-26	Mar-27
Construction	Road/Surface	Phase 2 Construction (Roads/Surfaces)	Apr-27	Sep-27
Construction	Road/Surface	Phase 3 Construction (Roads/Surfaces)	Oct-27	Dec-28
Construction	Road/Surface	Phase 4 Construction (Roads/Surfaces)	Jan-29	Dec-29
Construction	Road/Surface	Phase 2 Construction (Parking Surfaces)	Feb-27	Jul-27
Construction	Road/Surface	Phase 3 Construction (Parking Surfaces)	Jul-27	Dec-28
Construction	Road/Surface	Phase 4 Construction (Parking Surfaces)	Jan-29	Dec-29
Construction	Road/Surface	Phase 4 (Parking Garage Structure)	Jan-29	Dec-31
Construction	Road/Surface	Phase 4 (Parking Garage Structure)	Jan-29	Dec-31
Construction	Airfield/Surface	West Concourse Apron	Jul-27	Dec-28
Construction	Airfield/Surface	East Concourse Apron	Jul-29	Dec-30

Source: CMT, April 2024.

Table D-4 presents the types of off-road construction equipment and on-road construction vehicles as well as monthly activity levels associated with the projects needed to implement the Proposed Action.

Table D-4: Construction Equipment/Vehicles and Activity Levels

Construction Equipment/Vehicles	Off-Road/On-Road	Fuel Type	Activity Levels	Units
40 Ton Crane	Off-Road	Diesel	2,351	hours/month
40 Ton Rough Terrain Crane	Off-Road	Diesel	163	hours/month
90 Ton Crane	Off-Road	Diesel	89	hours/month
Air Compressor	Off-Road	Diesel	154	hours/month
Asphalt 18-Wheeler	On-Road	Diesel	6,058	miles/month
Asphalt Paver	Off-Road	Diesel	103	hours/month
Auger Drill	Off-Road	Diesel	140	hours/month
Backhoe	Off-Road	Diesel	3,547	hours/month
Bob Cat	Off-Road	Diesel	12,451	hours/month
Bulldozer	Off-Road	Diesel	328	hours/month
Cement Mixer	On-Road	Diesel	153,384	miles/month
Chain Saw	Off-Road	Diesel	127	hours/month
Chain Saws	Off-Road	Diesel	140	hours/month
Chipper/Stump Grinder	Off-Road	Diesel	127	hours/month
Compacting Equipment	Off-Road	Diesel	94	hours/month
Concrete Pump	Off-Road	Diesel	206	hours/month
Concrete Ready-Mix Trucks	Off-Road	Diesel	862	hours/month
Concrete Saws	Off-Road	Diesel	154	hours/month
Concrete Truck	Off-Road	Diesel	849	hours/month
Curb/Gutter Paver	Off-Road	Diesel	49	hours/month
Distributing Tanker	On-Road	Diesel	2,638	miles/month
Dozer	Off-Road	Diesel	889	hours/month
Dump Truck	On-Road	Diesel	857,446	miles/month
Dump Truck - Asphalt	On-Road	Diesel	9,791	miles/month
Dump Truck (12 cy)	On-Road	Diesel	36,479	miles/month
Dump Truck Subbase Material	On-Road	Diesel	81,795	miles/month
Excavator	Off-Road	Diesel	350	hours/month
Excavator with Bucket	Off-Road	Diesel	7,243	hours/month
Excavator with Hoe Ram	Off-Road	Diesel	1,087	hours/month
Flat Bed or Dump Trucks	On-Road	Diesel	5,853	miles/month
Flatbed Truck	On-Road	Diesel	23,861	miles/month
Fork Truck	Off-Road	Diesel	16,629	hours/month

Construction Equipment/Vehicles	Off-Road/On-Road	Fuel Type	Activity Levels	Units
Forklift	Off-Road	Diesel	134	hours/month
Front Loader	Off-Road	Diesel	368	hours/month
Front Loader for Subgrade Materials	Off-Road	Diesel	45	hours/month
Generator Sets	Off-Road	Diesel	6,155	hours/month
Grader	Off-Road	Diesel	50	hours/month
Grout Mixer	Off-Road	Diesel	67	hours/month
High Lift	Off-Road	Diesel	4,627	hours/month
Hydroseeder	Off-Road	Diesel	45	hours/month
Line Painting Truck and Sprayer	On-Road	Diesel	1,171	miles/month
Loader	Off-Road	Diesel	178	hours/month
Log Chipper	Off-Road	Diesel	140	hours/month
Man Lift	Off-Road	Diesel	11,823	hours/month
Man Lift (Fascia Construction)	Off-Road	Diesel	1,176	hours/month
Material Deliveries	On-Road	Diesel	5,471	miles/month
Mulcher	Off-Road	Diesel	140	hours/month
Off-Road Truck	Off-Road	Diesel	45	hours/month
Other General Equipment	Off-Road	Diesel	1,856	hours/month
Passenger Car	On-Road	Gasoline	762,511	miles/month
Paving Machine	Off-Road	Diesel	187	hours/month
Pickup Truck	On-Road	Diesel	307,537	miles/month
Pumps	Off-Road	Diesel	42	hours/month
Roller	Off-Road	Diesel	645	hours/month
Rubber Tired Loader	Off-Road	Diesel	154	hours/month
Scraper	Off-Road	Diesel	193	hours/month
Skid Steer Loader	Off-Road	Diesel	222	hours/month
Slip Form Paver	Off-Road	Diesel	154	hours/month
Small Dozer	Off-Road	Diesel	94	hours/month
Surfacing Equipment (Grooving)	Off-Road	Diesel	229	hours/month
Survey Crew Trucks	On-Road	Diesel	3,174	miles/month
Ten Wheelers	On-Road	Diesel	2,341	miles/month
Ten Wheelers- Material Delivery	On-Road	Diesel	5,797	miles/month
Tool Truck	On-Road	Diesel	106,608	miles/month
Tractor	Off-Road	Diesel	234	hours/month
Tractor Trailer	On-Road	Diesel	3,162	miles/month
Tractor Trailer- Material Delivery	On-Road	Diesel	54,501	miles/month
Tractor Trailer- Steel Deliveries	On-Road	Diesel	5,034	miles/month
Tractor Trailer- Stone Delivery	On-Road	Diesel	2,230	miles/month

Construction Equipment/Vehicles	Off-Road/On-Road	Fuel Type	Activity Levels	Units
Tractor Trailer- Topsoil & Seed	On-Road	Diesel	1,115	miles/month
Tractor Trailer with Boom Hoist- Curbs Del & Place	On-Road	Diesel	1,115	miles/month
Tractor Trailer with Boom Hoist- Delivery	On-Road	Diesel	3,512	miles/month
Tractor Trailers Temp Fac.	On-Road	Diesel	1,621	miles/month
Tractors/Loader/Backhoe	Off-Road	Diesel	345	hours/month
Trencher	Off-Road	Diesel	134	hours/month
Trencher for U/G Piping	Off-Road	Diesel	89	hours/month
Trowel Machines (2) machines	Off-Road	Diesel	18	hours/month
Vibratory Compactor	Off-Road	Diesel	98	hours/month
Water Truck	On-Road	Diesel	323,642	miles/month

Source: CMT, April 2024.

The type and number of aircraft operations directly affects emissions. Table D-5 provides the aircraft fleet mix and operations modelled in AEDT for the future years 2032 and 2037 for both the No Action Alternative and Proposed Action. Notably, the number of aircraft operations and fleet mix does not change between the No Action Alternative and Proposed Action.

Table D-5: Aircraft Fleet Mix and Operations

Aircraft Category	AEDT Equip ID	AEDT Aircraft Airframe	AEDT Aircraft Engine	2032 Operations	2037 Operations
Passenger Carrier	6662	Boeing 737-7	LEAP-1B27	47,277	64,123
Passenger Carrier	6472	Boeing 737-8	LEAP-1B28/28B1/28B2/28B3	30,302	45,907
Passenger Carrier	3815	Embraer ERJ175	CF34-8E5A1	27,411	31,068
Passenger Carrier	178	Boeing 737-700 Series	CFM56-7B24	15,757	--
Passenger Carrier	2106	Cessna 208 Caravan	PT6A-114	11,089	11,642
Passenger Carrier	3998	Bombardier CRJ-900	CF34-8C5A2	7,562	8,161
Passenger Carrier	6585	Boeing 737-800 Series	CFM56-7B26E	7,289	--
Passenger Carrier	6532	Tecnam P2012 Traveller	TIO-540-J2B2	6,427	6,798
Passenger Carrier	6400	Airbus A319-NEO	LEAP-1A26CJ	5,099	5,572
Passenger Carrier	967	Airbus A319-100 Series	CFM56-5B6/P	3,457	3,777
Passenger Carrier	5301	Airbus A220-100	PW1524G	2,590	2,832
Passenger Carrier	2456	Airbus A321-200 Series	CFM56-5B3/3	2,219	2,404
Passenger Carrier	5976	Airbus A321-NEO	LEAP-	2,219	2,404

Aircraft Category	AEDT Equip ID	AEDT Aircraft Airframe	AEDT Aircraft Engine	2032 Operations	2037 Operations
			1A35A/33/33B2/32/30		
Cargo	457	Boeing 767-300 ER	CF6-80C2B6F	2,132	2,194
Passenger Carrier	6406	Boeing 737-9	LEAP-1B28/28B1/28B2/28B3	1,604	2,338
Passenger Carrier	6398	Airbus A320-NEO	LEAP-1A29	1,041	1,128
Cargo	704	Airbus A300F4-600 Series	PW4158	834	819
Passenger Carrier	2546	Bombardier CRJ-700	CF34-8C5B1	828	--
Passenger Carrier	1095	Airbus A330-300 Series	Trent 772	520	520
Passenger Carrier	2560	Embraer ERJ170	CF34-8E5A1	485	530
Passenger Carrier	3049	Bombardier CRJ-200	CF34-8C5B1	374	--
Passenger Carrier	2412	Boeing 737-900-ER	CFM56-7B27	360	--
Passenger Carrier	997	Airbus A320-200 Series	CFM56-5B4/2P	347	376
Passenger Carrier	6440	Boeing 787-9 Dreamliner	Trent 1000-N3	--	208
Air Taxi / General Aviation	1239	Bombardier Challenger 600	ALF 502L-2	3,082	3,253
Air Taxi / General Aviation	6070	Cessna 560 Citation XLS	PW530	2,870	3,029
Air Taxi / General Aviation	3047	Cessna 680 Citation Sovereign	PW306B	2,262	2,387
Air Taxi / General Aviation	6552	Embraer Legacy 450 (EMB-545)	AS907-3-1E-A1 (HTF7500E)	1,913	2,019
Air Taxi / General Aviation	2028	Bombardier Learjet 35	TFE731-2-2B	1,485	1,567
Air Taxi / General Aviation	1927	Gulfstream G-5 Gulfstream 5 / G-5SP Gulfstream G500	BR700-715C1-30	1,347	1,422
Air Taxi / General Aviation	1292	Cessna 550 Citation II	JT15D-4 series	1,344	1,418
Air Taxi / General Aviation	1976	Gulfstream G150	TFE731-3	1,313	1,385
Air Taxi / General Aviation	1309	Cessna 750 Citation X	AE3007C1	784	828
Air Taxi / General Aviation	1603	Raytheon King Air 100	TPE331-6	585	617
Air Taxi / General Aviation	5189	Gulfstream G400	PW812GA	551	582
Air Taxi / General Aviation	1489	Pilatus PC-12	PT6A-67B	421	442
Air Taxi / General	1323	Dassault Falcon 900-	TFE731-3	355	374

Aircraft Category	AEDT Equip ID	AEDT Aircraft Airframe	AEDT Aircraft Engine	2032 Operations	2037 Operations
Aviation		EX			
Air Taxi / General Aviation	31	Raytheon Beech 1900-C	PT6A-67B	318	336
Air Taxi / General Aviation	1776	Bombardier Global Express	BR700-715C1-30	303	320
Air Taxi / General Aviation	1196	Raytheon Beech Baron 58	TIO-540-J2B2	184	194
Air Taxi / General Aviation	6286	Diamond DA40	IO-360-B	173	182
Air Taxi / General Aviation	1265	Cessna 172 Skyhawk	TSIO-360C	107	113
Air Taxi / General Aviation	1324	Cirrus SR20	IO-360-B	78	82
Military(L)	1807	Boeing F-15 Eagle	F100-PW-100	1,369	1,369
Military(L)	4236	Boeing F/A-18 Hornet	F404-GE-400	931	--
Military(L)	1862	T-38 Talon	J85-GE-5H (w/AB)	219	876
Military(I)	1532	Pilatus Turbo Trainer PC-9	PT6A-68	85	85
Military(I)	1403	Boeing C-17A	F117-PW-100	11	11
Military(I)	3170	Lockheed C-130 Hercules	R-1820	11	11

Source: CMT, April 2024.

Table D-6 lists the social cost of greenhouse gases (GHGs) per one metric ton. These values were used in the GHG analysis. These costs are based on year 2020 dollars and an assumed discount rate of 2 percent.

Table D-6: Social Cost of Greenhouse Gases per One Metric Ton

Year of Emissions	CO_2	CH_4	N_2O
2020	$190	$1,600	$54,000
2030	$230	$2,400	$66,000
2040	$270	$3,300	$79,000
2050	$310	$4,200	$93,000
2060	$350	$5,100	$110,000
2070	$380	$5,900	$120,000
2080	$410	$6,800	$130,000

Notes : CO_2 = Carbon Dioxide, CH_4 = Methane, and N_2O = Nitrogen Oxides.

Source: EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific, November 2023, [EPA-HQ-OAR-2021-0317], available at https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf.

Appendix E:
Aquatic and Ecological Resources

Aquatic and Ecological Resources Report

The MDC and USFWS correspondence was removed to avoid duplication. It is included in Appendix E of the EA report.

Aquatic and Ecological Resources Report

St. Louis Lambert International Airport
Consolidated Terminal Program Project
St. Louis, St. Louis County, Missouri

CMT Job Number: 22004919.00

DATE: MARCH 22, 2024

PREPARED BY:

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APPENDICES

1.0 SUMMARY

This report has been prepared at the request of the St. Louis Lambert International Airport (STL). The purpose of this report is to describe the wetlands and other regulated surface water resources located within the study area for the proposed airport improvements at STL in St. Louis, Missouri.

The Clean Water Act defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils." Thus, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement, for an area to be considered a wetland, it must meet all of the following criteria, under normal circumstances: wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils.

As summarized in the table below, eight (8) streams and one (1) wetland were identified within the study area. We anticipate that six (6) of these streams are subject to regulation under the Clean Water Act and therefore, impacts to these resources would require 404 authorization from the US Army Corps of Engineers (USACE) and a 401 water quality certification from the Missouri Department of Natural Resources.

Suitable habitat for the federally-listed Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) are present within the project area. Any proposed work on-site should avoid impacts to these species or their habitat. The project is anticipated to result in up to 3.9 acres of tree clearing. Consultation with USFWS under Section 7 of the Endangered Species Act will be required if impacts to these species or their habitats occur.

WATER RESOURCES				
RESOURCE	TYPE	EXISTING CONDITION	PRELIMINARY JURISDICTIONAL STATUS*	WITHIN STUDY AREA
UNT 1	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	389.1 linear feet, 0.09 acre
UNT 2	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	15.9 linear feet, 0.002 acre
UNT 3 – Natural Portion	Perennial	Moderately Functional	Federally Jurisdictional (a)(3)(i)	820.4 linear feet, 0.18 acre
UNT 3 – Concrete Portion	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	1,151 linear feet, 0.26 acre
UNT 4	Ephemeral	Functionally Impaired	Non-Jurisdictional	60.7 linear feet, 0.005 acre
UNT 5	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	367.9 linear feet, 0.03 acre
UNT 6	Intermittent	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	32.6 linear feet, 0.002 acre
UNT 7	Ephemeral	Functionally Impaired	Non-Jurisdictional	1,694.2 linear feet, 0.14 acre
Coldwater Creek	Perennial	Moderately Functional	Federally Jurisdictional (a)(3)(i)	2,827 linear feet, 2.98 acre
Wetland A	Emergent	Impaired	Possibly exempt	0.01 acre

*based on the revised definition of "Waters of the United States" (40 CFR 230.3(s))

2.0 METHODOLOGY

2.1 STREAMS

The on-site evaluation of the study area was conducted during a site visit on May 23 and 24, 2023, January 31, 2024, and March 20, 2024. Streams were evaluated for their jurisdictional status based on the revised definition of waters of the United States (40 CFR 230.3(s)), which requires the presence of an ordinary high water mark (OHWM) and the stream to be a perennial, intermittent or ephemeral tributary with ultimate connection to downstream Section 10 Traditional Navigable Waters (TNW).

The following USACE definitions for the three stream types were used:

> **Ephemeral streams** have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
>
> **Intermittent streams** have flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
>
> **Perennial Streams** have flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

The determination of stream designation is based on an evaluation of the size of the watershed for each stream, the presence of flow during the on-site evaluation and the evidence observed of the frequency of flow, and the presence of aquatic life. In addition to flow regime, streams were also classified according to existing conditions and rated either fully functional, moderately functional, or functionally impaired, based on the definitions in the State of Missouri Stream Mitigation Method (MSMM).

2.2 WETLANDS

When evaluating for the presence of wetlands, CMT personnel used the routine method presented in the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement. In order for an area to be classified as a jurisdictional wetland, the area has to have a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology and be an adjacent wetland as defined by the revised definition of waters of the United States (40 CFR 230.3(s)). The specific indicators used for each of the three parameters are noted in the following paragraphs.

2.2.1 HYDROPHYTIC VEGETATION

According to Tiner (2012), a hydrophyte is a vascular plant that grows in water or on a substrate that is saturated at a frequency and duration during the growing period sufficient to affect plant occurrence. Using this definition, the U.S. Fish and Wildlife Service released the National

Wetland Plant List. This list categorizes species according to their probability of occurrence in wetlands based on the ecological region. The list identifies five general plant indicator status categories:

- Obligate (OBL): almost always is a hydrophyte, rarely in uplands
- Facultative Wetland (FACW): Usually is a hydrophyte but occasionally found in uplands
- Facultative (FAC): Commonly occurs as either a hydrophyte or non-hydrophyte
- Facultative Upland (FACU): Occasionally is a hydrophyte but usually occurs in uplands
- Obligate Upland (UPL): Rarely is a hydrophyte, almost always in uplands

In order to satisfy the hydrophytic vegetation criteria required for a jurisdictional wetland, the area had to be dominated (over 50 percent) by obligate wetland plants, facultative wetland plants and facultative plants.

The method used during this survey for determining vegetation dominance was the 50/20 method. Using this method, plant species in each stratum are ranked according to their percent aerial cover and then cumulatively summed until 50 percent of the total dominance measure is exceeded. All species contributing to that cumulative total plus any additional species that have at least 20 percent of the total dominance measure are considered dominants in their respective stratum.

2.2.2 HYDRIC SOIL

Hydric soil is soil formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Hydric soil indicators include the presence of histosols, histic epipedons, reducing conditions, gleyed or low chroma soil colors and high organic content or organic streaking in sandy soil. An additional hydric soil indicator was used if the mapped and confirmed soil type appears on the local or national hydric soils list.

2.2.3 WETLAND HYDROLOGY

Wetland hydrology is defined as an area that is inundated or saturated at or near the surface for at least five percent of the growing season in most years. This can include areas that are ponded, flooded or those areas that have a water table at or near the surface. Indications of wetland hydrology included surface water, saturation, evidence of drift deposits, iron deposits or drainage patterns, and inundation. Water-stained leaves, oxidized root channels within 12 inches below ground surface on living plants, the FAC neutral test and local soil survey data were also used to indicate wetland hydrology.

2.2.4 WETLAND LOCATION

The wetland boundaries were surveyed using a handheld GPS device with sub-meter accuracy. The wetland boundaries with the wetland and upland data point locations are found on the Water Resource Maps in Appendix A.

2.2.5 WETLAND QUALITATIVE ASSESSMENT

The wetland plant community was evaluated using the Floristic Quality Index (FQI).

The FQI is an index derived from floristic inventory data and is calculated from the number of species that occur in the plant community, as well as the species coefficient of conservatism (C) values. C-values are assigned to individual plant species. The higher the C-value is, the more likely a plant is from a minimally altered landscape. Low C-values are assigned to weeds, or species that can exist in a wide range of conditions. An area of high natural quality would include conservative native plants that are adapted to a specialized community context and would have a mean C-value of 5 or greater. The aggregate conservatism of all the plants inhabiting a site is used to determine its FQI.

The general classifications of the vegetative communities are made based on the FQI scores.

FQI	Classification
0-5	severely degraded
5-10	degraded
10-20	moderately degraded
20 +	high quality

The wetlands were also classified according to existing conditions and rated either fully functional, functional, moderately functional, or functionally impaired, based on the definitions in the State of Missouri Wetland Mitigation Method (MWMM).

2.3 OTHER SURFACE WATER RESOURCES

Other surface water resources include features such as lakes/ponds, drainage swales, and ditches. Evaluation of other surface water resources was based on the presence of an ordinary high-water mark (OHWM), flow regime, and/or on their jurisdictional status.

2.4 THREATENED AND ENDANGERED SPECIES

The project study area was observed for suitable threatened and endangered species habitat. The habitats present were searched for suitability and the presence of species. The known or historic range of federally endangered or threatened species within the study area was determined by reviewing the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list and the Missouri Department of Conservation (MDC) Natural Heritage Review generated for the project study area.

3.0 BACKGROUND INFORMATION

3.1 PROJECT DESCRIPTION

The Consolidated Terminal Program (CTP) project includes constructing a new consolidated terminal with up to 62 gates in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area.

The project is intended to accommodate the demand for airport traffic to and from a single terminal. The project will provide a new terminal roadway with the optimal length from interstate to terminal while minimizing changes needed to existing interstate facilities. The primary impact of the project is the redistribution of traffic from the Airflight Drive interchange to the Cypress Road interchange. In order to accommodate the redistribution of traffic, a continuous auxiliary lane is proposed in the westbound direction of I-70 from the Airflight Drive entrance ramp to the Cypress Road exit ramp while closing the existing westbound I-70 on ramp from Lambert International Boulevard. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 Cypress Road entrance is recommended. Construction is anticipated to begin in 2025 and be completed by the end of 2027.

FIGURE 1 – STUDY AREA

3.2 PROJECT LOCATION

The proposed project is located approximately 13 miles northwest of downtown St. Louis in unincorporated St. Louis County, Missouri. Per the USGS Saint Charles, Florissant, Creve Coeur, and Clayton Quadrangle Maps, the study area is situated within Sections 5 and 28, Township 46 North, and Range 6 East. Per the Missouri public land survey system, the study area is also situated within Land Grant 1196, Land Grant 2625, Land Grant 1993, Land Grant 2524, and Land Grant 1250 associated with the Marais des Liards Common Field land grant. The land use around the project area is primarily airport facilities and infrastructure, commercial, and residential.

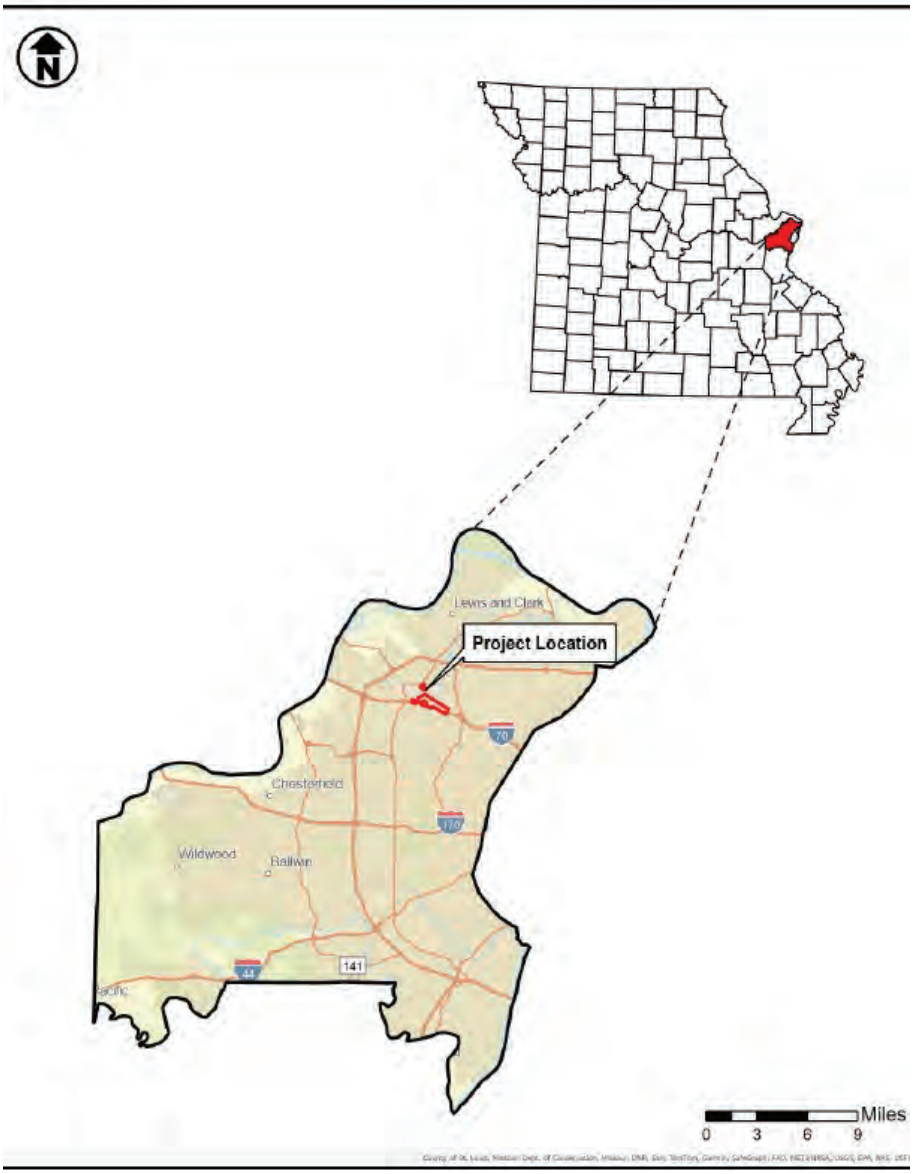

FIGURE 2 – COUNTY LOCATION MAP

3.3 HISTORICAL OR PUBLISHED INFORMATION

The project is located within the Headwaters Coldwater Creek watershed (12-digit hydrologic unit code 103002000802).

According to the National Hydrography Dataset (NHD), National Wetlands Inventory (NWI) map, and USGS topographic maps, three streams are located within the study area. The NWI map indicates three riverine features within the study area.

According to the Missouri Department of Natural Resources 2020 Section 303 (d) Listed Waters, Coldwater Creek has been listed as impaired for chloride from urban runoff and storm sewers. Coldwater Creek is a tributary to the Missouri River, a TNW.

The St. Louis County Soil Survey indicates the following soils are present within the study area.

- 99023 – Urban land, upland, 0 to 5 percent slopes
- 60025 – Urban land-Harvester complex, 2 to 9 percent slopes
- 68001 – Fishpot-Urban land-Freeburg complex, 9 to 20 percent slopes
- 60191 – Menfro-Urban land complex, 9 to 20 percent slopes
- 60223 – Urban land-Harvester complex, 9 to 20 percent slopes

According to the St. Louis County Hydric Soils List, none of these soils are hydric.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), most of the study area is located within the FEMA Flood Zone X, which corresponds to areas of minimal flood risk. The southwestern portion of the study area is located within FEMA Flood Zone AE, which corresponds to the 1% annual chance of a flood with base flood elevations. This flood zone is the FEMA designated 100-year floodplain for Coldwater Creek. Additionally, the southwestern portion of the study area is located within the 0.2% annual chance flood hazard zone, which corresponds to areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile.

There is a new Preliminary FEMA FIRM map, which is planned to be published in 2024. These floodplain and floodway limits differ from the existing FEMA FIRM limits. Both maps are included in Appendix A for reference. According to the Preliminary FEMA FIRM, most of the study area is located within the FEMA Flood Zone X, which corresponds to areas of minimal flood risk. The western portion of the study area is located within FEMA Flood Zone AE, which corresponds to the 1% annual chance of a flood with base flood elevations. This flood zone is the FEMA designated 100-year floodplain for Coldwater Creek and is a designated regulatory floodway. Additionally, the western portion of the study area is located within the 0.2% annual chance flood hazard zone, which corresponds to areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile.

Copies of the NWI map, flood zone map, Natural Resources Conservation Service (NRCS) soils map, NHD map, and the relevant portions of the St. Louis County Soil Survey are included in Appendix A.

4.0 RESULTS

Eight (8) streams and one (1) wetland were identified in the study area during the onsite investigation on May 23 and 24, 2023, January 31, 2024, and March 20, 2024. The Ecological Resources Maps, provided in Appendix A, depict the location of the resources on an aerial photograph. Data forms and Floristic Quality Index (FQI) results are provided in Appendix B. Representative photographs are provided in Appendix C.

4.1 STREAMS

A total of eight (8) streams were identified within the study area. A summary of these streams is provided in the table below.

STREAM SUMMARY								
Stream Name	Receiving Waters	Preliminary USACE Jurisdictional Status	Stream Type	Drainage Area[1] (Sq.Mile)	MSMM[2] Assessment		Linear Feet within Study Area	Acres within Study Area
					Priority Waters	Existing Condition		
UNT 1	UNT 1 > Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	1.1	Tertiary Priority	Functionally Impaired	389.1	0.09
UNT 2	UNT 2> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.065	Tertiary Priority	Functionally Impaired	15.9	0.002
UNT 3 - Natural Portion	UNT 3> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.52	Tertiary Priority	Moderately Functional	820.4	0.19
UNT 3 - Concrete Portion	UNT 3> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.52	Tertiary Priority	Moderately Functional	1151.0	0.26
UNT 4	UNT 4> UNT 3 > Coldwater Creek	Non-Jurisdictional	Ephemeral	<0.01	Tertiary Priority	Functionally Impaired	60.7	0.005
UNT 5	UNT 5> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.04	Tertiary Priority	Functionally Impaired	367.9	0.03
UNT 6	UNT 6> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Intermittent	0.06	Tertiary Priority	Functionally Impaired	32.6	0.002
UNT 7	UNT 7> Coldwater Creek	Non-Jurisdictional	Ephemeral	0.04	Tertiary Priority	Functionally Impaired	1694.2	0.14
Coldwater Creek	Coldwater Creek> Missouri River	Federally Jurisdictional (a)(3)(i)	Perennial	8.6	Seconday Priority	Moderately Functional	2827.0	2.98
						Total	7358.8	3.70

[1]As calculated by USGS Stream Stats at most downstream location within the study area.
[2]MSMM - Missouri Stream Mitigation Method

As indicated in the table above, UNT 1 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, UNT 1 has predominantly gravel and sand substrate with flowing water observed during the site visit. The UNT 1 riparian buffer consists of scrub-shrub vegetation on both sides of the stream. Nuisance odors and oil sheens were observed in the stream. Approximately 347.7 linear feet of UNT 1 is captured by culverts through the study area.

UNT 2 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, UNT 2 is predominantly artificial concrete substrate with flowing water observed during the site visit. UNT 2 originates from a concrete culvert and has nuisance algae throughout. There is no riparian buffer on either side of UNT 2.

UNT 3 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. UNT 3 was evaluated in two sections, UNT 3 – Natural Portion and UNT 3 – Channelized Portion, due to differing geomorphology characteristics in these sections. Within the study area, UNT 3 – Natural Portion has predominantly cobble and silt substrate with slow flowing water within the study area. UNT 3 – Concrete Portion has predominately artificial concrete substrate with slow flowing water within the study area. The UNT 3 – Natural Portion and the UNT 3-Concrete Portion riparian buffers consist of scrub-shrub vegetation with scattered immature trees on both sides of the stream. Nuisance odors, nuisance algae, litter, and oil sheens were observed in both sections of the stream. Foam and minnows were observed in the UNT 3 - Natural Portion. Approximately 413.9 linear feet of UNT 3 – Natural Portion are captured by culverts through the study area.

UNT 4 is an ephemeral tributary, which flows through a detention basin into SF 7, into a detention basin inlet, which flows to UNT 3, which flows to Coldwater Creek and ultimately the Missouri River, a TNW. UNT 4 is likely non-jurisdictional based on its ephemeral flow. Within the study area, UNT 4 has predominantly leaf pack and fine detritus substrate with slow flowing water observed during the site visit. UNT 4 is located within a detention basin with a mowed grass vegetation buffer on both sides of the stream. Nuisance algae and litter were observed within the stream.

UNT 5 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. There are narrowleaf cattails in the stream with flowing water observed during the site visit. Within the study area, UNT 5 has predominantly silt and fine detritus substrate. The UNT 5 buffer consists of scrub-shrub vegetation with scattered immature trees within the upstream portion of the stream and a mown grass buffer along both sides of the stream within the downstream portion of the stream. Nuisance algae, oil sheen, and litter were observed in the stream.

UNT 6 is an intermittent tributary, which originates at an existing culvert outlet and flows into two existing culvert inlets, which ultimately flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. SF 9 drains into UNT 6. There are narrowleaf

cattails in the stream with slow flowing water observed during the site visit. Within the study area, UNT 6 has predominantly gravel substrate. The UNT 6 buffer consists of upland vegetation and mowed grass vegetation on both sides of the stream. Foam and litter were observed in the stream.

UNT 7 is an ephemeral tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW. UNT 7 is likely non-jurisdictional based on its ephemeral flow. There are narrowleaf cattails in the stream with standing water with scattered dry spots observed during the site visit. Within the study area, UNT 7 has predominantly silt and fine detritus substrate. The UNT 7 buffer consists of mostly mowed grass vegetation and scrub-shrub vegetation in the upstream area on both sides of the stream. Litter was observed in the stream.

Coldwater Creek is a perennial tributary of the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, Coldwater Creek is predominantly cobble and hardpan substrate. There are narrowleaf cattails in the stream with flowing water observed during the site visit. The riparian buffer is scrub-shrub vegetation with broken concrete on both sides of the stream. The STL airfield is located beyond the riparian buffer on both sides of the stream. Approximately 241.8 linear feet of Coldwater Creek are captured by culverts through the study area. Within the study area, Coldwater Creek flows into existing double culverts of unknown length on the airport property, which then outlet off airport property and outside the study area.

The Water Resources Maps in Appendix A show the location of the streams in the study area. Representative photographs are provided in Appendix C, and the Stream Stats reports for UNT 1, UNT 2, UNT 3, UNT 6, UNT 7, and Coldwater Creek are provided in Appendix B. The remaining streams drainage areas were estimated based on inferred watershed areas using the USGS topographic map.

4.2 WETLANDS

One (1) wetland was identified in the study area. A summary of the wetland data is provided in the table below. Details on the soil, hydrology and dominant vegetation for each wetland are provided on the Routine Wetland Determination Data Forms included in Appendix B, along with the floristic quality assessment data. Representative photographs of the wetland are provided in Appendix C.

Additional areas exhibiting wetland characteristics were identified in the study area, but were completely confined to the limits of the ordinary high water mark of the streams and therefore were not evaluated as wetlands.

WETLAND SUMMARY									
Wetland ID	Location	Connection to Downstream TNW	Preliminary USACE Jurisdictional Status	Wetland Type	MWMM		Floristic Quality Assessment		Acres within Study Area
					Aquatic Resource Type	Existing Condition	FQI / Mean C Value	Functional Classificaiton	
Wetland A	Located in western portion of the study area	Wetland A> Drainage swale> Catch basin> Coldwater Creek	Possibly exempt	Emergent	Type C	Impaired	4/2.3	Severely degraded	0.01
								TOTAL	0.01
MWMM - Missouri Wetland Mitigation Method									

WETLAND A

Wetland A is an incidental emergent wetland feature located within a constructed roadside ditch in the western portion of the study area. The roadside ditch appears to have been constructed in an upland area in non-hydric soils. The wetland boundary is confined to the original constructed ditch configuration. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. This wetland drained northeast to a swale that drains into a catch basin which eventually drains into Coldwater Creek, indicating the wetland has an ultimate connection to the Missouri River, a TNW. Although Wetland A has an ultimate connection to a TNW, it is possibly exempt from federal regulation because it is an incidental feature in a constructed roadside ditch. The final determination of jurisdictional waters is ultimately made by the USACE.

A Floristic Quality Index (FQI) was completed for Wetland A. The native mean C-value for Wetland A is 2.3, indicating that the plant community is considered severely degraded. The native FQI for Wetland A is 4, indicating that the plant community is severely degraded.

INCIDENTAL WETLAND FEATURES WITHIN CONSTRUCTED STORMWATER BASINS

Two incidental wetland features within constructed stormwater detention basins were identified within the study area.

One basin (photolog #29-30), located in the western portion of the study area, was constructed in the late 1980s-mid 1990s in what appears to have been upland area in non-hydric soils. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. This feature drained south into a pipe that eventually drains into Coldwater Creek, indicating the feature has an ultimate connection to the Missouri River, a TNW. Although the feature has an ultimate connection to a TNW, it is non-jurisdictional because it is an incidental feature in a constructed stormwater basin.

Another basin (photolog #88-90), located in the eastern portion of the study area, was constructed in the late 1980s-mid 1990s in what appears to have been upland area in non-hydric soils. Based on historic aerial imagery and topographic maps, there is no evidence of

historic drainage or wetland features at this location. This feature drained southwest into a pipe that eventually drains into Coldwater Creek, indicating the feature has an ultimate connection to the Missouri River, a TNW. Although the feature has an ultimate connection to a TNW, it is non-jurisdictional because it is an incidental feature in a constructed stormwater basin.

UPLAND DATA POINT B2

Upland point B2 was taken on a terrace inside of an I-70 ramp near UNT 5, to determine the presence or absence of wetlands. The vegetation was dominated by Johnson grass (*Sorghum halepense*, FAC, 20%) and giant foxtail (*Setaria faberi,* FACW, 60%) in the herbaceous layer. The vegetative community had a dominance test of >50%; therefore, the vegetation is hydrophytic. The soil at this site was loamy/clayey and failed to meet any hydric soil indicators. Wetland hydrology indicators were observed, including surface water, high water table, saturation, saturation visible on aerial imagery, and FAC-Neutral test. Only two of the three wetland criteria were met; therefore, data point B2 is not within a wetland.

4.3 OTHER SURFACE WATER RESOURCES

Sixteen (16) other surface water features (SFs) were identified in the study area. SFs 1-6 and 9-10 are constructed, cement-lined stormwater features, and are likely not federally jurisdictional. SF 7 is a vegetated, ephemeral swale feature located in a detention basin. UNT 4 flows into SF 7. SF 8 is a vegetated, ephemeral swale feature that drains Wetland A. SFs 11-13 are constructed, cement-lined stormwater features that have wetland vegetation within the feature, and are likely not federally jurisdictional. SF 14 is a riprap and gravel-lined stormwater feature and is not likely federally jurisdictional. SFs 15 and 16 are vegetated, ephemeral swale features that drain into UNT 7. All the other surface water features are likely not federally jurisdictional since they did not exhibit a continuous, defined OHWM and only carry or hold water during or for a short duration after storm events or are constructed stormwater features.

SURFACE FEATURES SUMMARY			
Feature Name	Substrate	Preliminary USACE Jurisdictional Status	Linear Feet within Study Area
SF 1	Cement	Likely not jurisdictional	7.6
SF 2	Cement	Likely not jurisdictional	49.6
SF 3	Cement	Likely not jurisdictional	23.2
SF 4	Cement	Likely not jurisdictional	26.9
SF 5	Cement	Likely not jurisdictional	40.7
SF 6	Cement	Likely not jurisdictional	5.2
SF 7	Vegetation	Likely not jurisdictional	48.0
SF 8	Vegetation	Likely not jurisdictional	73.7
SF 9	Cement	Likely not jurisdictional	434.0
SF 10	Cement	Likely not jurisdictional	47.5
SF 11	Cement	Likely not jurisdictional	307.5
SF 12	Cement	Likely not jurisdictional	625.6
SF 13	Cement	Likely not jurisdictional	47.1
SF 14	Riprap and Gravel	Likely not jurisdictional	38.6
SF 15	Vegetation	Likely not jurisdictional	72.2
SF 16	Vegetation	Likely not jurisdictional	789.2
		Total	2636.6

4.4 THREATENED & ENDANGERED SPECIES

The MDC Natural Heritage Review of the project on February 21, 2024 returned a Level Three Report, provided in Appendix D, indicating that there are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the project area. After contacting MDC for additional information, the report indicates there are records of the following federally-listed species near the project site:

- Indiana bat (*Myotis sodalis*), endangered
- Northern long-eared bat (*Myotis septentrionalis*), endangered
- Gray bat (*Myotis grisescens*), endangered
- Decurrent false aster (*Boltonia decurrens*), endangered
- Pallid sturgeon (*Scaphirhynchus albus*), endangered
- Bald eagle (*Haliaeetus leucocephalus*), protected

Up to 3.9 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout disturbed areas on airport property and road right-of-way, and the majority of trees are saplings. Sixteen (16) trees were identified as suitable bat roost trees (photolog #83-84) for the Indiana bat and northern long-eared bat. All 16 potential roost trees were river birch (*Betula nigra*) trees exhibiting peeling bark. The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, it is expected that this project may affect, but is not likely to adversely affect the Indiana and northern long-eared bats.

No large rivers or suitable habitat for the gray bat, decurrent false aster, pallid sturgeon, or bald eagle are within the project area; therefore, the project is expected to have no impact on these state-listed species near the project site.

According to the USFWS IPaC Official Species list generated February 21, 2024 (Consultation Code: 2023-00826719 Appendix D), the project is located within the known or historic range of the following federally endangered or threatened species:

- Gray bat (*Myotis grisescens*), endangered
- Indiana bat (*Myotis sodalis*), endangered
- Northern long-eared bat (*Myotis septentrionalis*), threatened
- Tricolored bat (*Perimyotis subflavus)*, proposed endangered
- Decurrent false aster (*Boltonia decurrens*), threatened

The project is not located within any designated critical habitat areas.

Gray bat (*Myotis grisescens*): No caves are known to be present in the project area, so suitable habitat is not expected to be available in the project area. Therefore, this project is expected to have no effect on the gray bat.

Indiana bat (*Myotis sodalis*), and Northern long-eared bat (*Myotis septentrionalis*): Suitable habitat for these species was identified as any tree over 3 inches DBH with peeling bark or cavities that would provide shelter and allow the bat to move around the tree for thermoregulation. Up to 3.9 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout disturbed areas on airport property and road right-of-way, and the majority of trees are saplings. Sixteen (16) trees were identified as suitable bat roost trees (photolog #83-84). The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, it is expected that this project may affect, but is not likely to adversely affect the Indiana and northern long-eared bats.

Tricolored bat (*Perimyotis subflavus)*: Suitable habitat for this species was identified as live and dead leaf clusters of live or recently dead deciduous hardwood trees. Up to 3.9 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout disturbed areas on airport property and road right-of-way, and the majority of trees are saplings. Sixteen (16) trees were identified as suitable bat roost trees (photolog #83-84). The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, it is expected that this project may affect, but is not likely to adversely affect the tricolored bat.

Decurrent false aster (*Boltonia decurrens*): Suitable habitat for this species was identified as moist, sandy floodplains or prairie wetland areas. The project is within a highly developed area, consisting of upland, mowed lawn, and commercial areas. The identified wetland does not contain the appropriate wet-prairie habitat and are of degraded, poor quality. Therefore, this project is expected to have no effect on decurrent false aster.

Migratory Bird Treaty Act

No bridges will be demolished or impacted during this project; therefore, no swallows or other bird species protected by the Migratory Bird Treaty Act (MBTA) are expected to be impacted by this project.

5.0 CONCLUSIONS

A total of six (6) intermittent and perennial streams were identified within the study area and are likely considered jurisdictional waters of the U.S. due to their hydrologic connectivity to the Missouri River, a TNW. Two (2) ephemeral streams were identified within the study area and are likely non-jurisdictional based on their ephemeral flow. One (1) possibly exempt, severely degraded wetland totaling 0.01 acre was identified within the study area. Four (4) swales totaling 983.1 linear feet, and twelve (12) drainage ditches totaling 1,653.5 linear feet were identified within the study area. The swales and ditches did not exhibit a continuous, defined OHWM and only carry or hold water during or for a short duration after storm events or are constructed stormwater features and are likely not considered jurisdictional waters of the U.S.

Wetlands and other surface water resources that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers.

Suitable habitat for the federally-listed Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) are present within the project area. Any proposed work on-site should avoid impacts to these species or their habitat. The project is anticipated to result in up to 3.9 acres of tree clearing. Consultation with USFWS under Section 7 of the Endangered Species Act will be required if impacts to these species or their habitats occur.

6.0 REFERENCES

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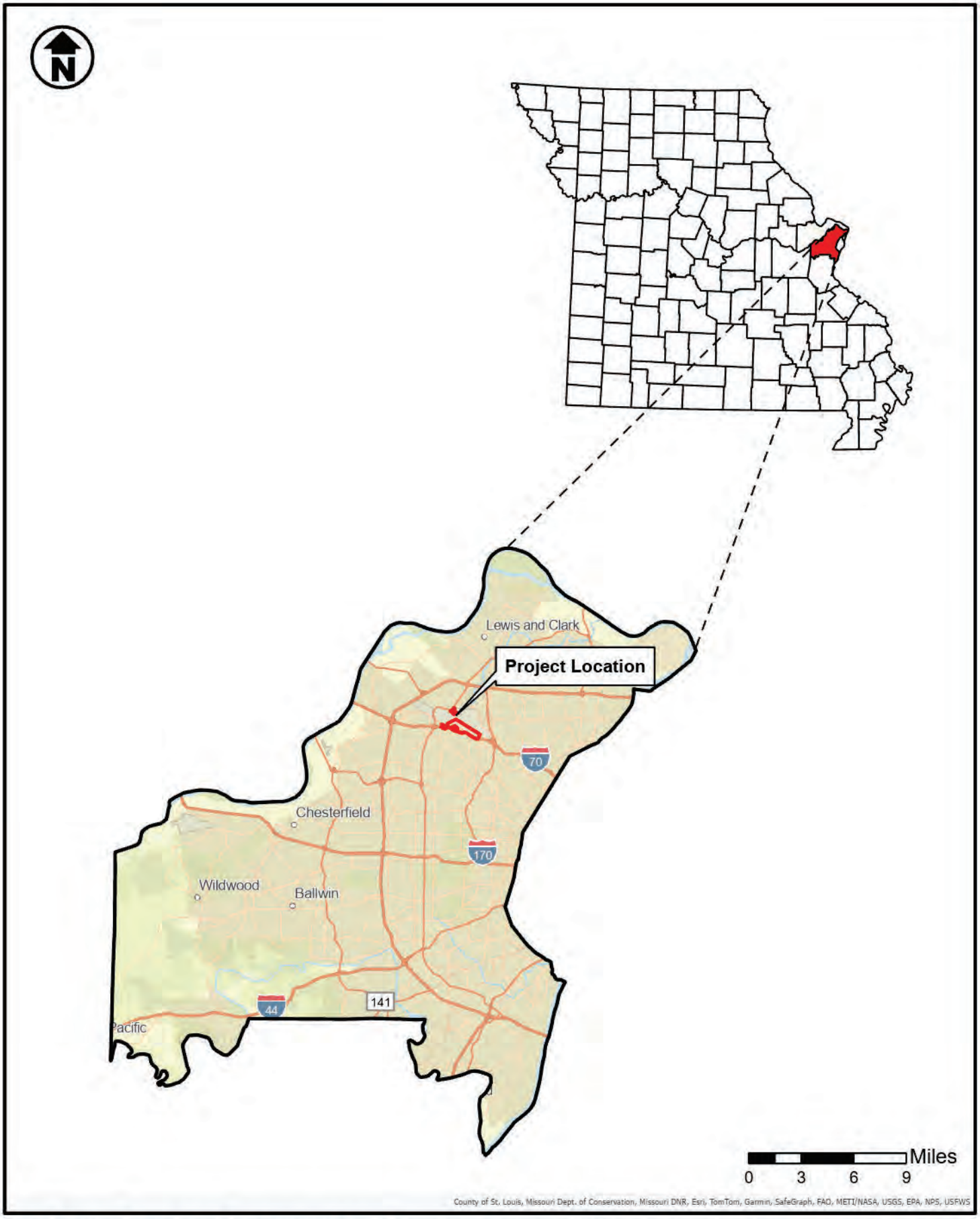
- Priority Watershed Listing at: https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC4PriorityWaters.pdf

Lambert International Airport – Consolidated Terminal Program

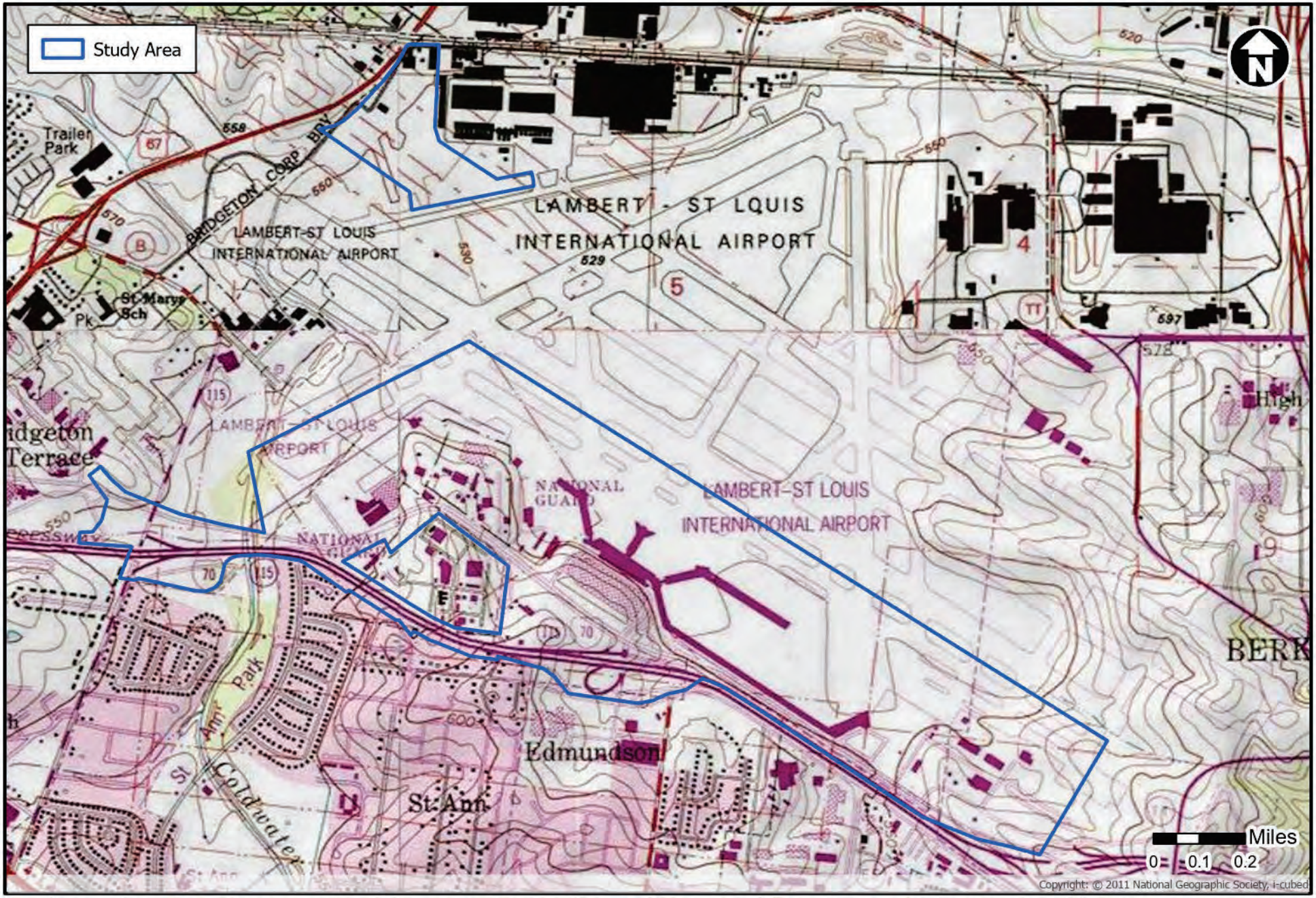
APPENDIX A: PROJECT MAPPING



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

County Location Map

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

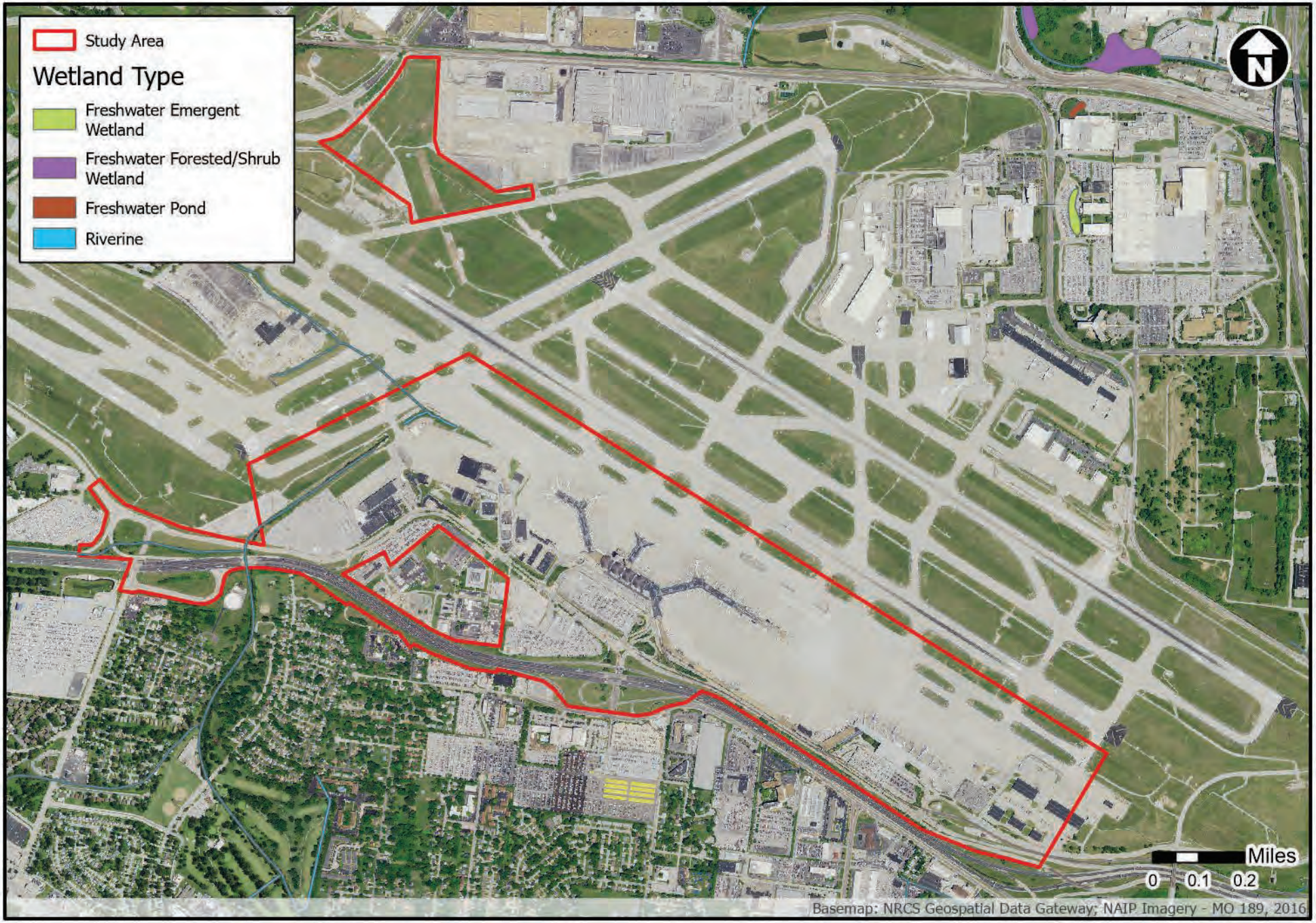
USGS Topographic Map, St. Charles, Creve Coeur, Florissant, and Clayton, Mo., Quadrangles

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

Aerial Map

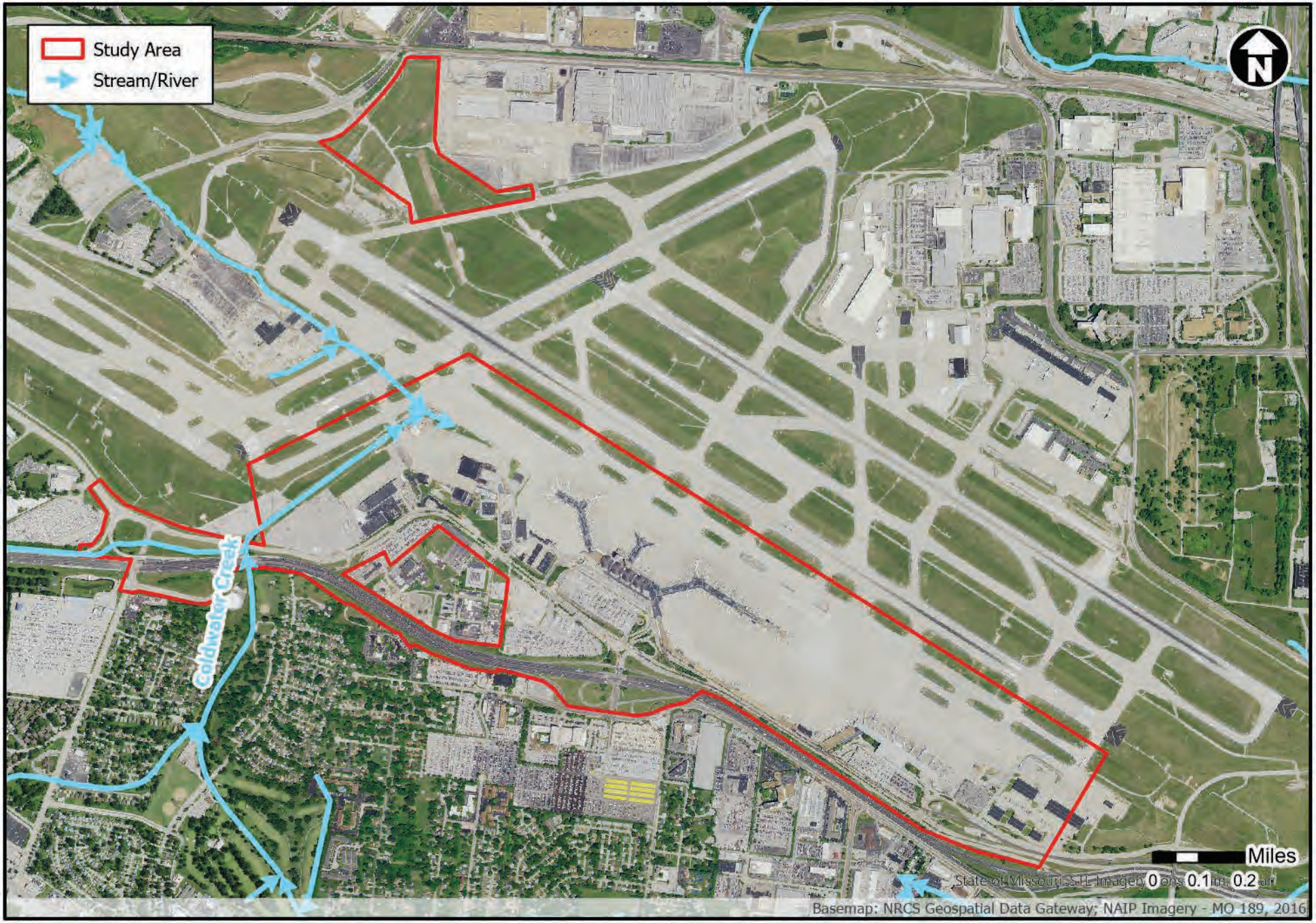
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

National Wetlands Inventory

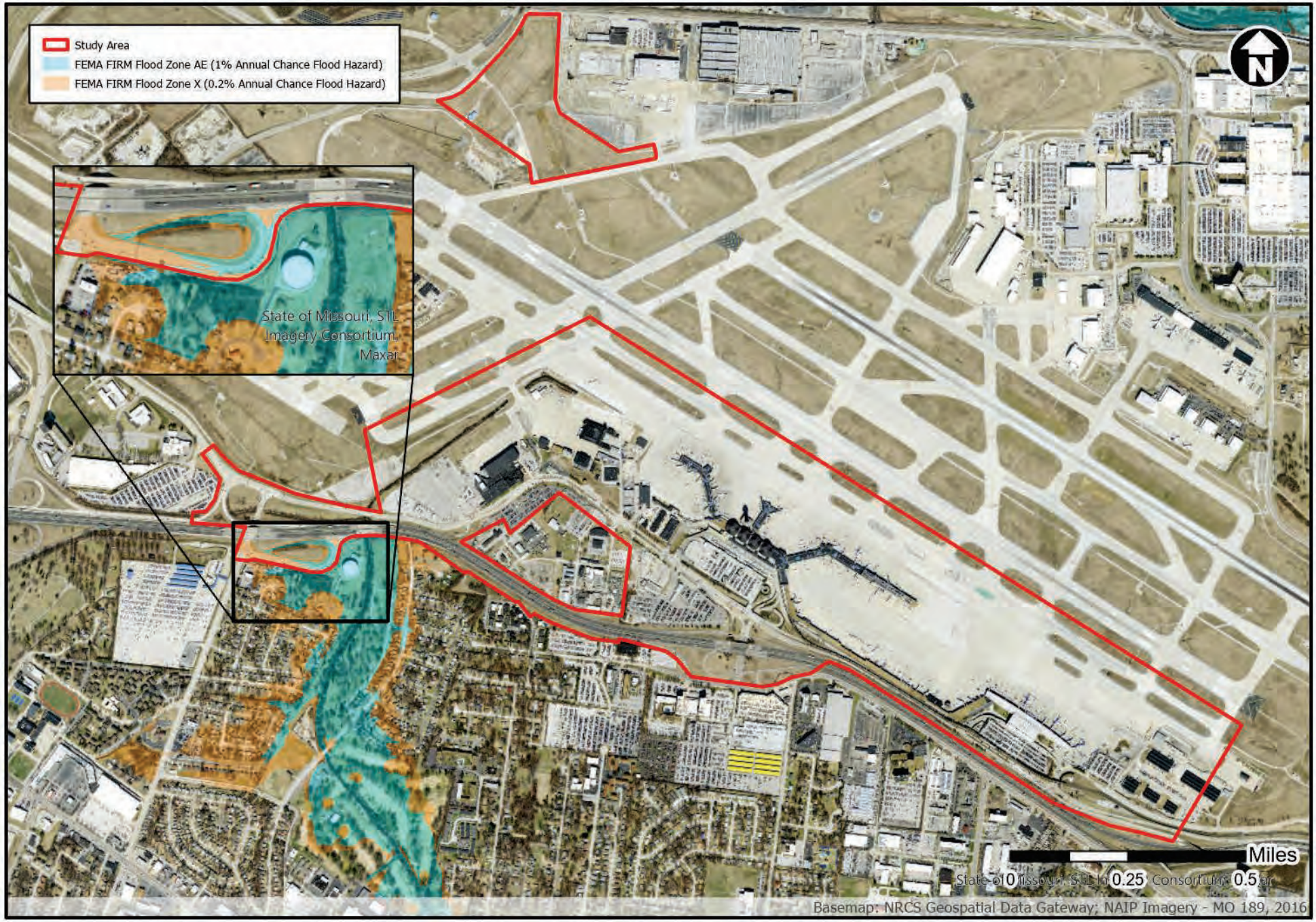
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

National Hydrography Dataset

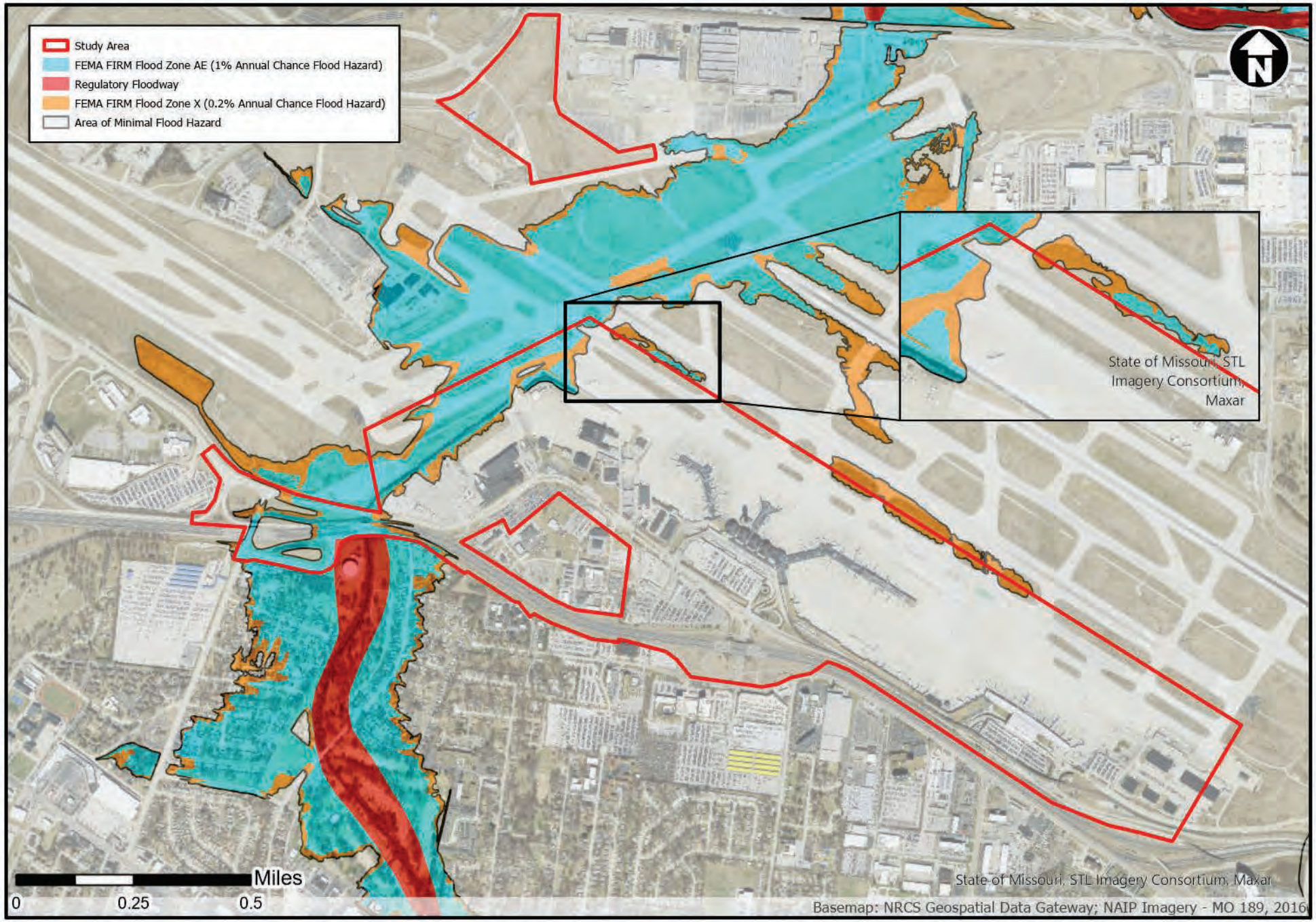
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

FEMA/FIRM Map

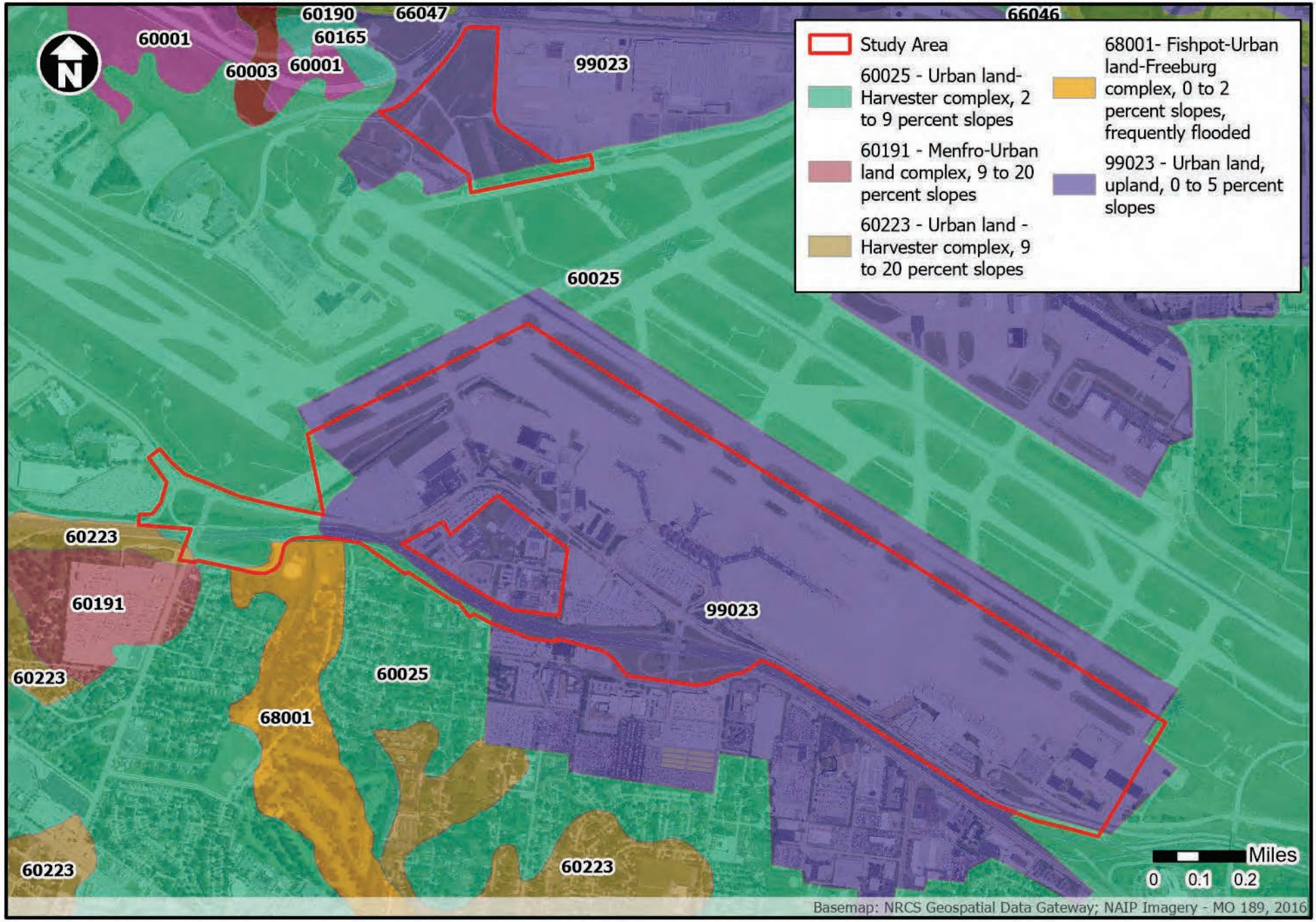
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

Updated Preliminary Floodplain Map

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

NRCS Soils Map

CMT
Crawford, Murphy & Tilly

Map Unit Description (Brief, Generated)

St. Louis County and St. Louis City, Missouri

[Minor map unit components are excluded from this report]

Map unit: 60025 - Urban land-Harvester complex, 2 to 9 percent slopes

Component: Urban land (55%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Harvester (40%)

The Harvester component makes up 40 percent of the map unit. Slopes are 2 to 9 percent. This component is on interfluves, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 34 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F115XB061MO Anthropic Deep Loess Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: 60191 - Menfro-Urban land complex, 9 to 20 percent slopes

Component: Menfro (50%)

The Menfro component makes up 50 percent of the map unit. Slopes are 9 to 20 percent. This component is on hillslopes, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This component is in the F115XB043MO Deep Loess Exposed Backslope Woodland, Deep Loess Protected Backslope Forest ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Urban land (40%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: 60223 - Urban land-Harvester complex, 9 to 20 percent slopes

Component: Urban land (60%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map Unit Description (Brief, Generated)

St. Louis County and St. Louis City, Missouri

Map unit: 60223 - Urban land-Harvester complex, 9 to 20 percent slopes

Component: Harvester (30%)

The Harvester component makes up 30 percent of the map unit. Slopes are 9 to 20 percent. This component is on hillslopes, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 34 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F115XB061MO Anthropic Deep Loess Upland ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Map unit: 68001 - Fishpot-Urban land-Freeburg complex, 0 to 2 percent slopes, frequently flooded

Component: Fishpot (45%)

The Fishpot component makes up 45 percent of the map unit. Slopes are 0 to 2 percent. This component is on leveled land on anthroscape on river valleys, stream terraces on river valleys, flood plains on river valleys. The parent material consists of human-transported material over alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F115XB060MO Anthropic Wet Terrace ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Urban land (25%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Freeburg (20%)

The Freeburg component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood-plain steps on river valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 17 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F115XB025MO Wet Terrace Forest ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: 99023 - Urban land, upland, 0 to 5 percent slopes

Component: Urban land (100%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map Unit Description (Brief, Generated)

No soils within the project area are hydric, hence the hydric soil report was blank

uis City, Missouri

xcluded from this report]

Map unit: 60025 - Urban land-Harvester complex, 2 to 9 percent slopes

Component: Urban land (55%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Harvester (40%)

The Harvester component makes up 40 percent of the map unit. Slopes are 2 to 9 percent. This component is on interfluves, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 34 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F115XB061MO Anthropic Deep Loess Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map unit: 60191 - Menfro-Urban land complex, 9 to 20 percent slopes

Component: Menfro (50%)

The Menfro component makes up 50 percent of the map unit. Slopes are 9 to 20 percent. This component is on hillslopes, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This component is in the F115XB043MO Deep Loess Exposed Backslope Woodland, Deep Loess Protected Backslope Forest ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Urban land (40%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map unit: 60223 - Urban land-Harvester complex, 9 to 20 percent slopes

Component: Urban land (60%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Map Unit Description (Brief, Generated)

St. Louis County and St. Louis City, Missouri

Map unit: 60223 - Urban land-Harvester complex, 9 to 20 percent slopes

Component: Harvester (30%)

The Harvester component makes up 30 percent of the map unit. Slopes are 9 to 20 percent. This component is on hillslopes, hills. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 34 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 1 percent. This component is in the F115XB061MO Anthropic Deep Loess Upland ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Map unit: 68001 - Fishpot-Urban land-Freeburg complex, 0 to 2 percent slopes, frequently flooded

Component: Fishpot (45%)

The Fishpot component makes up 45 percent of the map unit. Slopes are 0 to 2 percent. This component is on leveled land on anthroscape on river valleys, stream terraces on river valleys, flood plains on river valleys. The parent material consists of human-transported material over alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 26 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F115XB060MO Anthropic Wet Terrace ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Urban land (25%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

Component: Freeburg (20%)

The Freeburg component makes up 20 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood-plain steps on river valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 17 inches during January, February, March, April, May, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F115XB025MO Wet Terrace Forest ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map unit: 99023 - Urban land, upland, 0 to 5 percent slopes

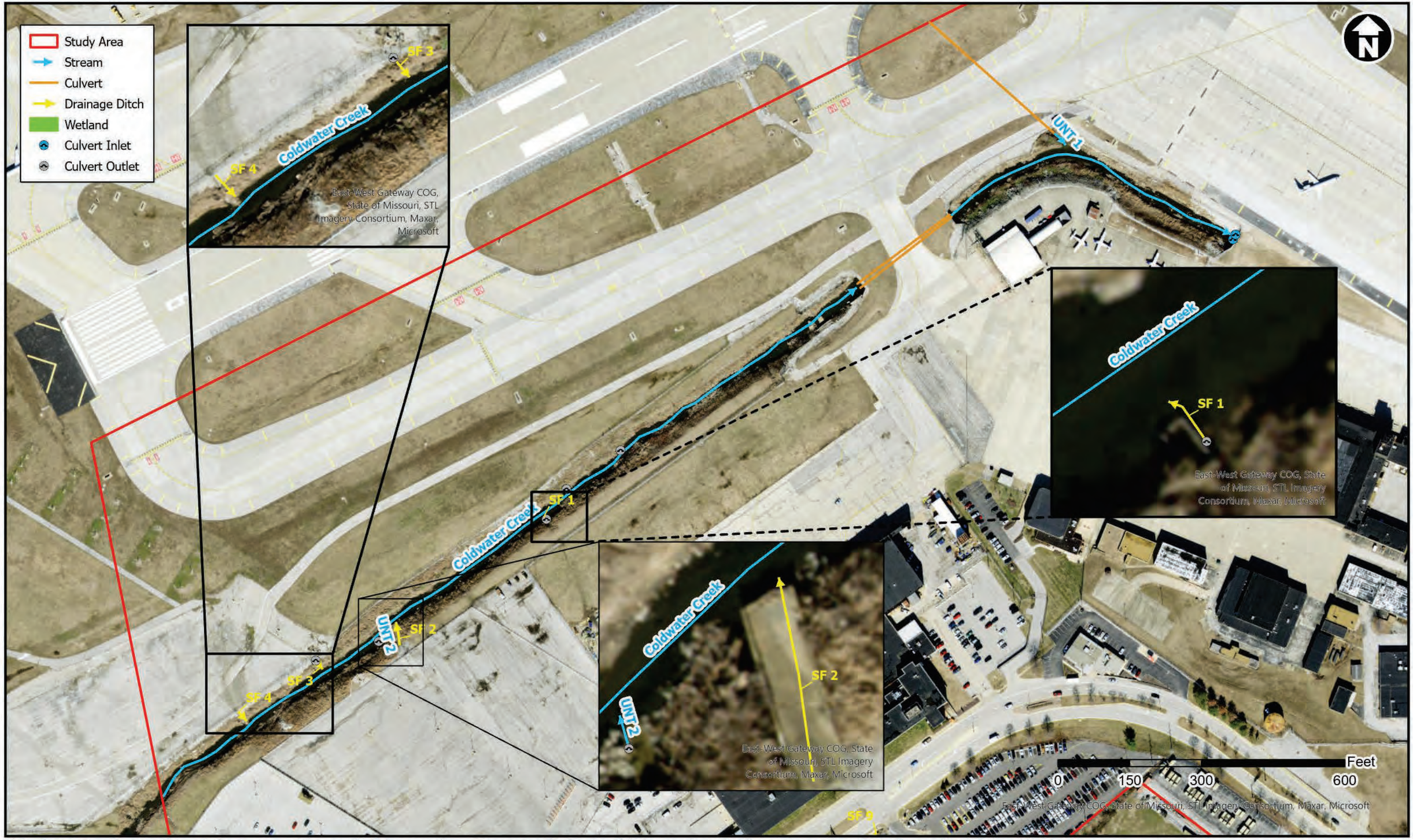
Component: Urban land (100%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources Overall Map

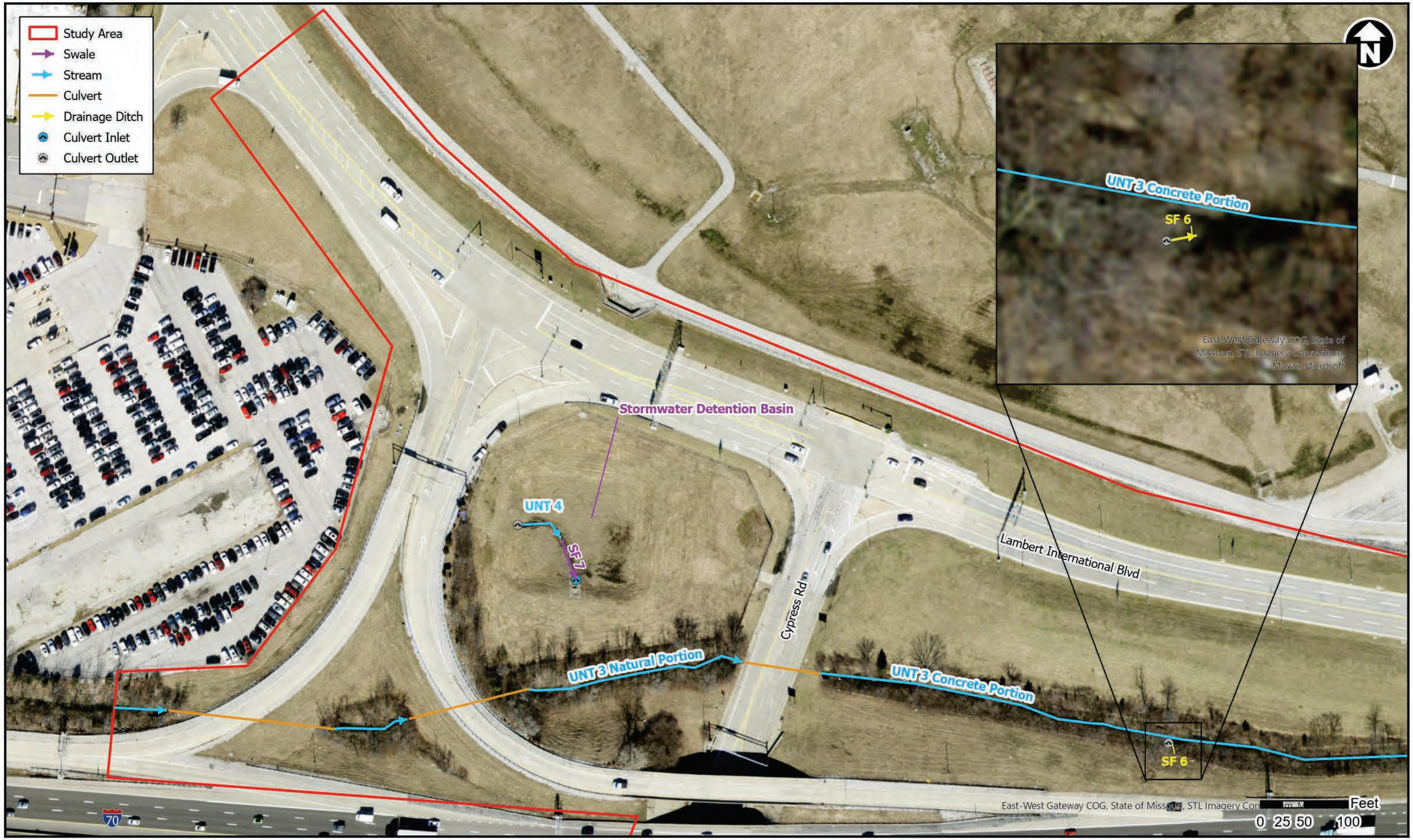
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (1 of 7)

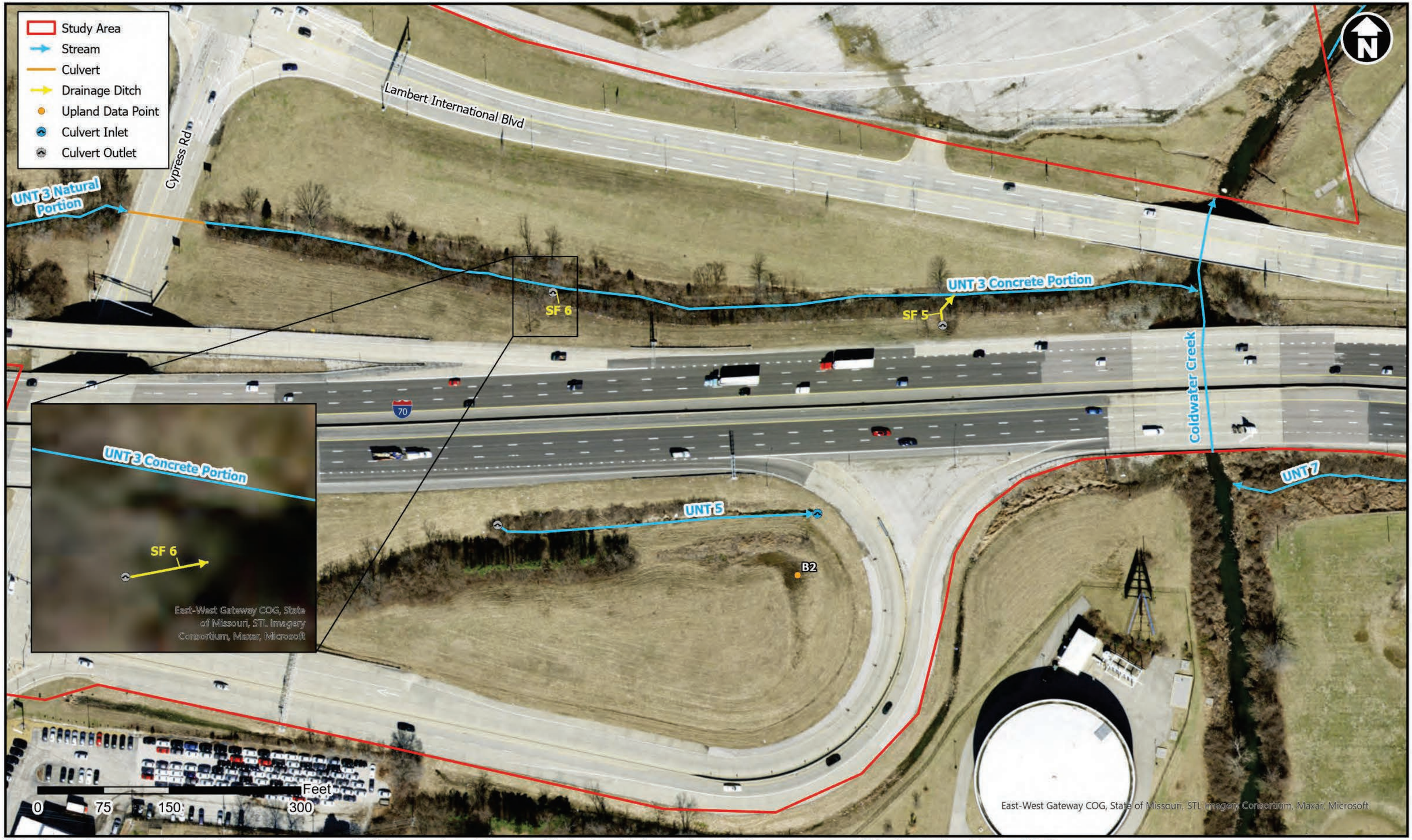
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (2 of 7)

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (3 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (4 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (5 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (6 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (7 of 7)

CMT
Crawford, Murphy & Tilly

Lambert International Airport – Consolidated Terminal Program

APPENDIX B: DATA FORMS

CMT

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Consolidated Terminal Program City/County: St. Louis County Sampling Date: 5/23/2023

Applicant/Owner: St. Louis Lambert International Airport State: MO Sampling Point: A1 WET

Investigator(s): Alex Zelles and Meghan Oh, CMT Inc. Section, Township, Range: Land Grant 01196

Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave

Slope (%): 5 Lat: 38.736257 Long: -90.35148 Datum: NAD 83

Soil Map Unit Name: 99023 - Urban land, upland, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:
Swale between highway on ramp.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	45	Yes	OBL
2. *Carex vulpinoidea*	45	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	45	x 2 =	90
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		135 (B)

Prevalence Index = B/A = 1.50

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: A1 WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	40	10YR 4/6	10	C	PL/M	Mucky Loam/Clay	
4-8	10YR 3/1	40	10YR 4/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations
4-8	10YR 4/2	40					Mucky Loam/Clay	
8-12	10YR 4/2	60	10YR 4/6	40	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- X Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Concrete

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland A drained northeast to a swale that drains into a catch basin which eventually flows into Coldwater Creek

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Consolidated Terminal Program | City/County: St. Louis County | Sampling Date: 5/23/2023
Applicant/Owner: St. Louis Lambert International Airport | State: MO | Sampling Point: A2 UPL
Investigator(s): Alex Zelles and Meghan Oh, CMT Inc. | Section, Township, Range: Land Grant 01196
Landform (hillside, terrace, etc.): Roadside Ditch | Local relief (concave, convex, none): Concave
Slope (%): 5 | Lat: 38.736309 | Long: -90.351585 | Datum: NAD 83
Soil Map Unit Name: 99023 - Urban land, upland, 0 to 5 percent slopes | NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? Yes ____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1. *Lonicera maackii*	10	Yes	UPL
2.			
3.			
4.			
5.			
	10 =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Carex festucacea*	50	Yes	FACW
2. *Poa pratensis*	50	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1. *Vitis aestivalis*	5	Yes	FACU
2.			
	5 =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	10	x 5 =	50
Column Totals:	115 (A)		320 (B)

Prevalence Index = B/A = 2.78

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
____ 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: A2 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	40	10YR 4/6	10	C	PL/M	Mucky Loam/Clay	
4-8	10YR 3/1	40	10YR 4/6	20	C	M	Mucky Loam/Clay	Prominent redox concentrations
4-8	10YR 4/2	40					Mucky Loam/Clay	
8-12	10YR 4/2	60	10YR 4/6	40	C	M	Mucky Loam/Clay	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- X Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Concrete

Depth (inches): 12

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Consolidated Terminal Program City/County: St. Louis County Sampling Date: 1/31/2024

Applicant/Owner: St. Louis Lambert International Airport State: MO Sampling Point: B2 UPL

Investigator(s): Meghan Oh, CMT Inc. Section, Township, Range: Land Grant 01196

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave

Slope (%): 2 Lat: 38.742532 Long: -90.382726 Datum: NAD 83

Soil Map Unit Name: 60223 - Urban land - Harvester complex, 9 to 20 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Mowed, non-growing season

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: 5)			
1. *Setaria faberi*	60	Yes	FACW
2. *Sorghum halepense*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	____ =Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	60	x 2 =	120
FAC species	20	x 3 =	60
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		180 (B)

Prevalence Index = B/A = 2.25

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
____ 3 - Prevalence Index is ≤3.0[1]
____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: B2 UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	Loam and gravel
3-7	10YR 6/1	100					Loamy/Clayey	Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Gravel/Concrete

Depth (inches): 7

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Checked four locations, all the same.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1		
Water Table Present?	Yes X	No ___	Depth (inches): 0		
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0	**Wetland Hydrology Present?**	**Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Inventory Assessment

Edit This Inventory | Download Report | Done

Wetland A

» Date & Location:

2023-05-23
STL - CTP
St. Louis
Missouri, Missouri, United States

» FQA Database:

Region: **Missouri**
Year Published: **2015**
Description:
Ladd, D. and J.R. Thomas. 2015. Ecological Checklist of the Missouri Flora for Floristic Quality Assessment. Phytoneuron 2015-12: 1-274

» Details:

Practitioner: **AMZ & MKO**
Latitude: 38.736257
Longitude: -90.35148
Weather Notes:
Duration Notes:
Community Type Notes:
Other Notes:
This assessment is **private** (viewable only by you).

» Conservatism-Based Metrics:

Total Mean C: **1.8**
Native Mean C: **2.3**
Total FQI: **3.6**
Native FQI: **4**
Adjusted FQI: **19.9**
% C value 0: **50%**
% C value 1-3: **25%**
% C value 4-6: **25%**
% C value 7-10: **0%**
Native Tree Mean C: **n/a**
Native Shrub Mean C: **n/a**

» Species Richness:

Total Species: **4**
Native Species: **3 (75%)**
Non-native Species: **1 (25%)**

» Species Wetness:

Mean Wetness: **-2**
Native Mean Wetness: **-2.7**

» Physiognomy Metrics:

Tree: **0 (0%)**
Shrub: **0 (0%)**
Vine: **0 (0%)**
Forb: **1 (25%)**
Grass: **2 (50%)**
Sedge: **1 (25%)**
Rush: **0 (0%)**
Fern: **0 (0%)**
Bryophyte: **0 (0%)**

» Duration Metrics:

Annual: **0 (0%)**
Perennial: **4 (100%)**
Biennial: **0 (0%)**

Native Annual: **0 (0%)**
Native Perennial: **3 (75%)**
Native Biennial: **0 (0%)**

Native Herbaceous Mean
C: **2.3**

» Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Carex vulpinoidea	Cyperaceae	CXVULP	native	3	-3	sedge	perennial	fox sedge
Festuca arundinacea	Poaceae	FESARU	non-native	0	0	grass	perennial	tall fescue
Hordeum jubatum	Poaceae	HORJUB	native	0	0	grass	perennial	squirrel-tail grass
Juncus effusus subsp. solutus	Juncaceae	JUNEFF	native	4	-5	forb	perennial	common rush

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 43.5

Stream & Location: UNT 1 / St. Louis Lambert International Airport **RM:** _ _ _._ **Date:** 5 / 23 / 23

Scorers Full Name & Affiliation: Alex Zelles, CMT Inc.

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 38 . 74791 / -90 . 37403 Office verified location ☑

1] SUBSTRATE

Check *ONLY* **Two** substrate *TYPE BOXES*; estimate % or note every type present

Check ONE (*Or 2 & average*)

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]	0%	0%	☐ ☐ HARDPAN [4]	0%	0%
☐ ☐ BOULDER [9]	0%	5%	☐ ☐ DETRITUS [3]	5%	0%
☐ ☐ COBBLE [8]	0%	0%	☐ ☐ MUCK [2]	0%	0%
☑ ☐ GRAVEL [7]	35%	30%	☐ ☐ SILT [2]	30%	30%
☐ ☑ SAND [6]	30%	35%	☐ ☐ ARTIFICIAL [0]	0%	0%
☐ ☐ BEDROCK [5]	0%	0%			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☑ 3 or less [0]

ORIGIN	SILT / EMBEDDEDNESS	QUALITY
■ LIMESTONE [1]		☐ HEAVY [-2]
☐ TILLS [1]		■ MODERATE [-1]
☐ WETLANDS [0]		☐ NORMAL [0]
☐ HARDPAN [0]		☐ FREE [1]
☐ SANDSTONE [0]		☐ EXTENSIVE [-2]
☐ RIP/RAP [0]		☐ MODERATE [-1]
☐ LACUSTURINE [0]		■ NORMAL [0]
☐ SHALE [-1]		☐ NONE [1]
☐ COAL FINES [-2]		

Substrate 13 *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]	____ POOLS > 70cm [2]	____ OXBOWS, BACKWATERS [1]	**AMOUNT** (Check ONE (*Or 2 & average*))
1 OVERHANGING VEGETATION [1]	____ ROOTWADS [1]	____ AQUATIC MACROPHYTES [1]	☐ EXTENSIVE >75% [11]
____ SHALLOWS (IN SLOW WATER) [1]	____ BOULDERS [1]	____ LOGS OR WOODY DEBRIS [1]	☐ MODERATE 25-75% [7]
____ ROOTMATS [1]			■ SPARSE 5-<25% [3]
			☐ NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20 5.0

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	■ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	■ RECOVERING [3]	☐ LOW [1]
■ NONE [1]	■ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

Channel Maximum 20 7.0

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for *EACH BANK* (*Or 2 per bank & average*)

River right looking downstream

EROSION (L R)	RIPARIAN WIDTH (L R)	FLOOD PLAIN QUALITY (L R)	(L R)
☐ ☐ NONE / LITTLE [3]	☐ ☐ WIDE > 50m [4]	☐ ☐ FOREST, SWAMP [3]	☐ ☐ CONSERVATION TILLAGE [1]
☑ ■ MODERATE [2]	☐ ☐ MODERATE 10-50m [3]	☐ ☐ SHRUB OR OLD FIELD [2]	☑ ■ URBAN OR INDUSTRIAL [0]
☐ ☐ HEAVY / SEVERE [1]	☐ ■ NARROW 5-10m [2]	☐ ☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ ☐ MINING / CONSTRUCTION [0]
	■ ☐ VERY NARROW < 5m [1]	☐ ☐ FENCED PASTURE [1]	
	☐ ☐ NONE [0]	☐ ☐ OPEN PASTURE, ROWCROP [0]	

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian Maximum 10 3.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check **ONE** (*ONLY!*))	CHANNEL WIDTH (Check ONE (*Or 2 & average*))	CURRENT VELOCITY (Check ALL that apply)	
☐ > 1m [6]	☐ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	■ SLOW [1]
■ 0.7-<1m [4]	■ POOL WIDTH = RIFFLE WIDTH [1]	☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☐ 0.4-<0.7m [2]	☐ POOL WIDTH < RIFFLE WIDTH [0]	☐ FAST [1]	☐ INTERMITTENT [-2]
☐ 0.2-<0.4m [1]		☐ MODERATE [1]	☐ EDDIES [1]
☐ < 0.2m [0]		*Indicate for reach - pools and riffles.*	

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments 26" = 0.9144 m

Pool / Current Maximum 12 6.0

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
■ BEST AREAS 5-10cm [1]	■ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	■ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		■ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments 2" = 5.08 cm

Riffle / Run Maximum 8 3.0

6] GRADIENT

(10 ft/mi)

DRAINAGE AREA
(1.13 mi²)

☐ VERY LOW - LOW [2-4]
■ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]

%POOL: 15% %GLIDE: 10%
%RUN: 60% %RIFFLE: 15%

Gradient Maximum 10 6

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE

1st -sample pass-		2nd
☐	HIGH	☐
☐	UP	☐
☒	NORMAL	☐
☐	LOW	☐
☐	DRY	☐

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

_____ meters

CLARITY

1st --sample pass--		2nd
☒	< 20 cm	☐
☐	20-<40 cm	☐
☐	40-70 cm	☐
☐	> 70 cm/ CTB	☐
☐	SECCHI DEPTH	☐

1st pass _____ cm

2nd _____ cm

CANOPY

- ☒ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

Oil sheen and odor

B] AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☒ OIL SHEEN
- ☐ TRASH / LITTER
- ☒ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

C] RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC (PRIVATE) BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

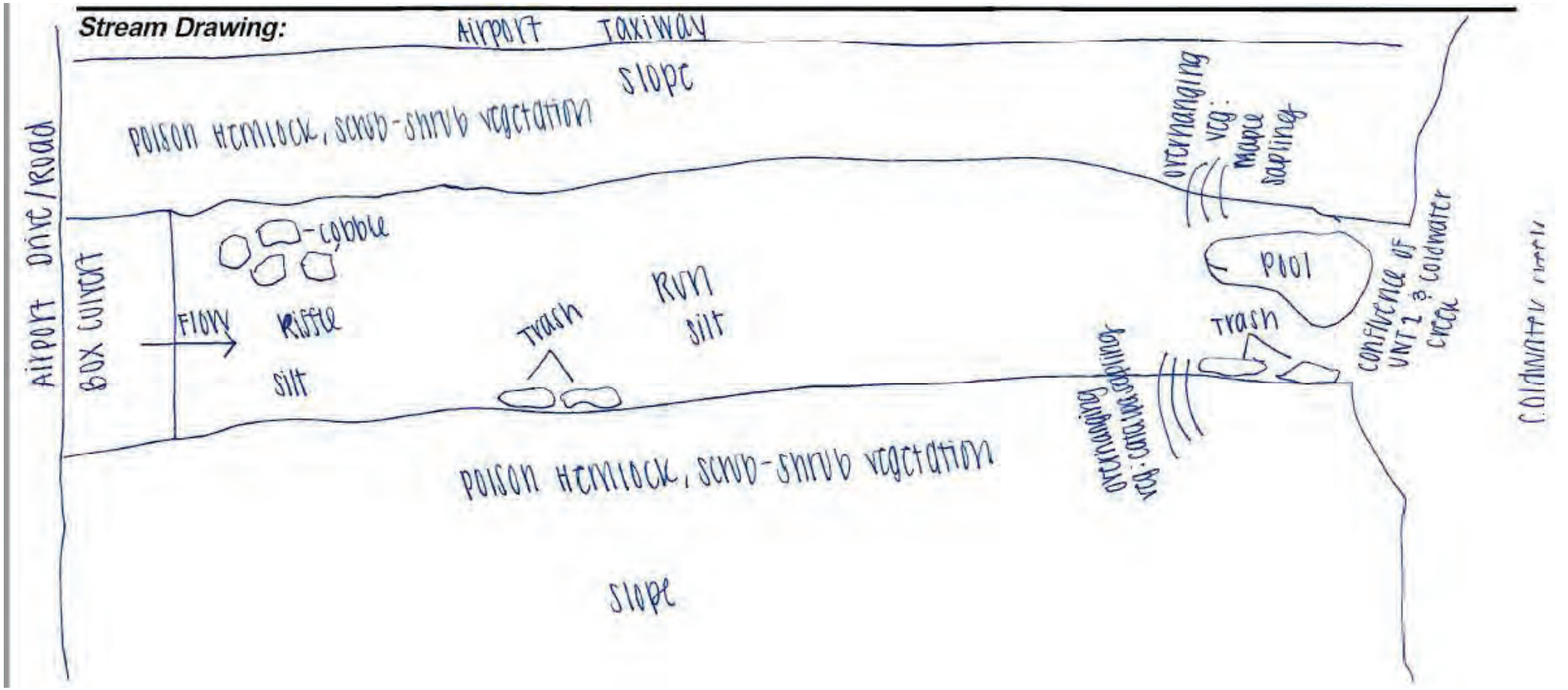
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width
- $\bar{x}$ depth
- max. depth
- $\bar{x}$ bankfull width
- bankfull $\bar{x}$ depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 17

SITE NAME/LOCATION: St. Louis Lambert International Airport

SITE NUMBER: UNT 2 | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.065

LENGTH OF STREAM REACH (ft): 17.24 | LAT: 38.745033 | LONG: 38.745033 | RIVER MILE: N/A

DATE: 5/24/2023 | SCORER: Stephanie Spence | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☑ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☑☑	ARTIFICIAL [3 pts]	100

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0 (A)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6

TOTAL NUMBER OF SUBSTRATE TYPES: 1 (B)

HHEI Metric Points

Substrate Max = 40: 7

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: 1/4" = 0.635 cm

MAXIMUM POOL DEPTH (centimeters): 0.6

Pool Depth Max = 30: 5

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: 16" = 0.4064 m

AVERAGE BANKFULL WIDTH (meters): 0.4

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Surrounded by airport

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Flows west into coldwater creek, OHWM = 7 "

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☑ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☑ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 0

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 5/17/2023 Quantity: 0.03 in

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Oil sheen, nuisance algae,

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

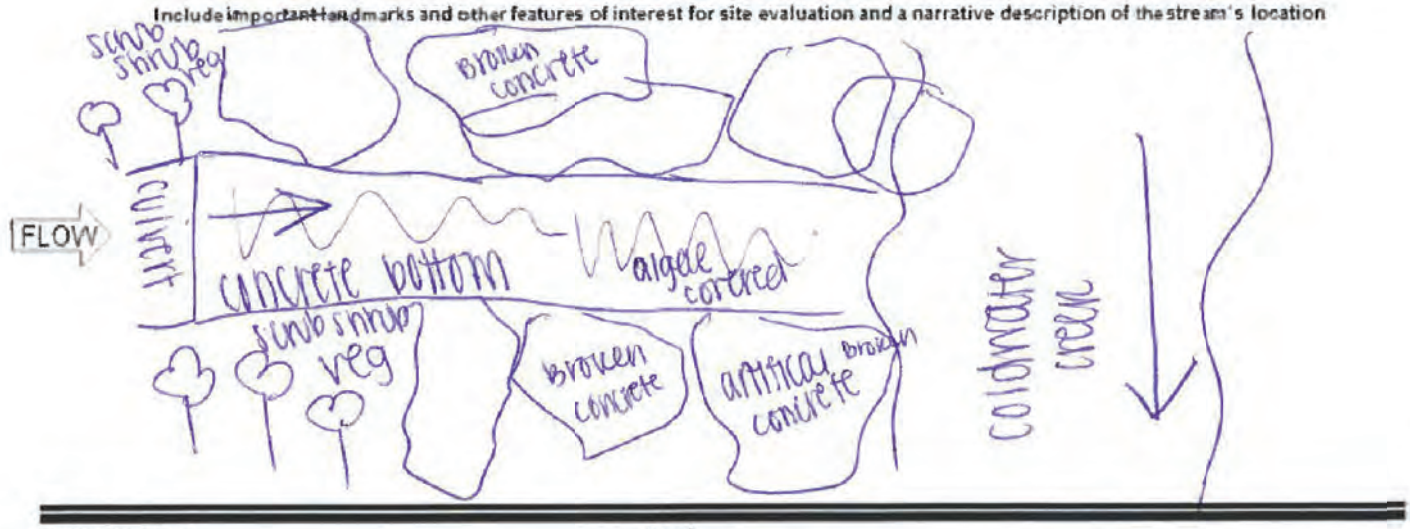
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 43

SITE NAME/LOCATION: St. Louis Lambert International Airport - UNT 3 Concrete Portion

SITE NUMBER: UNT 3 Concrete | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.52

LENGTH OF STREAM REACH (ft): 200 | LAT: 38.743416 | LONG: 90.381985 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: Stephanie Spence - CMT | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☐☐	SILT [3 pt]	20
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐☐	BEDROCK [16 pts]	0	☐☐	FINE DETRITUS [3 pts]	0
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	0
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☑☑	ARTIFICIAL [3 pts]	80

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6 | TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 8
A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 28

Pool Depth Max = 30: 30

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: 30" | AVERAGE BANKFULL WIDTH (meters): 0.

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Surrounded by detention basin and I-70

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Flow into coldwater creek.

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☑ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☑ Yes ☐ No QHEI Score 25 (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 0 ft.

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2023 Quantity: 0.24 in

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 85

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Oil sheen, nuisance algae, odor, filled with trash from highway. Overhanging honeysuckle and tree branches. 1/3 of stream had concrete bottom, 2/3rds was natural.

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

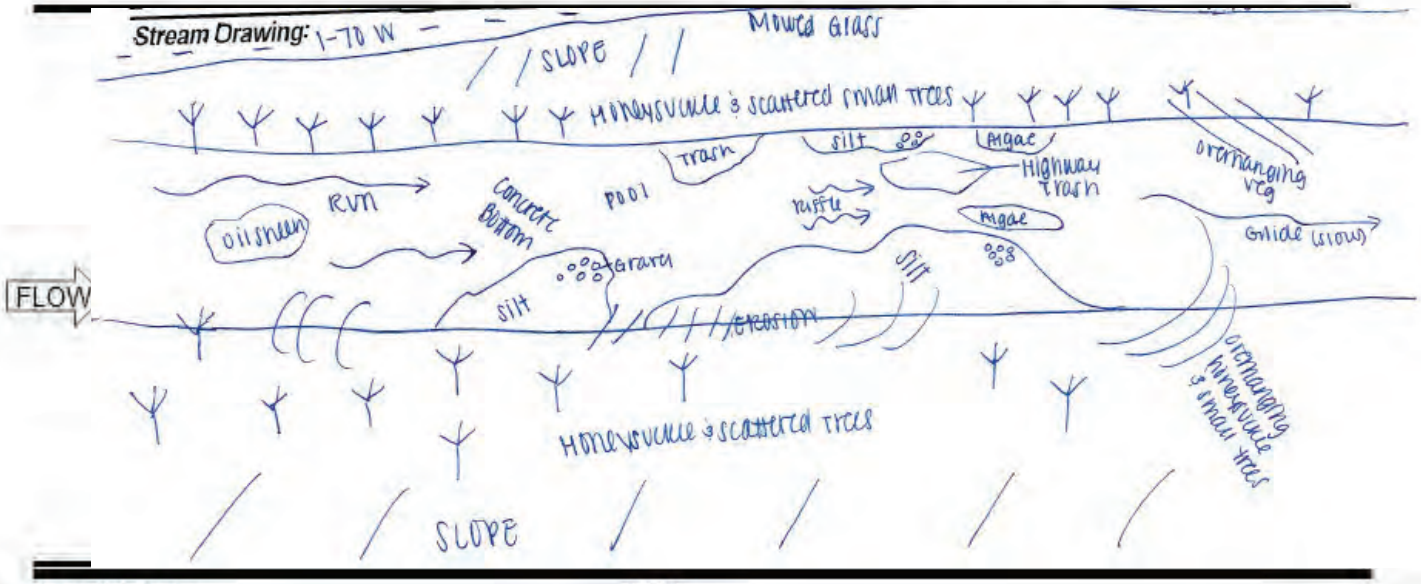
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

Stream Drawing: I-70 W



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 54

SITE NAME/LOCATION: St. Louis Lambert International Airport - UNT 3 Natural Portion

SITE NUMBER: UNT 3 Natural | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.52

LENGTH OF STREAM REACH (ft): 200 | LAT: 38.743536 | LONG: 90.384289 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: Stephanie Spence - CMT | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]	0	☑ ☐	SILT [3 pt]	30
☐ ☐	BOULDER (>256 mm) [16 pts]	0	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐ ☐	BEDROCK [16 pts]	0	☐ ☐	FINE DETRITUS [3 pts]	0
☐ ☑	COBBLE (65-256 mm) [12 pts]	40	☐ ☐	CLAY or HARDPAN [0 pt]	0
☐ ☐	GRAVEL (2-64 mm) [9 pts]	15	☐ ☐	MUCK [0 pts]	0
☐ ☐	SAND (<2 mm) [6 pts]	15	☐ ☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 40

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15 | TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points
Substrate Max = 40: 19
A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☑ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: 11 1/4 " | MAXIMUM POOL DEPTH (centimeters): 28

Pool Depth Max = 30: 30

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: 30" | AVERAGE BANKFULL WIDTH (meters): 0.

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Surrounded by detention basin and I-70

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Flow into coldwater creek.

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☑ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☑ Yes ☐ No QHEI Score 42 (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 1,139.7 ft.

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2023 Quantity: 0.24 in

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 85

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Oil sheen, nuisance algae, odor, filled with trash from highway, brown foam. Overhanging honeysuckle and tree branches. 1/3 of stream had concrete bottom, 2/3rds was natural.

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): Minnows

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

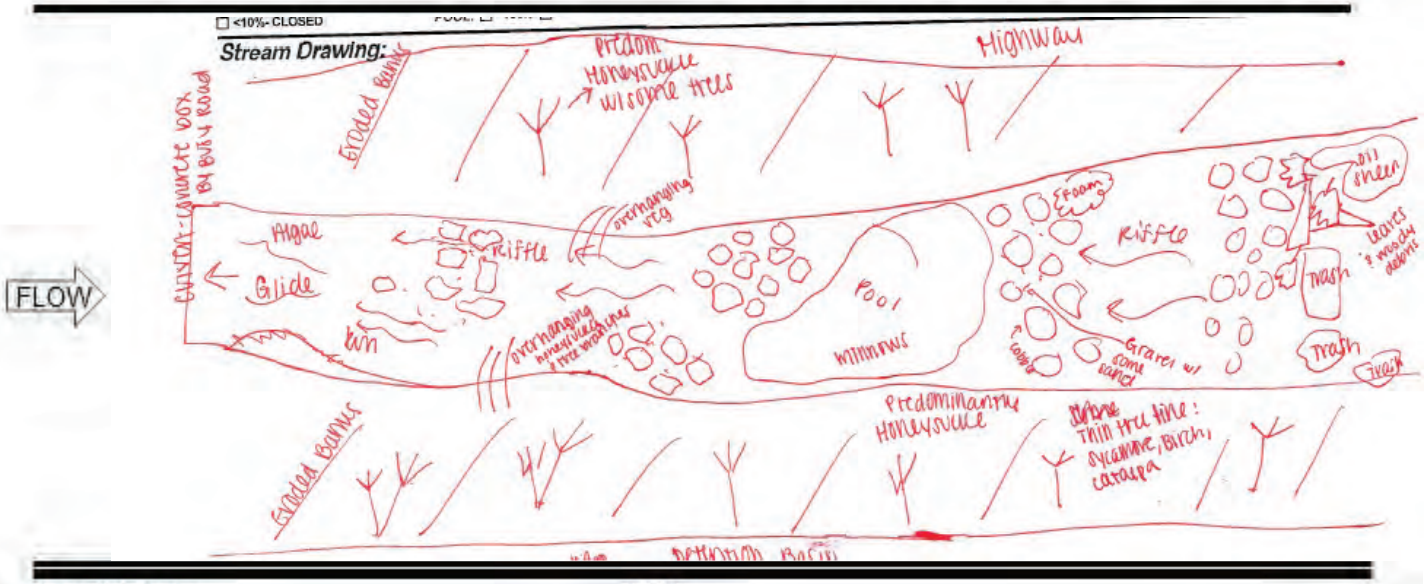
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: Minnows present in one pool.

☐ <10%- CLOSED

Stream Drawing:



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 33

SITE NAME/LOCATION: UNT 4 - St. Louis Lambert International Airport

SITE NUMBER: UNT 4 | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): <0.01

LENGTH OF STREAM REACH (ft): 23.5 | LAT: 38.74411 | LONG: -90.386173 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: SKS/MKO | COMMENTS: Stream within stormwater detention basin, flows into grass-lined swale

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☐	SILT [3 pt]	0
☐	BOULDER (>256 mm) [16 pts]	0	☑	LEAF PACK/WOODY DEBRIS [3 pts]	70
☐	BEDROCK [16 pts]	0	☑	FINE DETRITUS [3 pts]	30
☐	COBBLE (65-256 mm) [12 pts]	0	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	0	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	0	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6 | TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 8
A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☑ ≥ 30 centimeters [20 pts]
- ☐ ≥ 22.5 - 30 cm [30 pts]
- ☐ ≥ 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 38

Pool Depth Max = 30: 20

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ ≥ 4.0 meters (> 13') [30 pts]
- ☐ ≥ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ ≥ 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ ≥ 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.6

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐ Moderate 5-10m	☐	☐ Immature Forest, Shrub or Old Field	☑	☑ Urban or Industrial
☐	☐ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☑	☑ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS: Surrounded by roads on both sides, within stormwater detention basin, grass surrounding stream

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Slow flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☑ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 151 feet

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2024 Quantity: 0.01 inches

Photo-documentation Notes: Rained 1/22-1/25, 1/27-1/28

Elevated Turbidity? (Y/N): N Canopy (% open): 100

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Trash and litter from highway surrounding stream

Stream within stormwater detention basin, flows into grass-lined swale

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

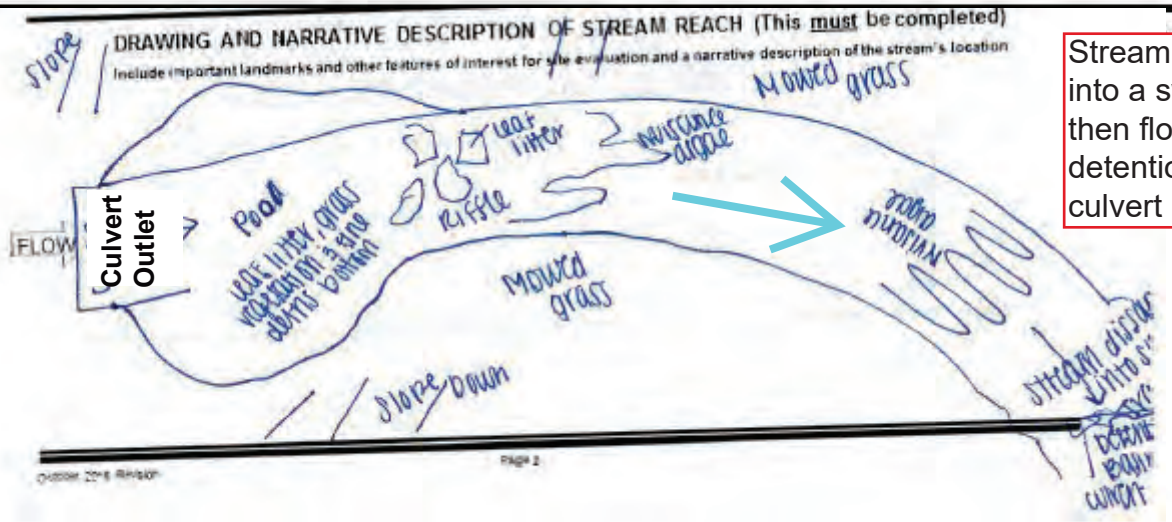
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Stream dissipates into a swale, which then flows into the detention basin culvert inlet

Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 28

SITE NAME/LOCATION: UNT 5 - St. Louis Lambert International Airport

SITE NUMBER: UNT 5 | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT: 38.742691 | LONG: -90.383383 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: SKS/MKO | COMMENTS: In concave area long I-70 west

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☐☑	SILT [3 pt]	80
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐☐	BEDROCK [16 pts]	0	☑☐	FINE DETRITUS [3 pts]	20
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	0
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6 | TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 8

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☑ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: 4 inches | MAXIMUM POOL DEPTH (centimeters): 10

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: 36 inches | AVERAGE BANKFULL WIDTH (meters): 0.6

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Within concave area along I-70 west.

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☑ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Slow flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 474 feet

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2024 Quantity: 0.01

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 90

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Trash and litter from highway, oil sheen, wetland vegetation within OHWM, whole stream flows slowly/glides. Stream is within a concave area along I-70 west.

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

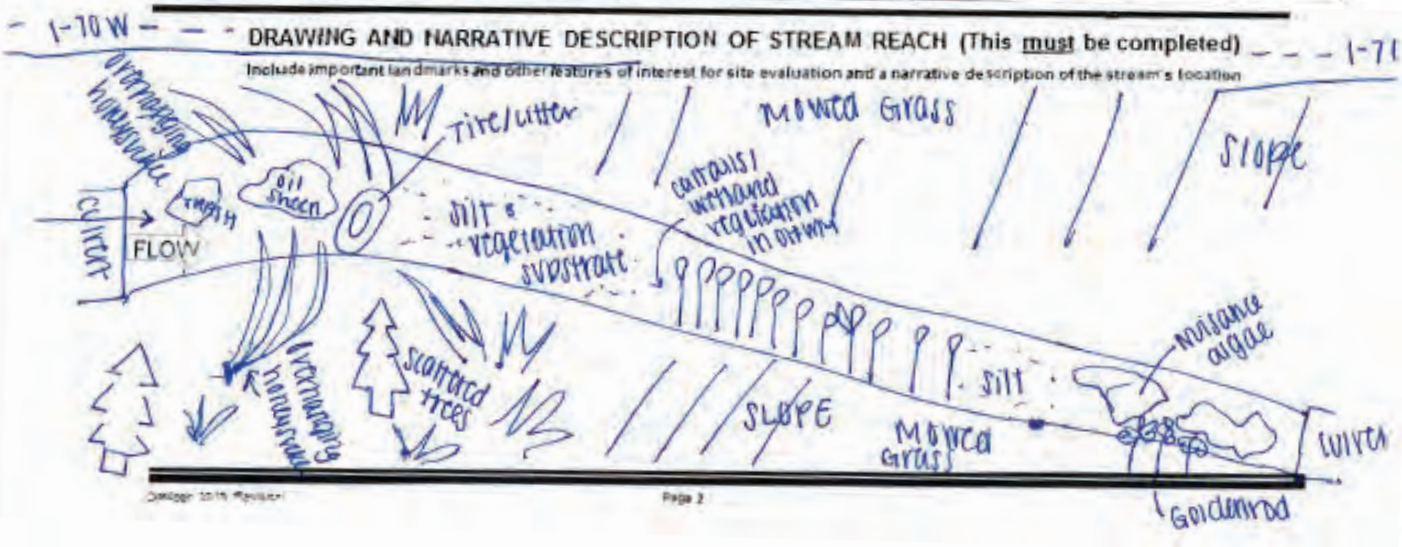
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 34

SITE NAME/LOCATION: UNT 6 - St. Louis Lambert International Airport

SITE NUMBER: UNT 6 | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.06

LENGTH OF STREAM REACH (ft): 39.83 | LAT: 38.743065 | LONG: 90.376617 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: Stephanie Spence, CMT Inc. | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS **[16 pts]**	0	☐ ☒	SILT **[3 pt]**	30
☐ ☐	BOULDER (>256 mm) **[16 pts]**	0	☐ ☐	LEAF PACK/WOODY DEBRIS **[3 pts]**	0
☐ ☐	BEDROCK **[16 pts]**	0	☐ ☐	FINE DETRITUS **[3 pts]**	0
☐ ☐	COBBLE (65-256 mm) **[12 pts]**	0	☐ ☐	CLAY or HARDPAN **[0 pt]**	0
☒ ☐	GRAVEL (2-64 mm) **[9 pts]**	70	☐ ☐	MUCK **[0 pts]**	0
☐ ☐	SAND (<2 mm) **[6 pts]**	0	☐ ☐	ARTIFICIAL **[3 pts]**	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 12 | **TOTAL NUMBER OF SUBSTRATE TYPES:** (B) 2

HHEI Metric Points

Substrate Max = 40: 14

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters **[20 pts]**
- ☐ > 22.5 - 30 cm **[30 pts]**
- ☐ > 10 - 22.5 cm **[25 pts]**
- ☒ 5 cm - 10 cm **[15 pts]**
- ☐ < 5 cm **[5pts]**
- ☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS: 3 inches | **MAXIMUM POOL DEPTH (centimeters):** 7.62

Pool Depth Max = 30: 15

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') **[30 pts]**
- ☐ > 3.0 m - 4.0 m (> 9' 7"- 13') **[25 pts]**
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
- ☒ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS: 30 inches | **AVERAGE BANKFULL WIDTH (meters):** 0.7

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R	L	R
☐	☐ Wide >10m	☐	☐ Mature Forest, Wetland	☐	☐ Conservation Tillage
☐	☐ Moderate 5-10m	☐	☐ Immature Forest, Shrub or Old Field	☒	☒ Urban or Industrial
☐	☐ Narrow <5m	☐	☐ Residential, Park, New Field	☐	☐ Open Pasture, Row Crop
☒	☒ None	☐	☐ Fenced Pasture	☐	☐ Mining or Construction

COMMENTS: Stream surrounded by Department of Defense Area and Airport.

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☒ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☐ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Slow flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☒ Yes ☐ No QHEI Score 41.5 (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Coldwater Creek Distance from Evaluated Stream 1,277 feet

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2024 Quantity: 0.01

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 95

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Trash and litter present, brown foam, Wetland vegetation within OHWM

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

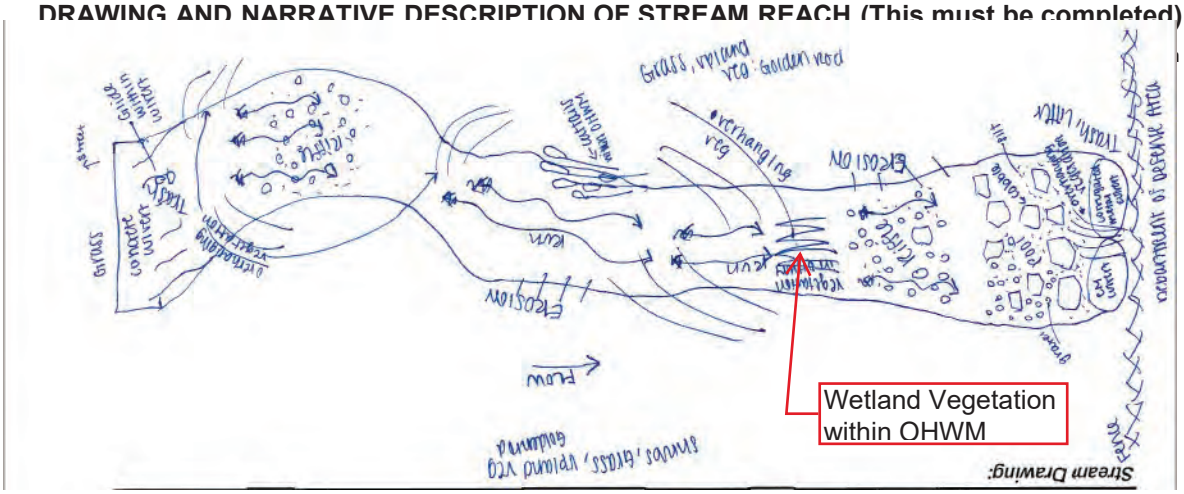
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

FLOW



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3) 38

SITE NAME/LOCATION: UNT 7 - St. Louis Lambert International Airport

SITE NUMBER: UNT 7 | RIVER BASIN: Missouri River | RIVER CODE: | DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 200 | LAT: 38.741862 | LONG: -90.376818 | RIVER MILE: N/A

DATE: 1/31/2024 | SCORER: SKS/MKO | COMMENTS:

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☑ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	0	☑☐	SILT [3 pt]	60
☐☐	BOULDER (>256 mm) [16 pts]	0	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐☐	BEDROCK [16 pts]	0	☐☑	FINE DETRITUS [3 pts]	40
☐☐	COBBLE (65-256 mm) [12 pts]	0	☐☐	CLAY or HARDPAN [0 pt]	0
☐☐	GRAVEL (2-64 mm) [9 pts]	0	☐☐	MUCK [0 pts]	0
☐☐	SAND (<2 mm) [6 pts]	0	☐☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6 | TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 8
A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☑ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 20

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check *ONLY* one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☑ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.6

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream *

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☑	☑	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☑	☑	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: Along airport parking lot

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (interstitial)
- ☑ Moist Channel, isolated pools, no flow (intermittent)
- ☐ Dry channel, no water (ephemeral)

COMMENTS: Scattered pools

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☑ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☑ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Coldwater Creek Distance from Evaluated Stream 764 feet

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Clayton, Creve Coeur NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: St. Louis Township/City: St. Louis

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 1/28/2024 Quantity: 0.01

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 100

Were samples collected for water chemistry? (Y/N): _____ Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Trash and litter from highway, Wetland vegetation within OHWM

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

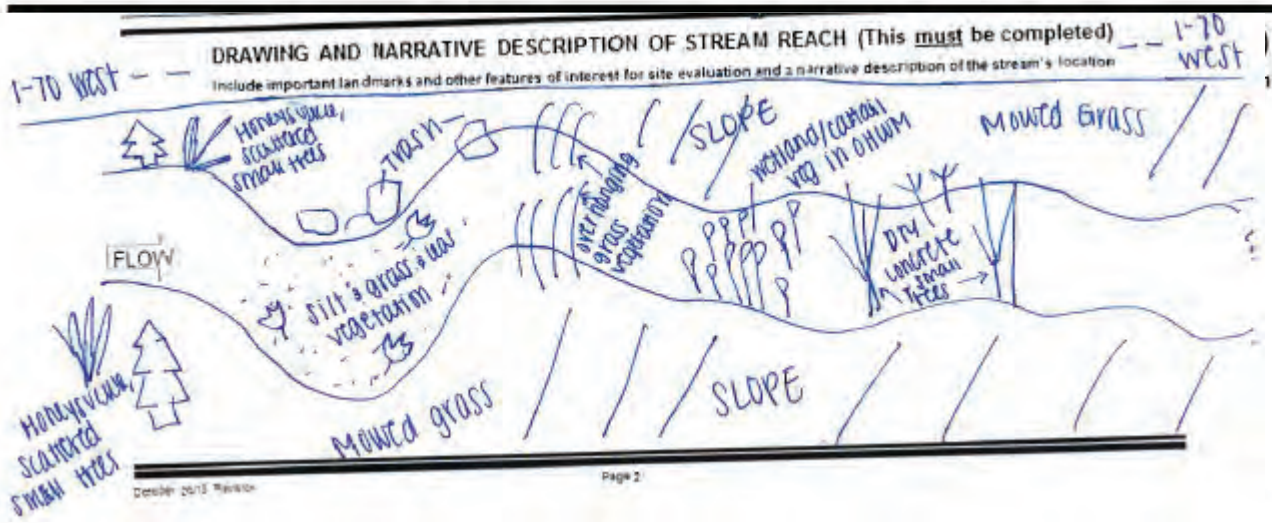
Salamanders Observed? (Y/N) N Species observed (if known): _____

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 38

Stream & Location: Cold Water Creek - St. Louis Lambert International Airport **RM:** _ _ _._ **Date:** 5 / 23 / 23

Scorers Full Name & Affiliation: Marion Wells & Stephanie Spence, CMT In

River Code: _ _ _ - _ _ _ - _ _ _ **STORET #:** _ _ _ _ _ _ **Lat./ Long.:** (NAD 83 - decimal °) 38 . 747734 / -90 . 37366 ☐ Office verified location

1] SUBSTRATE

Check ***ONLY Two*** substrate *TYPE BOXES*; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ ☐ BLDR /SLABS [10]	0%	0%	☐ ☒ HARDPAN [4]	15%	40%
☐ ☐ BOULDER [9]	0%	5%	☐ ☐ DETRITUS [3]	0%	0%
☑ ☐ COBBLE [8]	45%	10%	☐ ☐ MUCK [2]	0%	0%
☐ ☐ GRAVEL [7]	20%	10%	☐ ☐ SILT [2]	0%	0%
☐ ☐ SAND [6]	10%	10%	☐ ☐ ARTIFICIAL [0]	10%	25%
☐ ☐ BEDROCK [5]	0%	0%			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Check ONE (*Or 2 & average*)

ORIGIN
- ☒ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☐ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☒ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☒ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ NONE [1]

Substrate 11 *Maximum 20*

Comments

2] INSTREAM COVER

Indicate presence 0 to 3: **0**-Absent; **1**-Very small amounts or if more common of marginal quality; **2**-Moderate amounts, but not of highest quality or in small amounts of highest quality; **3**-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1	UNDERCUT BANKS [1]	____	POOLS > 70cm [2]	____	OXBOWS, BACKWATERS [1]
____	OVERHANGING VEGETATION [1]	____	ROOTWADS [1]	1	AQUATIC MACROPHYTES [1]
____	SHALLOWS (IN SLOW WATER) [1]	____	BOULDERS [1]	1	LOGS OR WOODY DEBRIS [1]
1	ROOTMATS [1]				

AMOUNT

Check ONE (*Or 2 & average*)
- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Comments

Cover *Maximum 20* 7.0

3] CHANNEL MORPHOLOGY

Check ONE in each category (*Or 2 & average*)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☒ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☐ GOOD [5]
- ☐ FAIR [3]
- ☒ POOR [1]

CHANNELIZATION
- ☐ NONE [6]
- ☐ RECOVERED [4]
- ☒ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☒ MODERATE [2]
- ☐ LOW [1]

Comments

Channel *Maximum 20* 8.0

4] BANK EROSION AND RIPARIAN ZONE

Check **ONE** in each category for ***EACH BANK*** (*Or 2 per bank & average*)

River right looking downstream

L	R	EROSION
☐	☐	NONE / LITTLE [3]
☑	☒	MODERATE [2]
☐	☐	HEAVY / SEVERE [1]

L	R	RIPARIAN WIDTH
☐	☐	WIDE > 50m [4]
☐	☐	MODERATE 10-50m [3]
☐	☐	NARROW 5-10m [2]
☐	☐	VERY NARROW < 5m [1]
☑	☒	NONE [0]

L	R	FLOOD PLAIN QUALITY
☐	☐	FOREST, SWAMP [3]
☐	☐	SHRUB OR OLD FIELD [2]
☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]
☐	☐	FENCED PASTURE [1]
☐	☐	OPEN PASTURE, ROWCROP [0]

L	R	
☐	☐	CONSERVATION TILLAGE [1]
☑	☒	URBAN OR INDUSTRIAL [0]
☐	☐	MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian *Maximum 10* 2.0

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check **ONE** (*ONLY!*)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☒ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (*Or 2 & average*)
- ☒ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☒ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments 15" = 0.381 meters

Pool / Current *Maximum 12* 4.0

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (*Or 2 & average*). ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
- ☒ BEST AREAS > 10cm [2]
- ☐ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☒ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☒ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☐ LOW [1]
- ☒ MODERATE [0]
- ☐ EXTENSIVE [-1]

Comments 8" = 20.32 centimeters, 9" = 22.86

Riffle / Run *Maximum 8* 4.0

6] GRADIENT

(0 ft/mi)
- ☒ VERY LOW - LOW [2-4]
- ☐ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (8.6 mi²)

%POOL: 20% **%GLIDE:** 30% **%RUN:** 30% **%RIFFLE:** 20%

Gradient *Maximum 10* 2

A] SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

_____ meters

STAGE

1st -sample pass-	2nd
☐ HIGH	☐
☐ UP	☐
☒ NORMAL	☐
☐ LOW	☐
☐ DRY	☐

CLARITY

1st --sample pass--	2nd
☐ < 20 cm	☐
☒ 20-<40 cm	☐
☐ 40-70 cm	☐
☐ > 70 cm/ CTB	☐
☐ SECCHI DEPTH	☐

1st pass _____ cm

2nd _____ cm

CANOPY

- ☒ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

C] RECREATION AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

Comment RE: Reach consistency/ Is reach typical of steam?, *Recreation/* Observed - Inferred, *Other/* Sampling observations, Concerns, Access directions, etc.

Crayfish, Minnows, and frogs were observed

Artificial = Broken concrete

B] AESTHETICS

- ☒ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☒ TRASH / LITTER
- ☒ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

D] MAINTENANCE

Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES

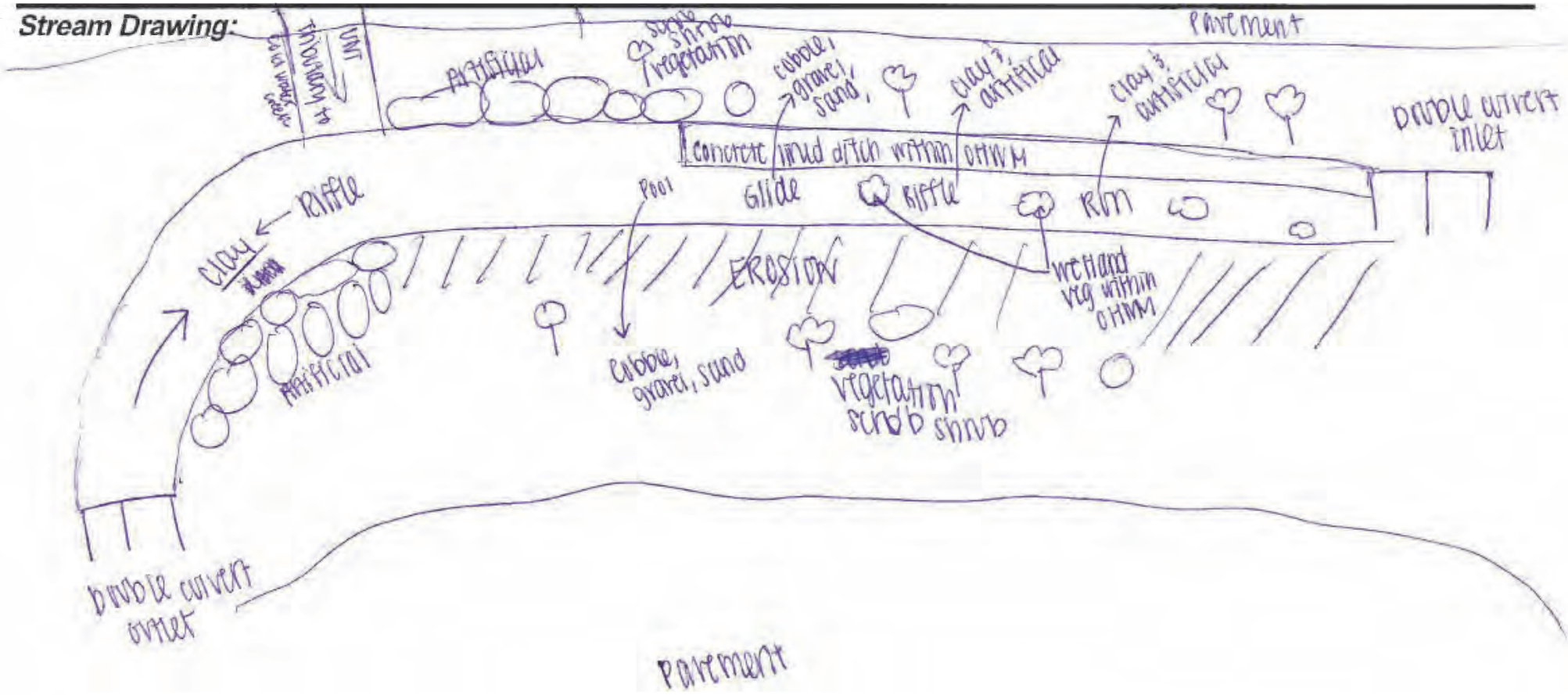
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

- $\bar{x}$ width
- $\bar{x}$ depth
- max. depth
- $\bar{x}$ bankfull width
- bankfull $\bar{x}$ depth
- W/D ratio
- bankfull max. depth
- floodprone x^2 width
- entrench. ratio

Legacy Tree:

Stream Drawing:



StreamStats Report - St. Louis Lambert International Airport - UNT 1

Region ID: MO
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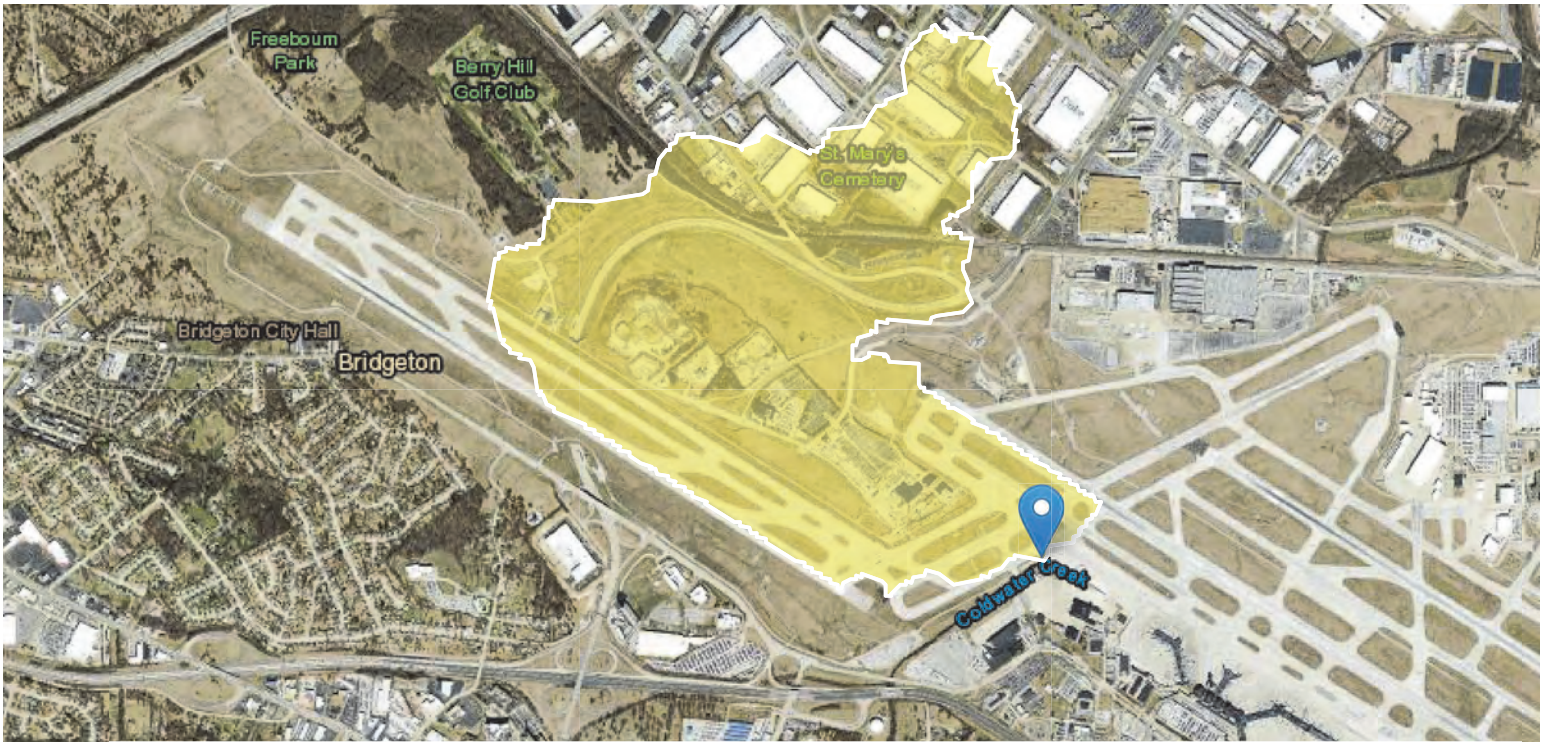
Time: 2023-06-12 15:45:00 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1.13	square miles

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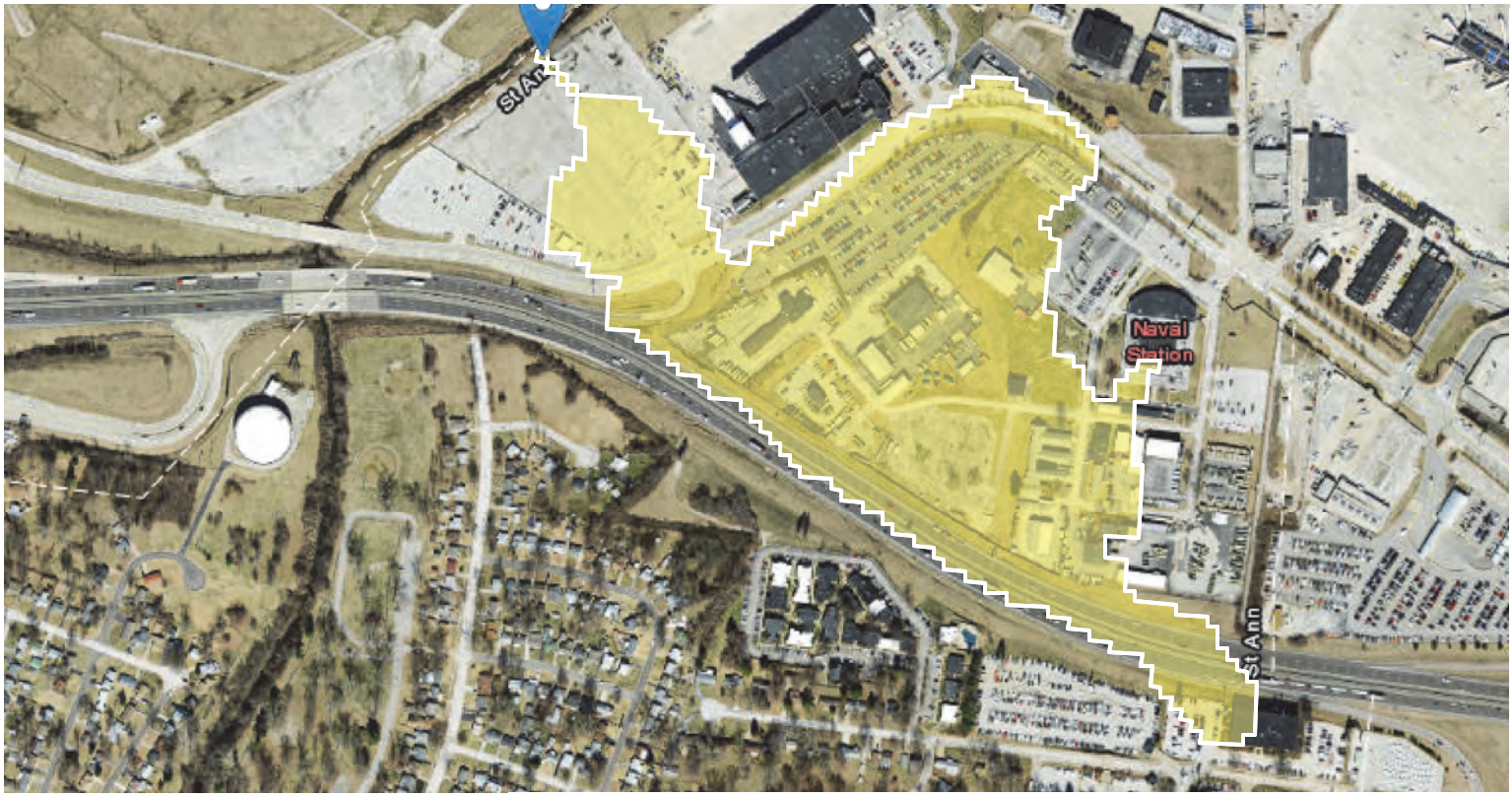
StreamStats Report - St. Louis Lambert International Airport - UNT 2

Region ID: MO
Workspace ID: MO20230622194331209000
Clicked Point (Latitude, Longitude): 38.74512, -90.37867
Time: 2023-06-22 15:43:59 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0654	square miles

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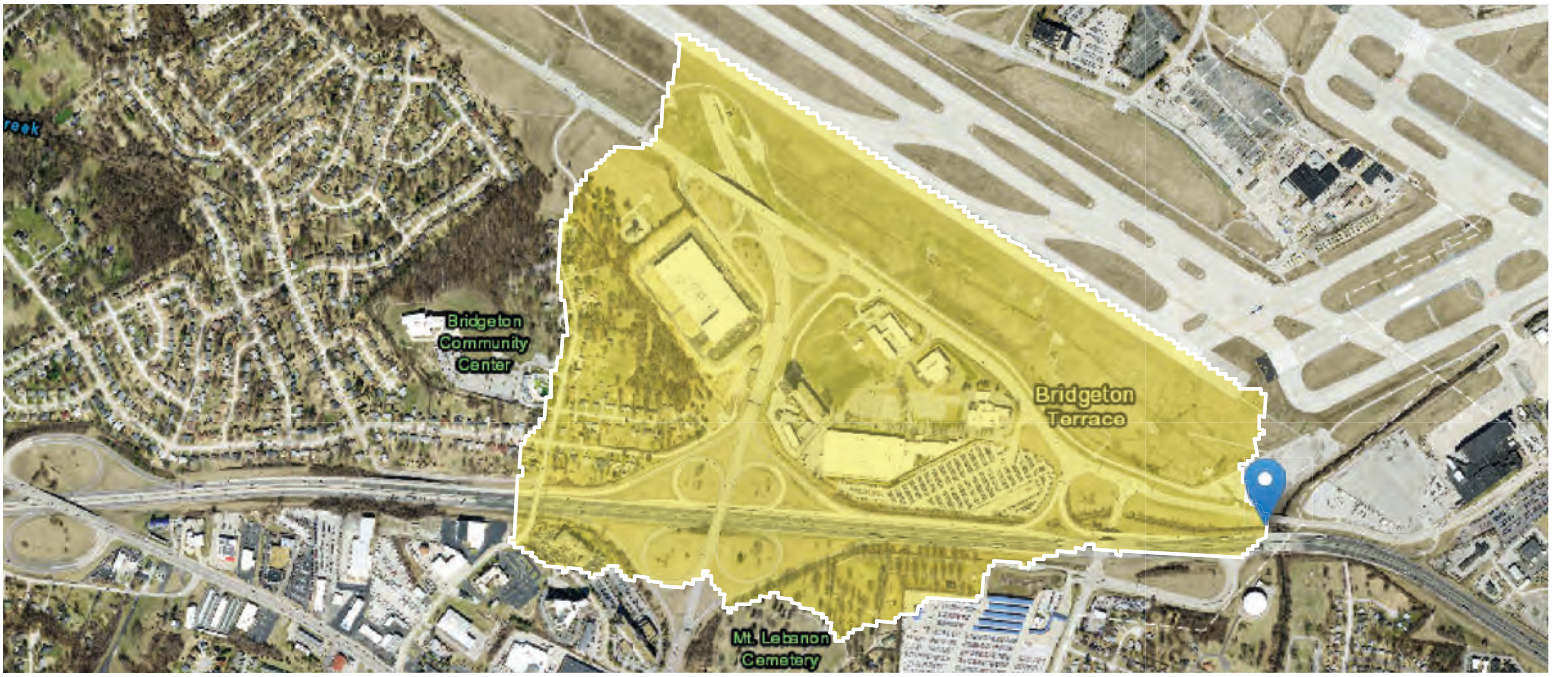
StreamStats Report - St. Louis Lambert International Airport - UNT 3

Region ID: MO
Workspace ID: MO20240228193555045000
Clicked Point (Latitude, Longitude): 38.74345, -90.38146
Time: 2024-02-28 14:36:21 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.52	square miles

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Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report - St. Louis Lambert International Airport - UNT 6

Region ID: MO
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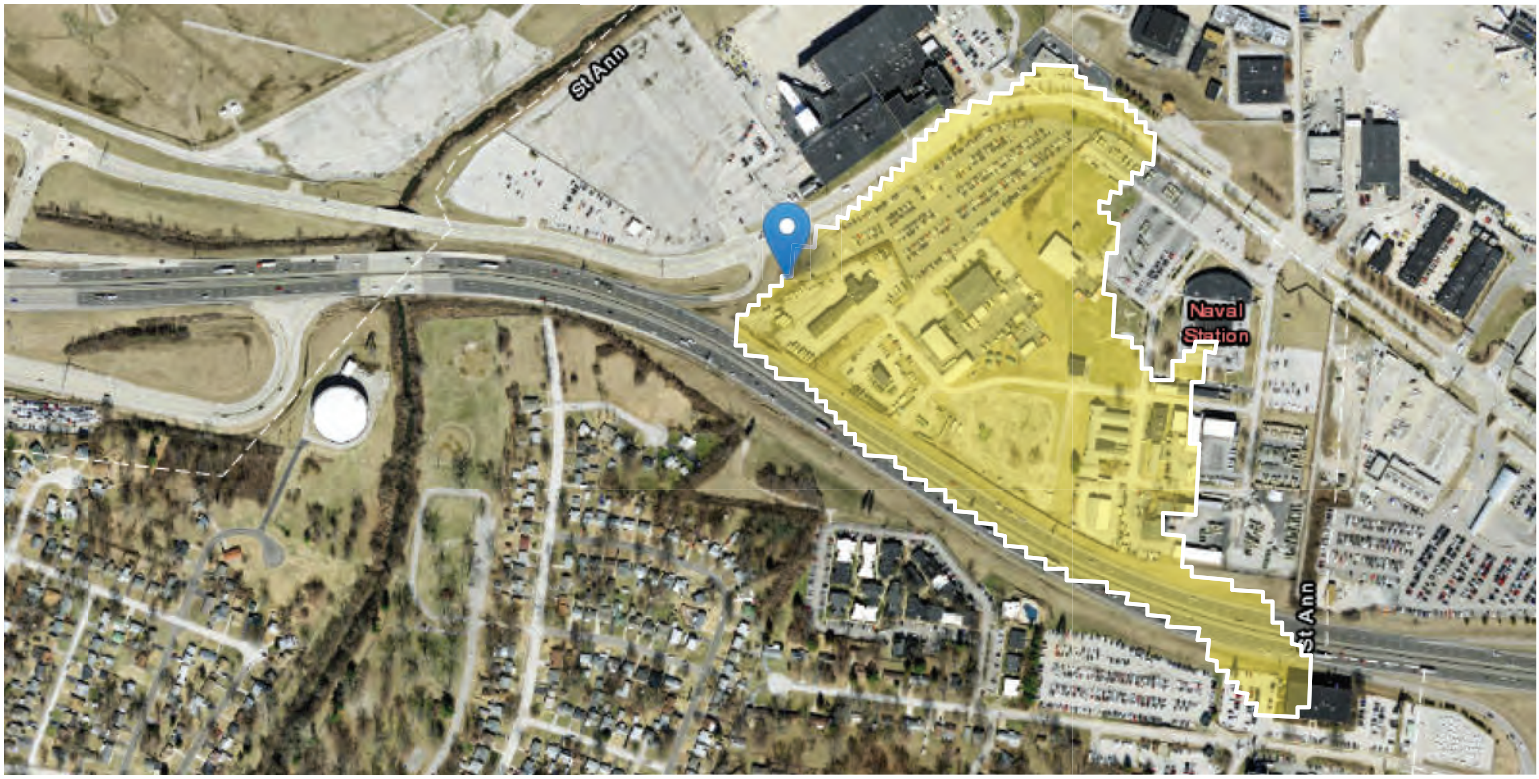
Time: 2024-02-28 15:39:48 -0500



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0551	square miles

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StreamStats Report - St. Louis Lambert International Airport - UNT 7

Region ID: MO
Workspace ID: MO20240322161142285000
Clicked Point (Latitude, Longitude): 38.74260, -90.37885
Time: 2024-03-22 12:12:07 -0400

Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.0356	square miles

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material nor shall the fact of release constitute any such warranty. Furthermore, the software is released on condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from its authorized or unauthorized use.

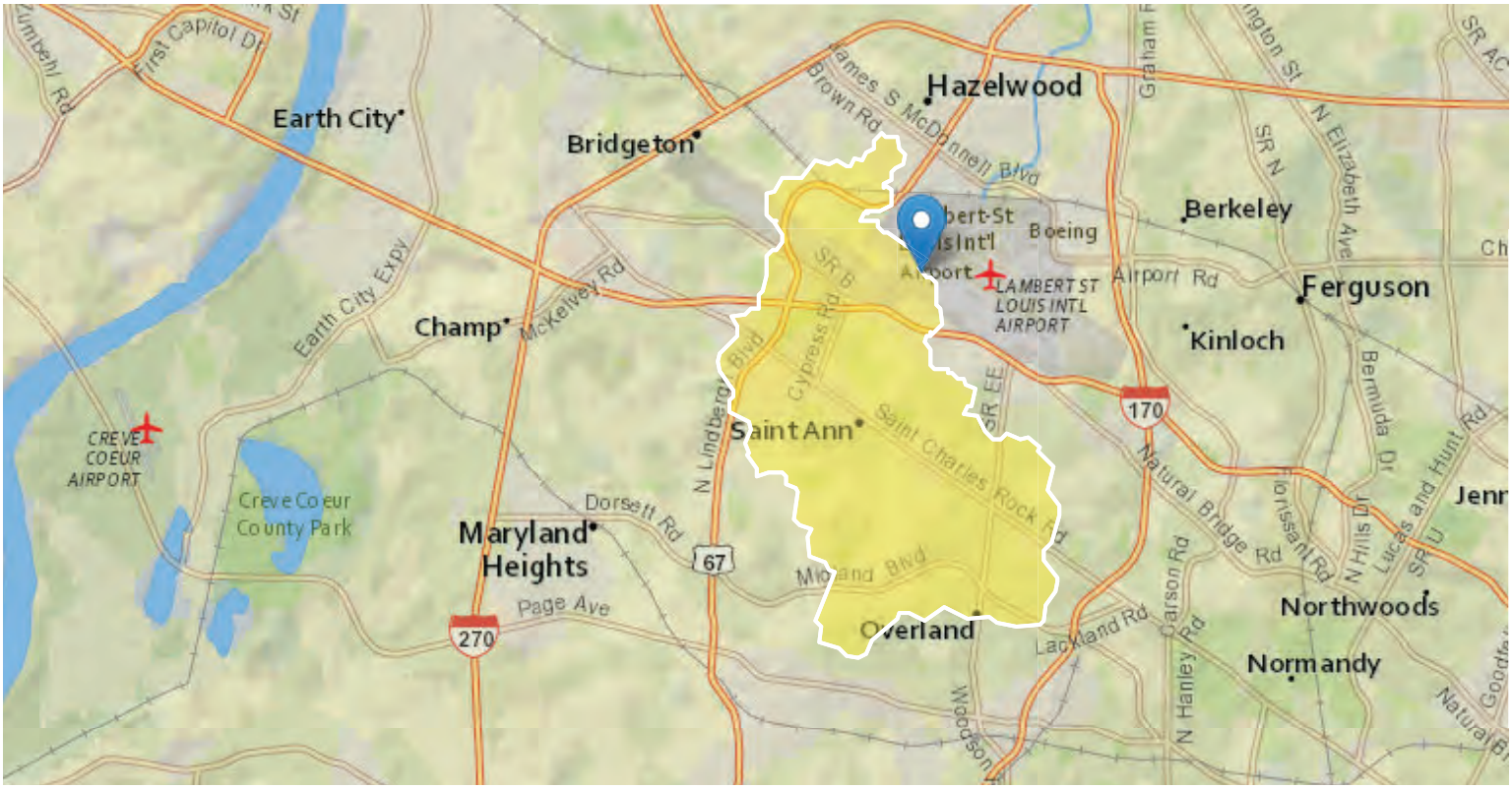
USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.19.4
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

StreamStats Report - St. Louis Lambert International Airport - Coldwater Creek

Region ID: MO

Workspace ID: MO20230517134709689000
Clicked Point (Latitude, Longitude): 38.74803, -90.37214
Time: 2023-05-17 09:47:34 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	8.64	square miles

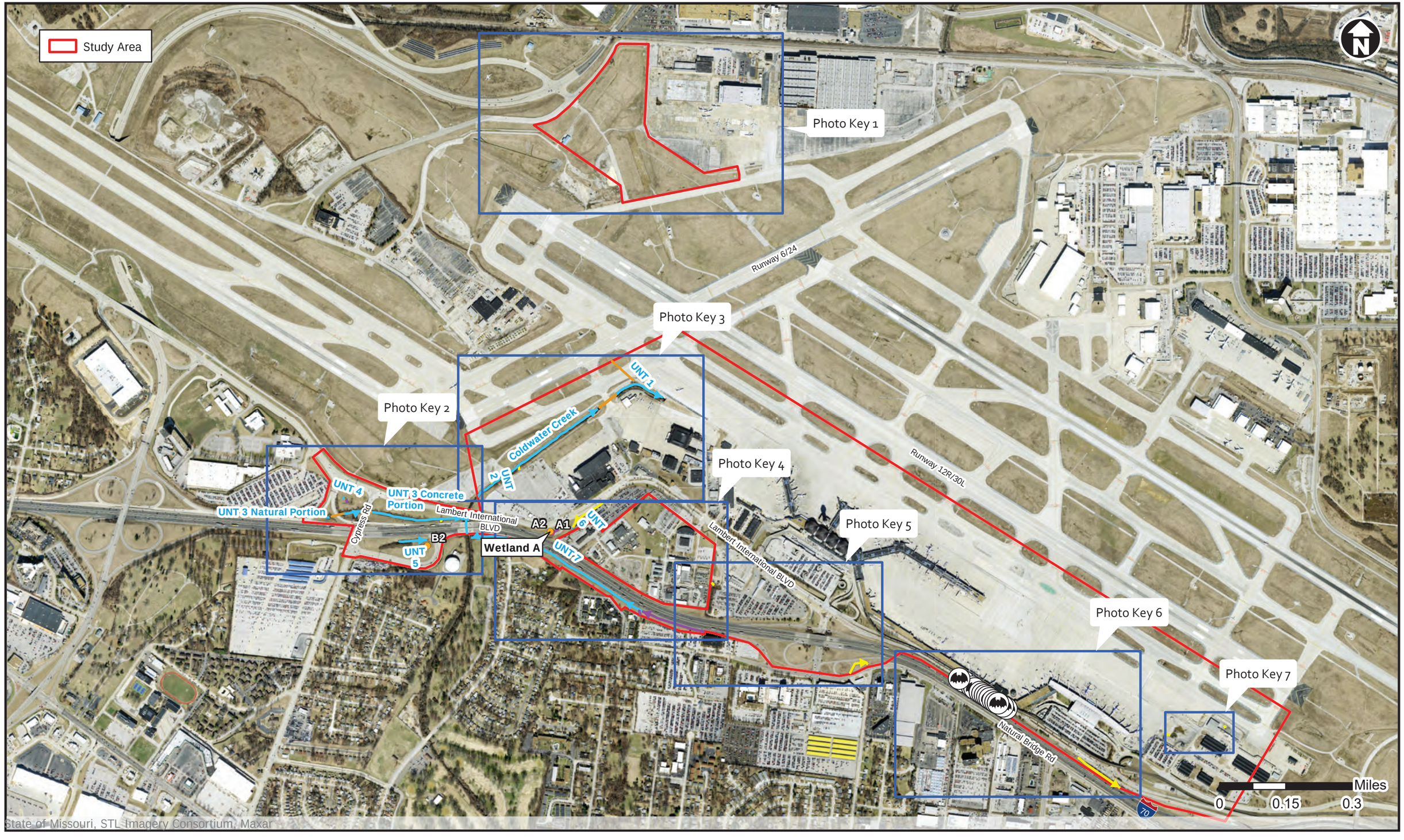
USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

USGS Software Disclaimer: This software has been approved for release by the U.S. Geological Survey (USGS). Although the software has been subjected to rigorous review, the USGS reserves the right to update the software as needed pursuant to further analysis and review. No warranty, expressed or implied, is made by the USGS or the U.S. Government as to the functionality of the software and related material

Lambert International Airport – Consolidated Terminal Program

APPENDIX C: PHOTOGRAPHS

CMT



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Overall Photo Key

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (1 of 7)

CMT
Crawford, Murphy & Tilly

Study Area
Photo Location and Direction
Stream
Drainage Ditch
Swale
Upland Data Point
Culvert
Culvert Inlet
Culvert Outlet

N

UNT 3 Concrete Portion
SF 6
19

UNT 3 Concrete Portion
20
21
22
SF 5

Stormwater Detention Basin
UNT 4
27
28
29
30
SF 7

UNT 3 Natural Portion
7
8
9
10
11
12
13
14
15
16
17
18
SF 6
19
UNT 3 Concrete Portion
20
21
22
23
24
25
26
SF 5

Lambert International BLVD
Cypress Rd
70

UNT 5
31
32
33
34
35
B2
36
37

Stormwater Detention Basin
UNT 4
27
28
29
30
SF 7

Miles
0
0.03
0.05

State of Missouri, STL Imagery Consortium, Maxar, Microsoft, East-West Gateway COG, State of Missouri, STL Imagery Consortium, Maxar, Microsoft

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (2 of 7)

CMT
Crawford, Murphy & Tilly

Study Area
Photo Location and Direction
Stream
Drainage Ditch
Culvert
Culvert Inlet
Culvert Outlet

Coldwater Creek
SF 1
SF 2
SF 3
SF 4
UNT 1
UNT 2
Miles
0
0.03
0.05
N
State of Missouri, STL Imagery Consortium, Maxar, Microsoft, East-West Gateway COG, State of Missouri, STL Imagery Consortium, Maxar, Microsoft

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (3 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (4 of 7)

CMT
Crawford, Murphy & Tilly

Study Area
Photo Location and Direction
Drainage Ditch
Swale
Culvert Inlet
Culvert Outlet

SF 10
SF 16
SF 11
75
76
77
74
78
79
80
81
82
70
Lambert International BLVD
Natural Bridge Rd
N
0 0.03 0.05 Miles

State of Missouri, STL Imagery Consortium, Maxar, Microsoft, East-West Gateway COG, State of Missouri, STL Imagery Consortium, Maxar, Microsoft

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (5 of 7)

CMT
Crawford, Murphy & Tilly

Study Area
Photo Location and Direction
Drainage Ditch
Culvert Outlet
Potential IN/NLEB Roost Tree

N

83
84
85
86
87
SF 1.2
70
Natural Bridge Rd

0 0.03 0.05 Miles

State of Missouri, STL Imagery Consortium, Maxar, Microsoft, East-West Gateway COG, State of Missouri, STL Imagery Consortium, Maxar, Microsoft

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (6 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Photo Key Map (7 of 7)

CMT
Crawford, Murphy & Tilly

1. View of upland vegetation/mowed grass, facing south. 5/24/2023

2. View of upland vegetation/mowed grass, facing north. 5/24/2023

3. View of upland vegetation/mowed grass, facing southwest. 5/24/2023

4. View of upland vegetation/mowed grass, facing south. 5/24/2023

5. View of upland vegetation/mowed grass, facing north. 5/24/2023

6. View of upland vegetation/mowed grass, facing east. 5/24/2023

7. View of UNT 3 - Natural Portion, facing upstream west. 1/31/2024

8. View of UNT 3 at existing box culvert inlet, facing downstream east. 1/31/2024

9. View of UNT 3 at existing box culvert outlet, facing upstream west. 1/31/2024

11. View of UNT 3 at existing box culvert outlet, facing upstream west. 1/31/2024

10. View of UNT 3 - Natural Portion at existing box culvert inlet, facing downstream east. 1/31/2024

12. View of UNT 3 - Natural Portion, facing downstream east. 1/31/2024

13. View of upland riparian vegetation surrounding UNT 3 – Natural Portion, facing north. 1/31/2024

14. View of UNT 3 - Natural Portion, facing upstream west. 1/31/2024

15. View of UNT 3 at existing box culvert inlet underneath Cypress Road, facing downstream east. 1/31/2024

16. View of UNT 3 - Natural Portion at existing box culvert outlet underneath Cypress Road, facing upstream west. 1/31/2024

17. View of UNT 3 – Concrete Portion, facing downstream east. 1/31/2024

19. View of SF 6 and culvert outlet draining into UNT 3 – Concrete Portion, facing southwest. 1/31/2024

18. View of upland riparian vegetation surrounding UNT 3 – Concrete Portion, facing north. 1/31/2024

20. View of UNT 3 – Concrete Portion, facing upstream west. 1/31/2024

21. View of SF 5 and culvert outlet draining into UNT 3 – Concrete Portion, facing south. 1/31/2024

22. View of UNT 3 – Concrete Portion, facing downstream east. 1/31/2024

23. View of UNT 3 – Concrete Portion, facing upstream west. 1/31/2024

24. View of confluence of UNT 3 – Concrete Portion flowing into Coldwater Creek, facing west. 1/31/2024

25. View of Coldwater Creek flowing underneath Lambert International Blvd bridge, facing downstream north. 1/31/2024

27. View of UNT 4 at existing culvert outlet, facing upstream west. 1/31/2024

26. View of Coldwater Creek flowing underneath I-70 bridge, facing upstream south. 1/31/2024

28. View of SF 7 draining from UNT 4 to detention basin inlet, facing south. 1/31/2024

29. View of existing stormwater detention basin, facing northeast. 1/31/2024

30. View of existing stormwater detention basin, facing southwest. 1/31/2024

31. View of upland vegetation, facing west. 1/31/2024

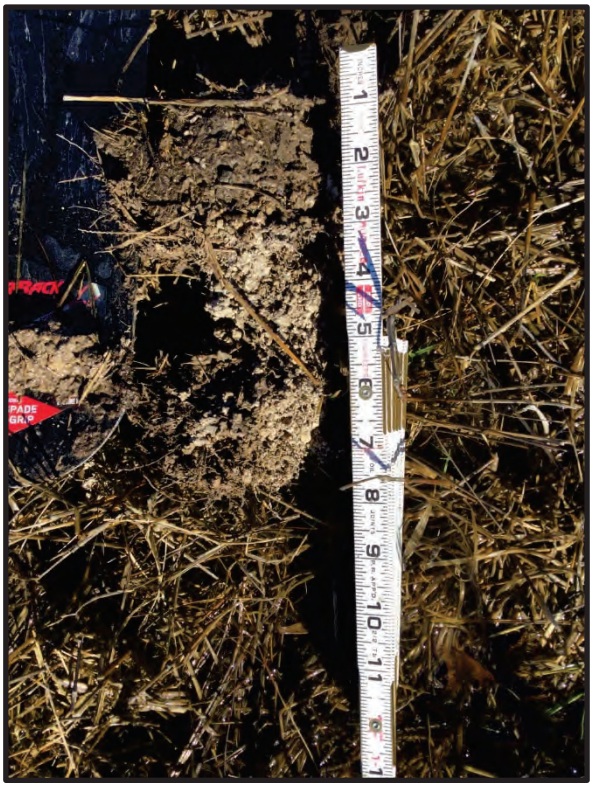
32. View of UNT 5 at existing culvert outlet, facing upstream west. 1/31/2024

33. View of UNT 5, facing downstream east. 1/31/2024

35. View of culvert inlet and UNT 5, facing downstream east. 1/31/2024

34. View of UNT 5, facing upstream west. 1/31/2024

36. View of upland data point C2, facing west. 1/31/2024



37. View of upland data point C2 soil profile. 5/24/2023

39. View of SF 3 draining into Coldwater Creek, facing south. 5/24/2023

38. View of SF 4 draining into Coldwater Creek, facing south. 5/24/2023

40. View of UNT 2 and culvert outlet draining into Coldwater Creek, facing upstream south. 5/24/2023

41. View of SF 2 draining into Coldwater Creek, facing north. 5/24/2023

43. View of Coldwater Creek, facing downstream northeast. 5/24/2023

42. View of Coldwater Creek, facing upstream southwest. 5/24/2023

44. View of SF 1 outlet into Coldwater Creek, facing southeast. 5/24/2023

45. View of Coldwater Creek, facing upstream southwest. 5/24/2023

47. View of Coldwater Creek bridge, facing upstream southwest. 5/24/2023

46. View of Coldwater Creek bridge, facing downstream northeast. 5/24/2023

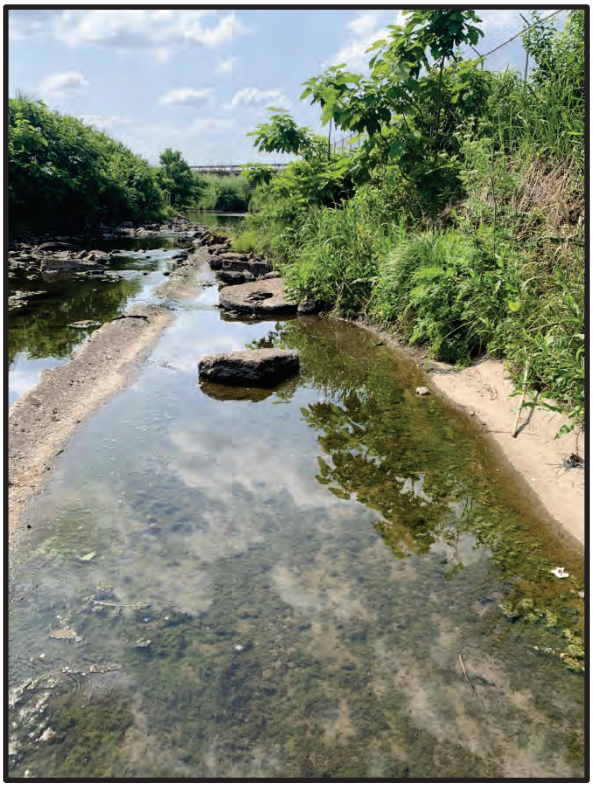
48. View of Coldwater Creek, facing downstream northeast. 5/23/2023.

49. View of Coldwater Creek, facing upstream southwest. 5/23/2023

50. View of UNT 1 underneath existing box culvert, facing upstream northwest. 5/23/2023 5/24/2023

51. View of UNT 1, facing downstream southeast. 5/23/2023

52. View of Coldwater Creek, facing downstream east. 5/23/2023



53. View of Coldwater Creek, facing upstream northwest. 5/23/2023

54. View of Coldwater Creek at existing box culvert inlets, facing downstream southeast. 5/23/2023

55. View of SF 9, facing southwest. 5/23/2023

56. View of SF 9, facing northeast. 5/23/2023

57. View of SF 9, facing southwest. 5/23/2023

59. View of UNT 6, facing downstream southeast. 5/23/2023

58. View of UNT 6 at existing culvert outlet, facing upstream northwest. 5/23/2023

60. View of UNT 6 at existing culvert inlets, facing downstream southeast. 5/23/2023

61. View of SF 8, facing northeast. 5/24/2023

63. View of Wetland A, facing east. 5/24/2023

62. View of Wetland A, facing west. 5/24/2023

64. View of Wetland data point A1 soil profile and redox features. 5/24/2023

65. View of UNT 7, facing downstream northwest. 1/31/2024

67. View of UNT 7, facing upstream southeast. 1/31/2024

66. View of UNT 7, facing upstream southeast. 1/31/2024

68. View of UNT 7, facing upstream southeast. 1/31/2024

69. View of UNT 7, facing downstream northwest. 3/20/2024

70. View of SF 15, facing northwest. 3/20/2024

71. View of SF 15 draining into UNT 7, facing northwest. 3/20/2023

72. View of SF 16, facing southeast. 3/20/2023

73. View of existing ground culvert inlet collecting water from SF 16. 3/20/2023

75. View of SF 10, facing northwest. 1/31/2024

74. View of SF 16, facing west. 3/20/2023

76. View of upland vegetation, facing southeast. 1/31/2024

77. View of upland vegetation, facing northwest. 1/31/2024

79. View of upland vegetation, facing northeast. 5/24/2023

78. View of upland vegetation, facing west. 1/31/2024

80. View of SF 11 at existing culvert outlet, facing southwest. 1/31/2024

81. View of SF 11, facing east. 1/31/2024

83. View of row of 16 *Betula nigra* (river birch) potential bat roost trees. 5/24/2023

82. View of SF 11 at existing culvert inlet, facing southeast. 1/31/2024

84. Representative photo of potential *Betula nigra* (river birch) roost tree, exhibiting peeling bark, that will likely be removed by project. 5/24/2023

85. View of SF 12 at existing culvert outlet, facing west. 1/31/2024

87. View of SF 12, facing southeast. 1/31/2024

86. View of SF 12, facing northwest. 1/31/2024

88. View of SF 13, facing west. 5/24/2023

89. View of stormwater detention basin, facing north. 5/24/2023

90. View of stormwater detention basin, facing south. 5/24/2023

91. View of stormwater detention basin, facing north. 5/24/2023

92. View of SF 14, facing southeast. 5/24/2023

93. View of SF 14 at existing culvert outlet, facing south. 5/24/2023

MDOC Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: St. Louis Lambert International Airport – Consolidated Terminal Program #12779
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri at 38.7362840 latitude -90.3860201 longitude. The proposed work is 0.1 mile east of Pear Tree Lane, 0.78 mile north of State Road 180 and 0.01 mile east of Hunter Drive. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton, MO USGS Quadrangles. Construction is anticipated to begin in 2025 and be completed by the end of 2031. Land use in the vicinity of the project is predominantly developed commercial and residential areas, with some sparse wooded areas. Coldwater Creek runs through the western terminus of the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area. The current Terminals 1 and 2 have limited capacity, and are unable to handle future growth of the airport. Portions of Terminal 1 are in poor condition and both Terminals 1 and 2 have areas that are functionally obsolete, providing a sub-optimum level of passenger service. Additionally, the landside roadway geometry, intersections, and curbsides have existing safety deficiencies, and some on-airport parking facilities are operating over capacity. The proposed project consists of constructing a new sixty-two gate consolidated terminal in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area The project will also provide a new terminal roadway with the optimal length from interstate to terminal while minimizing changes needed to existing interstate facilities. The primary impact of the project is the redistribution of traffic from the Airflight Drive interchange to the Cypress Road interchange. In order to accommodate the redistribution of traffic, a continuous auxiliary lane is proposed in the westbound direction of I-70 from the Airflight Drive entrance ramp to the Cypress Road exit ramp while closing the existing westbound I-70 on ramp from Lambert International Boulevard. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 entrance is recommended. The total project area is 593 acres.

Project Type: Transportation, Airports (runways, taxiways, terminals, control towers, beacons, fuel depots), Construction of new runways, terminals/concourses, other facilities
Contact Person: Stephanie Spence
Contact Information: sspence@cmtengr.com or 5134278169

Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

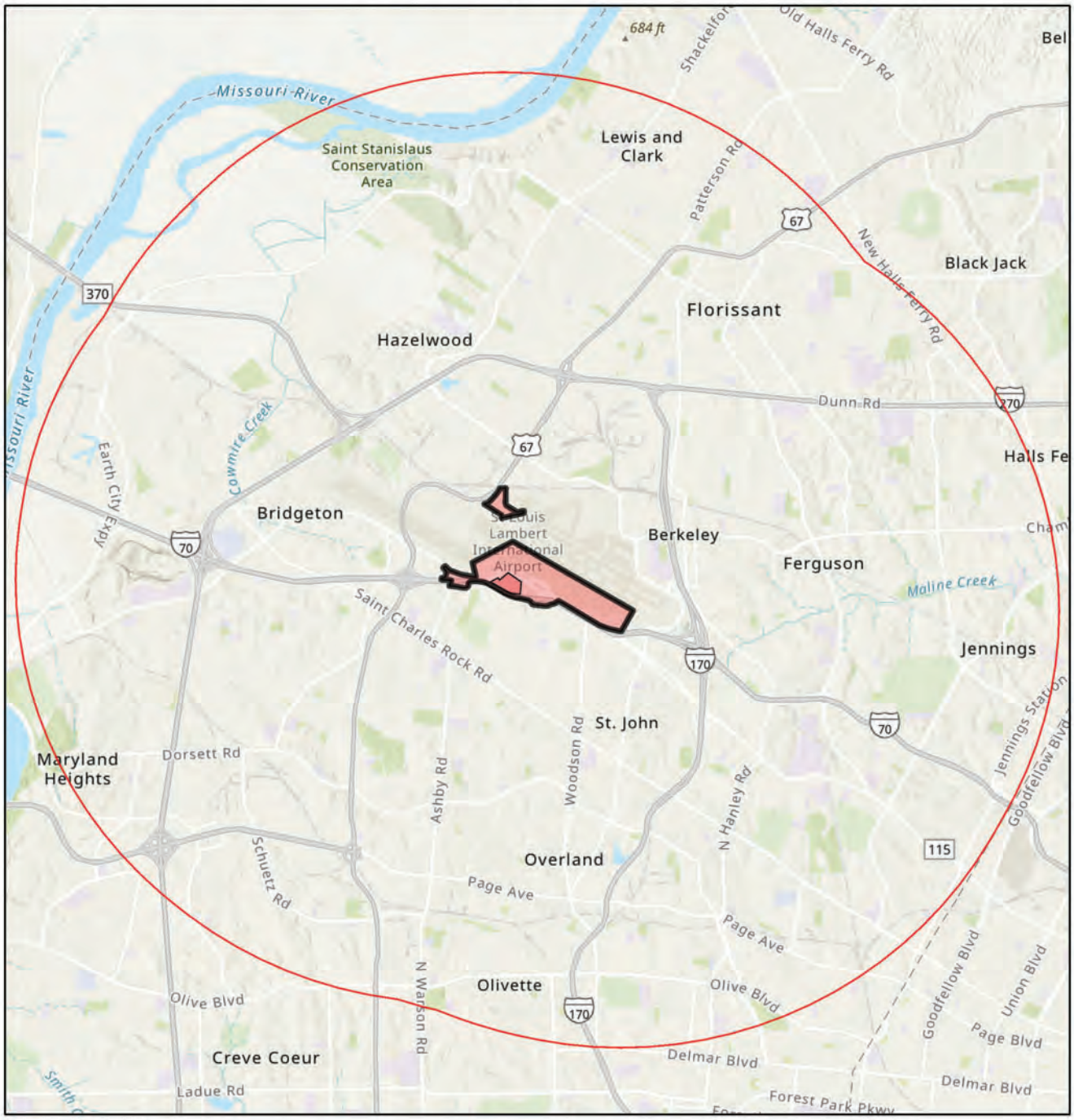
This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

PREVIEW REPORT

St. Louis Lambert International Airport – Consolidated Terminal Program



February 21, 2024

1:105,570

0 0.75 1.5 3 mi

0 1.25 2.5 5 km

Buffered Project Boundary

Project Boundary

County of St. Louis, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri, NASA, NGA, USGS

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, Bridgeton Armory, Bryan Island, Ferguson (January-Wabash Park Lake), Hickory Woods CA, Jennings (Koeneman Park Lake), Overland (Wild Acres Park Lake), STL Lambert, Saint Stanislaus CA, please contact MOARNG, COE, MDC.

Project Type Recommendations:

Transportation -Airports: New and Maintenance should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions. Project design should include stormwater management elements that assure storm discharge rates to streams for heavy rain events will not increase from present levels. Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

PRELIMINARY REPORT

Decurrent False Aster (Boltonia decurrens, federal-listed threatened and state-listed endangered) may occur in this area. Decurrent False Aster is a head floodplain species that grows in wetlands and on the borders of marshes, lakes, oxbows, and sloughs. It also may be found in old fields, roadsides, agricultural fields, and on levees. It favors sites characterized by moist soil and regular disturbance, preferably periodic flooding, which maintains open areas with high light levels. Today it is found in areas where succession is prevented, and sunlight is allowed to reach the seedlings. It is a perennial plant that blooms from August through October. Please see Best Management Practices for Construction and Development Projects Decurrent False Aster (mo.gov).

Gray Bat: The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

Karst: This county has known karst geologic features (e.g., caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are Species of Conservation Concern) are influenced by changes to water quality; please check your project site for any karst features and make every effort to protect groundwater in the project area. Additional information and specific recommendations are available at Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

Pallid Sturgeon: The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See Pallid Sturgeon Best Management Practices (mo.gov) for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

PRELIMINARY REPORT

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

PRELIMINARY REPORT

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

PRELIMINARY REPORT

USFWS Official Species List Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: February 21, 2024
Project Code: 2023-0082619
Project Name: St. Louis Lambert International Airport – Consolidated Terminal Program

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the Species website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

John Weber

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

PROJECT SUMMARY

Project Code: 2023-0082619
Project Name: St. Louis Lambert International Airport – Consolidated Terminal Program
Project Type: Airport - New Construction
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton, MO USGS Quadrangles.
The proposed project consists of constructing a new sixty-two gate consolidated terminal in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area. The proposed improvements also include an auxiliary lane and shoulder improvements along I-70 westbound from the Airflight Drive entrance ramp to the Cypress Road exit ramp and adjustments to the Cypress Road interchange. It also removes direct access to the new consolidated terminal from Airflight Road to the south. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 entrance is recommended. Construction is anticipated to begin in 2025 and be completed by the end of 2031.

Land use in the vicinity of the project is commercial and residential. Coldwater Creek runs through the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area.
Suitable summer habitat is located within and adjacent to the project area. Suitable summer habitat will be impacted for the construction of the project. No more than 6.7 acre of tree removal, all within 100 feet of existing roadway, will be required for the project. One (1) tree was identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. The project activities will not include the use of percussives. The project does include installing new permanent lighting. Although temporary lighting is not expected to be required for the construction of the project, it is possible some night work will be performed. Mitigation is not anticipated.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.74154435,-90.36614188618142,14z

Counties: St. Louis County, Missouri

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Z6DI3ZCPARBXZMZZPXBZMYWGXM/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Z6DI3ZCPARBXZMZZPXBZMYWGXM/documents/generated/6868.pdf	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Decurrent False Aster *Boltonia decurrens*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7705

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Crawford, Murphy and Tilly Inc.
Name: Stephanie Spence
Address: 1 Memorial Dr
Address Line 2: Suite 500
City: St. Louis
State: MO
Zip: 63102
Email sspence@cmtengr.com
Phone: 5134278169

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Revised Definition of Waters of the United States

Fact Sheet for the Final Rule: Amendments to the Revised Definition of "Waters of the United States"

August 2023

Overview

On August 29, 2023, the U.S. Environmental Protection Agency (EPA) and Department of the Army (the agencies) announced a final rule amending the 2023 definition of "waters of the United States."[1] The amendments conform with the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency.* While EPA's and Army's 2023 rule defining "waters of the United States" was not directly before the Supreme Court, the decision in *Sackett* made clear that certain aspects of the 2023 rule are invalid. Therefore, the agencies have amended key components of the regulatory text to conform it to the Supreme Court decision. The final rule provides clarity for protecting our nation's waters consistent with the Supreme Court's decision while advancing infrastructure projects, economic opportunities, and agricultural activities.

Changes to the "Waters of the United States" Categories and Definitions [2]

The agencies' amendments change the parts of the 2023 definition of "waters of the United States" that are invalid under the *Sackett* decision. For example, the rule removes the significant nexus test from consideration when identifying tributaries and other waters as federally protected. It also revises the adjacency test when identifying federally jurisdictional wetlands, clarifies that interstate wetlands do not fall within the interstate waters category, and clarifies the types of features that can be considered under the "additional waters" category.

Changes that the agencies have made to the January 2023 Rule categories:

Jurisdictional Category	Key Changes to the January 2023 Rule Regulation Text	Regulatory Text Paragraph
Traditional Navigable Waters	No changes	(a)(1)
Territorial Seas	No changes	(a)(1)
Interstate Waters	Removing interstate wetlands from the text of the interstate waters provision	(a)(1)
Impoundments	No changes	(a)(2)
Tributaries	Removing the significant nexus standard	(a)(3)
Adjacent Wetlands	Removing the significant nexus standard	(a)(4)
Additional Waters	Removing the significant nexus standard; removing wetlands and streams from the text of the provision	(a)(5)

[1] The "Revised Definition of 'Waters of the United States'" rule published in the Federal Register on January 18, 2023.

[2] These tables are provided for informational purposes; the rule establishes the requirements defining "waters of the United States."

Changes that the agencies have made to the January 2023 Rule definitions:

Definition	Key Changes to the January 2023 Rule Regulation Text	Regulatory Text Paragraph
Wetlands	No changes	(c)(1)
Adjacent	Revised definition to mean "having a continuous surface connection."	(c)(2)
High tide line	No changes	(c)(3)
Ordinary high water mark	No changes	(c)(4)
Tidal waters	No changes	(c)(5)
Significantly affect	Deleted definition	(c)(6)

No Changes to the Exclusions from "Waters of the United States"

The amendments to the January 2023 Rule do not change the eight exclusions from the definition of "waters of the United States" that provide clarity, consistency, and certainty. **The exclusions are:**

- **Prior converted cropland**, adopting USDA's definition and generally excluding wetlands that were converted to cropland prior to December 23, 1985.
- **Waste treatment systems**, including treatment ponds or lagoons that are designed to meet the requirements of the Clean Water Act.
- **Ditches** (including roadside ditches), excavated wholly in and draining only dry land, and that do not carry a relatively permanent flow of water.
- **Artificially irrigated areas,** that would revert to dry land if the irrigation ceased.
- **Artificial lakes or ponds,** created by excavating or diking dry land that are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- **Artificial reflecting pools or swimming pools,** and other small ornamental bodies of water created by excavating or diking dry land.
- **Waterfilled depressions,** created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction operation is abandoned and the resulting body of water meets the definition of "waters of the United States."
- **Swales and erosional features** (*e.g.*, gullies, small washes), that are characterized by low volume, infrequent, or short duration flow.

Additionally, the agencies' amended definition of "waters of the United States" does not affect the longstanding activity-based permitting exemptions provided to the agricultural community by the Clean Water Act.

For More Information

Additional information is available on EPA's Waters of the United States website.

USACE Approved Jurisdictional Determination Request

From:	Heather Lacey
To:	mvs-regulatory@usace.army.mil
Cc:	Tener, Scott (FAA); Beckmann, Gerald A.; Kuchinski, Jennifer; Douglas Gregory; Marion Wells; Laura Sakach
Subject:	St. Louis Lambert International Airport Consolidated Terminal Program AJD
Date:	Thursday, April 11, 2024 9:50:00 AM
Attachments:	AJD.pdf image001.png

Regulatory Branch Chief,

The St. Louis Airport Authority, as the Sponsor of the St. Louis Lambert International Airport (STL), is proposing to move forward with the Consolidated Terminal Program. The Proposed Action requires approval from the Federal Aviation Administration (FAA) of the changes to the STL Airport Layout Plan (ALP) and for Federal financial assistance under the Airport Improvement Program and is therefore subject to the requirements of the National Environmental Policy Act (NEPA). CMT and WSP are currently preparing the NEPA documentation for the Proposed Action for FAA and STL. A copy of the Approved Jurisdictional Determination (AJD) Request is attached.

A full copy of the delineation report with all data forms and background information can be downloaded at this link: STL CTP

Please let us know if you have any questions or if you need any additional information.

Thank you!

HEATHER LACEY | Environmental Group Manager

Crawford, Murphy & Tilly | **Engineers & Consultants**
One Memorial Drive, Suite 500 | St. Louis, MO 63102
w 314.436.5500 | m 937.307.0744 | hlacey@cmtengr.com

Centered in Value

USACE Approved Jurisdictional Determination Response

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103

7 May 2024

Regulatory Branch
File Number: MVS-2024-216

Crawford, Murphy, & Tilly
c/o Heather Lacey
One Memorial Drive, Suite 500
St. Louis, Missouri 63102

Dear Ms. Lacey:

This letter is regarding an approved jurisdictional determination for the project known as Lambert International Airport Consolidated Terminal Program. The Consolidated Terminal Program (CTP) project includes constructing a new consolidated terminal with up to 62 gates in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area. The project is located in Section 22, Township 46 North, Range 6 East, in St. Louis County, Missouri. Approximate geographic coordinates for the site are 38.7426°, -90.3661°.

The features addressed in this AJD were evaluated consistent with the definition of “waters of the United States” found in the pre-2015 regulatory regime and consistent with the Supreme Court's decision in Sackett on 25 May 2023. This AJD did not rely on the 2023 “Revised Definition of ‘Waters of the United States,’” as amended on 8 September 2023 (Amended 2023 Rule) because, as of the date of this decision, the Amended 2023 Rule is not applicable in Missouri due to litigation. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Mississippi Valley Division Office at the address shown on the form.

The features included in this approved jurisdictional determination are:

- UNT 1, jurisdictional – Section 404
- UNT 2, jurisdictional – Section 404
- UNT 3, jurisdictional – Section 404
- UNT 4, non-jurisdictional
- UNT 5, jurisdictional – Section 404
- UNT 6, non-jurisdictional
- UNT 7, non-jurisdictional
- Coldwater Creek, jurisdictional – Section 404
- Wetland A, non-jurisdictional
- SF 1, non-jurisdictional
- SF 2, non-jurisdictional

- SF 3, non-jurisdictional
- SF 4, non-jurisdictional
- SF 5, non-jurisdictional
- SF 6, non-jurisdictional
- SF 7, non-jurisdictional
- SF 8, non-jurisdictional
- SF 9, non-jurisdictional
- SF 10, non-jurisdictional
- SF 11, non-jurisdictional
- SF 12, non-jurisdictional
- SF 13, non-jurisdictional
- SF 14, non-jurisdictional
- SF 15, non-jurisdictional
- SF 16, non-jurisdictional

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the Division Office within 60 days of the date of the enclosed NAP. It is not necessary to submit an RFA form to the division office if you do not object to the determination in this letter

This approved jurisdictional determination may be relied upon for five years from the date of this letter. However, the Corps reserves the right to review and revise the boundary in response to changing site conditions, information that was not considered during our initial review, or off-site activities that could indirectly alter the extent of wetlands and other resources on-site. This determination may be renewed at the end of the five-year period provided you submit a written request, and our staff are able to verify that the limits established during the original determination are still accurate.

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

This review is applicable only to the permit program administered by the Corps of Engineers. It does not eliminate the need to obtain other Federal, state, or local approvals before beginning work and any modification that includes impacts to potential waters may require subsequent review and authorization from this office.

If you have any questions, please contact me in our office at (314) 331-8044 or Chad.M.LaMontagne@usace.army.mil. In any correspondence or inquiries, please refer to the File Number **MVS-2024-216**. The St. Louis District Regulatory Branch is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to go to our Customer Service Survey found on our web site at https://regulatory.ops.usace.army.mil/customer-service-survey/.

Sincerely,

Chad LaMontagne

Chad LaMontagne
Missouri Project Manager
Regulatory Branch

Enclosures

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, ST. LOUIS DISTRICT
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103

CEMVS-OD-F May 7, 2024

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Pre-2015 Regulatory Regime Approved Jurisdictional Determination in Light of *Sackett v. EPA*, 143 S. Ct. 1322 (2023) ,[1] MVS-2024-216

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[2] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[3] For the purposes of this AJD, we have relied on section 10 of the Rivers and Harbors Act of 1899 (RHA),[4] the Clean Water Act (CWA) implementing regulations published by the Department of the Army in 1986 and amended in 1993 (references 2.a. and 2.b. respectively), the 2008 *Rapanos-Carabell* guidance (reference 2.c.), and other applicable guidance, relevant case law and longstanding practice, (collectively the pre-2015 regulatory regime), and the *Sackett* decision (reference 2.d.) in evaluating jurisdiction.

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. The features addressed in this AJD were evaluated consistent with the definition of “waters of the United States” found in the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. This AJD did not rely on the 2023 “Revised Definition of ‘Waters of the United States,’” as amended on 8 September 2023 (Amended 2023 Rule) because, as of the date of this decision, the Amended 2023 Rule is not applicable in Missouri due to litigation.

1. SUMMARY OF CONCLUSIONS.

[1] While the Supreme Court’s decision in *Sackett* had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.
[2] 33 CFR 331.2.
[3] Regulatory Guidance Letter 05-02.
[4] USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

a. Provide a list of each individual feature within the review area and the jurisdictional status of each one (i.e., identify whether each feature is/is not a water of the United States and/or a navigable water of the United States).

i. UNT 1, jurisdictional – Section 404
ii. UNT 2, jurisdictional – Section 404
iii. UNT 3, jurisdictional – Section 404
iv. UNT 4, non-jurisdictional
v. UNT 5, jurisdictional – Section 404
vi. UNT 6, non-jurisdictional
vii. UNT 7, non-jurisdictional
viii. Coldwater Creek, jurisdictional – Section 404
ix. Wetland A, non-jurisdictional
x. SF 1, non-jurisdictional
xi. SF 2, non-jurisdictional
xii. SF 3, non-jurisdictional
xiii. SF 4, non-jurisdictional
xiv. SF 5, non-jurisdictional
xv. SF 6, non-jurisdictional
xvi. SF 7, non-jurisdictional
xvii. SF 8, non-jurisdictional
xviii. SF 9, non-jurisdictional
xix. SF 10, non-jurisdictional
xx. SF 11, non-jurisdictional
xxi. SF 12, non-jurisdictional
xxii. SF 13, non-jurisdictional
xxiii. SF 14, non-jurisdictional
xxiv. SF 15, non-jurisdictional
xxv. SF 16, non-jurisdictional

2. REFERENCES.

a. Final Rule for Regulatory Programs of the Corps of Engineers, 51 FR 41206 (November 13, 1986).

b. Clean Water Act Regulatory Programs, 58 FR 45008 (August 25, 1993).

c. U.S. EPA & U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (December 2, 2008)

d. *Sackett v. EPA*, 598 U.S. _, 143 S. Ct. 1322 (2023)

3. REVIEW AREA. Review area includes areas to the north and south of Lambert International Airport in St. Louis, Missouri. 38.7426, -90.3661.

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), INTERSTATE WATER, OR THE TERRITORIAL SEAS TO WHICH THE AQUATIC RESOURCE IS CONNECTED. Missouri River.

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, INTERSTATE WATER, OR THE TERRITORIAL SEAS. Resources flow into the 3rd order, perennial Coldwater Creek which then flows into the Missouri River – a TNW.

6. SECTION 10 JURISDICTIONAL WATERS[5]: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic

[5] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce, or is presently incapable of such use because of changed conditions or the presence of obstructions.

resource or other feature within the review area and how it was determined to be jurisdictional in accordance with Section 10.[6] N/A

7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the pre-2015 regulatory regime. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.

   a. TNWs (a)(1): N/A

   b. Interstate Waters (a)(2): N/A

   c. Other Waters (a)(3): N/A

   d. Impoundments (a)(4): N/A

   e. Tributaries (a)(5): Flow regime determined by observing flow at lowest downstream extent of defined stream order. Flow was consistent throughout length of feature.

      UNT 1 (389.1 linear feet, 1st order perennial)
      UNT 2 (15.9 linear feet, 1st order perennial)
      UNT 3 (1971.4 linear feet, 1st order perennial)
      UNT 5 (367.9 linear feet, 1st order perennial)
      Coldwater Creek (2827 linear feet, 3rd order perennial)

      UNT 1-3, 5 & **Coldwater Creek** flow continuously at least seasonally. Stream orders were determined by analyzing the flow regime at the furthest downstream end of the order and were the predominate flow regime of the reach.

[6] This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.

f. The territorial seas (a)(6): N/A

g. Adjacent wetlands (a)(7): N/A

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

a. Describe aquatic resources and other features within the review area identified as "generally non-jurisdictional" in the preamble to the 1986 regulations (referred to as "preamble waters").[7] Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA as a preamble water.

Wetland A (0.01-acre) – incidental wetland features that formed in a ditch that is non-relatively permanent, excavated in uplands, and drains only uplands.

SF 1 (7.6'), **SF 2 (49.6')**, **SF 3 (23.2')**, **SF 4 (26.9')**, **SF 5 (40.7')**, **SF 6 (5.2')**: concrete lined drainage ditches that are not relatively permanent waters, excavated in uplands, and drain only uplands.

SF 7: this feature is considered part of UNT 4 (see below).

SF 8 (73.7'): this feature is a vegetated swale that is part of a drainage ditch that was excavated in uplands and is a non-relatively permanent water. Wetland 1 is drained by SF 8, but as that Wetland 1 only exists incidental to SF 8, it is not considered to drain a wetland.

SF 9 (434.0'), **SF 10 (47.5')**, **SF 11 (307.5')**, **SF 12 (625.6')**, **SF 13 (47.1')**: concrete lined drainage ditches that are not relatively permanent waters, excavated in uplands, and drain only uplands.

SF 14 (38.6'): a rock riprap and gravel-lined drainage ditch that does not convey relatively permanent flow, was created in uplands, and drains only uplands.

SF 15 (72.2') and **SF 16 (789.2')**: vegetated swales that do not convey relatively permanent flow, were excavated in uplands, and drain only uplands.

[7] 51 FR 41217, November 13, 1986.

b. Describe aquatic resources and features within the review area identified as "generally not jurisdictional" in the *Rapanos* guidance. Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA based on the criteria listed in the guidance. N/A

c. Describe aquatic resources and features identified within the review area as waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA. Include the size of the waste treatment system within the review area and describe how it was determined to be a waste treatment system. N/A

d. Describe aquatic resources and features within the review area determined to be prior converted cropland in accordance with the 1993 regulations (reference 2.b.). Include the size of the aquatic resource or feature within the review area and describe how it was determined to be prior converted cropland. N/A

e. Describe aquatic resources (i.e. lakes and ponds) within the review area, which do not have a nexus to interstate or foreign commerce, and prior to the January 2001 Supreme Court decision in "*SWANCC*," would have been jurisdictional based solely on the "Migratory Bird Rule." Include the size of the aquatic resource or feature, and how it was determined to be an "isolated water" in accordance with *SWANCC*. N/A

f. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the pre-2015 regulatory regime consistent with the Supreme Court's decision in *Sackett* (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).

UNT 4 (108.7 linear feet, 1st order ephemeral)
UNT 6 (32.6 linear feet, 1st order ephemeral)
UNT 7 (1694.2 linear feet, 1st order ephemeral)

UNT 4, 6, & 7 do not exhibit continuous flow at least seasonally, flowing only in response to precipitation events. Stream orders were determined by analyzing the flow regime at the furthest downstream end of the order and were the predominate flow regime of the reach.

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

   a. Aquatic and Ecological Resources Report: March 22, 2024

   b. Regulatory Viewer – accessed 6 May 2024

10. OTHER SUPPORTING INFORMATION. Lambert International Airport Master Plan – Stormwater Planning.

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.

Study Area
Wetland
Swale
Stream
Culvert
Drainage Ditch
Upland Data Point
Wetland Data Point
Culvert Inlet
Culvert Outlet
Potential IN/NLEB Roost Tree

Wetlands
Wetland

Swales
Swale

Ecological Resources Map 1
Ecological Resources Map 2
Ecological Resources Map 3
Ecological Resources Map 4
Ecological Resources Map 5
Ecological Resources Map 6
Ecological Resources Map 7

Runway 6/24
Runway 12R/30L
Coldwater Creek
UNT 1
2 UNT
UNT 4
Cypress Rd
Lambert-International Blvd
SF 8
A2
A1
UNT 6
Wetland A
UNT 5
B2
UNT 7
SF 15
SF 16
Stormwater Detention Basin
Natural Bridge Rd
70

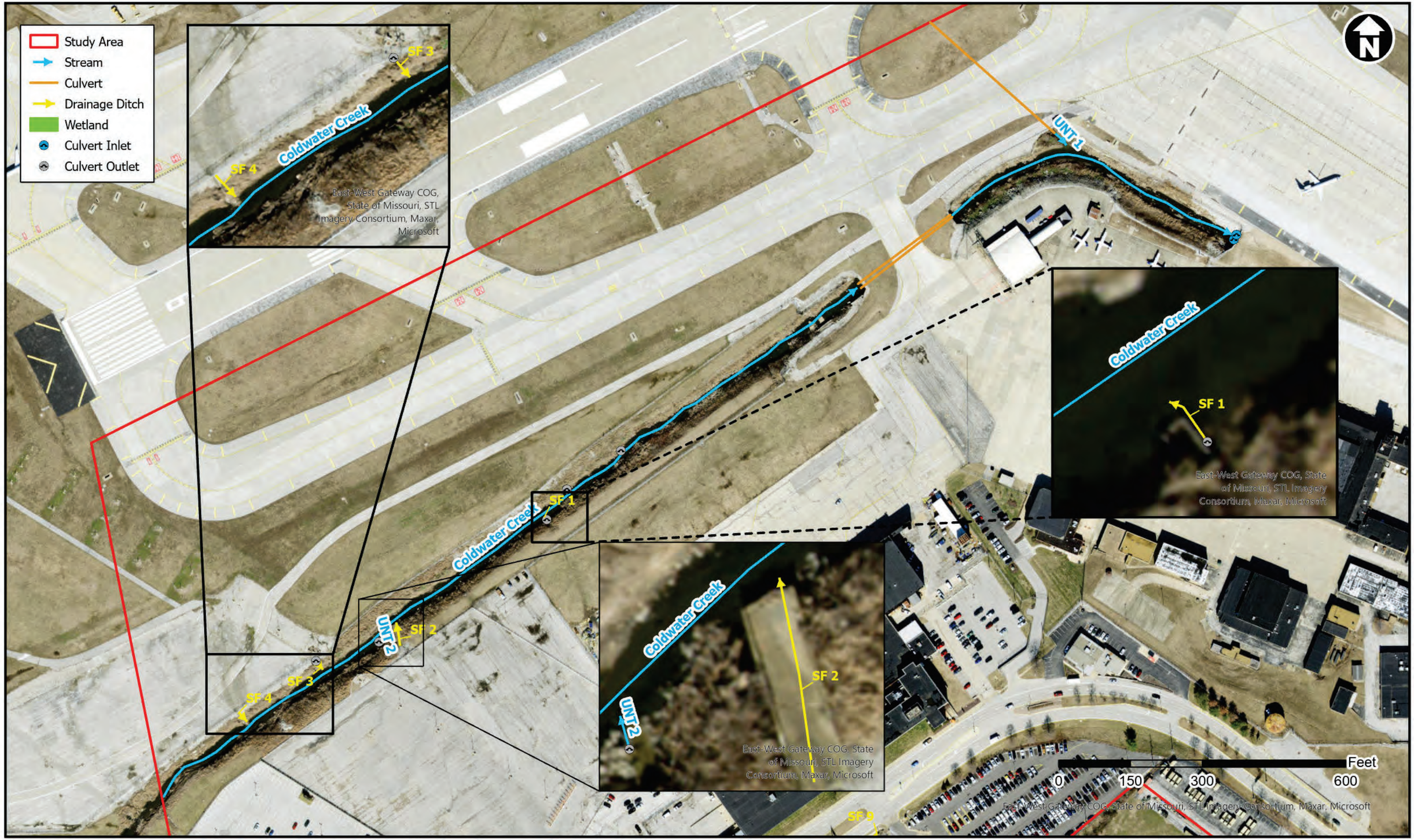
0 0.13 0.25 0.5 Miles

State of Missouri, STL Imagery Consortium, Maxar

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources Overall Map

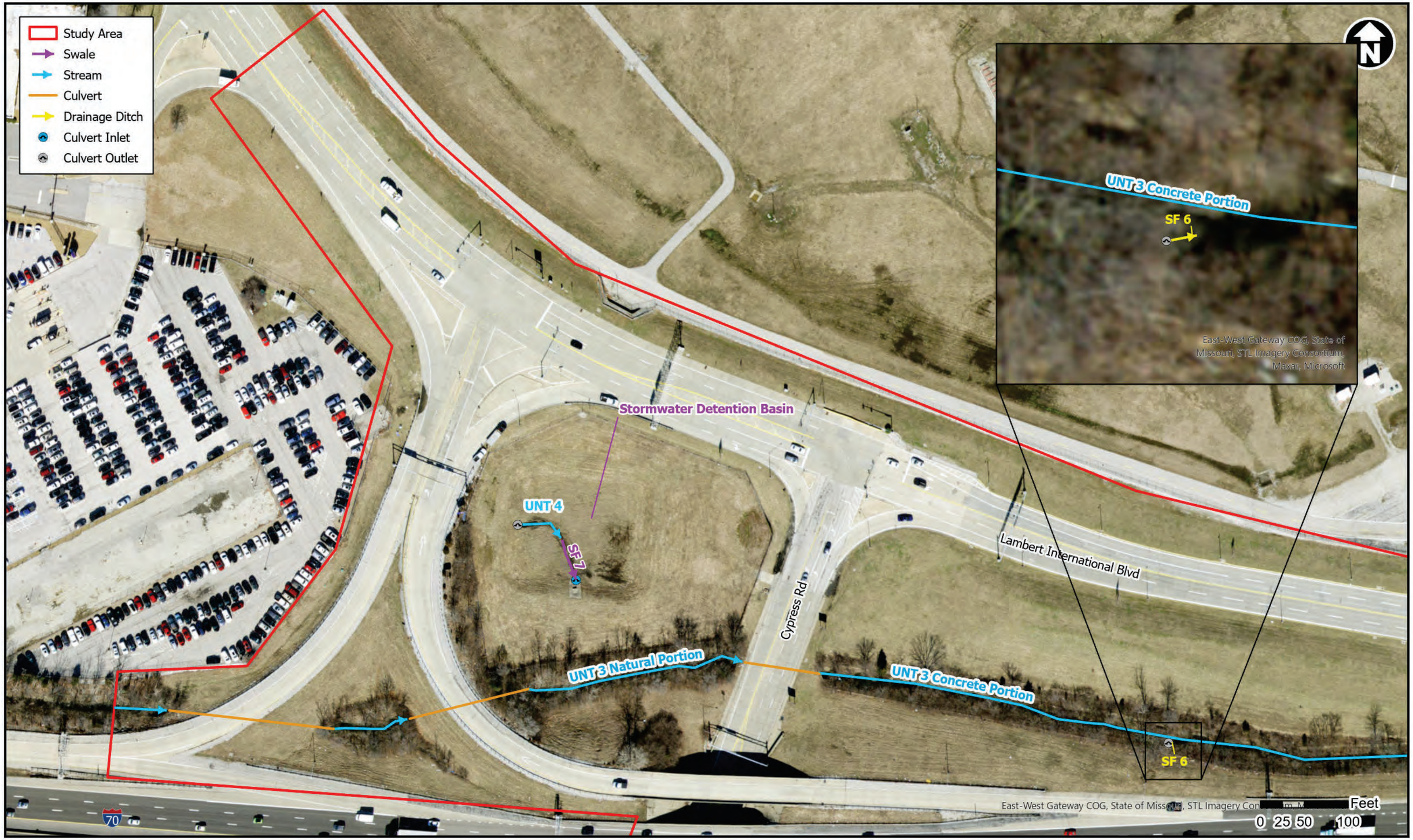
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (1 of 7)

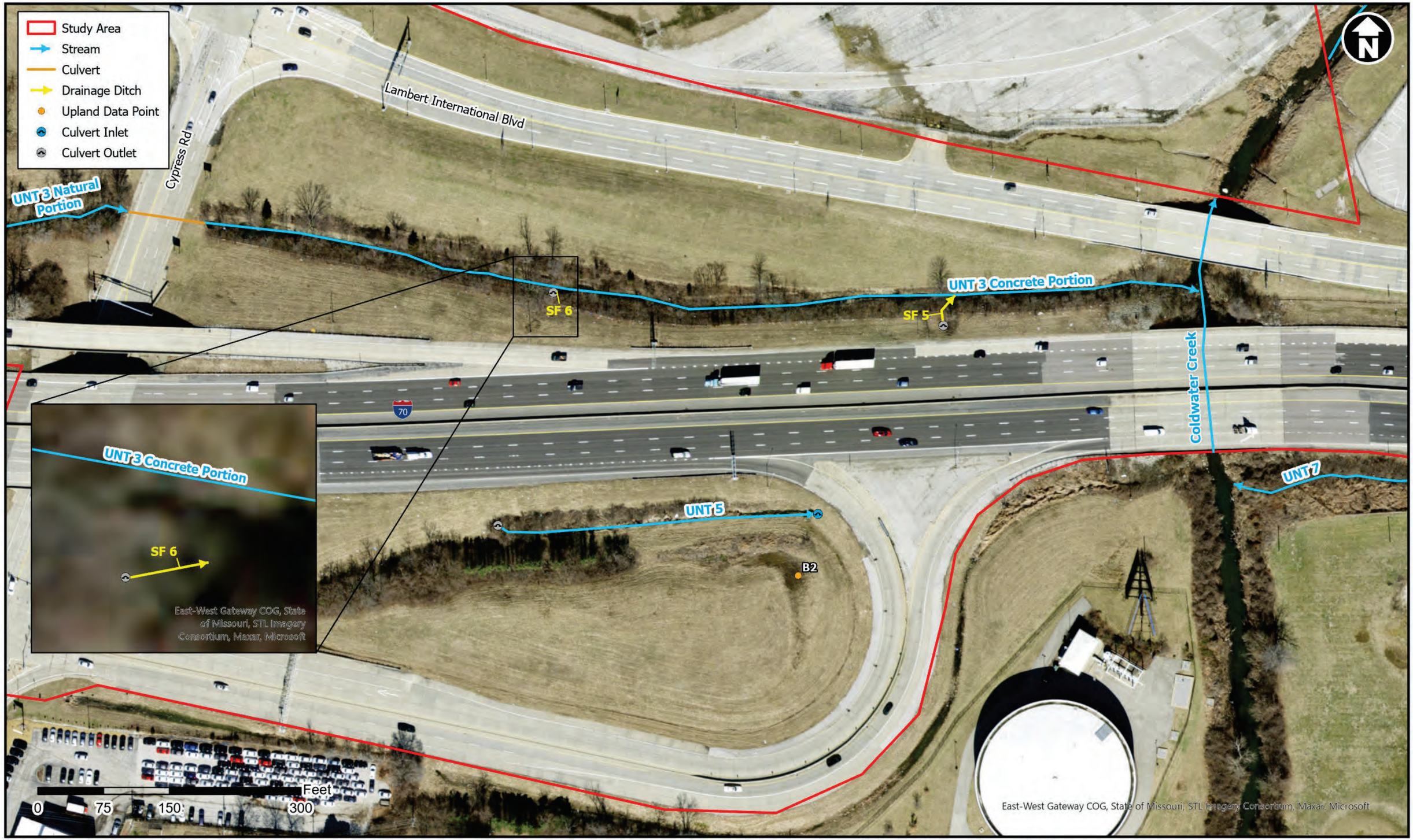
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (2 of 7)

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (3 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (4 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

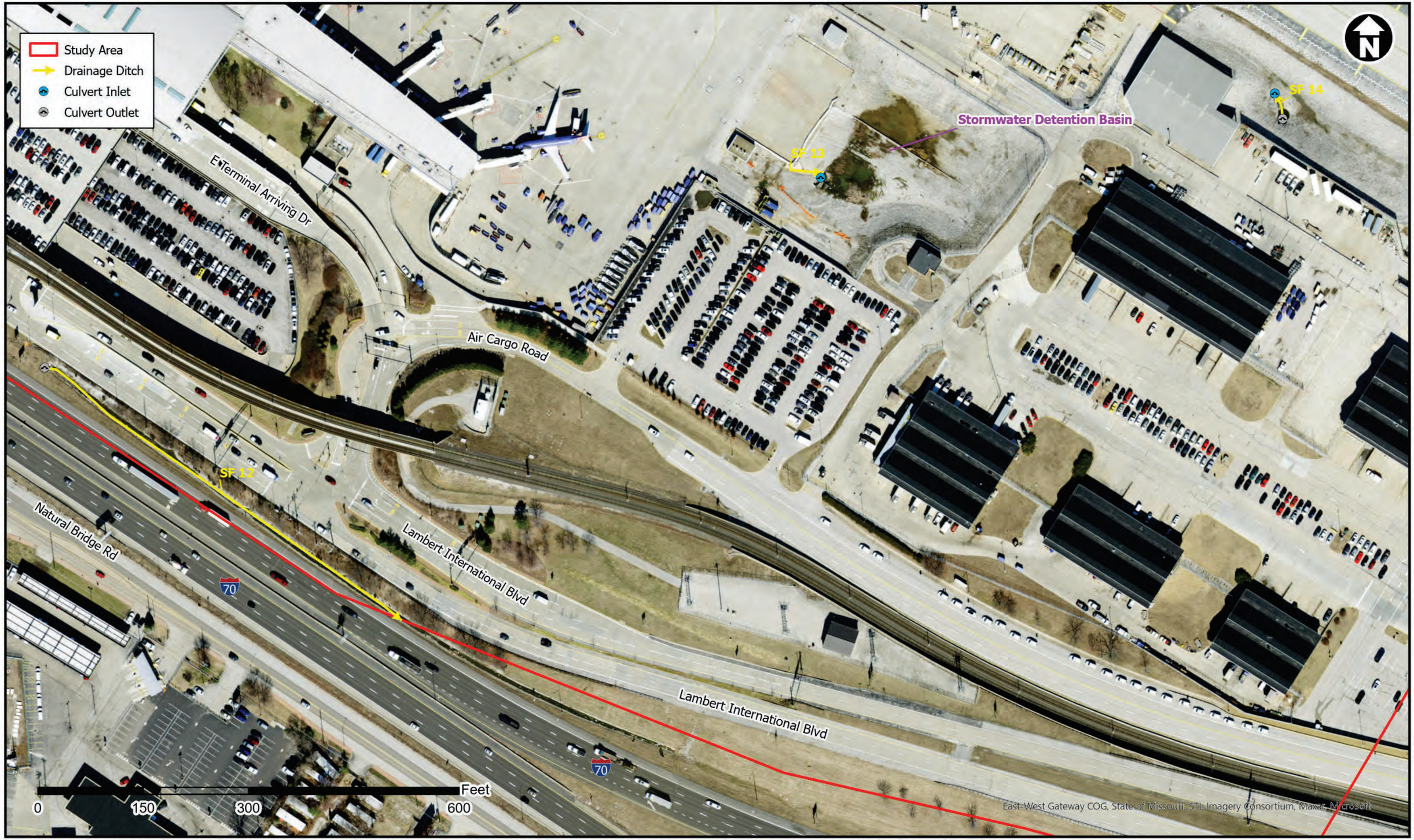
Ecological Resources (5 of 7)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (6 of 7)

CMT
Crawford, Murphy & Tilly



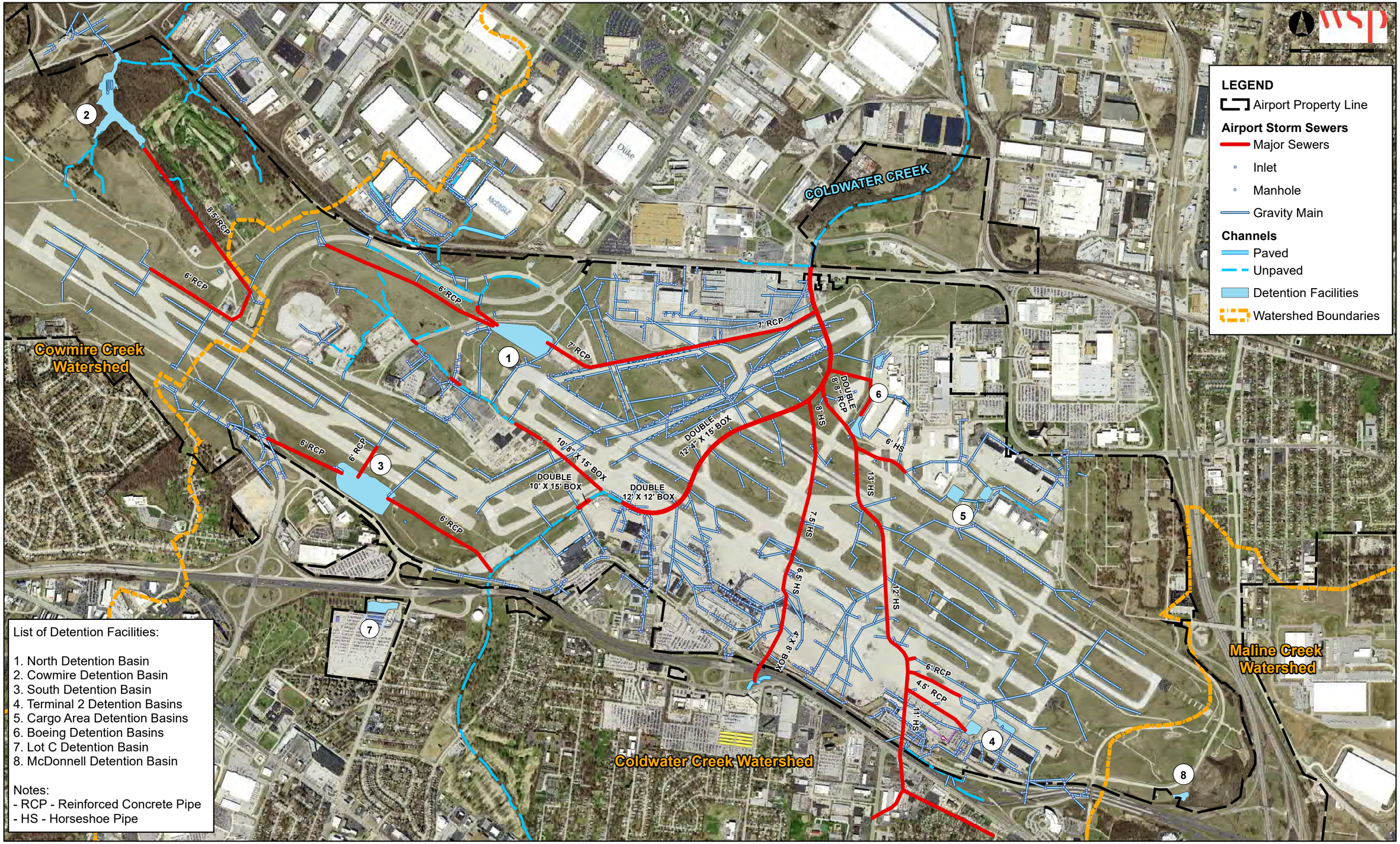
St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources (7 of 7)

CMT
Crawford, Murphy & Tilly

ST LOUIS LAMBERT INTERNATIONAL AIRPORT
Airport Master Plan
Stormwater Planning
February 2023

Figure 9.3-1
Stormwater Data Collection
Existing Airport Stormwater System Map



List of Detention Facilities:

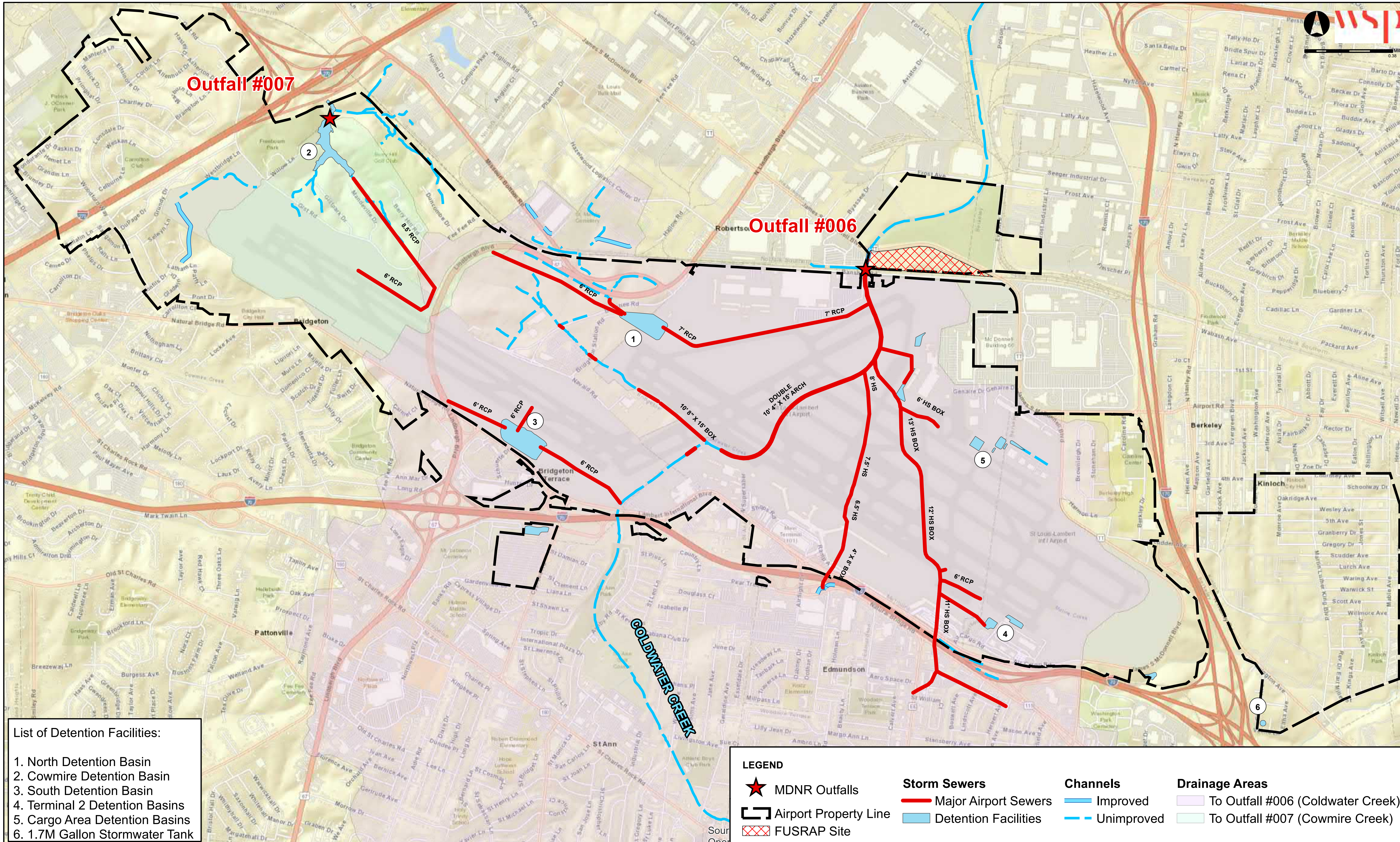
1. North Detention Basin
2. Cowmire Detention Basin
3. South Detention Basin
4. Terminal 2 Detention Basins
5. Cargo Area Detention Basins
6. Boeing Detention Basins
7. Lot C Detention Basin
8. McDonnell Detention Basin

Notes:
- RCP - Reinforced Concrete Pipe
- HS - Horseshoe Pipe

SOURCE: M3 Engineering, 2021.

ST LOUIS LAMBERT INTERNATIONAL AIRPORT
Airport Master Plan
Stormwater Planning
February 2023

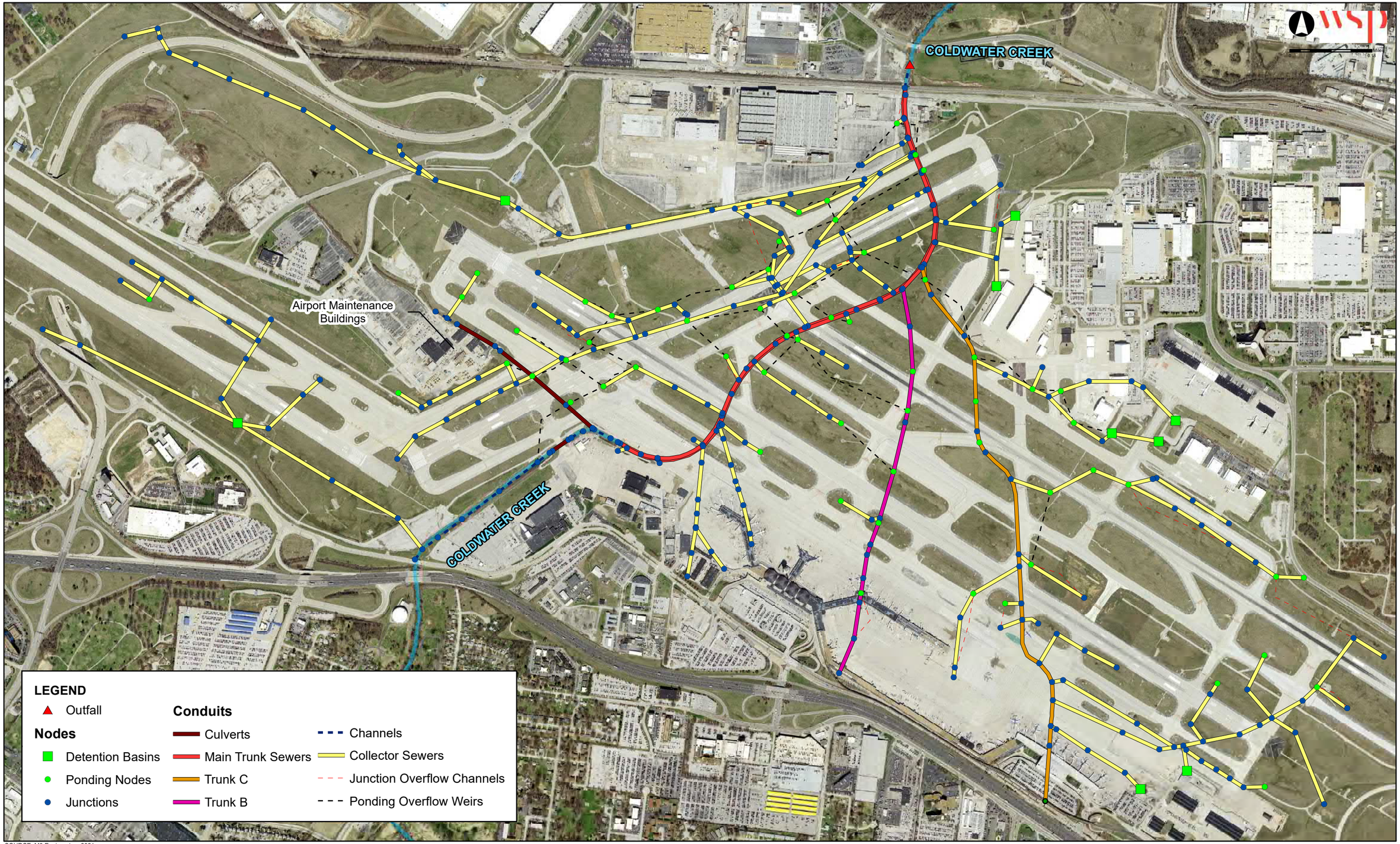
Figure 9.4-1
Stormwater Rules and Regulations
Outfall Locations and Major Sewers Map



SOURCE: M3 Engineering, 2021.

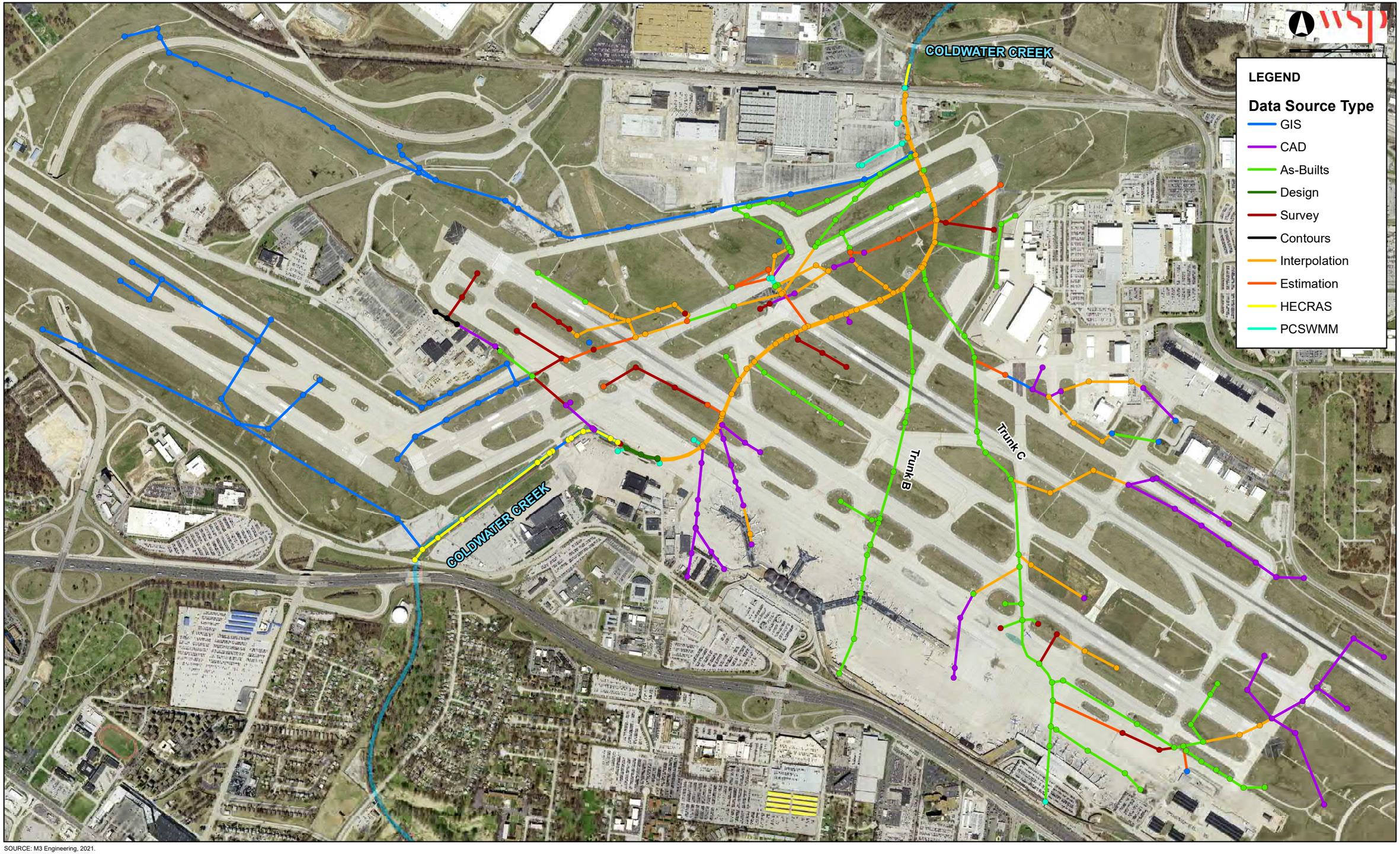
ST LOUIS LAMBERT INTERNATIONAL AIRPORT
Airport Master Plan
Stormwater Planning
February 2023

Figure 9.5-1
Coldwater Creek Airport Stormwater Model
Model Overview Map



SOURCE: M3 Engineering, 2021.

Figure 9.5-11
Coldwater Creek Airport Stormwater Model
Model Data Source Types



SOURCE: M3 Engineering, 2021.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: St. Louis Lambert Intern. Airport	File Number: MVS-2024-216	Date: 7 May 2024
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL WITHOUT PREJUDICE	C
	PERMIT DENIAL WITH PREJUDICE	D
X	APPROVED JURISDICTIONAL DETERMINATION	E
	PRELIMINARY JURISDICTIONAL DETERMINATION	F

SECTION I

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/appeals/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL WITHOUT PREJUDICE: Not appealable
You received a permit denial without prejudice because a required Federal, state, and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application. The permit denial without prejudice is not appealable. There is no prejudice to the right of the applicant to reinstate processing of the Army permit application if subsequent approval is received from the appropriate Federal, state, and/or local agency on a previously denied authorization and/or certification.

D: PERMIT DENIAL WITH PREJUDICE: You may appeal the permit denial
You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information for reconsideration

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

- RECONSIDERATION: You may request that the district engineer reconsider the approved JD by submitting new information or data to the district engineer within 60 days of the date of this notice. The district will determine whether the information submitted qualifies as new information or data that justifies reconsideration of the approved JD. A reconsideration request does not initiate the appeal process. You may submit a request for appeal to the division engineer to preserve your appeal rights while the district is determining whether the submitted information qualifies for a reconsideration.

F: PRELIMINARY JURISDICTIONAL DETERMINATION: Not appealable
You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision you may contact:	If you have questions regarding the appeal process, or to submit your request for appeal, you may contact:
U.S. Army Corps of Engineers St. Louis District Regulatory Branch 1222 Spruce St. St. Louis, MO. 63103 314-331-8575	Administrative Appeals Review Officer Mississippi Valley Division U.S. Army Corps of Engineers 1400 Walnut Street Vicksburg, MS 39181-0080 601-634-5820

SECTION II – REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT	
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. Use additional pages as necessary. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)	
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation and will have the opportunity to participate in all site investigations.	
_____ Signature of appellant or agent.	Date:
Email address of appellant and/or agent:	Telephone number:

USFWS Concurrence Request Letter

April 19, 2024

John Weber, Field Supervisor
U.S. Fish & Wildlife Service
Ecological Services
101 Park Deville Drive
Columbia, Missouri 65203-0057
Sent via email: John_S_Weber@fws.gov

RE: ST. LOUIS LAMBERT INTERNATIONAL AIRPORT – CONSOLIDATED TERMINAL PROGRAM
ST. LOUIS, ST. LOUIS COUNTY, MISSOURI
SECTION 7 INFORMAL CONSULTATION
IPAC PROJECT CODE: 2023-0082619

Dear Mr. Weber:

The Federal Aviation Administration (FAA) is considering a proposal by St. Louis Lambert International Airport (STL), referred to as the Consolidated Terminal Program, to construct a new consolidated terminal and roadway improvements (Project). As the designated federal representative in making Section 7 determinations, FAA has determined that this project may affect, but is not likely to adversely affect (NLAA) the Indiana, Northern long-eared and tricolored bats and will have no effect on the gray bat, decurrent false aster, pallid sturgeon and bald eagle. We are requesting that the Service review the proposed activities, as described below, for concurrence with these NLAA determinations.

Location

The proposed project is located approximately 13 miles northwest of downtown St. Louis in unincorporated St. Louis County, Missouri. Per the USGS Saint Charles, Florissant, Creve Coeur, and Clayton, MO Quadrangle Maps, the study area is situated within Sections 5 and 28, Township 46 North, and Range 6 East. See Attachment 1: Project Location Map.

Project Description

Consistent with the Airport Layout Plan Update and Master Plan, STL proposes to construct a new consolidated terminal, with up to sixty-two gates, in the location of the existing Terminal 1 location at STL. Nearly all the passenger processing areas of Terminals 1 and 2 are undersized and congested. In addition, mechanical systems, holdrooms, restrooms and concession space in Terminal 1 are in poor condition and functionally obsolete. Additional gates are required in Terminal 2, and while there are unused gates in the adjacent Concourse D, they are undersized, functionally obsolete, and would result in unacceptably long walks for passengers. Post-security concessions are undersized in both terminals, restricting both passenger choices and Airport revenue. Therefore, both terminals provide a sub-optimum level of passenger service. The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground

transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area.

The roadway geometry, intersections, and curbsides have several existing safety deficiencies and inefficiencies that would be made worse with the forecast increase in passengers. The project is intended to accommodate the demand for airport traffic to and from a single terminal. The project will provide a new terminal roadway with the optimal length from interstate to terminal while minimizing changes needed to existing interstate facilities. The primary impact of the project is the redistribution of traffic from the Airflight Drive interchange to the Cypress Road interchange. In order to accommodate the redistribution of traffic, a continuous auxiliary lane is proposed in the westbound direction of I-70 from the Airflight Drive entrance ramp to the Cypress Road exit ramp while closing the existing westbound I-70 on ramp from Lambert International Boulevard. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 Cypress Road entrance is recommended. A conceptual plan of the proposed Project is included as **Attachment 2: Project Layout.**

Effects on Threatened & Endangered Species

The project study area was observed for suitable threatened and endangered species habitat during on-site evaluations conducted on May 23 and 24, 2023, January 31, 2024, and March 20, 2024. See **Attachment 3: Ecological Overview Map** *and* **Attachment 4: Site Visit Photos**.

*According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list (***Attachment 5***) and the Missouri Department of Conservation (MDC) Natural Heritage Review (***Attachment 6***), the project is within the known or historic range of the following protected species:*

- *Gray bat (Myotis grisescens), federally endangered*
- *Indiana bat (Myotis sodalis), federally and state endangered*
- *Northern long-eared bat (Myotis septentrionalis), federally endangered*
- *Tricolored bat (Perimyotis subflavu), proposed federally endangered*
- *Decurrent false aster (Boltonia decurrens), federally threatened, state endangered*
- *Pallid sturgeon (Scaphirhynchus albus), federally and state endangered*
- *Bald eagle (Haliaeetus leucocephalus), protected*

Gray bat (Myotis grisescens): No caves are known to be present in the project area, so suitable habitat is not expected to be available in the project area. **Therefore, this project is expected to have no effect on the gray bat.**

Indiana bat (Myotis sodalis), and Northern long-eared bat (Myotis septentrionalis): Suitable habitat for these species was identified as any tree over 3 inches DBH with peeling bark or cavities that would provide shelter and allow the bat to move around the tree for thermoregulation. Up to 3.9 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout disturbed areas on airport property and road right-of-way, and the majority of trees are saplings. One (1) tree was identified as a suitable bat roost tree. The project sponsor commits to clear the identified suitable bat roost tree during the bat inactive season, between November 1 and March 31. Some structure demolition will be necessary for the project. Any structures that are open (such as the parking garage) or in poor condition and may allow for bat roosting, will be inspected prior to demolition to evaluate for the signs

of bat presence. ***Therefore, this project may affect, but is not likely to adversely affect the Indiana and Northern long-eared bats.***

Tricolored bat (Perimyotis subflavus): Suitable habitat for this species was identified as live and dead leaf clusters of live or recently dead deciduous hardwood trees. Up to 3.9 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout disturbed areas on airport property and road right-of-way, and the majority of trees are saplings. One (1) tree was identified as a suitable bat roost tree. The project sponsor commits to clear the identified suitable bat roost tree during the bat inactive season, between November 1 and March 31. Some structure demolition will be necessary for the project. Any structures that are open (such as the parking garage) or in poor condition and may allow for bat roosting, will be inspected prior to demolition to evaluate for the signs of bat presence. ***Therefore, this project may affect, but is not likely to adversely affect the tricolored bat.***

Decurrent false aster (Boltonia decurrens): Suitable habitat for this species was identified as moist, sandy floodplains or prairie wetland areas. The project is within a highly developed area, consisting of upland, mowed lawn, and commercial areas. The identified wetland does not contain the appropriate wet-prairie habitat and are of degraded, poor quality. ***Therefore, this project is expected to have no effect on decurrent false aster.***

Pallid sturgeon (Scaphirhynchus albus): No rivers large enough to support the pallid sturgeon are located on the project site. ***Therefore, this project is expected to have no effect on the pallid sturgeon.***

Bald eagle (Haliaeetus leucocephalus): No bald eagle nests were reported by MDC or observed during the on-site investigations on May 23 and 24, 2023, January 31, 2024, and March 20, 2024. ***Therefore, this project is expected to have no effect on the bald eagle.***

The project is not located within any designated critical habitat areas.

Following your review of this information, ***FAA is requesting concurrence on the NLAA determinations for the Indiana, Northern long-eared, and tricolored bats.***

We look forward to your review of this request. If there are questions or if any additional information is needed, please contact me at hlacey@cmtengr.com or (937) 701-6578 or Scott Tener at scott.tener@faa.gov or (816) 329-2639.

Sincerely,
CRAWFORD, MURPHY & TILLY, INC.

Heather Lacey

Heather Lacey
Senior Environmental Scientist

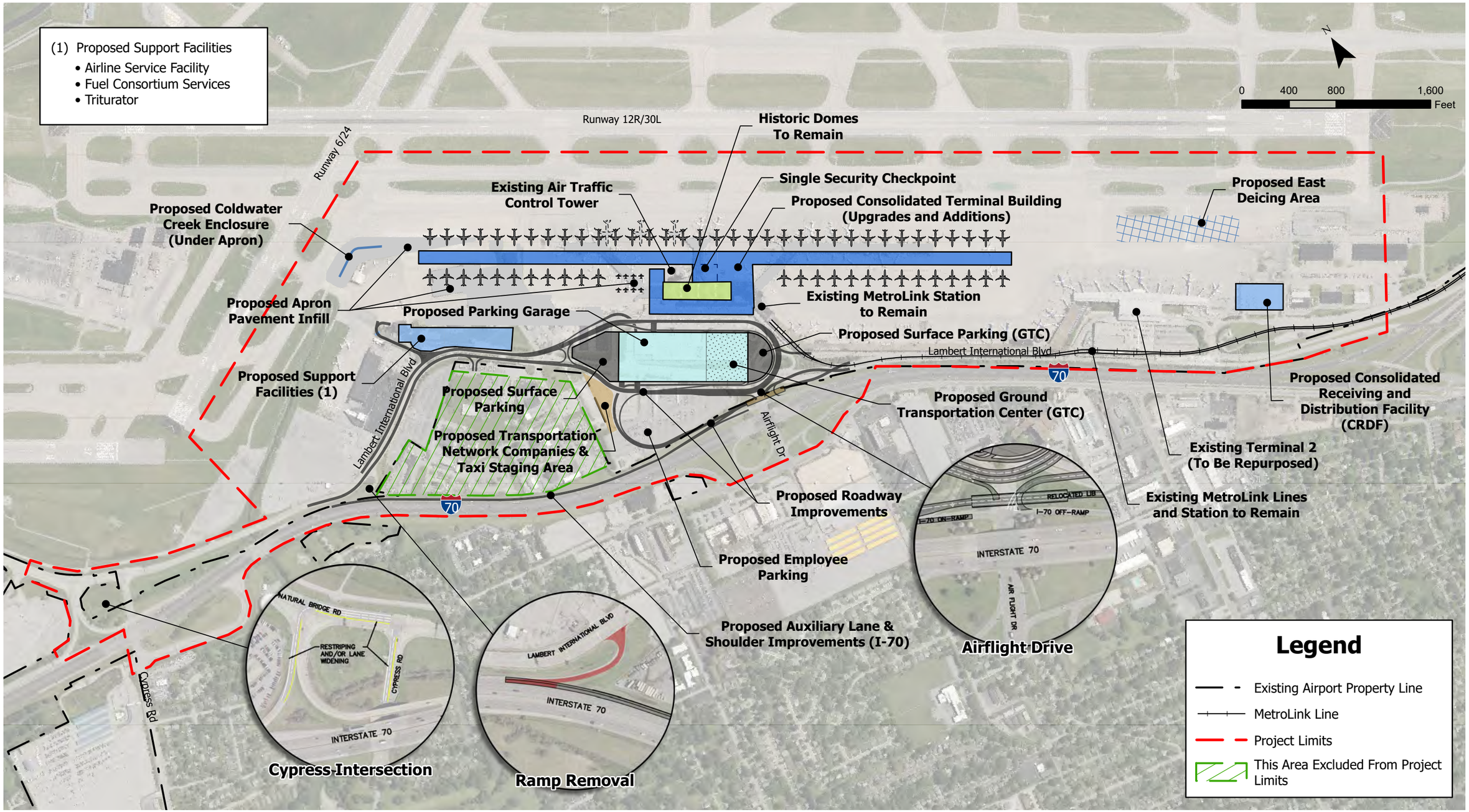
Enc: ***Attachment 1: Project Location Map***
Attachment 2: Project Layout
Attachment 3: Ecological Resources Overall Map
Attachment 4: Site Visit Photographs (#83-84)
Attachment 5: IPaC Official Species List
Attachment 6: MDC Natural Heritage Review

Cc: *Scott Tener, Federal Aviation Administration*
Jerry Beckmann, St. Louis Airport Authority
Jennifer Kuchinski, WSP
Laura Sakach, CMT

Attachment 1: Project Location Map

Sources: Background Map, ESRI World Street Map, CMT, 2023.

Attachment 2: Project Layout

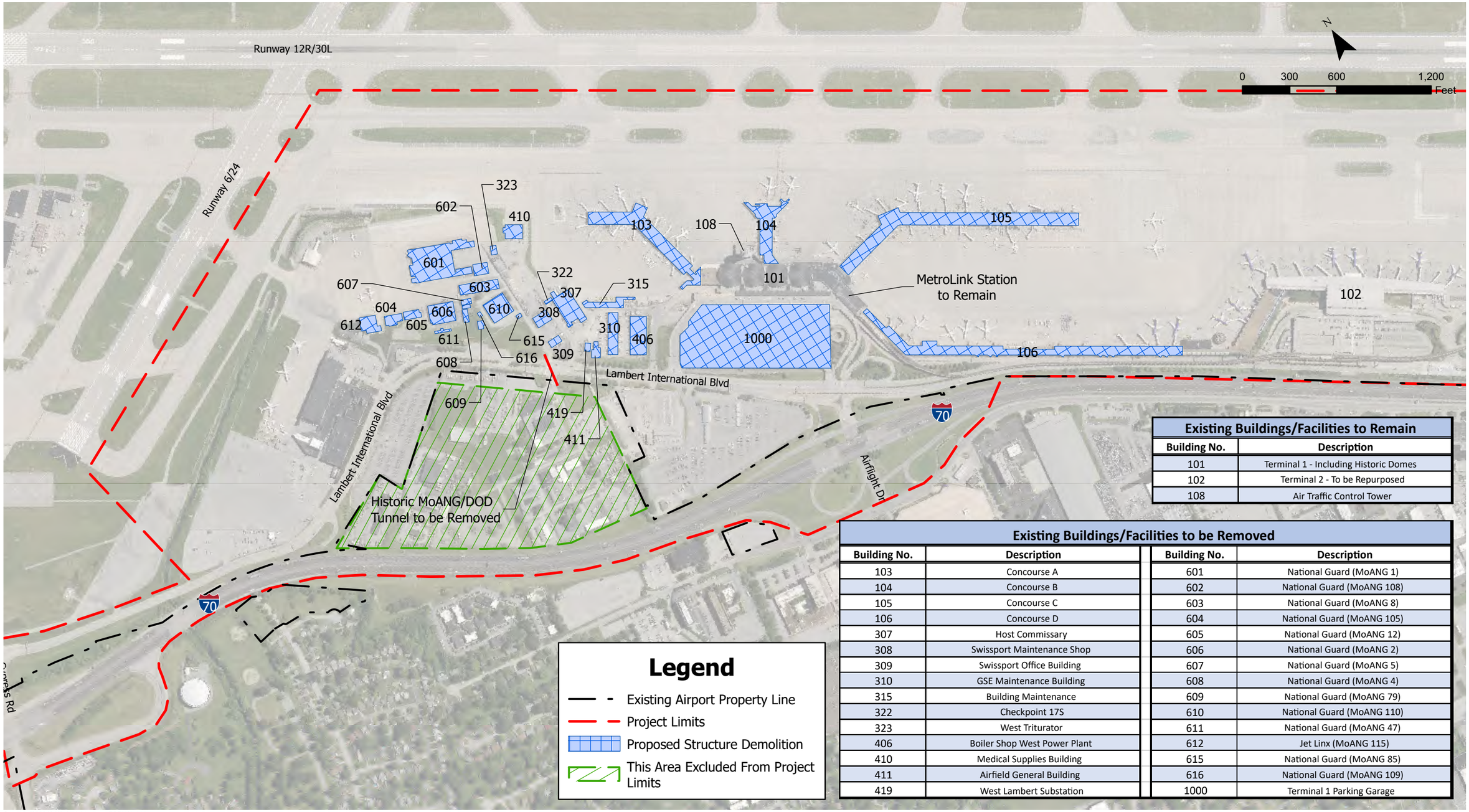


Source: [22004919] Aerial Image - ESRI World Imagery

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Sponsor's Proposed Action

Exhibit x-x



Existing Buildings/Facilities to Remain

Building No.	Description
101	Terminal 1 - Including Historic Domes
102	Terminal 2 - To be Repurposed
108	Air Traffic Control Tower

Existing Buildings/Facilities to be Removed

Building No.	Description	Building No.	Description
103	Concourse A	601	National Guard (MoANG 1)
104	Concourse B	602	National Guard (MoANG 108)
105	Concourse C	603	National Guard (MoANG 8)
106	Concourse D	604	National Guard (MoANG 105)
307	Host Commissary	605	National Guard (MoANG 12)
308	Swissport Maintenance Shop	606	National Guard (MoANG 2)
309	Swissport Office Building	607	National Guard (MoANG 5)
310	GSE Maintenance Building	608	National Guard (MoANG 4)
315	Building Maintenance	609	National Guard (MoANG 79)
322	Checkpoint 17S	610	National Guard (MoANG 110)
323	West Triturator	611	National Guard (MoANG 47)
406	Boiler Shop West Power Plant	612	Jet Linx (MoANG 115)
410	Medical Supplies Building	615	National Guard (MoANG 85)
411	Airfield General Building	616	National Guard (MoANG 109)
419	West Lambert Substation	1000	Terminal 1 Parking Garage

Source: [22004919] Aerial Image - ESRI World Imagery

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

Sponsor's Proposed Action Removals

Exhibit x-x

Attachment 3: Ecological Resources Overall Map

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

Ecological Resources Overall Map

CMT
Crawford, Murphy & Tilly

Attachment 4: Site Visit Photographs #83-84
(Additional photos available in the Aquatic and Ecological Resources Report – to be provided upon request)

83. View of row of 16 *Betula nigra* (river birch) potential bat roost trees. 1/31/2024

84. Representative photo of potential *Betula nigra* (river birch) roost tree, exhibiting peeling bark, that will likely be removed by project. 5/24/2023

Attachment 5: IPaC Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: February 21, 2024
Project Code: 2023-0082619
Project Name: St. Louis Lambert International Airport – Consolidated Terminal Program

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the Species website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

John Weber

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

PROJECT SUMMARY

Project Code: 2023-0082619
Project Name: St. Louis Lambert International Airport – Consolidated Terminal Program
Project Type: Airport - New Construction
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton, MO USGS Quadrangles.
The proposed project consists of constructing a new sixty-two gate consolidated terminal in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area. The proposed improvements also include an auxiliary lane and shoulder improvements along I-70 westbound from the Airflight Drive entrance ramp to the Cypress Road exit ramp and adjustments to the Cypress Road interchange. It also removes direct access to the new consolidated terminal from Airflight Road to the south. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 entrance is recommended. Construction is anticipated to begin in 2025 and be completed by the end of 2031.

Land use in the vicinity of the project is commercial and residential. Coldwater Creek runs through the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area.
Suitable summer habitat is located within and adjacent to the project area. Suitable summer habitat will be impacted for the construction of the project. No more than 6.7 acre of tree removal, all within 100 feet of existing roadway, will be required for the project. One (1) tree was identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. The project activities will not include the use of percussives. The project does include installing new permanent lighting. Although temporary lighting is not expected to be required for the construction of the project, it is possible some night work will be performed. Mitigation is not anticipated.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.74154435,-90.36614188618142,14z

Counties: St. Louis County, Missouri

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Z6DI3ZCPARBXZMZZPXBZMYWGXM/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/Z6DI3ZCPARBXZMZZPXBZMYWGXM/documents/generated/6868.pdf	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Decurrent False Aster *Boltonia decurrens*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7705

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Crawford, Murphy and Tilly Inc.
Name: Stephanie Spence
Address: 1 Memorial Dr
Address Line 2: Suite 500
City: St. Louis
State: MO
Zip: 63102
Email sspence@cmtengr.com
Phone: 5134278169

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Attachment 6: MDC Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: St. Louis Lambert International Airport – Consolidated Terminal Program #12779
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri at 38.7362840 latitude -90.3860201 longitude. The proposed work is 0.1 mile east of Pear Tree Lane, 0.78 mile north of State Road 180 and 0.01 mile east of Hunter Drive. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton, MO USGS Quadrangles. Construction is anticipated to begin in 2025 and be completed by the end of 2031. Land use in the vicinity of the project is predominantly developed commercial and residential areas, with some sparse wooded areas. Coldwater Creek runs through the western terminus of the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area. The current Terminals 1 and 2 have limited capacity, and are unable to handle future growth of the airport. Portions of Terminal 1 are in poor condition and both Terminals 1 and 2 have areas that are functionally obsolete, providing a sub-optimum level of passenger service. Additionally, the landside roadway geometry, intersections, and curbsides have existing safety deficiencies, and some on-airport parking facilities are operating over capacity. The proposed project consists of constructing a new sixty-two gate consolidated terminal in the location of the existing Terminal 1 location at the St. Louis Lambert International Airport (STL). The proposed project involves modifying the core terminal processor, relocating the terminal support facilities, new landslide configuration, new consolidated receiving and distribution facility, new ground transportation center, proposed surface parking, remain overnight parking and parking garage, constructing a new east deicing pad, and the full enclosure of a portion of Coldwater Creek running through the project area The project will also provide a new terminal roadway with the optimal length from interstate to terminal while minimizing changes needed to existing interstate facilities. The primary impact of the project is the redistribution of traffic from the Airflight Drive interchange to the Cypress Road interchange. In order to accommodate the redistribution of traffic, a continuous auxiliary lane is proposed in the westbound direction of I-70 from the Airflight Drive entrance ramp to the Cypress Road exit ramp while closing the existing westbound I-70 on ramp from Lambert International Boulevard. Additional changes are proposed at the MO 115 and I-70 westbound intersection to the west of Cypress Road. Two left turns are recommended westbound, extending to the intersection at Cypress Road. Additionally, adding a second lane to the I-70 entrance is recommended. The total project area is 593 acres.

Project Type: Transportation, Airports (runways, taxiways, terminals, control towers, beacons, fuel depots), Construction of new runways, terminals/concourses, other facilities
Contact Person: Stephanie Spence
Contact Information: sspence@cmtengr.com or 5134278169

Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

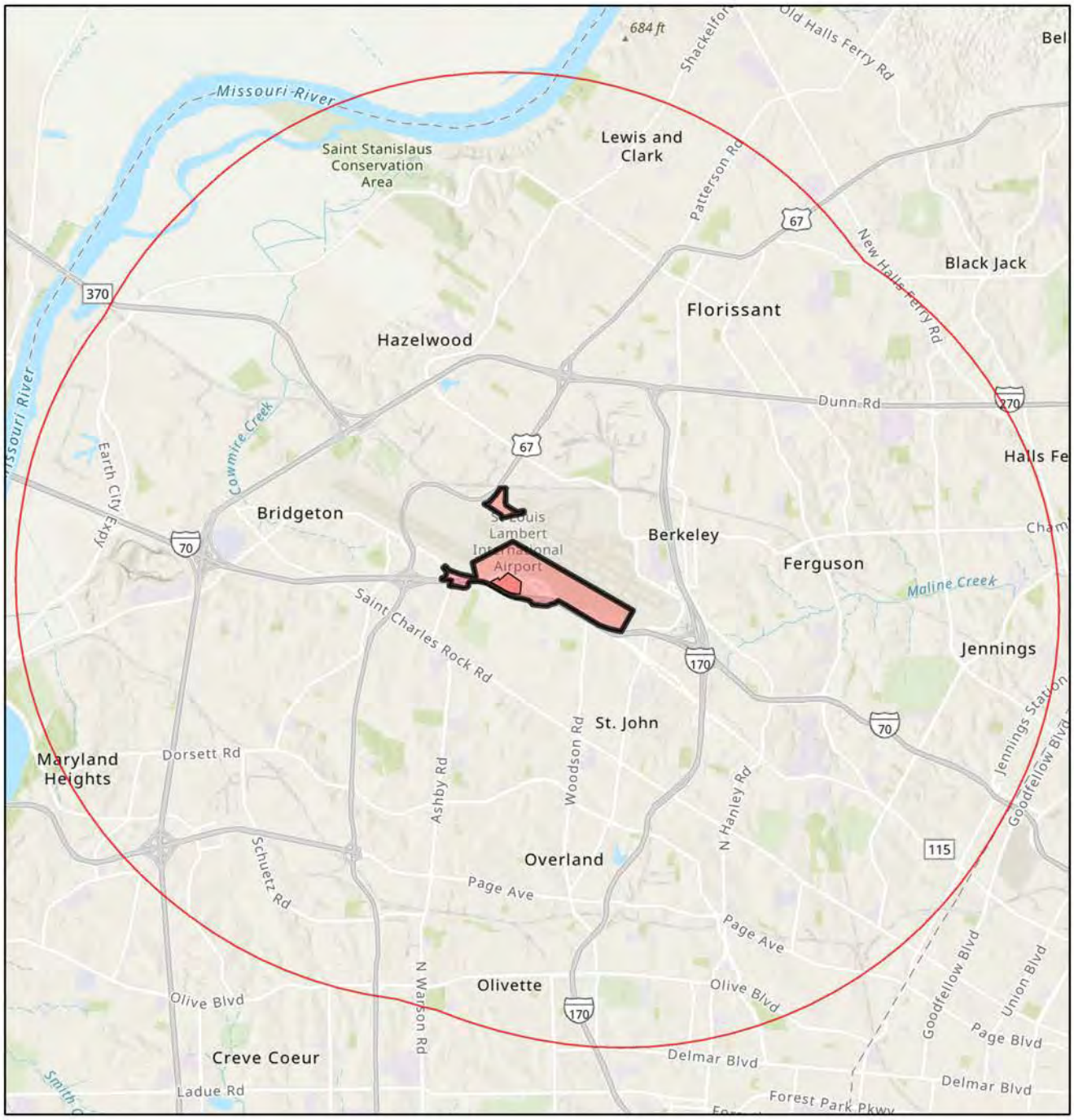
This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

PRELIMINARY REPORT

St. Louis Lambert International Airport – Consolidated Terminal Program



February 21, 2024

1:105,570

0 0.75 1.5 3 mi

0 1.25 2.5 5 km

Buffered Project Boundary

Project Boundary

County of St. Louis, Missouri Dept. of Conservation, Missouri DNR, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri, NASA, NGA, USGS

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, Bridgeton Armory, Bryan Island, Ferguson (January-Wabash Park Lake), Hickory Woods CA, Jennings (Koeneman Park Lake), Overland (Wild Acres Park Lake), STL Lambert, Saint Stanislaus CA, please contact MOARNG, COE, MDC.

Project Type Recommendations:

Transportation -Airports: New and Maintenance should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions. Project design should include stormwater management elements that assure storm discharge rates to streams for heavy rain events will not increase from present levels. Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

Decurrent False Aster (Boltonia decurrens, federal-listed threatened and state-listed endangered) may occur in this area. Decurrent False Aster is a head floodplain species that grows in wetlands and on the borders of marshes, lakes, oxbows, and sloughs. It also may be found in old fields, roadsides, agricultural fields, and on levees. It favors sites characterized by moist soil and regular disturbance, preferably periodic flooding, which maintains open areas with high light levels. Today it is found in areas where succession is prevented, and sunlight is allowed to reach the seedlings. It is a perennial plant that blooms from August through October. Please see Best Management Practices for Construction and Development Projects Decurrent False Aster (mo.gov).

Gray Bat: The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

Karst: This county has known karst geologic features (e.g., caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are Species of Conservation Concern) are influenced by changes to water quality; please check your project site for any karst features and make every effort to protect groundwater in the project area. Additional information and specific recommendations are available at Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

Pallid Sturgeon: The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See Pallid Sturgeon Best Management Practices (mo.gov) for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

PRELIMINARY REPORT

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

PRELIMINARY REPORT

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

PRELIMINARY REPORT

USFWS Concurrence E-mail

From:	Weber, John S
To:	Heather Lacey
Cc:	Tener, Scott (FAA); Beckmann, Gerald A.; Kuchinski, Jennifer; Douglas Gregory; Neidel II, James R.; Marion Wells; Stephanie Spence
Subject:	Re: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program
Date:	Friday, April 19, 2024 5:06:42 PM

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Dear Ms. Lacey,

The U.S. Fish and Wildlife Service has reviewed your April 19, 2024, email and enclosures requesting consultation on the proposed St. Louis Lambert International Project in St. Louis County, Missouri and submits these comments pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

Based on the information provided, the Service concurs with your determination that the proposed project is not likely to adversely affect federally listed species and is not likely to jeopardize the continued existence of the tricolored bat or the monarch butterfly. Should the scope, timing, or manner of activity change, please contact this office.

Thank you for the opportunity to review the proposed project.

Sincerely,

John Weber
Field Supervisor
Missouri Field Office
U.S. Fish & Wildlife Service
Cell: 573-825-6048

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Friday, April 19, 2024 9:44 AM
To: Weber, John S <John_S_Weber@fws.gov>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Douglas Gregory <dgregory@cmtengr.com>; Neidel II, James R. <jrneidel@flystl.com>; Marion Wells <mwells@cmtengr.com>; Stephanie Spence <sspence@cmtengr.com>
Subject: RE: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program

Hi John,
I've revised the effect determination letter to include the requirement to inspect structures for presence of bats prior to demolition. We will incorporate this along with the time of year tree removal commitments into the EA.

Please let us know if you need anything else to concur with the determinations.

Thank you!

HEATHER LACEY | **Crawford, Murphy & Tilly** | w 314.436.5500 | m 937.307.0744
Environmental Group Manager

From: Weber, John S <John_S_Weber@fws.gov>
Sent: Wednesday, April 17, 2024 1:01 PM
To: Heather Lacey <hlacey@cmtengr.com>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Douglas Gregory <dgregory@cmtengr.com>; Neidel II, James R. <jrneidel@flystl.com>
Subject: Re: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Hi Heather,

Yes—please update the EA to include an inspection for bats prior to demolition. Once I receive your updated EA, I am happy to concur with a not likely to adversely affect determination.

Best regards,

John Weber
Field Supervisor
Missouri Field Office
U.S. Fish & Wildlife Service
Cell: 573-825-6048

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Wednesday, April 17, 2024 7:56 AM
To: Weber, John S <John_S_Weber@fws.gov>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Douglas Gregory <dgregory@cmtengr.com>; Neidel II, James R. <jrneidel@flystl.com>
Subject: RE: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program

Good morning John,
Thank you for the prompt response to our concurrence request. All of the buildings planned to be demolished are in good condition and in most cases, occupied so we didn't see any need to do a detailed inspection of those. All culverts/bridges within the project area were inspected

for any signs of bat occupation with none identified.

If necessary for a no adverse effect determination, we can include a commitment to check structures for the presence of bats prior to demo in the EA. Let us know your thoughts. If you would like to discuss further, I'd be happy to set up a conference call. We are aiming to have the EA in for FAA and MoDOT review by the end of April so it would be ideal to have something set up soon if needed.

Thanks,

HEATHER LACEY | Crawford, Murphy & Tilly | w 314.436.5500 | m 937.307.0744
Environmental Group Manager

From: Weber, John S <John_S_Weber@fws.gov>
Sent: Tuesday, April 16, 2024 8:07 AM
To: Heather Lacey <hlacey@cmtengr.com>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Douglas Gregory <dgregory@cmtengr.com>
Subject: Re: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program

External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Heather,

Thank you kindly for sending this in. We reviewed a similar request from Boeing this year at STL Lambert. As you correctly identified in your request, our main concern for this project is listed bat species. In this case, your tree removal request is minimal and not a large concern, especially if performed in the winter. We are more concerned about bats using the structures to be demolished and the timing of the demolition. Abandoned buildings in poor condition are often home to bats, and sometimes federally protected bats.

If your group can commit to removing any structures in poor condition that may facilitate bat habitation during the bat inactive season from October 15-April 1, then we would be able to concur with a "Not-Likely to Adversely Affect" determination.

I'm happy to get on the phone to discuss sometime soon as well.

Best,

John Weber
Field Supervisor
Missouri Field Office
U.S. Fish & Wildlife Service

Cell: 573-825-6048

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Thursday, April 11, 2024 8:42 AM
To: Weber, John S <John_S_Weber@fws.gov>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Douglas Gregory <dgregory@cmtengr.com>
Subject: [EXTERNAL] St. Louis Lambert International Airport Consolidated Terminal Program

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Good afternoon Mr. Weber,
On behalf of the Federal Aviation Administration (FAA), attached is an informal Section 7 consultation and request for concurrence for the referenced project at St. Louis Lambert International Airport. FAA is requesting concurrence on the NLAA determinations for the Indiana, Northern long-eared, and tricolored bats.

If there are questions or if any additional information is needed, please let me know.

Thank you,
HEATHER LACEY | Environmental Group Manager

Crawford, Murphy & Tilly | **Engineers & Consultants**
One Memorial Drive, Suite 500 | St. Louis, MO 63102
w 314.436.5500 | m 937.307.0744 | hlacey@cmtengr.com

Centered in Value

Appendix F:
Section 4(f) Evaluation

Section 4(f) Statement
Proposed Consolidated Terminal Program

St. Louis Lambert International Airport

St. Louis, St. Louis County, Missouri

October 2024

Prepared by: Crawford, Murphy & Tilly, Inc. and WSP

Table of Contents

List of Figures

1 Introduction

Section 4(f) of the Department of Transportation (DOT) Act of 1966 protects significant publicly owned parks, recreation areas, or wildlife and waterfowl refuges and public and private historic sites that are listed or eligible for listing on the National Register of Historic Places (NRHP). The Secretary of Transportation may approve a transportation project requiring the use of such resources if, after a full evaluation, there is no feasible and prudent alternative to using that land and the project includes all possible planning to minimize harm resulting from the use. Section 4(f) of the DOT Act of 1966 is currently codified as 49 U.S.C. Section 303. This Statement will refer to 49 U.S.C. Section 303 as Section 4(f).

This Section 4(f) Statement addresses the proposed Consolidated Terminal Program and other associated projects (the Proposed Action) at the St. Louis Lambert International Airport (STL or Airport) in St. Louis, St. Louis County, Missouri. The City of St. Louis (City) is the owner of the airport and is responsible for the operations of the airport. The implementation of the Proposed Action would result in the physical use of a Section 4(f) resource.

This Section 4(f) Statement provides the required documentation to demonstrate that there is no prudent and feasible alternative that would avoid the use of Section 4(f) resources in the form of historic properties. This evaluation also outlines the coordination that has occurred and demonstrates that all possible planning to minimize harm to the Section 4(f) resource has occurred.

2 Description of the Proposed Action

The Proposed Action includes the following major components and connected actions[1] as summarized in Table 1 and depicted in Figures 1, 2 and 3.

Table 1: Proposed Action

Major Project Components and Connected Actions
Enabling Projects: ▪ Demolish various structures to accommodate a new consolidated terminal, including all buildings and a tunnel which comprise the **Lambert Field Historic District** (former Missouri Air National Guard (MoANG) Campus), South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities (Swissport), phased demolition of existing Concourses A, B, C and D, and other support facilities as depicted in Figure 1. ▪ Construct a temporary Consolidated Receiving & Distribution Facility (CRDF), Building Maintenance Facility, and Airport Administration & Police Space.
Consolidated Terminal/Airside Components: ▪ Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2, as depicted in Figures 2 and 3, including: o Reconfigure terminal passenger ticketing and baggage claim areas within the existing historic terminal dome area, o Construct new consolidated security screening centered between the check-in lobby and the terminal concourse, o Construct new Federal Inspection Services (FIS)/Customs accessible to all airlines, o Construct new baggage claim area on lower level of the new consolidated terminal, and o Relocate and upgrade utilities (electric, natural gas, telecommunications, water, sanitary and storm sewers, glycol and hydrant fueling, etc.). ▪ Construct replacement airline support facilities to accommodate Ground Support Equipment (GSE), fuel consortium services, triturator,[2] and other airline/airport support services. ▪ Construct Consolidated Receiving and Distribution Facility (CRDF) ▪ Construct various stormwater collection system improvements, including east deicing pad spent aircraft deicing fluid (SADF) collection infrastructure. ▪ Construct terminal apron infill around the west terminal concourse, including proposed Coldwater Creek enclosure. ▪ Reconstruct the aprons and taxilanes in the vicinity of the new consolidated terminal. ▪ Convert Taxilane C to Taxiway C. ▪ Close Terminal 2 and mothball until a potential reuse is identified.

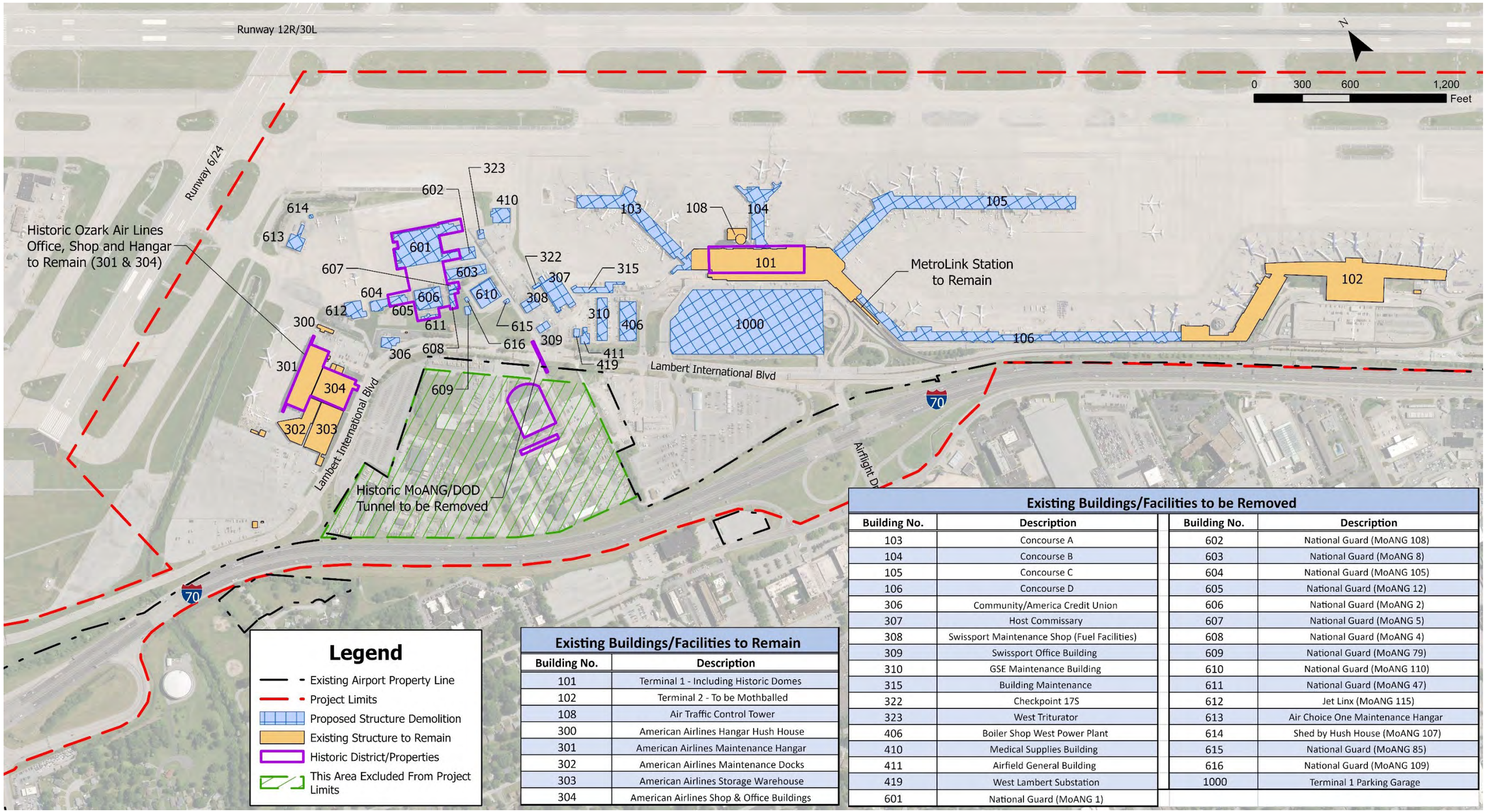
[1] Connected actions are closely related actions that: (a) automatically trigger other actions; (b) cannot or will not proceed unless other actions are taken previously or simultaneously; or (c) are interdependent parts of a larger action and depend on the larger action for their justification (see 40 CFR § 1508.25 (a) (1), CEQ Regulations).

[2] An airport triturator is a specialized system used for waste disposal at airports, particularly for managing waste from aircraft lavatories.

Major Project Components and Connected Actions
On-Airport Roadway and Landside Components: ▪ Realign terminal roadway system with improved driver wayfinding. The Cypress/Natural Bridge Intersection will become the main access into the Consolidated Terminal. ▪ Construct replacement two-level passenger drop-off and pick-up curb. ▪ Construct Ground Transportation Center (GTC). ▪ Construct replacement terminal parking garage, surface parking and employee parking facilities. ▪ Construct Transportation Network Companies & Taxi Staging Area.
▪ **Connected Actions – Other Roadway Access Improvements:** ▪ Construct roadway and intersection improvements in coordination with the Federal Highway Administration (FHWA), and the Missouri Department of Transportation (MoDOT),[3] including: o Auxiliary lane and shoulder improvements along westbound I-70 between the Airflight Drive and Natural Bridge Road interchanges, o Airflight Drive intersection improvements, including removing direct access from northbound Airflight to the proposed Consolidated Terminal, o Remove ramp from Lambert International Boulevard onto westbound I-70, and o Intersection improvements at the I-70 and Cypress Road/Natural Bridge Interchange, which may include widening or restriping pavement for additional turning lanes at the various ramp terminal intersections. ▪ Construct potential additional access improvements as identified and refined during the detailed design phase of the project.

[3] During the conceptual design phase of the CTP, it was determined that some off-airport roadway capacity improvements would be needed to better accommodate vehicular traffic demand that currently accesses two terminals at STL but would access a single terminal under the Proposed Action. Therefore, these proposed off-airport roadway improvements have been included as part of the Proposed Action being evaluated, and are being coordinated with MoDOT and FHWA.

Figure 1: Proposed Action – Consolidated Terminal Program (Structure Removals)



Existing Buildings/Facilities to Remain

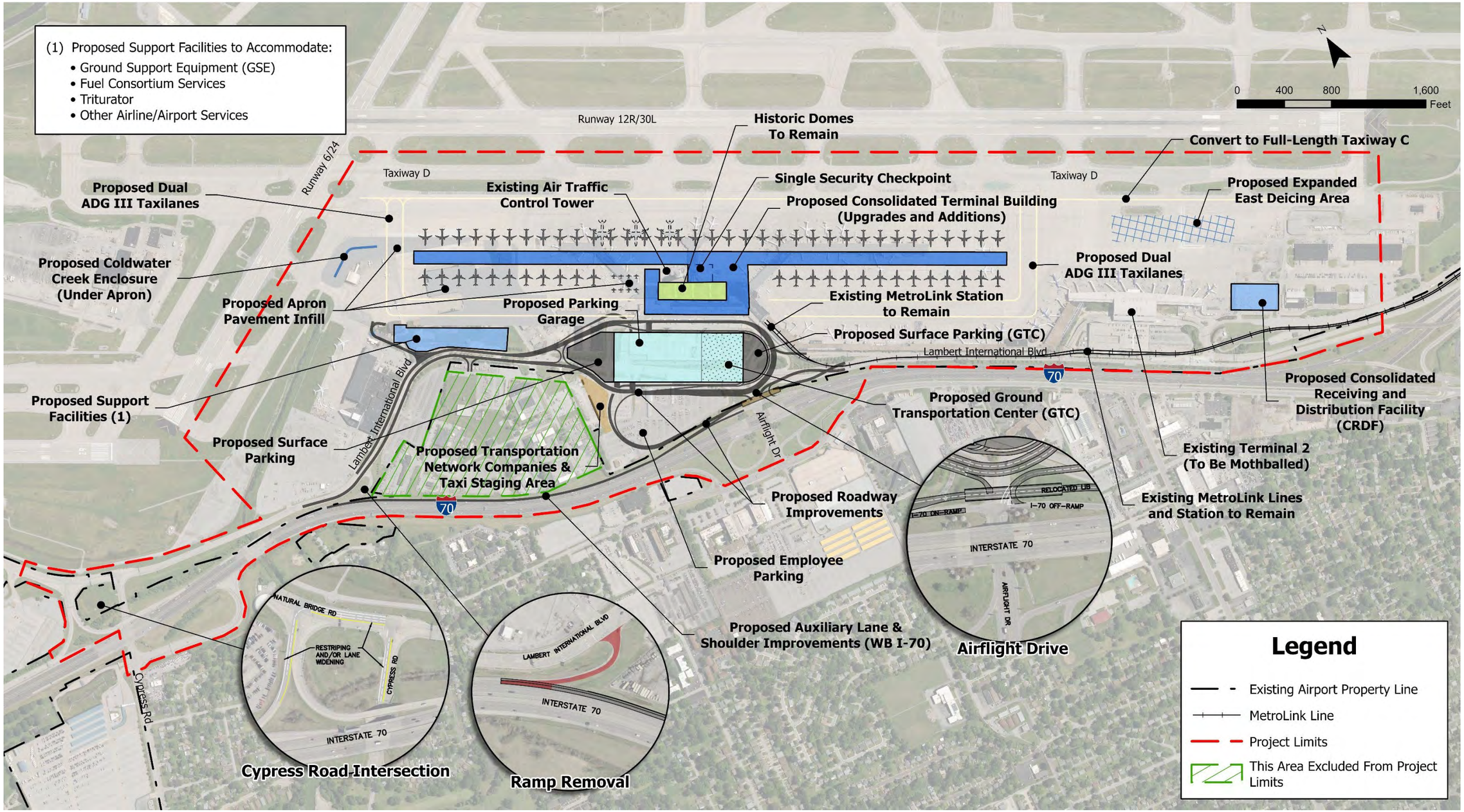
Building No.	Description
101	Terminal 1 - Including Historic Domes
102	Terminal 2 - To be Mothballed
108	Air Traffic Control Tower
300	American Airlines Hangar Hush House
301	American Airlines Maintenance Hangar
302	American Airlines Maintenance Docks
303	American Airlines Storage Warehouse
304	American Airlines Shop & Office Buildings

Existing Buildings/Facilities to be Removed

Building No.	Description	Building No.	Description
103	Concourse A	602	National Guard (MoANG 108)
104	Concourse B	603	National Guard (MoANG 8)
105	Concourse C	604	National Guard (MoANG 105)
106	Concourse D	605	National Guard (MoANG 12)
306	Community/America Credit Union	606	National Guard (MoANG 2)
307	Host Commissary	607	National Guard (MoANG 5)
308	Swissport Maintenance Shop (Fuel Facilities)	608	National Guard (MoANG 4)
309	Swissport Office Building	609	National Guard (MoANG 79)
310	GSE Maintenance Building	610	National Guard (MoANG 110)
315	Building Maintenance	611	National Guard (MoANG 47)
322	Checkpoint 17S	612	Jet Linx (MoANG 115)
323	West Triturator	613	Air Choice One Maintenance Hangar
406	Boiler Shop West Power Plant	614	Shed by Hush House (MoANG 107)
410	Medical Supplies Building	615	National Guard (MoANG 85)
411	Airfield General Building	616	National Guard (MoANG 109)
419	West Lambert Substation	1000	Terminal 1 Parking Garage
601	National Guard (MoANG 1)		

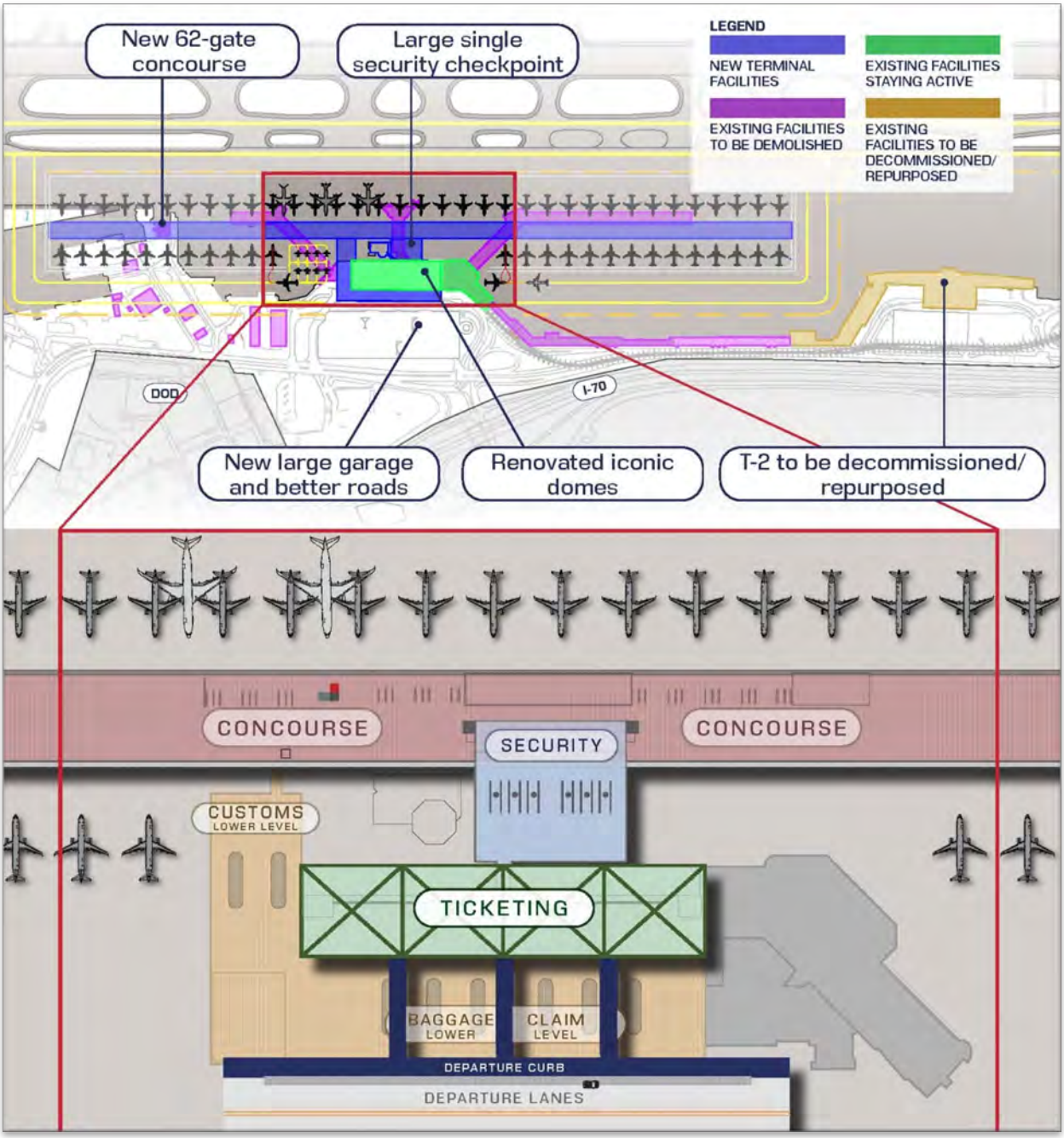
Source: CMT, 2024.

Figure 2: Proposed Action - Consolidated Terminal Program



Source: CMT, 2024.

Figure 3: Proposed Action - Consolidated Terminal Conceptual Layout



Source: WSP USA, 2024.

3 Purpose and Need

The purpose of the Proposed Action is to enhance the passenger experience; increase airport revenue; eliminate duplication of services; eliminate aging and redundant building systems; and ensure continued safe, secure, and efficient operations, by providing sufficient space and facilities for current and forecast passenger demand and aircraft operations, as well as improved access from the highway.

The need for this project is evidenced by current deficiencies within the existing terminals, roadways, and parking facilities which must be improved to enhance the passenger experience, increase airport revenue, and continue safe and efficient operations. The current Terminals 1 and 2 are undersized and congested and both terminals have functionally obsolete facilities. Both terminals provide a sub-optimum level of passenger service. The short distance between the Interstate Highway and the Terminal, the roadway geometry, intersections, and curbsides have safety and capacity deficiencies that would be made worse with the forecast increase in passengers and increased traffic.

The assessment of needed facilities (including deficiencies noted above) is based on the forecast, which was reviewed and approved by the FAA on August 21, 2020.[4] A subsequent forecast review in 2022 documented that passenger enplanements are forecast to increase from nearly 7.9 million in 2019 to 10.1 million in 2037.[5, 6] Commercial aircraft operations (passenger and cargo) are forecast to increase over the same period from nearly 175,000 operations to 195,000 operations. This growth is anticipated to occur with or without the Proposed Action.

4 Aviation Demand Forecast and Critical Design Aircraft Approval Letter, FAA, August 21, 2020.

5 WSP, Memorandum from John van Woensel of WSP to Jerry Beckman and Dana Ryan of St. Louis Airport Authority: STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments, September 30, 2022.

6 St. Louis Airport Authority's fiscal year ends each year on June 30th and 2022 passenger and operation numbers are actual from FY 2022.

4 Description of Section 4(f) Resources

In compliance with Section 106 of NHPA, an evaluation of properties was completed within an identified Area of Potential Effect (APE) for the Proposed Action to determine if any properties/resources are listed in or considered eligible for listing on the NRHP. The evaluation included archaeological field surveys. The evaluation identified historic resources within the APE. There were no archaeological sites identified within the APE.

Of the Section 4(f) properties identified, only one, Lambert Field Historic District (former MoANG Campus), would experience a physical use as a result of the project. The terminal building is also discussed in this section due to the potential for a Section 4(f) use. Constructive use and de minimis use of Section 4(f) properties are not anticipated.

4.1 Terminal Building

The main terminal building was constructed in 1956. The building was designed by Minoru Yamasaki with the goal of creating the most airy, open, and uncluttered space possible. Described as "*the Grand Central of the Air*", the terminal building was crucial in starting the new Jet Age architecture used in terminal design of the time. The terminal has experienced alterations and additions since its original construction. The historic property boundary is limited to the four main terminal domes, as shown in Figures 4, 5 and 6. Later additions and the concourse are excluded from the boundary.

Figure 4: Terminal Building Historic Property Boundary

Source: WSP USA, 2023.

The Terminal Building is significant under Criterion A for its contribution to the history of the area. When constructed, the Terminal Building was one of the most advanced in the country, and the increased capacity as well as its ability to accommodate larger airliners, which spurred significant growth in the City of St. Louis. The Terminal Building is also significant under Criterion C due to its use of Jet Age architecture and significant influence of the architectural trends of other airport terminals across the country.

Figure 5: Terminal Building Historic Domes

Source: WSP USA, 2022.

The building is also considered the work of a master as Yamasaki was a prominent architect throughout the 20th century. The Terminal Building exhibits characteristics of his style.

Within the historic property boundary, the Project proposes improvements to the ticketing area to improve operational efficiency. Below, the baggage claim area would be expanded to accommodate additional baggage claim units. A new security checkpoint would be constructed between the Terminal Building and a new concourse to consolidate security in a single location. Many of these activities are in previously altered areas and/or in areas where these functions currently occur. Design details for this work are not finalized, and the Project's specific effects on the Terminal Building's other aspects of integrity are unknown.

Figure 6: Terminal Building Historic Domes (Interior)

Source: WSP USA, 2022.

No alterations of any kind are proposed for the historic domes in the Terminal Building. FAA is consulting with the Missouri State Historic Preservation Officer (SHPO) and preparing a Memorandum of Agreement (MOA) to enable a no adverse effect finding. Implementation of any measures to minimize harm stipulated in the MOA are expected to prevent any Section 4(f) use.

4.2 Lambert Field Historic District

The Lambert Field Historic District[7] was determined eligible for the NRHP in 2016. The boundary of the historic district was described and delineated in 2012. See Figures 7 and 8. The historic district includes a total of seven buildings and a tunnel associated with the MoANG. The boundary of this district is the extent of these buildings and tunnel, and it was determined that none of the buildings or tunnel are individually eligible. The buildings within the historic district were constructed in the 1940s and 1950s, representing the increased MoANG presence at the Airport during WWII and the Cold War. The District's importance during this period makes it significant under Criterion A.

[7] St. Louis Lambert International Airport, Consolidated Terminal Program, Section 106 Survey Report, April 2023.

Figure 7: Lambert Field Historic District Historic Property Boundary

Source: WSP USA, 2022.

The Proposed Action would demolish all of the buildings and the tunnel within the Lambert Field Historic District, resulting in an adverse effect under Section 106 of the NHPA and a Section 4(f) use of the historic property. FAA is consulting with the Missouri SHPO and preparing a MOA to fully resolve the adverse effect to this historic resource.

Figure 8: Existing MoANG Buildings (Lambert Field Historic District) to be Demolished

Source: WSP USA, 2022

5 Alternatives Analysis

5.1 Feasible and Prudent Analysis

This section provides the analysis to determine if there are any feasible and prudent alternatives that would completely avoid the use of the Section 4(f) resource. Procedural requirements for complying with Section 4(f) are set forth in DOT Order 5610.1C. The FAA's desk reference to FAA Order 1050.1F, Environmental Impacts: Policies and Procedures provides the FAA with guidance on how the FAA should undertake 4(f) evaluations, This guidance is based on the Federal Highway Administration / Federal Transit Administration (FHWA/FTA) regulations in 23 CFR part 774 and FHWA guidance (for example, Section 4(f) Policy Paper, 77 Federal Register 42802). These requirements are not binding on the FAA; however, the FAA may use them as guidance to the extent relevant to aviation projects.

According to the FHWA/FTA regulation at 23 CFR § 774.17:

1. A feasible and prudent alternative is one that avoids using Section 4(f) property and does not cause other severe problems of a magnitude that substantially outweighs the importance of protecting the Section 4(f) property. In assessing the importance of protecting the Section 4(f) property, it is appropriate to consider the relative value of the resource to the preservation purpose of the statute.
2. An alternative is not feasible if it cannot be built as a matter of sound engineering judgment.
3. An alternative is not prudent if:
    i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
    ii. It results in unacceptable safety or operational problems;
    iii. After reasonable mitigation, it still causes:
        A. Severe social, economic, or environmental impacts;
        B. Severe disruption to established communities;
        C. Severe disproportionate impacts to minority or low-income populations or
        D. Severe impacts to environmental resources protected under other Federal statutes;
    iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
    v. It causes other unique problems or unusual factors; or
    vi. It involves multiple factors in paragraphs (3)(i) through (3)(v), that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

5.2 Development of Alternatives

St. Louis Lambert International Airport's Master Plan reviewed fifteen terminal plans and over fifty individual terminal alternatives in five separate evaluation rounds, to define the Preferred Terminal Alternative. Factors used to evaluate alternatives included but were not limited to how well the alternative would address the needs identified, the construction period, the flexibility for future expansion potential, cost, traffic safety, avoidance of Runway Protection Zones (RPZ) and passenger experience and convenience. The options are discussed in the Airport Master Plan's Alternatives Development and Evaluation Report.[8] The fifth and final round of the alternatives

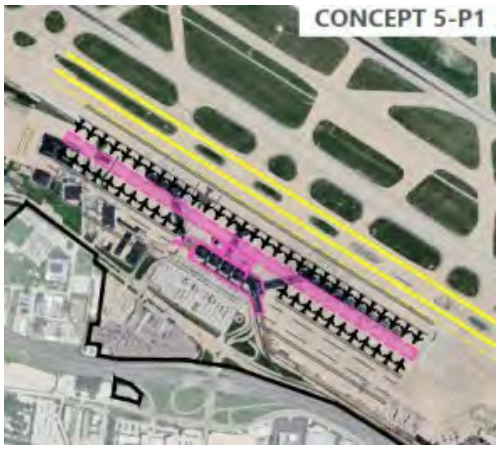
[8] St. Louis Lambert International Airport – Airport Master Plan Alternatives Development and Evaluation.

analysis compared a single terminal versus two terminal concepts. This fifth round distilled previous concepts down to just three alternatives that best addressed the factors considered: Alternative 5-P1 (Proposed Action), Alternative 5-P2 and Alternative 8B.

5.2.1 No Action Alternative

Under the No Action Alternative, STL would maintain its existing infrastructure and terminal configuration, and would not address the current deficiencies within the existing terminals, roadways, access from the highway and parking facilities.

Since the No Action Alternative would continue operations as they are today, this alternative would be feasible. The No Action Alternative would avoid a physical use of the Section 4(f) resource, as no changes to the existing terminals would be made and no structures within the Lambert Field Historic District would be demolished. However, the No Action Alternative would not meet the purpose of the project to provide a better customer experience for passengers and to ensure continued safe, secure, and efficient airport operations by providing space for current and potential future demand. Therefore, the No Action Alternative is feasible, but is not prudent per 23 CFR § 774.17.



5.2.2 Alternative 5-P1 (Proposed Action)

The Proposed Action as described in Chapter 2 of this Section 4(f) Statement, would be both feasible and reasonable. It would involve the demolition of buildings and the tunnel within the Lambert Field Historic District, resulting in an adverse effect under Section 106 of the NHPA and a Section 4(f) use of the historic property.

5.2.3 Alternative 5-P2

Similar to the Proposed Action, Alternative 5-P2 would provide a consolidated terminal. It would include the placement of the processor within the footprint of the existing parking garage adjacent to Terminal 1. The functionality of the existing processor under the domes would be moved to this location. This alternative would push the processor actions over the existing parking garage footprint, resulting in a narrower footprint for landside access. The area under the historic domes would be repurposed as only a pass-through concession area.

Alternative 5-P2 would be feasible and prudent. Similar to the Proposed Action, it would involve the demolition of buildings and the tunnel within the Lambert Field Historic District, resulting in an adverse effect under Section 106 of the NHPA and a Section 4(f) use of the historic property.

5.2.4 Alternative 8B

Under Alternative 8B, existing Terminal 1 and Terminal 2 would be removed to create a single terminal and processing center, including a single TSA checkpoint. Alternative 8B would include construction of three new satellite gates just east of the present Terminal 1 processing center.

Alternative 8B would involve no demolition of structures within the Lambert Field Historic District and would involve no use of any other Section 4(f) resources. The alternative is feasible. However, this alternative would require the splitting of Southwest Airlines operations over two separate satellites, which is not desirable. In addition, this alternative would require the construction of an above ground Airport People Mover (APM) which is very costly to install and maintain. Further, since an above ground APM does not provide for baggage conveyance between the terminal processor and the concourses, a tunnel would also need to be constructed for baggage conveyance, adding to the higher cost. Therefore, Alternative 8B is not prudent.

5.3 Summary of Avoidance Alternatives

The No Action Alternative and Alternative 8B both avoid the use of Section 4(f) resources. They are both feasible but are not prudent per 23 CFR § 774.17. The No Action Alternative is not prudent because it does not meet the project purpose and need. Alternative 8B is not prudent because it results in additional construction, maintenance, or operational costs of an extraordinary magnitude or results in other unique problems.

Based on the alternatives evaluation, there are no feasible and prudent alternatives that avoid a use of Section 4(f) resources.

6 Least Overall Harm Analysis

If the evaluation of avoidance alternatives concludes that there is no feasible and prudent avoidance alternative, then, from among the alternatives that would use Section 4(f) property, the FAA "*may approve only the alternative that causes the least overall harm in light of the statute's preservation purpose*".[9] This analysis is required when multiple alternatives that use Section 4(f) property remain under consideration. If the assessment of overall harms finds that two or more alternatives are substantially equal, FAA can approve any of those alternatives.

To determine which of the alternatives would cause the least overall harm, seven factors set forth in 23 CFR 774.3(c)(1) must be balanced. When comparing the alternatives under these factors, comparable mitigation measures are considered. The first four factors relate to the net harm that each alternative would cause to Section 4(f) property:

1. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property).
2. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.
3. The relative significance of each Section 4(f) property; and
4. The views of the officials with jurisdiction over each Section 4(f) property.

The remaining three factors to be compared consider any substantial problem with any of the alternatives remaining under consideration on issues beyond Section 4(f). These factors are:

1. The degree to which each alternative meets the purpose and need for the project.
2. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
3. Substantial differences in costs among the alternatives.

By balancing the seven factors, all relevant concerns are considered to determine which alternative would cause the least overall harm, which allows FAA to fulfill its statutory mandate to make project decisions in the best overall public interest.
This Section 4(f) evaluation discloses the impacts to Section 4(f) property that would result from the alternatives under consideration. Two of the alternatives evaluated resulted in a use of a Section 4(f) historic resource, met the purpose and need and have been carried forward to the least overall harm analysis: Alternative 5-P1 (the Proposed Action) and Alternative 5-P2.

6.1 Least Overall Harm Summary

The Proposed Action Alternative has been identified as the alternative that best meets the project's Purpose and Need, and that causes the least overall harm. The least overall harm analysis is summarized in Table 2.

[9] 23 CFR § 774.3(c)(1); FAA 1050.1F Desk Reference, Paragraph 5.3.4.

Table 2: Least Overall Harm Summary

Criteria	Proposed Action (Alternative 5-P1)	Alternative 5-P2
The degree to which each alternative meets the Purpose and Need for the Project	Yes; would address all of the purpose and need elements of the project including enhancing the passenger experience to a greater degree than Alternative 5-P2 by retaining existing parking facilities and improving passenger mobility and access to concessions and services and maximizing Airport revenue.	Yes; however, it would reduce passenger mobility and access to concessions and services due to the narrower footprint for landside access and could limit the Airport revenue potential. Therefore, Alternative 5-P2 meets the project purpose and need to a lesser degree than the Proposed Action Alternative.
Ability to Mitigate adverse impacts to each Section 4(f) property	Yes, mitigation through the implementation of a MOA would be completed.	Yes, mitigation through the implementation of a MOA would be completed.
Relative severity of the remaining harm, after mitigation, to protected activities, attributes, or features that qualify each Section 4(f) property for protection	Equal; an adverse effect would result due to the demolition of Section 4(f) resources	Equal; an adverse effect would result due to the demolition of Section 4(f) resources
Relative significance of each Section 4(f) property	Equal; the same Section 4(f) resources would be impacted	Equal; the same Section 4(f) resources would be impacted
Views of the official(s) with jurisdiction over each Section 4(f) property	Equal, acknowledged the adverse effect due to the demolition of Section 4(f) resources	Equal, acknowledged the adverse effect due to the demolition of Section 4(f) resources
After reasonable mitigation, the magnitude of any remaining adverse impacts to resources not protected by Section 4(f)	Equal	Equal
Substantial differences in costs among the alternatives	Equal (Approx. $1.7B in 2021 Dollars)	Equal (Approx. $1.7B in 2021 Dollars)
Alternative with the least overall harm?	Yes; Although the Section 4(f) Resource would be demolished; this alternative best meets the Purpose and Need by fully satisfying all design requirements.	No; Although the same Section 4(f) Resource would be demolished; this alternative would meet the Purpose and Need to a lesser degree than the Proposed Action.

The Proposed Action is determined to cause the least overall harm based on the seven factors above. The Proposed Action best meets the project purpose and need because it improves the passenger experience and the revenue potential for the Airport beyond that provided under Alternative 5-P2.

7 Mitigation

If the Section 4(f) evaluation concludes there are no feasible and prudent alternatives to the use of Section 4(f) resource, it must also document that the project includes all possible planning to minimize harm or mitigate the Section 4(f) resource. As defined in 23 CFR 774.17, all possible planning means that all reasonable measures to minimize harm or mitigate adverse impacts must be included in the project.

A Memorandum of Agreement (MOA) that outlines the steps needed to mitigate the Adverse Effect for this project was prepared. Stipulations in the MOA were developed in consultation with the Federal Aviation Administration (FAA), the Missouri State Historic Preservation Officer (SHPO), and the Osage Nation Historic Preservation Office (ONHPO).

7.1 Design Measures that Minimize Use of Section 4(f) Property

Measures to minimize harm to the identified Section 4(f) property were identified through Section 106 consultation as described in the next section. Therefore, the Proposed Action has incorporated all possible planning to minimize harm to Section 4(f) property.

7.2 Mitigation Measures

Mitigation measures, as summarized below, were identified through the Section 106 consultation process, which included SHPO and ONHPO and will be incorporated in the project:

7.2.1 Photographic Record

A photographic record (photographs & drone video) of the Lambert Field Historic District will be completed in accordance with National Register Photo Policy Standards for archival purposes. Photographs and video shall provide an accurate visual representation of the property and its significant features. They must illustrate the qualities discussed in the description and NRHP statement of significance.

7.2.2 Physical Display

A permanent display will be created as part of the Consolidated Terminal Program that will illustrate the military history of the airport and the buildings comprising the Lambert Field Historic District including any salvaged items, original photos and plans, or other appropriate information.

7.2.3 Website

A webpage will be created within the St. Louis Lambert International Airport website that provides information, photos, cultural resource reports, NRHP listings, etc. relating to the military history at the Airport and the Lambert Field Historic District.

7.2.4 Design Review

In order to avoid an adverse effect on the Terminal Building, project plans will be provided to the Missouri SHPO for review and comment. All improvements to the Terminal Building will follow the *Secretary of the Interior's Standards for the Treatment of Historic Properties* in order to avoid diminishing the historic integrity of the building while also considering accessibility, operational, security, economic, and technical feasibility.

7.2.5 Archeological Monitoring

Although no archaeological sites were identified within the APE, as a precaution and in consultation with The Osage Nation, the Airport will provide archaeological monitoring for all

ground-disturbing construction activities within the APE provided by a Project Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (36 C.F.R. Part 61).

8 Coordination with Agencies having Jurisdiction

As a part of the Section 4(f) requirements, the FAA is responsible for soliciting and considering the comments of the Department of Interior (DOI) and, where appropriate, U.S. Department of Agriculture (USDA), or U.S. Department of Housing and Urban Development (HUD), as well as the appropriate official(s) with jurisdiction over the Section 4(f) property. The Proposed Action does not include the use of a national forest or land holding under the jurisdiction of the U.S. Forest Service; therefore, the USDA does not have jurisdiction over the identified Section 4(f) resource. In addition, because the Section 4(f) resource includes buildings owned and operated by the City of St. Louis, HUD should have no interest in this Section 4(f) resource.

Because the resources that would be used under Section 4(f) are historic properties, the Missouri SHPO is the official with jurisdiction for these resources. The following provides a summary of the coordination to date.

- Initiated the Section 106 consultation with the Missouri SHPO in December 2022 and identified tribes and other potential consulting parties.
- FAA provided the Cultural Resources Survey Report with eligibility determinations and an adverse effect finding in March 2023.
- In August 2023, Missouri SHPO concurred with the adverse effect finding and requested the preparation of an MOA to address the adverse effect on the Lambert Field Historic District and to prevent an adverse effect on the Main Terminal building historic domes.
- In August 2023 upon Missouri SHPO concurrence, FAA notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding and asked if they wanted to participate in the development of an MOA to address the adverse effect.
- ACHP responded in August 2023 declining the invitation to consult and requesting the final Section 106 agreement document, developed in consultation with the Missouri SHPO and any other consulting parties, at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the NHPA.
- The Osage Nation requested to be an invited signatory to the MOA, with included monitoring stipulations in January 2024.
- In February 2024, FAA notified the Missouri SHPO of a revised project APE, and no change to the finding of an adverse effect.
- The Missouri SHPO concurred with the revised APE and adverse effect finding in April 2024.
- Draft Section 4(f) Statement and Draft MOA provided for public review and comment July 3, 2024 through August 16, 2024. No comments were received.
- SHPO executed the MOA on August 27, 2024.

9 Section 4(f) Statement Conclusion

There are no alternatives that meet the purpose and need, are both prudent and feasible, and completely avoid the use of Section 4(f) resources. The Proposed Action has been identified as the alternative that causes the least overall harm. The FAA is consulting with the Airport, the Osage Nation, and the Missouri SHPO to develop an MOA under Section 106 of the NHPA. The MOA stipulates the mitigation measures required to address and fully resolve the adverse effects of the Proposed Action on historic properties.

The mitigation measures are a requirement of the Proposed Action and would address the Section 4(f) requirement that the project minimize adverse impacts when there is a use of a Section 4(f) resource. FAA has determined that there is not a feasible and prudent alternative to the use of Section 4(f) resources, and the Proposed Action includes all possible planning to minimize harm to the Section 4(f) resources resulting from the use. The Draft Section 4(f) Statement and Draft MOA were provided for public review and comment July 3, 2024 through August 16, 2024. No comments were received.

ABBREVIATIONS	
ACHP	Advisory Council on Historic Preservation
APM	Airport People Mover
CTP	Consolidated Terminal Program
DOD	Department of Defense
EA	Environmental Assessment
FAA	Federal Aviation Administration
STL	St. Louis Lambert International Airport
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
MOA	Memorandum of Agreement
OWJ	Official with Jurisdiction
SHPO	State Historic Preservation Officer
THPO	Tribal Historic Preservation Officer

Department of Interior
Comments on 4(f) Evaluation

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 46
Post Office Box 25207
Denver, Colorado 80225-0007

In reply refer to:
ER 240245

June 25, 2024

Scott Tener
FAA Central Region Airports Division
901 Locust Street; Room 364
Kansas City, MO 64106

Subject: Draft Section 4(f) Evaluation for the proposed Consolidated Terminal Program at the St. Louis Lambert International Airport (airport) in St. Louis, St. Louis County, Missouri

Dear Scott Tener,

The Department of the Interior (Department) has reviewed the Draft Section 4(f) Evaluation for the proposed Consolidated Terminal Program at the St. Louis Lambert International Airport (airport) in St. Louis, St. Louis County, Missouri. The Federal Aviation Administration (FAA) is the lead federal agency for this project's Section 4(f) evaluation. The National Park Service (NPS) has provided the following comments.

Section 4(f) Properties
The draft Section 4(f) evaluation considers effects under Section 4(f) of the Department of Transportation Act of 1966 (codified at 49 U.S.C. 303) associated with the project. Section 4(f) applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges, or significant historic resources. The draft evaluation assesses that the terminal building and Lambert Field Historic District (district) are located within the area of potential effects and subject to protection under Section 4(f). No parks, recreation areas, or wildlife and waterfowl refuges occur within the project area.

Terminal Building
The main terminal building was constructed in 1956 and was designed by Minoru Yamasaki, who was a prominent architect throughout the 20th century. Described as "the Grand Central of the Air," the terminal building was crucial in starting new Jet Age architecture, which significantly influenced terminal design at the time. Along with its contribution to the history of

the area, the four main terminal domes are included within the historic property boundary. Under the Preferred Alternative no alterations of any kind are proposed for the historic domes in the terminal building.

Lambert Field Historic District
The Lambert Field Historic District was determined eligible for the National Register of Historic Places in 2016. A total of seven buildings and a tunnel associated with the Missouri Air National Guard (MoANG) Campus are collectively part of the historic district. However, it was determined that none of the buildings or tunnel are individually eligible. The buildings within the historic district were constructed in the 1940s and 1950s, representing the increased MoANG presence at the airport during World War II and the Cold War. The Preferred Alternative would demolish all of the buildings and the tunnel within the Lambert Field Historic District, resulting in an adverse effect under Section 106 of the National Historic Preservation Act and a Section 4(f) use of the historic property.

Alternatives
The FAA considered two avoidance alternatives including a no build alternative. The no build alternative was found feasible but not prudent because it did not meet the purpose and need. The avoidance alternative was found feasible but not prudent because it would result in additional construction, maintenance, or operational costs of an extraordinary magnitude or other unique problems.

The FAA considered two use alternatives, the alternative 5-P1 (preferred alternative) and alternative 5-P2, which were found feasible and prudent and met the purpose and need. Both are carried forward for the least overall harm analysis.

Assessment of Effect and Proposed Mitigations
The FAA determined that both the preferred alternative and alternative 5-P2 would result in an adverse effect to historic properties under Section 106 of the NHPA. There are no alternatives that completely avoid Section 4(f) resources that are both prudent and feasible.

Terminal Building
No changes would be made to the four main terminal domes included within the historic property boundary under either alternative, therefore, no adverse effect would occur, and no mitigation is required.

Lambert Field Historic District
Both alternatives would result in an equal, adverse effect to the Lambert Field Historic District as a result of demolishing the seven buildings and tunnel comprising the MoANG Campus. The preferred alternative is determined to cause the least overall harm, because it best meets the purpose and need and improves passenger experience and revenue potential for the airport beyond that provided under Alternative 5-P2.

The FAA is consulting with the airport and the Missouri State Historic Preservation Officer (SHPO) to develop a Memorandum of Agreement (MOA), which will stipulate mitigation measures for the adverse effect.

The MOA outlines the following measures to mitigate the adverse effect to the Lambert Field Historic District:

1. A photographic record (e.g., photographs and drone video) of the district will be completed in accordance with National Register Photo Policy (NRHP) Standards for archival purposes. Photographs and video shall provide an accurate visual representation of the property and its significant features. They must illustrate the qualities discussed in the description and NRHP statement of significance.
2. A permanent display will be created as part of the Consolidated Terminal Program that will illustrate the military history of the airport and the buildings comprising the district including any salvaged items, original photos and plans, or other appropriate information.
3. A webpage will be created within the St. Louis Lambert International Airport website that provides information, photos, cultural resource reports, NRHP listings, etc. relating to the military history at the airport and the district.
4. To avoid an adverse effect on the terminal building, project plans will be provided to the Missouri SHPO for review and comment. All improvements to the terminal building will follow the Secretary of the Interior's Standards for the Treatment of Historic Properties to avoid diminishing the historic integrity of the building while also considering accessibility, operational, security, economic, and technical feasibility.
5. Although no archaeological sites were identified within the APE, as a precaution and in consultation with The Osage Nation, the airport will provide archaeological monitoring by a project archaeologist for all ground-disturbing construction activities within the APE meeting the Secretary of the Interior's Professional Qualifications Standards (36 C.F.R. Part 61).

Section 4(f) Comments

The building, designed in 1955 by Japanese American architect, Minoru Yamasaki, will be spared from demolitions, but its setting will be substantially changed by new construction. A MOA is being prepared to identify measures to mitigate adverse impacts this project will have on historic resources. The Department recommends that historic resources should be documented for the Historic American Buildings Survey (HABS), with final documentation submitted through the National Park Service to the Library of Congress for inclusion in the HABS Collection. This would include those resources that will be demolished, as well as the main terminal building. The National Park Service (NPS) concurs with this determination.

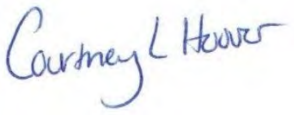
The Department concurs with the FAA's determination. Based on the information provided by the FAA in the Draft Section 4(f) Evaluation, the Department also concurs with the FAA's determination that there is no feasible and prudent avoidance alternative to the Section 4(f)

demolition of this historic property. The Department recommends that consultation continue with all Section 106 consulting parties pursuant to 36 CFR § 800.6 and that the project not proceed until an MOA to mitigate adverse effects is executed that is satisfactory to all parties.

For issues concerning Section 4(f) resources, please contact Hanna Daly, Regional Environmental Coordinator Regions 3, 4, and 5, NPS, hanna_daly@nps.gov. We appreciate the opportunity to provide these comments.

If you have any questions for the Department, please contact me at (303) 478-3373, or courtney_hoover@ios.doi.gov.

Sincerely,



Courtney Hoover
Regional Environmental Officer
Office of Environmental Policy and Compliance

From:	Daly, Hanna G
To:	Tener, Scott (FAA)
Cc:	Hoover, Courtney L
Subject:	Re: [EXTERNAL] FW: Department of the Interior - 4(f) Comments: Terminal Project at St. Louis Lambert International Airport, Missouri
Date:	Thursday, June 27, 2024 4:22:45 PM

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Scott,

Thank you for reaching out. The recommendation provided by the NPS is the best professional judgment of the historic preservation manager. However, if the SHPO is comfortable with the MOA as is, the HABS documentation is not required. Let me know if I can help with anything else.

Hanna

Hanna Daly (she/her/hers)
Regional Environmental Coordinator
National Park Service, DOI Regions 3, 4, and 5
Teams or hanna_daly@nps.gov
402-830-8673

From: Tener, Scott (FAA) <scott.tener@faa.gov>
Sent: Wednesday, June 26, 2024 2:53 PM
To: Daly, Hanna G <hanna_daly@nps.gov>
Cc: Hoover, Courtney L <courtney_hoover@ios.doi.gov>
Subject: [EXTERNAL] FW: Department of the Interior - 4(f) Comments: Terminal Project at St. Louis Lambert International Airport, Missouri

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hanna,

I wanted to reach out to you regarding NPS' comment concerning HABS documentation for the historic resources at the St. Louis Lambert International Airport. NPS recommends that historic resources should be documented for the Historic American Buildings Survey (HABS), with final documentation submitted through the National Park Service to the Library of Congress for inclusion in the HABS Collection. This would include those resources that will be demolished, as well as the main terminal building.

After discussing the comment with the Missouri SHPO for possible inclusion in the MOA, the SHPO believes that HABS documentation does not seem to be warranted. They believe that HABS documentation is not particularly well suited to providing an understanding of the setting that will be lost. Therefore, the SHPO does not feel the need to revise the MOA to include a requirement for HABS documentation of the Air National Guard Facility to be demolished or of the Main Terminal which is to remain.

We note in DOI's response that the comment is recommended and wanted to see if you would have any objection if we did not include the HABS documentation into the project mitigation.

Please let me know if you have any questions,

Scott Tener
Environmental Program Manager

FAA Central Region Airports Division
901 Locust St., Room 364
Kansas City, Missouri 64106-2325
T 816.329.2639 | F 816.329.2611
http://www.faa.gov/airports/central/

From: Hoover, Courtney L <courtney_hoover@ios.doi.gov>
Sent: Tuesday, June 25, 2024 7:27 AM
To: Tener, Scott (FAA) <scott.tener@faa.gov>
Cc: Skaar, Karen S <karen_skaar@ios.doi.gov>
Subject: Department of the Interior - 4(f) Comments

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hello Scott, please see the attachment for DOI's comment letter.

Please reach out if you have any questions or needs.

Courtney Hoover
Regional Environmental Officer, Denver
Office of Environmental Policy and Compliance
Department of the Interior Regions 5 (Missouri Basin) and 7 (Upper Colorado Basin)

303-478-3373 (Cell)
Denver Federal Center, Building 46
P.O. Box 25207
Denver, CO 80225

Appendix G:
Section 106 Consultation

SHPO Concurrence of APE

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

December 13, 2022

Jerry Beckmann
St. Louis Airport Authority
10701 Lambert International Blvd
St. Louis, MO 63145

Re: **SHPO Project Number: 017-SL-23** – Consolidated Terminal Program; St. Louis Lambert International Airport - 10701 Lambert International Boulevard, St. Louis, St. Louis County, Missouri (FAA)

Dear Jerry Beckmann:

Thank you for submitting information to the State Historic Preservation Office (SHPO) regarding the above-referenced project for review pursuant to Section 106 of the National Historic Preservation Act, P.L. 89-665, as amended (NHPA), and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which require identification and evaluation of historic properties.

We have reviewed the information regarding the above-referenced project and have included our comments on the following page(s). Please retain this documentation as evidence of consultation with the Missouri SHPO under Section 106 of the NHPA. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties. **Please be advised that, if the current project area or scope of work changes, such as a borrow area being added, or cultural materials are encountered during construction, appropriate information must be provided to this office for further review and comment.**

If you have questions please contact the SHPO at (573)751-7858 or call/email Marie Taylor (573) 522-4641, marie.taylor@dnr.mo.gov. If additional information is required please submit the information via email to MOSection106@dnr.mo.gov.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Toni M. Prawl

Toni M. Prawl, PhD
Director and Deputy
State Historic Preservation Officer

c: Jennifer Kuchinski WSP; Guy Blanchard, WSP

SHPO Project Number: 017-SL-23 – Consolidated Terminal Program; St. Louis Lambert International Airport - 10701 Lambert International Boulevard, St. Louis, St. Louis County, Missouri (FAA)

COMMENTS:

Based on the information submitted we concur that the proposed area of potential effect (APE) constitutes a reasonable and good faith effort to identify historic properties. We look forward to reviewing the completed identification and determination of effects.

SHPO Reviewer: Marie Taylor, (573) 522-4641, marie.taylor@dnr.mo.gov

Section 106 Survey Report

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

CONSOLIDATED TERMINAL PROGRAM

SECTION 106 SURVEY REPORT

APRIL 2023

wsp

Executive Summary

St. Louis Lambert International Airport (STL) is proposing the Consolidated Terminal Program (the Project), which is a multi-phase project that would redevelop Terminal 1, construct a new passenger concourse, and improve parking and roadway circulation within airport property. The Project is an undertaking subject to the National Historic Preservation Act of 1966 and its Section 106 regulations, which require federal agencies to consider project effects on historic properties. For this Project, the Federal Aviation Administration is responsible for Section 106 compliance.

Section 106 regulations require that federal agencies identify historic properties listed in or eligible for listing in the National Register of Historic Places within the project's Area of Potential Effects (APE); assess effects to historic properties; avoid, minimize, and/or mitigate any adverse effects; and consult with the State Historic Preservation Officer (SHPO) and other consulting parties throughout the Section 106 process, as appropriate.

Consultants[1] who meet the Secretary of the Interior Professional Qualifications Standards (36 C.F.R. Part 61) delineated an APE for the Project, conducted research and a field survey, and completed evaluations to identify any historic properties within the APE. As a result of these evaluations, three historic properties were identified: Lambert Field Historic District, Terminal Building, and Ozark Airlines Office, Shop, and Hangar. Survey results and individual intensive-level inventory forms are included in **Attachment A**.

[1] WSP list of preparers: Guy Blanchard, Lead Architectural Historian (Task Lead, Determinations of Eligibility, QAQC); John Perry, Sr. Consultant-Historian (Determinations of Eligibility, QAQC); Hansel Hernandez, Lead Architectural Historian (Determinations of Eligibility, QAQC, Field Investigations, APE).

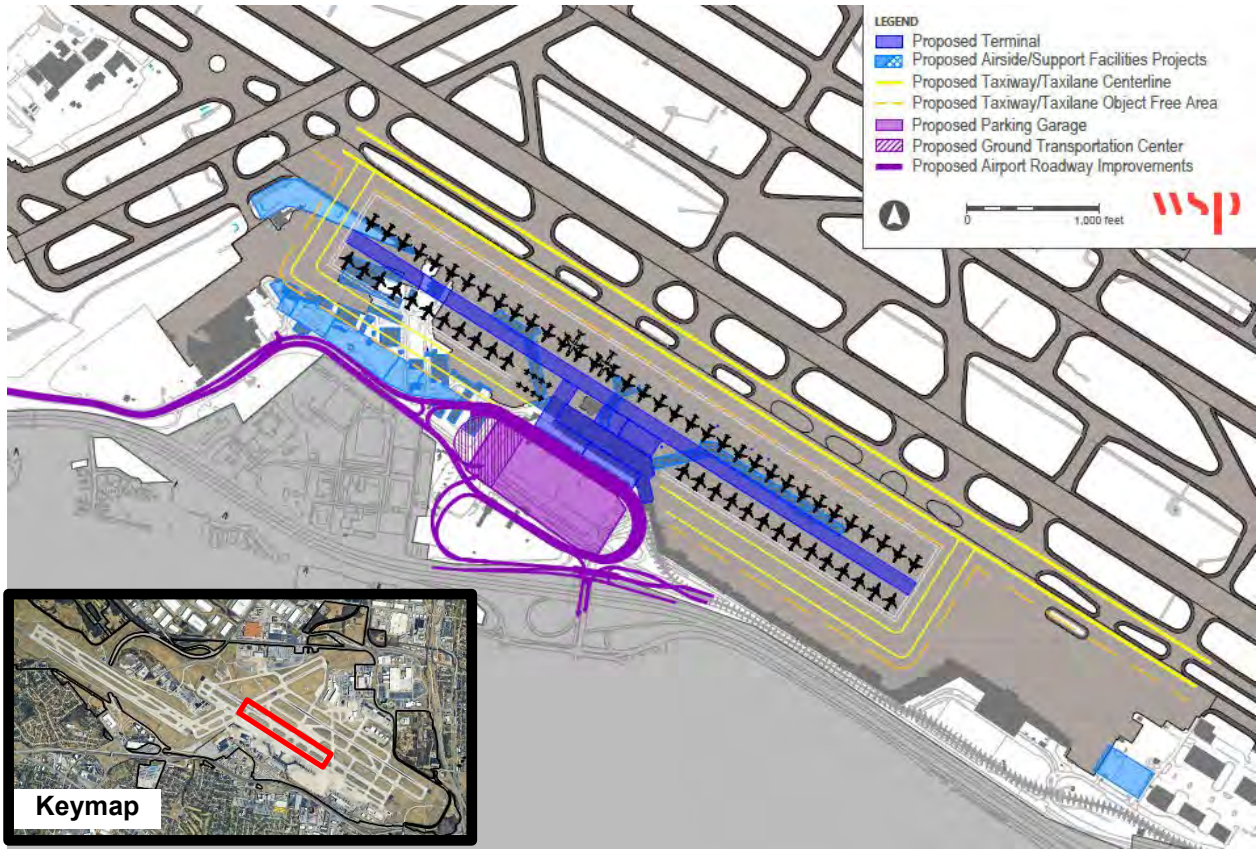
Table of Contents

List of Figures

1 INTRODUCTION

The Federal Aviation Administration (FAA) is considering a proposal by St. Louis Lambert International Airport (STL) to redevelop Terminal 1 and improve parking and roadway circulation within airport property (Project), as depicted on **Figure 1-1**. The Project is an undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 Code of Federal Regulations [C.F.R.] Part 800) (Section 106).

Figure 1-1: Proposed Project Layout



Source: WSP USA, 2023.

Consistent with the ongoing Airport Layout Plan Update and Master Plan, STL proposes a multi-phase improvement project to consolidate air carrier and passenger operations currently at Terminals 1 and 2 into a new, single terminal and linear concourse at Terminal 1. The existing concourses (A, B, and C) connected to Terminal 1 would be demolished. Terminal 2 and Concourse D would be decommissioned as airline passenger terminal facilities. Terminal 2 would be repurposed for some other Airport function, which will be determined in the course of future planning. Concourse D may be repurposed, which will be determined in the course of future planning. Project activities would not increase the forecast number of passengers or aircraft operations (the FAA-approved forecast projects unconstrained demand).[2]

[2] STL Master Plan, *Aviation Activity Analysis and Forecasts*, approved by FAA in August 2020.

Terminal 1's existing domes, designed by Modernist architect Minoru Yamasaki in 1955 and previously determined to be eligible for listing in the National Register of Historic Places (NRHP) (see Section 5.1.3), would remain as part of a new head house that includes passenger processing, ticketing, immigration and customs services, and baggage claim areas. The spaces directly under the domes would continue to serve as the terminal ticketing area with interior layout improvements to increase operational efficiency. The level beneath the ticketing area, Baggage Claim, would be expanded to accommodate additional baggage claim units. A new security checkpoint would be constructed between Terminal 1's domed entry hall and the proposed linear concourse. The new security checkpoint would consolidate all security screening in a single location. After clearing the security checkpoint, passengers would access the new concourse, which will accommodate up to 62 gates. In order to construct the new concourse and associated improvements, existing airport facilities west and south of Terminal 1 would be demolished and/or relocated, including the former Missouri Air National Guard facility, which was previously determined NRHP-eligible (see Section 5.1.2) and is currently vacant.

Associated improvements include demolition and reconstruction of the existing parking garage adjacent to Terminal 1. The new parking garage would exist within a substantially similar footprint. Roadway circulation improvements are also proposed for Lambert International Boulevard and connections to Interstate 70 within or near existing on-airport access roads.

The Project would be constructed in phases and is expected to be completed in 2031.

2 NATIONAL HISTORIC PRESERVATION ACT OF 1966

The Project is an undertaking subject to compliance with Section 106 of the NHPA of 1966, as amended (54 United States Code [U.S.C.] § 300101) and its implementing regulations (36 C.F.R. Part 800). Specifically, Section 106 of the NHPA requires that the lead federal agency consider the effects of its actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking.

Under 36 C.F.R. § 800.3, Section 106 requires the lead federal agency, in consultation with State Historic Preservation Officer (SHPO), to develop an Area of Potential Effects (APE), identify historic properties in the APE, and make a finding of the proposed project's effect on historic properties in the APE. Section 106 regulations require that the lead federal agency consult with the SHPO and identified parties with a demonstrated interest in the undertaking during planning and development of the proposed project. The ACHP may participate in the consultation or may leave such involvement to the SHPO and other consulting parties who have a demonstrated interest in historic preservation. The SHPO and other consulting parties may participate in developing a Memorandum of Agreement or Programmatic Agreement to avoid, minimize, or mitigate adverse effects as applicable.

2.1 AREA OF POTENTIAL EFFECTS

The APE, as defined in 36 C.F.R. § 800.16(d), is "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

Qualified professionals delineated the APE to reflect the nature, scale, and location of Project activities. It consists of the area where the Project has the potential to cause effects on historic properties, if present, and considers both direct and indirect Project effects. Direct project effects may include a physical impact in a particular area in addition to visual, noise, vibration, or other atmospheric effects. Indirect effects may include those caused as a result of project implementation that occur later in time, are farther removed in distance, or are cumulative.[3]

A qualified architectural historian[4] conducted a field visit on October 3-4, 2022, to confirm APE boundaries. The APE, depicted on **Figure 2-1**, encompasses a large area centered around Terminal 1, where the majority of Project activities would occur. Both Interstate 70, which has a variable height with bridges, ramps, and flyovers near the Airport, and Lambert International Boulevard, which is on a berm and elevated above the airfield side of the Airport, act as visual and noise buffers to areas located south of the Airport.

[3] *National Parks Conservation Association v. Semonite*, 916 F.3d 20175 (2019); *See also* Advisory Council on Historic Preservation Office of General Counsel, Memorandum, "Re: Recent Court Decision Regarding the Meaning of 'Direct' in Sections 106 and 110(f) of the National Historic Preservation Act," June 7, 2019.

[4] Hansel Hernandez, Lead Architectural Historian with WSP USA, conducted field investigations.

Further, the American Airlines facilities on the Airport's west end and the warehouses and hangars on the Airport's east end, which will not be physically affected by Project implementation, would provide additional visual and noise buffers in those areas of the Airport.

Figure 2-1: Area of Potential Effects

Source: WSP USA, 2022.

Views across the airfield toward Project activities are limited due to distance; facilities northeast of the terminal and across the airfield, which were extensively altered and expanded in the mid-1980s and early 2000s, are over 3,000 feet away. All Project activities on the airfield side would occur in areas where similar airport infrastructure and facilities currently exist. Current airport operations would continue throughout Project construction, limiting discernible changes to existing noise and other atmospheric effects. No changes are proposed to the runway layout, which has been continuously altered and expanded over multiple decades.

On the landside, south of the airfield side of the Airport, proposed demolition and reconstruction of the parking garage would occur substantially within the same footprint as the current parking garage. Roadway circulation improvements, including connections to Interstate 70, would be consistent with existing roadway infrastructure near and within the airport property.

Ground-disturbing activities required for Project implementation would occur in areas previously disturbed through decades of airport improvements. Prior archaeological field investigations were conducted as part

of a 1997 Environmental Impact Statement (EIS)[5], and no archaeological sites were identified within the Project APE as a result of those prior investigations. Thus, a vertical or archaeological APE was not delineated for this Project and no further archaeological investigations were recommended.

Pursuant to 36 C.F.R. § 800.4(a), FAA submitted the APE to the SHPO for review and comment on November 11, 2022. SHPO responded on December 14, 2022 and concurred with the proposed APE.

2.2 IDENTIFICATION OF HISTORIC PROPERTIES

Historic properties are defined at 36 C.F.R. § 800.16(l) as

> (1) "…any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion, in the National Register of Historic Places [NRHP] maintained by the Secretary of the Interior. This term includes all artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register Criteria.
>
> (2) The term eligible for inclusion in the National Register includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior, and all other properties that meet the National Register criteria.

2.2.1 CRITERIA FOR EVALUATION

A property is eligible for the NRHP if it is significant under one or more of the following criteria defined in 36 C.F.R. § 60.4, as "the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

> A: Are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B: Are associated with the lives of persons significant in our past; or
>
> C: Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D: Have yielded, or may be likely to yield, information important in prehistory or history."

Built resources are typically evaluated under Criteria A, B, and C; Criterion D applies primarily to archaeological resources. The National Register Bulletin "How to Apply the National Register Criteria for Evaluation" (National Park Service 1997) provides guidance for understanding a property's historic significance and applying the criteria for evaluation. Certain property types, such as cemeteries, birthplaces and graves of historical figures, properties owned or used by religious institutions, moved or reconstructed

[5] Federal Aviation Administration, *Final Environmental Impact Statement Lambert-St. Louis International Airport*, 1997.

buildings, commemorative properties, and properties less than 50 years of age are not ordinarily eligible for the NRHP, unless they meet specific requirements identified in criteria considerations provided by NRHP guidance.

2.2.2 INTEGRITY

If a property is determined to possess historic significance, its integrity is evaluated using the following seven aspects of integrity to determine if it conveys historic significance: location; design; setting; materials; workmanship; feeling; and association. If a property is determined to possess historic significance under one or more criteria and retains integrity to convey its significance, the property is determined to be eligible for listing in the NRHP.

The seven aspects of integrity are identified at 36 C.F.R. § 60.4 and described in the bulletin:

> **Location** is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons.
>
> **Design** is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials. A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamental detailing; and arrangement and type of plantings in a designed landscape.
>
> Design can also apply to districts, whether they are important primarily for historic association, architectural value, information potential, or a combination thereof. For districts, significant primarily for historic association or architectural value, design concerns more than just the individual buildings or structures located within the boundaries. It also applies to the way in which buildings, sites, or structures are related.
>
> **Setting** is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space. Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences.
>
> The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as: topographic features (a gorge or the crest of a hill); vegetation; simple manmade features (paths or fences); and relationships between buildings and

other features or open space. These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its surroundings. This is particularly important for districts.

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place. A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been preserved.

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques. Workmanship is important because it can furnish evidence of the technology of a craft, illustrate the aesthetic principles of a historic or prehistoric period, and reveal individual, local, regional, or national applications of both technological practices and aesthetic principles.

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.

Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character.

According to guidance found in "How to Apply the National Register Criteria for Evaluation," different aspects of integrity may be more or less relevant depending on why a specific historic property was listed in or determined eligible for listing in the NRHP. For example, a property that is significant for its historic association (Criteria A or B) is eligible if it retains the essential physical features that comprised its character or appearance during the period of its association with the important event, historical pattern, or person(s). A property determined eligible under Criteria A or B ideally might retain some features of all aspects of integrity, although aspects such as design and workmanship might not be as important.

A property important for illustrating a particular architectural style or construction technique (Criterion C) must retain most of the physical features that constitute that style or technique. A property that has lost some historic materials or details can be eligible if it retains the majority of features that illustrate its type and/or style in terms of the massing, spatial relationships, proportion, pattern of windows and doors, texture of materials, and ornamentation. The property is not eligible, however, if it retains some basic features conveying massing but has lost the majority of the features that once characterized its type or style. A property significant under Criterion C must retain those physical features that characterize the type, period,

or method of construction that the property represents. Retention of design, workmanship, and materials will usually be more important than location, setting, feeling, and association.

Location and setting will be important for those properties whose design is a reflection of their immediate environment, such as designed landscapes.

For a historic district to retain integrity, the majority of the components that comprise the district's historic character must possess integrity even if they are individually undistinguished. In addition, the relationships among the district's components must be substantially unchanged since the period of significance.

In some cases, select aspects of integrity are currently and substantially compromised by undertakings not related to the current project. These changes may have been made prior to determinations of eligibility or since these determinations were made.

3 SURVEY METHODOLOGY

Consultants[6] who meet the Secretary of the Interior's Professional Qualifications Standards (36 C.F.R. Part 61) conducted reviews of prior studies, archival research, NRHP and other historic property records, historic maps and images, and airport documents. Coordination with STL staff provided consultants with airfield access for field survey and photography. Because Project activities are proposed to be completed by 2031, built resources constructed in 1981 or earlier (that is, properties that would turn 50 years of age by 2031) received intensive-level documentation and NRHP evaluations, using Missouri Department of Natural Resources, State Historic Preservation Office Architectural/Historic Inventory Forms. All built resources within the APE were photographed and inventoried with their designated STL building number to assist airport staff in future Project planning.

3.1 PREVIOUSLY IDENTIFIED HISTORIC PROPERTIES

Consultants reviewed the Section 106 documentation included with the 1997 EIS developed for airport improvements at that time, including construction of a new runway to the west. The APE developed for that project included a wide area that encompassed the airport, airfield, and surrounding areas. No historic properties identified in the 1997 EIS were located within this Project's APE, including archaeological sites.

STL records searches yielded information on the Lambert Field Historic District, which was originally determined eligible for the NRHP in 2006, following an extensive survey of military facilities adjacent to and within STL property. The results of this survey were included in the *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri*. The area was surveyed again in the 2012 *Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field*, which clarified information from the 2006 report, provided

[6] WSP list of preparers: Guy Blanchard, Lead Architectural Historian (Task Lead, Determinations of Eligibility, QAQC); John Perry, Sr. Consultant-Historian (Determinations of Eligibility, QAQC); Hansel Hernandez, Lead Architectural Historian (Determinations of Eligibility, QAQC, Field Investigations, APE).

an updated count of contributing and noncontributing resources, and delineated a historic property boundary for the NRHP-eligible Lambert Field Historic District.

The 2013 *Thematic Survey of Modern Movement Non-Residential Architecture, 1945 – 1975, in St. Louis City* identified STL's main terminal (now called Terminal 1 and referred to in the 2013 thematic study as the Lambert International Air Terminal, Lambert Terminal, and Lambert Field Main Terminal, among other names) as a significant property eligible for listing in the NRHP.

Additional information on these historic properties is provided in Section 5.

3.2 LITERATURE REVIEW

Consultants identified and researched a variety of sources to inform the documentation and evaluation of previously and newly surveyed properties. Current aerial imagery and property data, as well as historical plat maps and aerial photography, aided in determining an individual property's development and the existence of subdivision boundaries. These sources included, but were not limited to:

- Current property data from St. Louis County, including land records, plats, and year-built data
- Historical maps, atlases, and aerial imagery
- The St. Louis Post Dispatch and other newspaper archives
- The Missouri Historical Society
- The St. Louis Public Library Special Collections
- The St. Louis County Library
- St. Louis Lambert International Airport Office Building Archives
- The State Historical Society of Missouri, Manuscript Collection
- Various online sources

Consultants used the information gathered from these sources to develop the historic context statements included in the report and in the inventory forms.

3.3 INTERVIEWS

Consultants conducted in-person interviews with STL's Airport Office Building staff on October 3 and 4, 2022, and via email on October 26, November 3 and 8, 2022. Telephone interviews were conducted with TWA Museum staff in Kansas City on October 26, 2022.

3.4 FIELD SURVEY

Consultants completed a field survey of the APE on October 3 and 4, 2022. The survey was conducted from public right-of-way or from the airfield in coordination with and accompanied by STL staff. The APE is characterized by typical airport buildings and structures, including terminals, concourses, hangars, storage and maintenance facilities, and other supporting infrastructure. An inventory and map of all built resources

within the Project's APE that are individually identified by STL or were identified during field survey are included in Attachment A. In total, 78 built resources were identified within the APE.

4 HISTORIC CONTEXT

4.1 BERKELEY

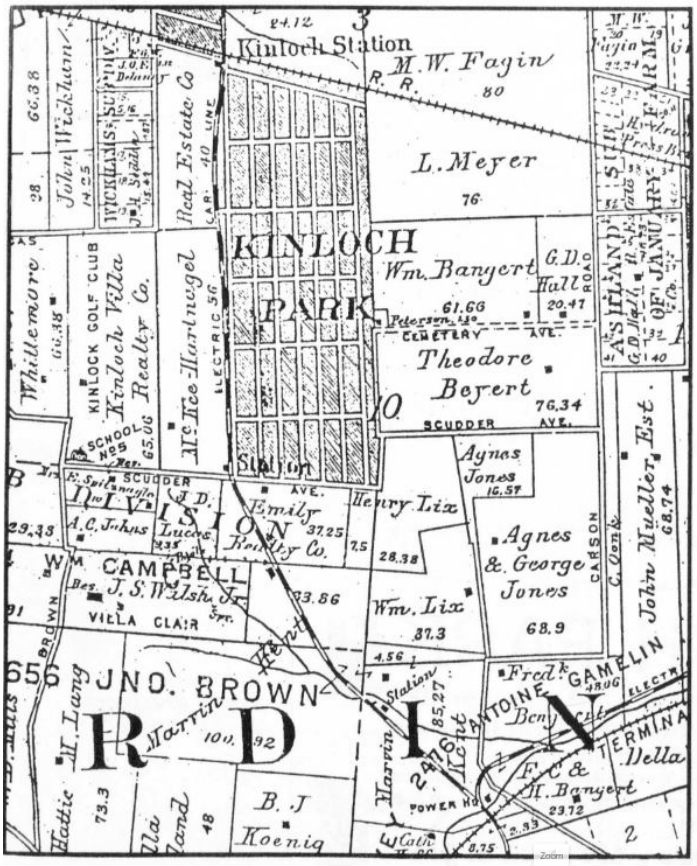
STL is located between the City of Berkeley and the City of Bridgeton, in northwest St. Louis County, Missouri. Berkeley is roughly bounded by I-270 on the north, I-70 on the south, the airport on the west, and Mabel Avenue on the east. According to early historic records, Major Richard Graham arrived from Virginia in 1807 and bought 1,100 acres comprising the area. He became aid-de-camp of President William Henry Harrison in the War of 1812, and after the war, returned with several slaves and settled in his property, named Hazelwood, which was in the vicinity of present-day Frost Avenue and Hanley Road. Graham lived there with his wife Catherine Mullanphy of Missouri and his four daughters.

Known early on as Kinloch, the area slowly grew but benefited from the advent of the railroad. After the Wabash Railroad's construction in 1855, Kinloch received a station known as Graham Station; the connection allowed the owners of nearby country estates to quickly commute to St. Louis. Once the City of St. Louis separated from the county in 1877, the county came to have five townships; Kinloch became part of St. Ferdinand Township. Commuting became easier when the steam-power Narrow Gauge Streetcar line opened in 1878, connecting St. Louis to Kirkwood, Kinloch, and Florissant in the western suburbs, until the line closed in 1931. By then, numerous railroad employees had settled in Kinloch, and early suburban development took advantage of connections to downtown St. Louis.

Black residents began arriving after the Kinloch Park subdivision was established in the 1890s (**Figure 4-1**). A 1983 report by the Kinloch History Committee entitled *Kinloch: Yesterday, Today and Tomorrow*, described that some lots had been reserved for Black residents who moved to the area to work as servants. However, the majority of lots were sold to Whites, who then sold them to Black families. Once established White families learned they had Black neighbors, they quickly moved away; when other Whites would not move in, Blacks began buying more lots and more than 30 Black families settled in the southeast portion of the subdivision in its early days. The Olive Street Terrace Realty Company, realizing the increased demand for lots by Black families, began acquiring nearby farms; the Lix, Bangert, and Jones farms, encompassing 180 acres, were quickly purchased. "The realty company adopted the policy of not selling any of this property to whites. The subdivision was called South Kinloch Park, distinguishing it from the original, mostly white portion of Kinloch Park."[7] The company aggressively pursued new residents: they advertised door-to-door and through printed material in multiple publications. Because Black residents could often not obtain financing, a property transfer scheme developed, whereby Whites bought lots and sold them to Black residents at double the original price.

[7] John A. Wright et al., *Kinloch: Yesterday, Today and Tomorrow*, (Kinloch: Kinloch History Committee, 1983), 7.

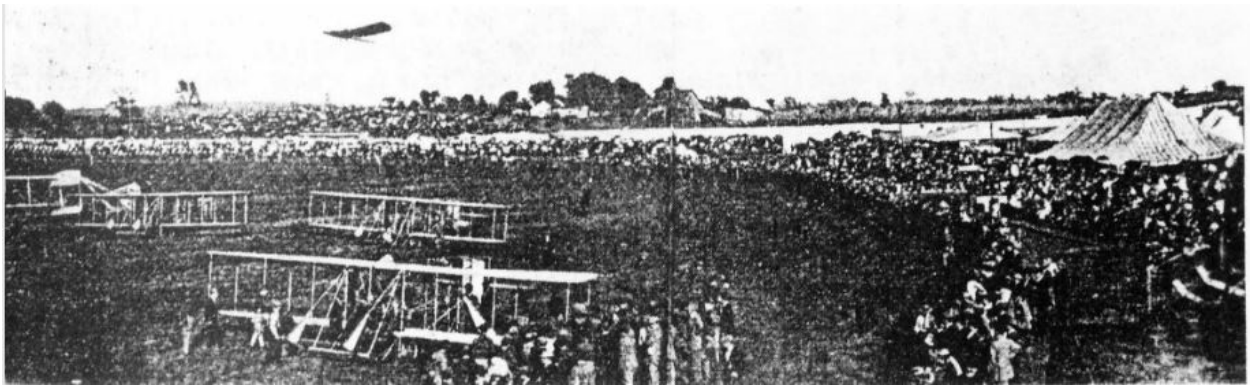
Figure 4-1: 1890s Map of Kinloch Area



Source: Kinloch: Yesterday, Today and Tomorrow

Kinloch also became home to St. Louis aviation. Aviation pioneer Albert Bond Lambert founded the Aero Club of St. Louis in the first decade of the 20th-century and started the city's first permanent airfield at Kinloch Park, a former racetrack located 12 miles northwest of downtown St. Louis (**Figure 4-2**). From 1910 to 1912, several flying schools gave instruction at Kinloch, but by the end of 1912, the Aero Club's lease on the land expired and flying activities ceased. The field's spectator and operational structures were consequently moved to a new field at 7800 North Broadway.

Figure 4-2: First International Air Meet at Kinloch Aviation Field, 1910



Source: Kinloch: Yesterday, Today and Tomorrow

A 1930 St. Louis County plat book indicates that the area comprised farmsteads and farmland, as well as large estates. Between the early Lambert Field on the west and the platted Berkeley Acres and Kinloch Park subdivisions on the east, is land belonging to J. A. Massey, J. & C. Edwards, Anton and Henry Haarmaan, C. E. Champ, J. D. Lucas, F. J. Hollerus, F. C. Whittlemore, J. Wickham, and Colonel Graham's Hazelwood Farm, north of the railroad tracks. Along Natural Bridge Road to the south, the landowners were D. Horton, M. Flichman, F. Getz, and J. W. Ottermeier.

A newspaper account indicates that the incorporation of the City of Berkeley was the result of racial strife in 1930s Kinloch.[8] The commuter suburb had an influx of Black residents during the 1900s. In April 1937, 350 students in the white territory of Kinloch School District No. 18 went on strike in support of their parents, who wished to create a separate white school district. The following month, white residents filed a petition to incorporate the community of Berkeley after white residents attempted to divide the Kinloch district. The school superintendent denied the separation, but in July of that year, the St. Louis County Court approved the incorporation of Berkeley, which included the white territory of the school district, along with 3,000 acres and 2,000 residents. Although Black residents protested the incorporation, claiming it would include tracts of farmland, "[f]ormer State Senator Clarence Shotwell, attorney for the petitioners, contended in his memoranda that the farm lands [sic] were farm land in name only, and in reality they were country estates."[9] Soon after, the new town of "white" Berkeley went as far as objecting to the election of a site for a new Black high school, claiming it was too close to its community. The community was named after Berkeley Acres, a 1920s unbuilt planned residential development that was platted north of the eastern edge of present-day Runways 12L-30R.

The growth of Berkeley reflects that of the neighboring community of Bridgeton west of the airport. Residents were historically employed by the aviation industry, which prospered during the war years and subsequently with the continued growth of civilian air travel. Industry employees and young veterans with their families settled in Berkeley and its population rose from 2,577 residents in 1940 to 14,123 by 1960, according to U. S. Census data. It peaked at 19,743 by 1970 and began to decrease after that time. The latest census data puts Berkeley's population at 8,148. African Americans make up the majority of Berkeley's residents, with 87.3 percent of the population, followed by Hispanics at 11.6 percent, and Whites at 10.5 percent.

4.2 BRIDGETON

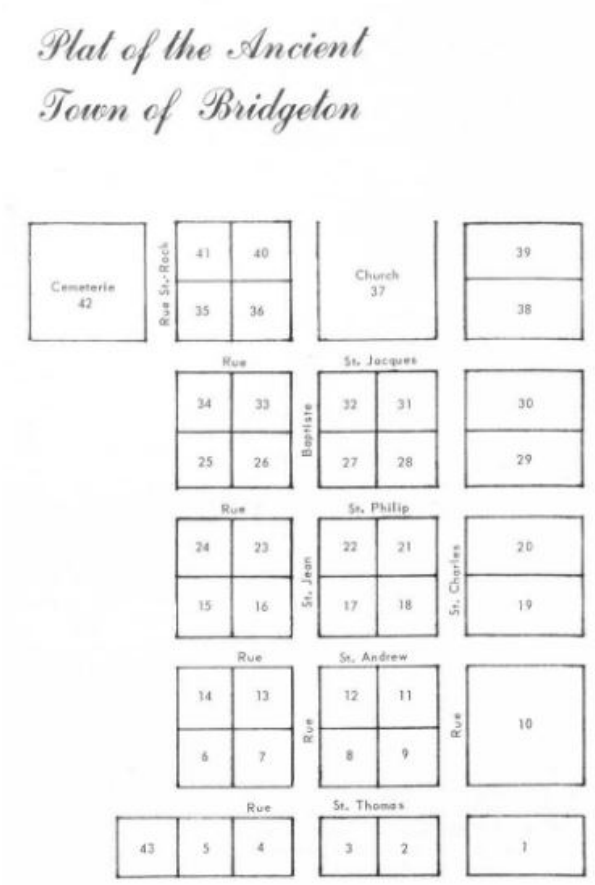
The 1763 Treaty of Paris awarded Spain the land west of the Mississippi River; however, the land known as Missouri had become home to French fur traders and settlers, who started arriving from Canada in the late-seventeenth century. After 1776, the "new Americans" began to move west into the Ohio Valley, and viewing them as a threat to Spanish territorial sovereignty, Spain began to issue tax-free land grants along the west bank of the Mississippi River to the settled French, Spanish, and even Protestant Americans willing to take a loyalty oath. The Osage and other Native American tribes, displaced by new settlers, retaliated against the European encroachment; however, both Spain and Great Britain soon began recruiting tribes as allies against one other.

[8] "Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

[9] Ibid.

By the 1790s, Jean Louis Marc and his family settled in an area known as Tudos Trace, a name derived from an early Indian trail between St. Charles and St. Louis. Then, James Mckay, a Scotsman, was given land in *Marais Des Liards*, near the Missouri River, where he and others settled: "On Mackay's property was built the log cabin now known as the 'Fee Fee Mystery House', at 3170 Fee Fee Road,"[10] approximately 2.5 miles south of present-day STL. In 1793, east of the nearby Cold Water Creek, Robert Owen and François Honoré built a fortified town called *Village à Robert*, which later became Owen's Station, to protect English and French settlers against the Osage. The following year, the settlement was platted, and seven streets were laid out in a 15-block grid that included an arsenal, cemetery, church, and common field. It was then renamed *Marais Des Liards* (marsh of the cottonwood): "The common fields for the Marais Des Liards included a large tract of ground south of Natural Bridge, from the then city limits to the property later in St. James Estates, all of McNulty Manor, Berryhill and part of Carrollton Oaks."[11] A 1799 census counted 379 people living in the village, 42 of them slaves (**Figure 4-3**)

Figure 4-3: 1794 Plat of the Town of Bridgeton



Source: Branneky, Laorraine A., et al. *Bridgeton: Since 1794*. (Bridgeton: Historical Commission of the City of Bridgeton, Missouri,1968)

[10] Jane Mobley, *Home Place: A Celebration of Life in Bridgeton, Missouri* (Kansas City: The Lowell Press, 1993), 6.

[11] Ibid., 7.

The village grew by attracting men who were seeking sanctuary from the East and the opportunity to own land. At the same time, Spain enticed Shawnee and Delaware Indians, displaced from their homelands in the East by the Americans, to settle in Marais Des Liards. One Shawnee, a former captive white man named Lewis Rogers, owned as much as 85 acres on Natural Bridge Road. Rogers became a civic leader and helped establish the first school in northern St. Louis County. James Richardson, who arrived in 1787 after escaping a murder charge in Kentucky, became a wealthy landowner and county deputy surveyor by the end of the eighteenth century. A more celebrated resident of the area was Auguste Chouteau, who with his sons Pierre and François, ran the Louisiana Fur Trading Company and became one of the most powerful merchants on the continent. By 1829, Chouteau "accepted vast Spanish land tracts along the Missouri River (including most of the land in what is now the Carrollton subdivision of Bridgeton, as well as land in the river bottoms) and became a powerful force in the development of St. Louis and the surrounding region."[12]

After Napoleon convinced Spain to relinquish Upper Louisiana in 1800, he quickly sold the territory to the Americans in 1803. Once completed in 1804, the Louisiana Purchase welcomed 10,350 Missourians to the United States, 60 percent of them of European descent and 15 percent Black and Indian slaves; the rest were Native Americans of different tribes. President Thomas Jefferson and Congress split the newly acquired territory into two regions to manage the area's settlement. Missouri fell into "the District of Louisiana," which was further divided into five subdivisions: St. Louis, St. Charles, Ste. Genevieve, Cape Girardeau, and New Madrid. Marais Des Liards fell into St. Louis, and by 1807, Marais Des Liards was organized into St. Ferdinand Township. English common law became part of the township's system with established taxation, courts of law, and a sheriff appointed by the governor. The first sheriff, James Rankin, along with two of the first county judges, Jacques Clamorgan and James Mckay, were all from Marais Des Liards.

Progress and growth in the region occurred shortly after the Lewis & Clark expedition passed through Bridgeton along the former Indian trail, the "Road to St. Charles," and "broadened awareness of the potential of Missouri, and tempted many new settlers into the land west of St. Louis."[13] Growth, migration, and settlement continued in the region. A ferry service established in 1805 across the Missouri River improved transportation between St. Charles and St. Louis. In 1819, the St. Charles Road became a post and stage route, with three trips per week through Bridgeton by the Overland Stagecoach Company, taking travelers between St. Louis and St. Charles. The ordered "Indian removals" by Congress from 1812 to 1820 eliminated a barrier to mass immigration into the territory of Missouri. Many tribes left the eastern regions of the territory to settle within more narrowly defined boundaries. The government put public land for sale in 1818 and created new counties. However, property owners found their Spanish land grants questioned by the United States and wanted verified land claims, resulting in land quarrels that continued until after the Civil War.

Missourians were ready to become a State and drew their own constitution in 1818. The most contentious issue of admitting Missouri to the Union, was that it was a slave-holding state, since slavery had been forbidden since 1787 north of the Ohio River. Many in Congress felt the same ban should extend west of the Mississippi River. The resulting Missouri Compromise of 1820 "made the southern boundary of Missouri

[12] Ibid., 8.

[13] Mobley, 9.

the line between slavery and freedom in the United States, prohibiting slavery north of the line-except Missouri-and setting the state for bitter and bloody conflict."[14] Missouri was admitted to the Union in August 1821. The Missouri legislature also banned Blacks from entering the state, which resulted in few Black families settling in the Bridgeton area from the rest of the nineteenth century and into the twentieth century.

An influential publication published in 1826 by the Reverend Timothy Flint, *Recollections of the Last Ten Years*, described his family's time in St. Charles, and described an idyllic area in which any abled-bodied person could escape poverty by working hard. Another book by German traveler Gottfried Dunden, published in 1829, recounted his travels in the Mississippi-Missouri valley, in which he praised and exalted the natural wealth and agrarian promise Missouri offered. Soon after, German immigrants began arriving. Large farmsteads in Bridgeton began to flourish, served by meadows bordered by forests, a network of creeks and river bottomlands, and fertile tillable land, leading to growth of numerous small communities. The town of Marais Des Liard was platted once again in 1842, and incorporated by the state legislature as Bridgeton in February 1843.

Germans who arrived in Bridgeton in the 1840s included not only farmers, but also doctors, teachers, lawyers, musicians, and clergy. They did not possess Spanish land grants but made good use of the land they bought. The Grosjohans settled in Patonville in the late 1830s; they were joined by the Schuettes who lived on the Long Road, and the Lucases who set up a blacksmith shop on the south side of St. Charles Road near Fee Fee Road. Frederik Heidorn started Bridgeton's first forge and carriage-making store shop. This German migration continued well into the 1860s.

During the Civil War, the residents of Bridgeton sympathized with the South, and St. Louis County maintained the state's highest slave population. In 1860, residents of Bridgeton voted for Stephen A. Douglas for President over Abraham Lincoln; however, Missouri never seceded from the Union and Bridgeton's residents served equally in the Union and Confederate forces. It is likely some area houses were part of the underground railroad helping slaves flee to the North.

At mid-century, the railroad expansion across the country encountered resistance in Missouri, where citizens long reliant on river travel opposed using public funds to build rail lines. Finally in 1849, the state approved to charter the Pacific Railroad, and by the mid-1850s, seven rail lines crisscrossed Missouri. By 1855, a stop on the North Missouri Railroad Company's rail line included Bridgeton and took people from St. Louis to the Missouri River. In 1876, the line was consolidated as the Wabash Railroad. "From the City of St. Louis, it ran northwest through Normandy and Ferguson, crossing the Missouri River at the north end of St. Charles."[15] The Wabash Railroad encircled the city of St. Louis and had three main stations. The western-bound trains traversed St. Ferdinand Township on their way to St. Charles and stopped in Ferguson, Kinloch, Bridgeton, and Bonfils. Thanks to the railroad, Bridgeton commerce experienced greater growth.

It was also at mid-century that important roads opened. The Fee Fee Church Road connected Bridgeton with the Baptist Church in 1829, using a former Indian trail; it was the only north-south corridor for many

[14] Ibid., 11

[15] Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794.* (Bridgeton: Historical Commission of the City of Bridgeton, Missouri,1968), 63.

years, and was finally paved in 1905. In 1858, Addie Road opened, followed by Missouri Bottom Road and Taussig Road in 1865. An east-west corridor called Natural Bridge Road was laid parallel to St. Charles Road in 1796 and was made into a single plank road in 1851. In 1863, the road was turned over to the county and parts of it macadamized after the Civil War. It was renamed Natural Bridge after a former bridge over Coldwater Creek. This road was widened and became a main route to the airport in 1947. It is still an important road in Bridgeton, and the site of the Bridgeton City Hall.

From the 1880s to the World War I, Bridgeton was fundamentally a farming community. Its rich soil allowed farmers to make huge profits following developments in the canning industry, and the network of rail lines facilitated transport of both canned and perishable goods, not only to its residents, but to St. Louis, the rest of the state, and beyond.

The United Railway Company (URC) laid streetcar tracks along St. Charles Road in 1902, and streetcar service began between St. Louis and St. Charles, with Wellston as a transfer point. In addition, the company laid a single track on Cypress Road from St. Charles to Natural Bridge Road, serving the people of Bridgeton. In 1923, the URC laid additional tracks from Wellston to Lindbergh, but less than a decade later, the routes to Bridgeton and St. Charles were discontinued, in 1931 and 1932, respectively. In lieu of rail transit, a bus service operated between St. Charles and Wellston.

The population of Bridgeton grew by 25 percent between 1920 and 1930, from 121 to 152 residents. However, few amenities existed at the time; Bridgeton operated without electric streetlights, electricity in homes, running water, or a police force. Families continued farming in what was mostly a rural community. Consequently, no food shortages occurred in Bridgeton during the Great Depression, although some farmers, whose land was mortgaged, experienced foreclosures. Overall, Bridgeton residents lived frugally, helped each other, and got by.

The increased demand for military aircraft during World War II brought a frenzy of activity to Bridgeton, as companies like Curtiss-Wright and McDonnell Douglas Corporation, large airplane manufacturers, had operations based at St. Louis-Lambert Airport. These companies' employees resided in Bridgeton, resulting in an increasing local population. Many air industry and air defense companies, include Bridgeton's Airpath Industries, continued to prosper with new technologies and future progress. In 1950, Bridgeton had 202 residents and its territory comprised 196 acres. Subdivisions added in the previous decade, such as Bridgeport in 1941, Cypress Gardens in 1946, and Charles Park in 1948, added new housing stock to the area. In 1952, the Bridgeton Board of Trustees reviewed the town's 1843 charter and determined towns with populations under 10,000 could extend their municipal limits without a popular vote of the town's citizens or of the citizens of the area to be acquired. Consequently, in January of 1953, the Trustees voted to double the size of the town by taking adjacent areas in every direction. A new city hall was built, and in 1955, the town doubled its size again by extending the city limits to a line between the Wabash Railroad tracks on the north and Long Road on the south. Trustees further moved the city limits westward beyond Fee Fee Road six months later. By mid-century, the community of St. Ann requested annexation by Bridgeton in an effort to obtain additional services. Suburban growth continued during this time, as new developments appeared during the decade: Fee Fee Hills, Carmel Gardens, Rolling Green Acres, Margaret Manor, and West Pattonville. Town expansion continued through 1956, as Bridgeton voted to extend its boundaries west several times.

Typical of postwar American town development, Bridgeton's farming community turned into the modern, clean, and ideal 1950s suburban community the Baby Boomer generation enjoyed. The children of the

farmers got degrees in engineering, astrophysics, business management, and other fields, moved to the suburban communities close to their jobs, and took up jobs at McDonnell Douglas and Trans World Airlines (TWA). One model subdivision was Carrollton. Begun in 1956 by developers Fischer & Fritchel, Inc., it was a 1200-acre planned community, which Mobley tells us "came to define modern Bridgeton, not only in its design, but in its lifestyle." Planned to be a 'community-within-a-community', it featured 1,826 homes with a nearby shopping district, a community recreation center featuring a pool, tennis and badminton courts, schools and churches, as well as several parks, within a 20-minute drive from St. Louis.

As the new decade of the 1960s began, and up to that point, for a largely rural community like Bridgeton, "the idea that a middle-income home purchase could guarantee a particular quality of life—complete with recreational amenities—presented a new, and hugely appealing, opportunity."[16] Located northwest of the existing airfield maintenance campus, between Cowmire Creek and I-270 on the north and a southern portion between Gallatin Lane and Bonfils Drive, Carrollton once boasted 6,000 residents and was skillfully planned, featuring curved, connecting streets with large lots accommodating the workers of the nearby aviation industry and their families. The commercial strip was located along Natural Bridge Road, between Bonfils and Carrollton Drives.

From a low of just a few hundred residents, Bridgeton's population boomed beginning in the 1950s, and expanded in size, through annexations, to sixteen square miles. Operations and expansions at Lambert St. Louis Municipal Airport continued to increase, and Bridgeton's population nearly tripled during a ten-year period, from 7,820 residents in 1960 to 19,992 in 1970. The airport doubled its passenger traffic during that decade, and STL invested $22 million in renovations of roads and runways. "Now that large scale building is under way, and the smell of progress is in the air, your town has every natural asset to become one of the largest municipalities in the county," boasted the Bridgeton Board of Trustees' 1960 Progress Report.[17] Established subdivisions continued to develop, and new ones were begun during the 1960s, with the Ranch Style being the predominant housing type and form. From 1960 to 1969, eighteen residential subdivisions developed in the vicinity of Bridgeton, adding 8,000 single-family homes, a trend that continued in subsequent decades.

During the 1970s, Bridgeton continued to grow and attract industry. In 1970, voters agreed to collect a half-cent sales tax to finance city expenses. The city's annual budget grew to $500,000 and was used to improve city services and infrastructure. Workers continued to call Bridgeton home because of favorable real estate prices and tax rates, while large employers moved to town, such as DePaul Community Health Center, Hussman Refrigerator Company, Shnuck Markets, and Ozark Air Lines. A new community center was built in 1977, and the decade also witnessed development of three new subdivisions: Caldwell Estates in 1975, White Oak Woods in 1977, and DePaul Hills in 1979.

In the 1980s, Bridgeton found itself opposite the agent which had played a large part in its growth, fortunes, and prosperity. STL needed to expand in order to stay competitive and meet future anticipated air travel growth into the millennium. Started in 1987 and known as "F-4," the airport expansion master plan "called for replacing and reorienting Lambert's two existing parallel runways and constructing a new runway to the

[16] Mobley, 81.

[17] Mobley, 80.

west, requiring demolition of several Bridgeton subdivisions."[18] Slated for demolition were the Berry Hill Golf Course and Bridgeton Terrace, which included Carrollton, northwest of the airport. Concerned Bridgeton citizens, along with the city's mayor, organized in opposition to the plan. The airport began to buy out residents in the late 1990s, and after eleven years of contentious legal battles between the city, the airport, and the FAA, the U. S. Court of Appeals approved the final expansion alternative known as "W-1W" in April 2000. Soon after, air travel declined after the September 11, 2001 attacks; the decline severely impacted the airport. STL's arrivals and departures declined, and what was once the country's eighth busiest airport found itself at thirty-second by 2005. However, improvements continued and Runway 11-29 was completed in 2006; portions of Carrollton were demolished, while other sections laid vacant, though the golf course was spared. The airport entered into an agreement with the Bridgeton to return 43 acres of land previously acquired for airport expansion, in exchange for land surrounding the Bridgeton City Hall. As a result, Bridgeton was able to create a new park and government center.

4.3 LAMBERT FLYING FIELD: 1910-1923

Albert Bond Lambert, called "the father of St. Louis aviation," was a scion of the prominent Lambert family, founders and owners of the Lambert Pharmaceutical Company, the maker of Listerine antiseptic mouthwash. Albert Lambert eventually became the company's president, and later, mayor of the City of St. Louis. He was first exposed to balloon flights while traveling in Europe in the early 1900s, made his first balloon flight in 1908, and obtained his balloon pilot's license two years later; he helped found the Aero Club of St. Louis soon after. Having met Orville Wright, including flying with him in 1910, Lambert obtained his pilot's license in 1911. Soon after, Lambert began organizing air events and tournaments that made St. Louis the center of aviation activity during World War I.

Lambert and the Aero Club "established the city's first permanent airfield at Kinloch Park, a former racetrack located 12 miles northwest of downtown St. Louis, as the site of the International Aeronautic Tournament held in October 1910."[19] Lambert contracted with the Wright Brothers' company to have aircraft and pilots, and with the Aero Club, held a tournament of novice pilots in July of 1910 in Washington Park. At Kinloch Park, three hangars and grandstands were built that summer in anticipation of the October tournament. The nine-day event saw the attendance of over 63,000 people, and brought President Theodore Roosevelt as a spectator; Roosevelt was even flown over the city, the first United States president to take flight.

Known as Kinloch Flying Field and referred to as Lambert Field in honor of its biggest sponsor and promoter, the airfield became home to several flying schools from 1910 to 1912. However, by the end of 1912, the Aero Club's lease on the land expired and flying activities ceased. The Kinloch Flying Field structures were consequently moved to a new field at 7800 North Broadway, where a nearby airfield also operated before World War I at 6700 North Broadway. With fellow pilot and business partner James W. Bemis, Lambert established the Missouri Aeronautical Society in 1917 to train air balloon pilots for the U. S. Army. During

[18] Daniel L. Rust, *The Aerial Crossroads of America: St. Louis's Lambert Airport* (St. Louis: Missouri History Museum Press, 2016), 235.

[19] James J. Horgan, *City of Flight: The History of Aviation in St. Louis* (Gerald, MO: Patrice Press, 1984), 95; Rust, *The Aerial Crossroads of America,* 8.

the war, Lambert served in the U. S. Army , where he rose to the rank of major, and served on a commission that selected the site of what would become Scott Air Force Base, near Belleville, Illinois.

The United States Post Office Department began transcontinental airmail service in 1918 using surplus DH 400 aircraft from the Army, and the St. Louis postmaster secured a branch line between the city and Chicago. In 1919, the City, with Lambert and other civic leaders, donated the money for construction of a new hangar on a 100-acre field in Forest Park's southeast corner. Airmail service at the park only lasted one year, a victim of postwar budget cutting, but before its demise, Lambert and the Missouri Aeronautical Society acquired a five-year lease on farmland in Bridgeton, 11 miles northwest of downtown St. Louis. Lambert paid for the site to be cleared, graded, and drained, and for a hangar to be built (**Figure 4-4**).

Figure 4-4: First Hangar at Lambert Field, c. 1920

Source: Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016. Missouri History Museum.

4.4 LAMBERT-ST. LOUIS FLYING FIELD: 1923-1927

Lambert formed the St. Louis Aeronautic Corporation and leased an additional 316 acres in Bridgeton in order to host the 1923 International Air Races (**Figure 4-5**). By October 1923, the new Lambert-St. Louis Flying Field, as it became known, covered 446 acres and opened at a cost of $130,000. Facilities included four new 120-foot by 132-foot steel hangars, a machine shop, a ten-thousand-gallon gasoline storage tank, and a ten-thousand-gallon water tank.

Figure 4-5: Lambert-St. Louis Flying Field, 1923 October Races

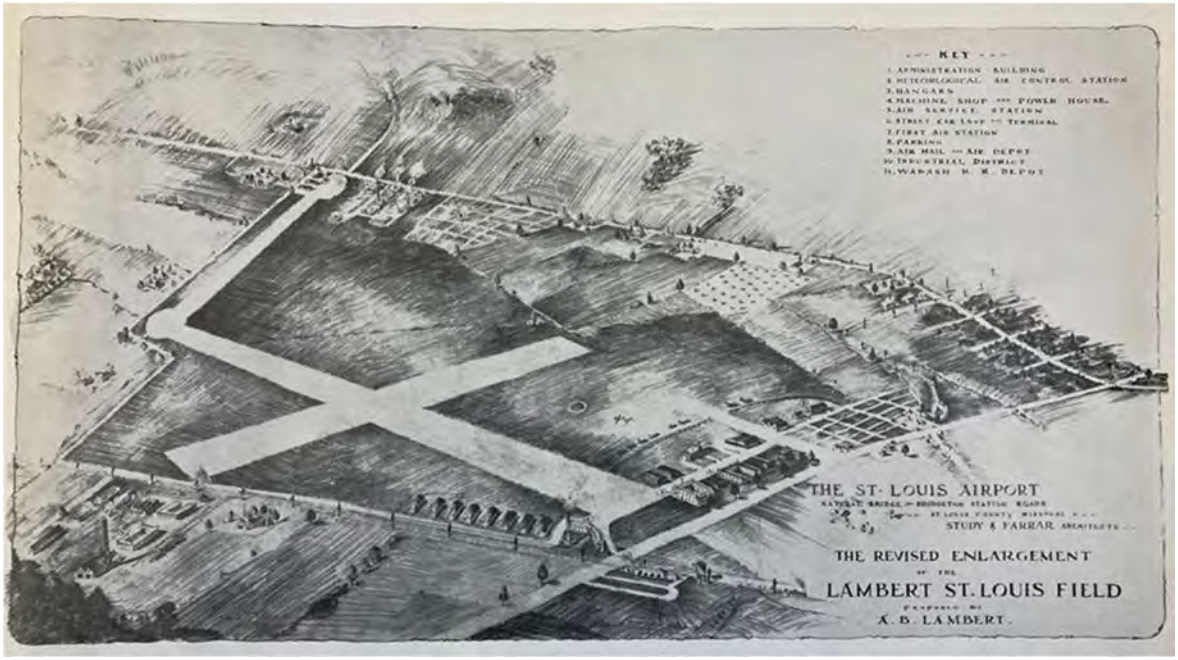
Source: Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016. The Paul Vance Collection.

When the lease ended in 1925, Lambert purchased the property, and in 1927, offered it to the City of St. Louis as its municipal airport; Lambert felt strongly that St. Louis should have a modern municipal airport. In October of that year, Lambert also self-published a brochure entitled *A Municipal Airport for St. Louis* **(Figure 4-6)**. In it, he advocated for the construction of a new facility on 608 acres in the town of Bridgeton to provide airmail, passenger, and commercial services. The site would front 3,800 feet on Natural Bridge Road, 2,600 feet on Bridgeton Station Road, and 4,000 on the Wabash Railroad. Lambert's publication asserted that "fellow St. Louisan", and Master of Aviation Charles Lindbergh himself, were requesting this new public work that would cement St. Louis as a global aviation leader, and to not do so would be a lost opportunity for the city:

> [Lindbergh's] wish and hope definitely expressed that St. Louis will grasp the opportunity and take a leading part in the development of the art that has spread the name of St. Louis to the most remotes corners of the world…It is an awakened spirit which will no doubt respond-and nobly so-to the hope and urgent advice of the foremost apostle of aviation. The reply of St. Louis to Lindbergh must be on a scale commensurate with the achievement of his flight. It must reflect the inspiration of our citizens and hold the admiration of the world.[20]

[20] Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion* (St. Louis: n.d.), 2.

Figure 4-6: Rendering of the Proposed Airfield



Source: Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion*. St. Louis: n.p., n.d. St. Louis Public Library Special Collections.

Lambert's proposal for a first-class airport included an administration building, air mail and passenger depot, meteorological and air traffic control stations, gasoline and oil supply stations, an air service station, streetcar loop and terminal, railroad station and switching, hangars, a machine shop and central power station, a fire station, a restaurant, and parking facilities **(Figure 4-7)**.

Figure 4-7: Photograph of Administration Building at Lambert Field, St. Louis. Postmarked 1935

Source: St. Louis Public Library Digital Collection.

Proposed new runways would accommodate passenger planes weighing 15,000 to 25,000 pounds. Lambert estimated a cost of $1,200,000, and emphasized that St. Louis could not be left behind other

municipalities, considering there were already 208 airfields in the country, with 303 new ones, according to him, under consideration. He ended the publication asserting that aviation "will prove a dominating influence in the struggle of large cities for supremacy."[21]

That same year, a bond issue was proposed to buy the existing facility in Bridgeton, while Lambert leased the use of the airfield for $1 per year. In January 1928, the mayor signed a bill appropriating $50,000 to temporarily acquire Lambert-St. Louis Flying Field as the municipal airport and begin improvements.

4.5 LAMBERT-ST. LOUIS MUNICIPAL AIRPORT: 1930-1939

In 1930, the airport was officially dedicated and named "Lambert-St. Louis Municipal Airport." The facility included 546 acres with three runways, extensive tarmac suitable for takeoff by tail-dragger aircraft, and several hangars. Airline companies began to set up headquarters nearby, attracted by the many facilities, and flying clubs, the Navy, and the National Guard also saw the benefits of having a presence at the airport and began to maintain a presence there. In 1932, St. Louis citizens voted to approve a $2,000,000 bond for upgrades and construction of a new airport terminal. Two years later, 82 airplanes and 175 pilots used the airport as their headquarters. From 1935 to 1940, the airport grew 495 percent in arrivals and departures according to records.

4.6 WORLD WAR II AND MILITARY INSTALLATIONS

By 1939, Lambert had fallen behind in airport infrastructure and capacity. Its runways were not long enough to accommodate new aircraft and had deteriorated under heavier airplanes, making the runways inadequate for the new, four-engine airplanes being developed. To address these issues, the Civil Aeronautics Administration (CAA) and the Works Progress Administration (WPA) appropriated funds for the $1.5 million construction of Runway 6-24 in 1941, with a length of 4,800 feet; it was extended to 6,000 feet two years later, allowing the airport to accommodate new airplanes and serve military needs.

While a Naval Reserve Air Base existed at Lambert Field since the 1930s, it was small with little aircraft and personnel. In 1941, the Navy decided to lease 21 acres on Natural Bridge Road and constructed a flight training base known as Naval Air Station (NAS) St. Louis. Eventually, the base expanded to more than 40 acres, and at its peak, NAS St. Louis housed 160 aircraft; in 1944, it began training Royal Navy cadets from the United Kingdom.

During wartime, a second local airport was under consideration by members of the St. Louis Chamber of Commerce. The organization conducted a 1941 study that examined possible sites and recommended a long-term expansion plan of airport facilities to be financed by a new bond. The study also recommended that the city buy land in the Columbia Bottom area, north of St. Louis, for a second airport. Even after a second study identified twenty-two possible airport locations, the CAA concluded all locations were unsuitable due to necessary flood protection. A third survey of potential sites for a second airport was conducted by a private engineering firm, which recommended a set of three parallel runways east of Runway 6-24, and concluded that Columbia Bottom was the only suitable location for a second airport. In

[21] Lambert, A. B., 3.

the summer of 1942, the city of St. Louis passed a new $4.5 million bond issue for airport expansion. However, the development of a second airport was shelved for the duration of World War II.

Having started at Lambert Field in the early 1930s as an aircraft and parts manufacturer, Curtiss-Wright developed a large industrial complex at the STL, focusing on the research, design, testing, and manufacturing of aircraft for the war effort from 1939 to 1946. Another early aircraft manufacturer, McDonnell Aircraft Corporation, also began operations at the airport in 1939, occupying the former Lambert Aircraft factory, where it produced the FH Phantom and the F2H Banshee jet fighter planes during World War II. Once Curtiss-Wright closed operations at Lambert Field in 1946, McDonnell bought their plant and began producing fighter jets during the 1960s, and formed McDonnell Douglas in 1968.

4.6.1 MISSOURI AIR NATIONAL GUARD BASE AT LAMBERT FIELD (ANGLF) 1941-1958

The history of the Missouri Air National Guard at STL is summarized in a cultural resources survey prepared in 2006 by Engineering-Environmental Management, Inc. According to the survey report, prior to the ANGLF, the NAS occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925, with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942, the unit used a hangar on the northwest corner of the airport built by the City of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure and a parachute loft was in the rafters of the hangar. No barracks existed, since the group consisted of two officers and 10 enlisted men in 1932.

Additional fields were established to handle the training schedule at Lambert Field; however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed for training. Ramp space had to be borrowed from other airlines and plane manufacturers. Improvements began in 1941 “on the southwest corner of the airport of what was to become NAS St. Louis, Missouri.”[22] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and according to the 2006 survey, had large hangars and repair shops, a steam plant, garages, an underground re-fueling system, a sewage treatment plant, and administrative offices. Soon after, additional construction began on the south side of the road, to be used primarily as living quarters for the cadets and enlisted men, which, the report tells us, included:

> A bachelor officers’ quarters, a recreation hall, an Olympic-size swimming pool, large gymnasium, a mess hall, a sick bay, including some hospital facilities, a training building, and many smaller buildings were added…an officers’ club, a recreation building containing a movie theatre, bowling alley, a chief petty officers’ club, a White Hat’s (enlisted) Club, a gasoline filling station, and a Navy Exchange Store. There were several barracks for enlisted sailors and Marines who lived on the base. A large mess hall served three meals a day.[23]

[22] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

[23] Engineering-Environmental Management, Inc., 3-14.

The second airport control tower was built atop the Navy hangar once the airport expanded to the east. After the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local FAA offices.

The Naval Air Station at Lambert provided all crash, fire, rescue, and snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, STL's base incurred a surge in the enrollment of sailors. After the war, the base continued operating and began using jet planes. In the fall of 1957, NAS St. Louis received de-commissioning orders from Washington, D.C. That year, the base had 47 aircraft assigned to it, including twenty-four FJ-2 fighters; five P2V patrol planes; two R5D transports; and sixteen SNB, TV-2, SNJ, and T34 trainers. The base logged 15,839 hours of flying time: 2,338 by active-duty station personnel and 13,501 by pilots in the reserve squadrons. Once NAS St. Louis closed in the winter of 1958, all fighter aircraft and maintenance logs were transferred to NAS Niagara Falls in New York, personnel and their records were dispersed among other naval activities, and files and photos of historical importance were sent to Washington, D.C.

4.6.2 THE 131ST FIGHTER WING AT MISSOURI AIR NATIONAL GUARD BASE AT LAMBERT FIELD 1946-1980

The 131st unit of the Missouri Air National Guard dates to 1923, as an observation squadron at Lambert Field. During World War II, the unit participated in active wartime service in the Pacific, but was also engaged in stateside training until 1944, when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert Field and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Fighter Wing became the 131st Composite Wing and became active for Korean War service in March 1951, as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert Field. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

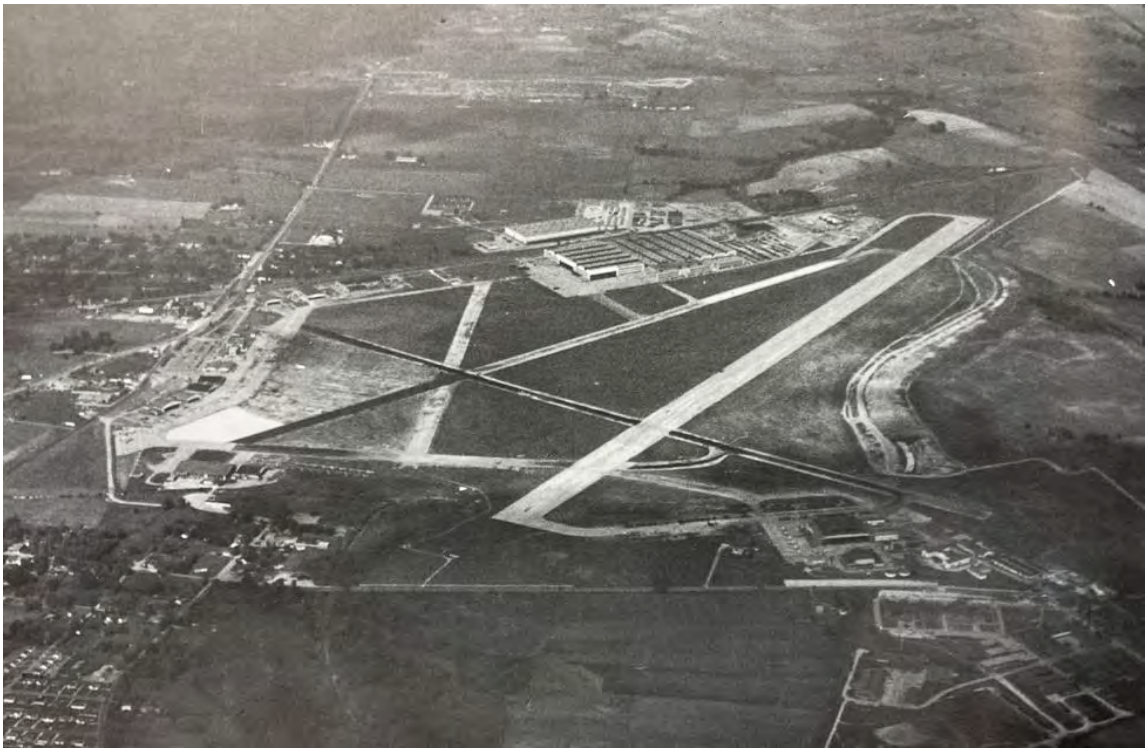
During the rest of the 1950s, the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1962, the squadron deployed to Europe during the Berlin Wall crisis, when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977, it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s, avionics, jet fuel, and support buildings were added to NAS St. Louis, enabling it to handle new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s, centered around support facilities as new headquarter buildings, traffic checkpoints, and

storage. During this time, the unit was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

4.7 THE JET AGE AND A NEW AIRPORT

By the mid-1940s, STL operated from its 1933 terminal and existing runways became increasingly incapable of handling the larger aircraft being fabricated for increased postwar passenger travel demand. In 1945, Lambert covered 1,060 acres and had a 6,000-foot-long runway, Runway 6-24 **(Figure 4-8).** In one year alone, from 1945 to 1946, passenger traffic at Lambert increased from 233,000 to 384,000, reaching 446,000 people by 1949. Consequently, the City of St. Louis authorized a $9.8 million bond to embark on a new eastward expansion project. The first step required enclosure of Coldwater Creek on the western boundary and the construction of the 5,000-foot-long Runway 12-30 that opened in November of 1947, parallel to Natural Bridge Road. Once city officials realized a second airport site at Columbia Bottom was not feasible, officials redirected attention to expand Lambert-St. Louis Municipal Airport between the new runway and Natural Bridge Road.

Figure 4-8: Aerial View of Lambert Airport in 1945 (old terminal at left, new Runway 6-24, and the Curtiss-Wright factory to the right)



Source: Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016. City of St. Louis.

From 1949 to 1951, the area was graded for the apron (aircraft parking at gate), taxiways, and other facilities, and the storm drainage system for the area was installed. Looking to finance the enterprise, St. Louis struck a deal with the McDonnell Aircraft Corporation in 1951: "In 1947, the city purchased the Curtiss-Wright plant at the airport from the Federal Government for $500,000, and four years later sold it to McDonnell for $9,873,093. The aircraft firm made a down payment of $1,000,000 and agreed to pay the

remainder at the rate of $74,000 a month, with interest of 2 percent on the unpaid balance. McDonnell still owe[d] $6,800,000 [as of 1954]."[24] St. Louis relied on the McDonnell payments for the airport improvements.

The airport engaged the firm of Hellmuth, Yamasaki and Leinweber to design a new terminal in 1951. The firm, along with airport consultant Landrum & Brown, prepared an economic study that determined the new terminal should feature a large space for full freedom of movement, in anticipation of the ever-increasing thousands of air travelers, and that it should be able to provide future expansion as air traffic increases over time. Construction began in 1953 on the new $6 million terminal, described as "the Grand Central of the Air" in reference to the great hall at New York's Grand Central Terminal. The principal designer was thirty-nine-year-old Minoru Yamasaki, who wanted the interior space to be a "gateway" similar to the arch that his friend Eero Saarinen had designed a few years earlier for the St. Louis waterfront. Yamasaki envisioned the hall to be as airy, open, and uncluttered as an air terminal could allow.

For maximum terminal efficiency, Yamasaki and his team distributed functions inside the new terminal with three distinct levels: an "apron" or lower level of service facilities and the ramp area for aircraft; a "finger floor" for arriving and departing passengers in the middle; and a top level known as the passenger floor for ticketing agents, departing passengers, and the public. Ticket counters, information and insurance booths would be located at the eastern third of the top passenger level; a coffee shop, cocktail lounge, dining terrace, private dining room and kitchen would be located at the west, with a waiting area, escalators and stairs, and concessions in the center **(Figure 4-9)**.

The middle, or finger level **(Figure 4-10),** would connect to the general public level via stairs and escalators and would accommodate the offices of airlines and airport management, along with an amusement room, nursery, restrooms, barbershop, and facilities for baggage claim. The passenger concourse would descend to the various fingers that would lead out to the lower apron level. The fingers were to be enclosed heated walkways with active gate positions, where airlines board and disembark passengers. In the apron level, additional offices, air mail and air cargo operations facilities, and catering kitchens, would be included, along with heating and cooling installations. A key element in the new airport scheme was a spectator deck extending 700 feet out from the terminal's central dome, to provide visitors and waiting travelers a view of airfield operations **(Figure 4-11)**.

Before deciding on the terminal's domed design, Yamasaki explored other roofing design types that would meet the terminal design program's desire for a single, expansive room, 412 feet long with no interior pillars or columns. Ultimately, Yamasaki covered the space with three shell-like concrete domes, 32 feet high, and 120 feet square **(Figure 4-12)**. A 1956 newspaper article recounts that Yamasaki's roof design drew inspiration from the Ancient World: "When I completed the plans, I remembered where I had seen such concrete shell-type construction…It was the Roman Baths at Caracalla, built in the Third Century. The building was 80-foot square on the same principle."[25]

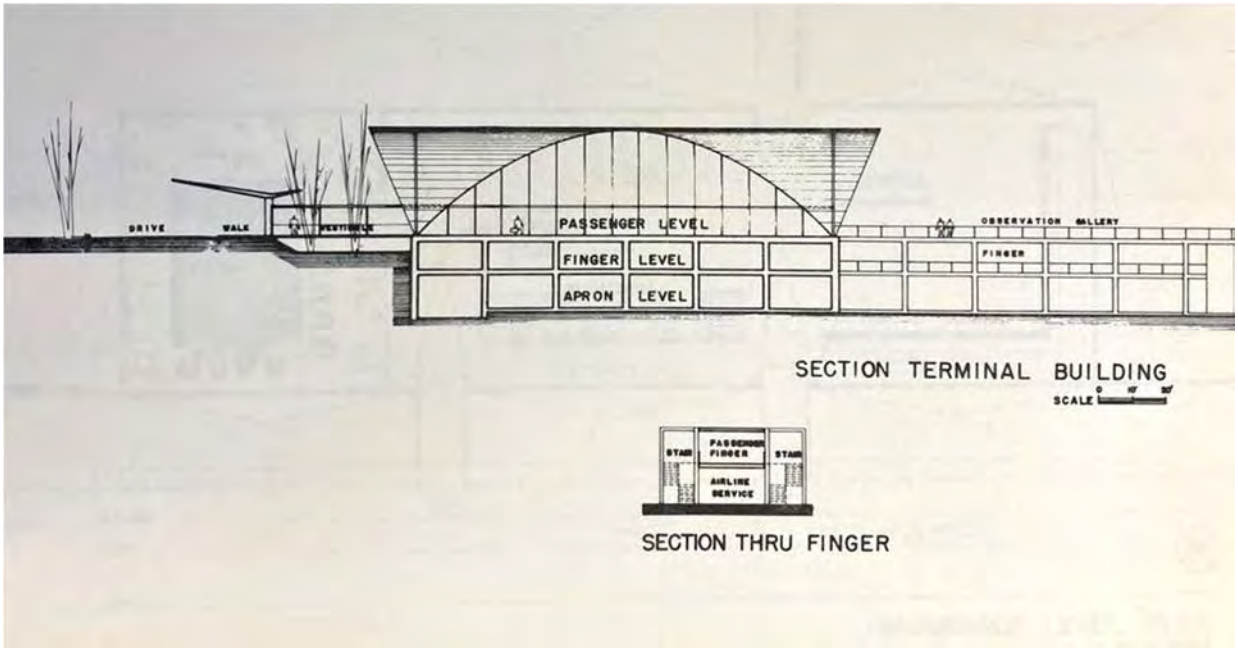
[24] Boeschenstein, C. K. "Describe as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat,* March 28, 1954. 53.

[25] Krell, Edwin D. "New St. Louis Air Terminal Building Opens: Public Service Role Stressed." *St. Louis Globe-Democrat,* March 11, 1956. 59.

Figure 4-9: The Passenger Floor at the New Lambert-St. Louis Municipal Airport Terminal c.1956

Source: Charles Trefts Photographs Collection. The State Historical Society of Missouri.

Figure 4-10: Section Thru Finger



Source: In Hellmuth, Yamasaki & Leinweber & Landrum & Brown. *Lambert St. Louis Municipal Airport: Economic Studies Terminal Building and Area Design for the City of St. Louis*. St. Louis: Hellmuth, Yamasaki & Leinweber, 1952. St. Louis Public Library Special Collections.

Figure 4-11: Photographs of new airport terminal models showing the spectator deck atop the center concourse

Source: In Hellmuth, Yamasaki & Leinweber & Landrum & Brown. *Lambert St. Louis Municipal Airport: Economic Studies Terminal Building and Area Design for the City of St. Louis*. St. Louis: Hellmuth, Yamasaki & Leinweber, 1952. St. Louis Public Library Special Collections.

Figure 4-12: Exterior, New Lambert-St. Louis Municipal Airport Terminal Building, c.1956

Source: Charles Trefts Photographs Collection. The State Historical Society of Missouri.

Initially unreinforced, the three groin vaults "are powerfully braced on the upper side with concrete ribs that reach a depth of about seven feet at the outside ends. And the outside edges of the 4 ½-inch shells are thickened for extra resistance, as they are at Saarinen's TWA terminal, at JFK Airport in New York. Heavy diagonal reinforcing bars were added in the floor at Lambert to brace the vault support corners against outward thrust."[26] The three domes were sheathed in copper and design plans supported expansion to six domes if required by future demand.

The terminal was inaugurated on March 10, 1956, and along with it, the airport featured a field lighting system, 1,282 acres of concrete runways, including a lengthened Runway 12-30, as well as a concrete parking lot. According to airport historian Daniel Rust,

> [T]he new Lambert terminal's architectural concept was unlike any other air terminal design of the time and served as the prototype for a new generation of terminals…Lambert's design inspired architect Eero Saarinen—the designer of St. Louis's Gateway Arch—in creating his designs for the TWA terminal at New York's Kennedy and Washington's Dulles airport.[27]

Not only was the new terminal one of the most advanced in the country, but it also became one of the few civilian airports able to handle the new generation of jetliners. The airport featured three narrow passenger concourses with twenty-eight gates capable of accommodating 1.2 million passengers each year.

4.8 AIRPORT EXPANSIONS 1964-1985 AND THE COLUMBIA-WATERLOO PLAN

By 1962, Lambert-St. Louis Municipal Airport was the sixth-busiest airport in the United States, and with progressively increasing air travel, it was fast outgrowing its runways and facilities. A secondary municipal airport opened in 1964 (Spirit of St. Louis Airport), and Ozark Air Lines, which utilized the airport as its hub, invested heavily at Lambert-St. Louis Municipal Airport by constructing new facilities including an office, shop, and hangar to house its fleet. Industry growth also led to Lambert-St. Louis Municipal Airport expansion by building its fourth dome at the terminal in 1966.

However, capacity concerns at the airport persisted: Lambert-St. Louis Municipal Airport's passenger traffic had increased fourfold between 1958 and 1969. A new $200 million revenue bond was approved in 1968 to finance future development and a new improvement program, and the City began to explore the concept of a new satellite passenger terminal at Lambert. The need was amplified in a FAA 1968 national report, that indicated Lambert-St. Louis Municipal Airport would not be able to accommodate increased air traffic expected by 1982 and recommended that an ancillary airport be in place by 1980. During the 1969-1970 fiscal year, the airport launched its $47 million improvement program, which projected building a new East Terminal located a mile southeast, covering 20 acres with 400,000 square feet of space and parking facilities; modernizing and enlarging the present terminal; increasing the number of gates from 32 to 40; and adding 8 baggage carousels. In the summer of 1969, construction began on the new 4-level parking

[26] Peters, Frank. "Minoru Yamasaki's Pivotal Building Years In St. Louis." *St. Louis Post-Dispatch,* February, 16, 1986.

[27] Rust, *The Aerial Crossroads of America*, 139.

garage, the 10,000-foot runway was resurfaced, the terminal apron was expanded and taxiway fillets enlarged, and a new fire-crash truck was purchased.

St. Louis had longed planned for alternatives to Lambert Field: the City purchased over 4,000 acres of land north of downtown St. Louis, where the Missouri and Mississippi Rivers met at Columbia Bottom, and planned to build a second airport after World War II. At the time of the purchase, mayor Joseph Darst proposed a plan to construct a new airport in Illinois closer to Downtown St. Louis than Lambert-St. Louis Municipal Airport. The idea was abandoned once major airlines voiced their preference for staying at Lambert-St. Louis Municipal Airport and hoped a new expressway could be built at much less the cost of a new facility.

In the spring of 1970, then-mayor Alfonso J. Cervantes and Illinois governor Richard Ogilvie announced plans for a new airport across the Mississippi River in Illinois, under a St. Louis metropolitan airport authority, and included eventual management of Lambert-St. Louis Municipal Airport. The St. Louis Metropolitan Area Airport Authority (also known as the Illinois Authority) was established in July that year, with state funding to conduct feasibility and engineering studies and with the ability to issue revenue bonds to finance all activities. Many residents and aldermen initially supported the concept, but concerns mounted that it would take away wealth, jobs, and trade from Missouri, as well as money and investment from Lambert-St. Louis Municipal Airport. Meanwhile, in 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971, following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city.

In May 1971, the Illinois Authority adopted the Columbia-Waterloo Plan, a $350 million airport located 19 miles southeast of St. Louis, comprising close to 18,000 acres of land and 6 runways. The Illinois Authority applied for $8.4 million of federal funds in early 1972 to begin land acquisition. In opposition, the Missouri state legislature formed its own Missouri-St. Louis Metropolitan Authority (known as the Missouri Authority) supporting the idea of a second airport, but in Missouri, not Illinois. In the spring, the Missouri Authority released a study claiming it would be more economical to improve Lambert-St. Louis International Airport than building a new airport; that abandoning Lambert-St. Louis International Airport would represent a severe economic dislocation in the city; and that an improved Lambert-St. Louis International Airport could remain as the main city airport for the next 20 years due to a recent decline in air traffic.

By the summer of 1972, opposition to Columbia-Waterloo grew among state legislators and city politicians to the point of enacting legislation to hold a referendum on the continued use of Lambert-St. Louis International Airport and support of a second Missouri airport, rather than one in Illinois. The FAA agreed to hold a public hearing in August for funding Columbia-Waterloo. Those present included Mayor Cervantes and Illinois governor Ogilvie in support of Columbia-Waterloo, while Missouri governor Warren Hearnes and St. Louis County supervisor Lawrence Roos advocated for Lambert-St. Louis International Airport and a second Missouri airport. The *Lambert-St. Louis 2000 Plan* was unveiled in October by the Missouri Authority and called for adding 800 acres to the airport with a new northwest-southeast runway and a new 90-gate terminal building. The $370 million project would accommodate 60 million annual passengers. On election day, the St. Louis region ballot referendum favored Lambert-St. Louis International Airport and a second Missouri airport more than 10 to 1 over an Illinois airport. Mayor Cervantes conceded to the public's wishes, but in Illinois, new governor Dan Walker vowed to continue pushing for the Columbia-Waterloo airport. The U. S. Department of Transportation, meanwhile, decided to consider Lambert-St. Louis International Airport's possible expansion. Regardless of the *Lambert-St. Louis 2000 Plan*, David Leigh, the

airport's director, announced a needed 3-year, $20 million plan to increase Lambert's passenger capacity to 20 million a year that included double-decking and extending the concourses and adding a wing for mobile transporters to take passengers to planes parked far away from the terminal. Meanwhile, at the airport, implementation of capacity improvements slowly continued with completion of a 3,000-vehicle concrete parking garage located immediately adjacent to the terminal. The airport also acted on its "international airport" status by offering flights to Mexico.

In 1973, the city's new mayor, John H. Polker, opposed Columbia-Waterloo. However, McDonnell Douglas opposed the *Lambert-St. Louis 2000 Plan*'s proposal to acquire the company facilities north of the airport for the expansion. The City, the aircraft manufacturer, and other opponents of the Illinois airport urged development of a new master plan for Lambert-St. Louis International Airport 's expansion and hired the Ralph M. Parsons Company to prepare it. Around the same time, the oil crisis and subsequent energy shortages allowed FAA to conclude a second St. Louis airport impractical. In addition, the U. S. Department of Transportation expressed a preference for not building new airports but expanding existing ones. In the spring of 1973, the U. S. Department of Transportation approved funds for the Ralph M. Parsons Company's master plan study and announced it would postpone a decision on Columbia-Waterloo until after the master plan's publication. The released plan, in January 1975, recommended extending the parallel runways and building a new east terminal to increase the number of gates to forty-nine by 1985. The $144.7 million expense would allow Lambert-St. Louis International Airport to continue to be the primary city airport through 1995. In late 1975, airlines operating at Lambert-St. Louis International Airport agreed to support the double-decking of concourses and increases to the number of gates. The U. S. Department of Transportation declared that "it appeared that [Lambert] may be technically capable of serving the area's air carrier need into the mid-1990s."[28] Furthermore, the FAA testified in congressional hearings that based on reduced air traffic, building the once-proposed airport at Columbia-Waterloo would cost more than $1 billion, rather than the previously predicted $350 million.

Following a public hearing earlier in the year, in September 1976, Secretary of Transportation William T. Coleman, in an eight-page decision, determined the proposed Lambert-St. Louis International Airport expansion presented in the Ralph M. Parsons Company's master plan was feasible and able to increase Lambert-St. Louis International Airport 's capacity through the early 1990s, but not beyond that time. In addition, he approved federal funding to acquire land for a future Columbia-Waterloo on condition that air traffic operations begin no earlier than January 1992, that new jobs at the new airport are given to people who lose jobs at Lambert-St. Louis International Airport as a result, and that employment priority is given to Missouri construction and building trade employees. Before he left office in early 1977, Secretary Coleman approved a $100,000 grant to begin acquisition of land at Columbia-Waterloo. The subsequent Secretary of Transportation, Brock Adams, met with delegations from both states, and in March 1977, withdrew federal funding for Columbia-Waterloo, contending the area residents' opposition to it, aviation forecasts for St. Louis considerably declined since 1972, and it was premature to speculate Lambert-St. Louis International Airport would not face capacity issues until the 1990s, since airlines extended their leases through 1995. The subsequent FAA *1978-1989 National Airport Systems Plan* made no mention of a new St. Louis airport, ending the 10-year battle over Lambert-St. Louis International Airport's fate.

[28] Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*, 183.

By 1977, Lambert-St. Louis International Airport featured a 10,000-foot runway, encompassed 2,000 acres, and accommodated 6.7 million passengers a year. Late that year, the airport announced a $40 million plan to resurface and extend Runway 12R-30L to reach 11,000 feet in length, extend Runway 12L-30R from 6,600 feet to 8,500 feet, and add 2.5 miles of taxiways and new runway lighting. These improvements required demolition of the 1933 terminal building and the last hangars from the 1920s for the projected runway expansion. The city sold $30 million in revenue bonds in the summer of 1978, followed by a $11.4 million grant from the Carter administration and the U.S. Department of Transportation. Still, the airport was unable to handle the growing number of passengers, and in early 1979, the airport announced a $30 million plan for an additional concourse at the terminal's east end to provide 20 to 30 more gates. The total budget for all the improvements ballooned to $121 million.

These changes followed the Airline Deregulation Act, which President Carter signed into law in late October 1978, and changed the airline-airport relationship and the overall aviation industry. The number of airlines proliferated, and this new environment of unrestrained competition greatly affected Lambert-St. Louis International Airport and St. Louis. Airlines began to adopt a "hub-and-spoke" route system that focused operations at select hub cities and served other destinations primarily from these hubs. This scheme "reduced operating costs, increase regional market dominance, and led to higher passenger load factors."[29] In keeping with this trend, TWA began to make Lambert-St. Louis International Airport its domestic hub and began to reduce its presence in Chicago, since American Airlines and United were vying for a larger presence there.

While work on the runways progressed, a master plan modification called for a satellite terminal east of the new east concourse for American Airlines; the target date of completion was 1983. Runway 12L-30R was extended to 9,000 feet in December of 1980; and main Runway 12R-30L was reconstructed and extended to 11,000 feet in August of 1982. Even with these improvements, Lambert-St. Louis International Airport suffered from increased competition and the eminent air traffic brought on by its hub status for TWA. "Lambert's traffic increased by more than 30 percent in the first half of 1983, making it the sixth busiest airport in the country."[30] Conversely, an FAA study found the airport to be the third highest for inflight delays, more than John F. Kennedy International Airport and LaGuardia Airport in New York. From 1982 to 1984, passenger traffic at Lambert increased from 11 million to 20 million. The airport opened a new extension to Concourse C on the east, including twelve additional gates with 400 feet of moving sidewalks; it demolished the old cargo hangars and the TWA maintenance hangar for the new southeast concourse, and built a new cargo city complex with five hangars at the airfield's southeast corner. When finished in 1985, the new southeast Concourse D featured 1,500 feet of moving sidewalks. TWA further increased its position at the airport in 1986 through a merger with Ozark Air Lines, which cause the latter to cease to exist.

[29] Rust, *The Aerial Crossroads of America*, 201.

[30] Rust, *The Aerial Crossroads of America*, 208.

4.9 LATER AIRPORT EXPANSIONS AND ALTERNATIVES F-4 AND W-1W

In the late 1980s, Lambert-St. Louis International Airport's extended parallel runways only occupied 1,300 feet apart, making them too close to allow simultaneous landings; space did not exist for an additional runway **(Figure 4-13)**. To resolve this issue, the airport pursued a new master plan study by Landrum & Brown, the original consultants on the 1950s airport. The 1989 master plan study identified four expansion proposals, each requiring acquisition of portions of Bridgeton to the west of the airport, which incensed the town. Bridgeton's mayor complained of being excluded from the planning process and vowed to oppose any airport expansion incurring into their city. In October, the airport selected plan "F-4," which proposed replacing and re-orienting the two parallel runways; constructing a new runway to the west, thereby eliminating several Bridgeton residential subdivisions; and increasing the number of gates from 80 to 119. The airport claimed the expansion assured retention of Lambert-St. Louis International Airport as an airline hub, 13,000 jobs, and a $2 billion economic boost to St. Louis and environs. TWA supported the plan since it planned to remain at Lambert-St. Louis International Airport until 2005, under its current lease agreement. In November 1991, St. Louis voters approved a $1.5 billion bond issue for the project, which upset residents of Bridgeton, who claimed St. Louis was deciding the fate of their community.

Figure 4-13: 1987 Completed Improvements to Lambert Airport, City of St. Louis, Missouri

Source: Rust, Daniel L. The Aerial Crossroads of America: St. Louis's Lambert Airport.

It soon became clear that the plan's execution would interfere with the airport's ability to function as a hub for a number of years. TWA expressed concerns about potential financial losses and additional fees the

interruption of service would bring. Consequently, the airport revised the plan in 1993 and eliminated a proposed fourth north runway. By Fall 1994, a new airport director abandoned "F-4" and advocated for a decision-making process that largely excluded Bridgeport. Bridgeton, meanwhile, advocated constructing a runway northeast of Lambert-St. Louis International Airport, and supported the idea of a passenger terminal at Scott Air Force Base near Belleville, Illinois. That year, Lambert-St. Louis International Airport served 23 million passenger, and handled 480,000 landings and takeoffs, adding pressure to the need for expansion.

In the Spring of 1995, the airport announced six new alternative expansion plans; one included a revised "F-4," which it called "Revised 1993." However, St. Louis and the airport favored an alternative called "W-1W," which required demolition of 1,500 homes and 70 businesses and the displacement of 5,000 Bridgeton residents, at a cost of $1.77 billion. Bridgeton city officials vowed to continue opposing any plans involving the displacement adding, "This is going to be a long haul. We're going to fight every inch of the way."[31] Their counter efforts produced a competing expansion proposal, *Lambert 2020*, which called for a shorter new runway within the airport boundaries, as well as the relocation of the passenger terminal to the north side.

Ultimately, the airport released the *Master Plan Supplement Study Final Report* in January of 1996, which included low, middle, and high passenger traffic forecasts for the next 20 years at Lambert-St. Louis International Airport, and settled on plan alternative "W-1W," which offered a more cost-efficient solution to the airport's capacity needs. According to airport historian Daniel Rust, by this time, many Bridgeton residents wanted to get on with their lives after seven years of dispute. However, lawyers for Bridgeton filed a lawsuit against the City of St. Louis, blocking the plan on the grounds it violated Bridgeton's zoning ordinance and did not receive city approval. Because the FAA had not yet approved "W-1W," the lawsuit was later dismissed. In September 1996, the FAA published a draft environmental impact statement in which it estimated that "W-1W" would be the least disruptive alternative, requiring demolition of fewer homes and no additional taxiways across Interstate 70.

During the "W-1W" environmental review process, Terminal 2 opened in March 1998 with little fanfare. In September, the FAA published its final environmental impact statement and Record of Decision, in which it identified "W-1W" as the preferred alternative in solving the capacity needs and delays at Lambert-St. Louis International Airport. Bridgeport soon filed lawsuits against the City of St. Louis for not complying with zoning codes and to challenge the FAA's approval of "W-1W." In early 1999, a state court held that St. Louis was not required to comply with Bridgeton zoning laws, but the town appealed the decision and continued litigation. Meanwhile, preparations for building the new runway moved forward, and the airport began acquiring and clearing real estate. In April 2000, and involving separate litigation working through the federal court system, the U. S. Court of Appeals upheld FAA's approval of "W-1W," noting that the Bridgeton counter plan failed to provide arrival capacity and that the approved plan was the less disruptive alternative to the airport's surrounding communities, compared to the other five alternatives. The eleven-year battle finally ended when the Missouri Court of Appeals upheld the lower court ruling against Bridgeton's zoning claim.

[31] Rust, *The Aerial Crossroads of America,* 243.

TWA's continued operational capabilities at Lambert-St. Louis International Airport depended on the airport's *F-4 Expansion Plan* from 1987, which promised new runways and an expanded and improved terminal in order to have St. Louis as its hub (Runway 11-29 was completed in 2006, but the planned terminal expansion never occurred). TWA survived bankruptcy several times during the 1980s and 1990s and had lost market share in the industry due to competition from low-cost carriers. The airline was once again facing a dire financial situation and on the brink of a complete shutdown when it put itself for sale. In January 2001, American Airlines announced an agreement to purchase TWA, with plans to preserve jobs and maintain the important hub in St. Louis. The two companies merged in April of that year with American paying $742 million in cash and taking on TWA's $2 billion debt, $15.5 million of which was owed to Lambert-St. Louis International Airport. TWA operated its last flight on December 1, 2001.

While American Airlines was taking over TWA, the September 11, 2001, attacks occurred. American Airlines considerably reduced the number of aircraft in its fleet and laid off a third of its employees, following a marked decline in air travel. The airline barely avoided bankruptcy and new management began focusing on successful hub operations in Chicago and Dallas-Ft. Worth.

The September 11 terrorist attacks caused travelers to suspend air travel plans and forced businesses to halt non-essential travel for their employees. The Transportation Security Administration (TSA), created by Congress, took over the private security contractors paid for by the major air carriers and forever changed the passenger screening process. In November 2003, American Airlines reduced the number of departures at Lambert from 417 to just 207 and announced layoffs of 2,000 employees in St. Louis. The airport authority's planned expansion of the main terminal was shelved indefinitely. Actions by American Airlines had a dramatic effect at Lambert-St. Louis International Airport: the airport froze spending $39 million in terminal upgrades; passengers numbers fell from 26 million in 2001 to 13 million in 2004; and landings and takeoffs decreased from 474,000 to 283,000. St. Louis went from being the eighth busiest airport in the country to the thirty-second in 2005.

However, Runway 11-29 on the westernmost portion of an expanded airfield, was completed in 2006 **(Figure 4-14)**.

Figure 4-14: View of new Runway 11-29 under construction in 2005

Source: City of St. Louis, Missouri. In Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016. City of St. Louis.

Passenger volume fell to 12 million by 2009, as effects of the 2008 financial crisis and ensuing recession took hold. American Airlines continued reducing its service in St. Louis, eliminated the airport's hub status, and avoided bankruptcy. Other airlines underwent Chapter 11 bankruptcies, restructured their operations, and merged with other carriers.

> St. Louis did not generate enough traffic to make it a successful hub. Its terminal facilities were not competitive with those of other cities, and it was burdened with the cost of the new runway. It was difficult for residents of the St. Louis area to accept the loss of the convenience and revenue of the former hub, resulting in a negative attitude toward the airport.[32]

New airport director, Rhonda Hamm-Niebruegge, who took over operations in 2010, decided to capitalize on Lambert-St. Louis International Airport's lack of congestion and its new runway as assets to promote the airport as an international cargo hub. At the same time, the airport was undergoing a $70 million project known as the *Airport Experience*, which began in 2007 to improve terminal facilities. It was during these improvements that the "Good Friday Tornado" struck Lambert-St. Louis International Airport on April 22, 2011, the most powerful tornado to hit St. Louis in 45 years, causing extensive damage: the roof of Concourse C was torn off, and the copper roof of Terminal 1 suffered extensive damage. Miraculously, Hamm-Niebruegge was able to deliver on her promise of having Lambert-St. Louis International Airport 70 percent operational by Sunday. Fortunately, Terminal 2 was relatively unaffected and Southwest Airlines flights operated normally. Southwest Airlines merged with AirTran Airways in 2011, making it the dominant

[32] Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport,* 269.

carrier at Lambert-St. Louis International Airport. Southwest airlines experimented with a connecting hub in 2016. The following year, it commenced hub operations and by 2019, nearly 35% of Southwest's enplaned passengers were connections.

As the millennium's second decade rolled in, St. Louis community leaders, along with airport officials, pursued creation of an air cargo hub at Lambert. A regional Foreign-Trade Zone was set aside next to the airport on the former Curtiss-Wright and McDonnell plants to develop new cargo facilities, which would benefit from reduced customs taxes on goods. The project also received a $1.7 million grant from the Midwest-China Hub Commission. However, the Missouri legislature failed to enact the tax-credit legislation and the plan was never realized. The airport continued efforts to promote international cargo service from other regions like the Middle East and Latin America, and in 2015, the airport announced the lease of 48 acres to Bi-National Gateway Terminal, a Mexican company, to develop a dual customs air cargo facility for importing and exporting goods. The ambitious project was terminated by the airport in May of 2019.

5 SURVEY RESULTS

5.1 IDENTIFIED HISTORIC PROPERTIES

As a result of survey and evaluations, three historic properties were identified within the APE, as depicted on **Figure 5-1**:

- Ozark Air Lines Office, Shop, and Hangar
- Lambert Field Historic District
- Terminal Building

All other evaluated built resources were determined not eligible for listing in the NRHP or were not evaluated because they were constructed after 1981. A table of surveyed built resources, along with a map of their location and survey forms, are included in Attachment A.

Figure 5-1: Identified Historic Properties

Source: WSP USA, 2022.

5.1.1 OZARK AIR LINES OFFICE, SHOP, AND HANGAR

The Ozark Air Lines Shop & Office Building and the adjacent Ozark Air Lines Hangar were built in 1964, as part of a new 130,000-square-foot office and maintenance facility, west of the passenger terminal at Lambert-St. Louis Municipal Airport (Figure 5-2). Construction of these facilities emphasized the importance of Ozark Air Lines' relationship with the airport, which had been its operational hub since the early 1950s. These 1964 facilities consist of the three-story office building with a U-shaped footprint along Lambert International Boulevard, a one-story shop building attached to the rear of the office, with a rectangular footprint, and a connected but functionally separate five-story rectangular hangar building to the north. Subsequent additions to the complex occurred in the 1970s and 1980s. Although evaluated on separate survey forms, collectively, the Ozark Air Lines Office, Shop, and Hangar constitute a single historic property that reflects significant airport investment and new facilities that adapted to changes in aviation technologies during the 1960s.

The Ozark Air Lines Office, Shop, and Hangar is significant under Criterion A. The buildings reflect trends in aviation modernization and technologies during the mid-twentieth century, as aircraft size increased and operations became more sophisticated. Additionally, the Ozark Air Lines Office, Shop, and Hangar reflect an investment by a major regional airline in St. Louis that utilized the airport as a hub for decades. Following

construction of its new facilities, Ozark Air Lines continued to operate throughout the Midwest, the Eastern seaboard and western parts of the country in the 1960s, and to the nation's capital and the southeast in the 1970s.

Figure 5-2: Ozark Air Lines Shop & Office (left) and Ozark Air Lines Hangar (right)

Source: WSP USA, 2022.

The complex is also significant under Criterion C. The Ozark Air Lines Shop & Office Building is a good example of the International Style with Brutalist influences, as applied to corporate office architecture popularized by the United States from the 1950s to the early 1970s. The block-like effect of the building's geometric shape, scale, and massing along the street, its uniform glazing pattern, and its use of modest yet elegant materials are characteristics of the style. Conversely, the steel frame and concrete-sheathed Hangar is representative of the consecutive-rectangular hangar type, used in the aircraft industry for weather protection, maintenance, repair, manufacturing, assembly and storage of airplanes. It features steel posts supporting steel trusses, which in turn support the roof deck, with tall and large sliding hangar doors which fold into an outrigger beyond the width of the hangar.

The Ozark Air Lines Office, Shop, and Hangar retain integrity of location, materials, workmanship, feeling, and association. Integrity of design has been slightly diminished by the extension of the shop building to the west and the small addition to the east. Its integrity of setting has also been slightly diminished through later airport improvement projects, resulting in surroundings that reflect decades of airport and roadway development. Therefore, the property is eligible for inclusion in the NRHP.

The period of significance is 1964, the date of construction, representing Ozark Air Lines' investment into its operational hub in St. Louis and preparation for larger commercial aircraft. Due to later building extensions to the east and west, the historic property boundary is the shop and office building footprint and the footprint of the hangar building, including the hangar's characteristic outriggers for door storage **(Figure 5-3)**.

Figure 5-3: Ozark Air Lines Office, Shop, and Hangar - Historic Property Boundary

Source: WSP USA, 2022.

5.1.2 LAMBERT FIELD HISTORIC DISTRICT

As described in Section 3.1, the Lambert Field Historic District was previously determined eligible for the NRHP in 2006 and documented in the *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and For Leonard Wood, Missouri*. The area was surveyed again in the 2012 *Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field*, which clarified information from the 2006 report, provided an updated count of contributing and noncontributing resources, and delineated a historic property boundary for the NRHP-eligible Lambert Field Historic District. For the current survey, the Lambert Field Historic District was re-photographed and documented on survey forms **(Figure 5-4)**. The historic district appears substantially as described in the 2012 survey, with no major discernible changes; these buildings and all other built resources within the APE are documented on survey forms included in Attachment A.

Figure 5-4: Aircraft Maintenance (left) and Engine Shop (right)

Source: WSP USA, 2022.

The Missouri Air National Guard (MoANG) began operating from Lambert Field in 1923, and a naval air station was established shortly thereafter in 1925. Existing facilities date to the early 1940s through 1950s, representing the increased military presence in St. Louis during World War II and the early part of the Cold War. In total, the Lambert Field Historic District comprises seven buildings and a tunnel that retain sufficient integrity to convey significance and relate to one another in their spacing, massing, and finishes, as described in the 2012 survey report. The historic district is significant under Criterion A for its associated military and generally aviation history during World War II and the Cold War. It retains integrity of location, design, setting, materials, and feeling, and its period of significance is 1942 through 1955. The historic property boundary encompasses the district's building footprints and tunnel, as depicted on **Figure 5-5**. Prior studies found that none of the buildings or tunnel would be individually eligible.

Figure 5-5: Lambert Field Historic District - Historic Property Boundary

Source: WSP USA, 2022.

5.1.3 TERMINAL BUILDING

When completed in 1956, the Terminal Building (the name given to the facility on its original architectural plans) was described as "the Grand Central of the Air" **(Figure 5-6)**. Its principal designer, Minoru Yamasaki, focused on creating a terminal interior space that could be as airy, open, and uncluttered as the business of an air terminal could allow. His concept ushered in a new and innovative era in airport terminal design and construction. Jet Age architecture was born in St. Louis, and soon became the new paradigm in airport design in the years to come. As previously noted, the 2013 The*matic Survey of Modern Movement Non-Residential Architecture, 1945 – 1975, in St. Louis City* identified the terminal as a significant property eligible for listing in the NRHP.

Figure 5-6: Terminal Building

Source: WSP USA, 2022.

The Terminal Building is significant under Criterion A. The Terminal Building was part of an extensive project to replace the 1930 Lambert Airfield, St. Louis' original airport, and when finished in 1956, the Terminal Building was one of the most advanced in the country. Its capacity improvements made Lambert St. Louis Municipal Airport one of the few civilian airports in the country able to handle the new generation of jetliners. The creation of the new Lambert St. Louis Municipal Airport made a significant contribution to the economic and urban development history of the City of St. Louis. During its first decade, the airport became St. Louis' symbolic gateway for those arriving by air.

The Terminal Building, which is limited to the terminal and its four domes, is significant under Criterion C. It is emblematic of early Jet Age architecture, a Modernistic design aesthetic, which blended ideals and concepts of flight and futurism. Jet Age architecture began being constructed in earnest following the opening of the Terminal Building in St. Louis, which became a harbinger for subsequent airport redevelopment and design efforts at Los Angeles International Airport (1961), TWA Flight Center at Idlewild Airport (1962), and Dulles International Airport (1962). Further, the Terminal Building is the work of a master, Minoru Yamasaki, who was a prominent and influential Modern architect throughout the twentieth century. The Terminal Building's vaulted ceilings, use of natural light and high windows, and expansive and open interior space are notable characteristics of Jet Age expressionist architecture and the work of Yamasaki.

The Terminal Building, comprising the terminal and its four domes, retains integrity of location, design, workmanship, materials, feeling, and association. Its integrity of setting has been diminished over time due to construction of newer airport facilities, modifications to the concourses, construction of the air traffic control tower, and major changes to the Terminal Building's views facing south, which are now blocked by a concrete parking garage, which in turn obscures views toward the terminal. The Terminal Building retains its integrity of feeling as a mid-century, Jet Age airport terminal and its integrity of association with air travel modernization during the twentieth century. Therefore, the Terminal Building, comprising its terminal and four domes, are eligible for inclusion in the NRHP.

The period of significance is 1956-1966, the building's date of construction through construction of the terminal's fourth dome, which followed Yamasaki's original design and plan for airport expansion.

Due to subsequent additions and alterations, the historic property boundary for the Terminal Building is the footprint of the original terminal comprising the four domes **(Figure 5-7)**. Due to extensive alterations over time, the concourses are considered noncontributing to the Terminal Building and are excluded from its historic property boundary, as are later modifications and additions that fall outside the Terminal Building's period of significance.

Figure 5-7: Terminal Building - Historic Property Boundary

Source: WSP USA, 2023.

6 SUMMARY

Qualified professionals developed an APE and conducted research and a field survey to identify historic properties within the APE. A total of 78 built resources were identified within the APE using information provided by STL, in conjunction with field observations. All built resources within the APE were photographed and inventoried with their designated STL building number to assist airport staff in future planning.

Following evaluations, 3 historic properties were identified within the APE:

- Ozark Air Lines Office, Shop, and Hangar
- Lambert Field Historic District
- Terminal Building

All other evaluated built resources were determined not eligible for listing in the NRHP or were not evaluated because they were constructed after 1981.

7 WORKS CONSULTED

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ATTACHMENT A

Section 106 Survey Maps, Survey Results and Inventory Forms

Survey Summary Table

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
1		Southwest Electrical Cabinets and HVAC Facility	-	-	c. 2006	Not Evaluated (Age)
2		American Airlines Maintenance Docks	Ozark Air Lines Hangar Maintenance Docks	302	1981	Not Eligible
3		American Airlines Stores	Ozark Air Lines Stores	303	1981	Not Eligible
4		American Airlines Hangar	Ozark Air Lines Hangar	301	1964	Eligible

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
5		American Airlines Shop & Office Building	Ozark Air Lines Shop & Office Building	304	1964	Eligible
6		American Airlines Hangar Hush House	Ozark Air Lines Hangar Hush House	300	1972	Not Eligible
7		Community America Credit Union	Community America Credit Union	316	1978	Not Eligible
8		JetLinx Hush House	Equipment (Building 107)	613	1981	Not Eligible
9		Shed by Hush House	-	614	c. 1995	Not Evaluated (Age)

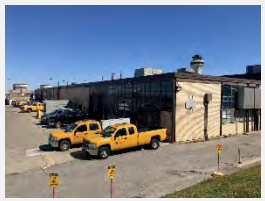
Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
10		Fuel Systems Dock (JetLinx)	Fuel Systems Dock (Building 115)	612	1978	Not Eligible
11		Fire Station	-	604	1986	Not Evaluated (Age)
12		Aircraft Maintenance	Aircraft Maintenance (Building 12)	605	1942	Eligible, Contributing to Lambert Field Historic District
13		Hangar Maintenance	Hangar Maintenance (Building 001)	601	1942	Eligible, Contributing to Lambert Field Historic District
14		Engine Shop	Engine Shop (Building 002)	606	1941	Eligible, Contributing to Lambert Field Historic District

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
15		Shop	Shop/ A / M /Ogrl (Building 047)	611	1944	Eligible, Contributing to Lambert Field Historic District
16		Water Storage	Water Storage (Building 41)	623	1943	Not Eligible
17		Storage & Aircraft Support	Storage & Aircraft Support (Building 108)	602	1979	Not Eligible
18		Weapons Release	Weapons Release (Building 008)	603	1941	Not Eligible
19		Paint Shop	Paint Shop (Building 006)	617	1942	Eligible, Contributing to Lambert Field Historic District

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
20		Pump House	Pump House (Building 005)	608B	1941	Eligible, Contributing to Lambert Field Historic District
21		General Purpose Aircraft Shop	General Purpose Aircraft Shop (Building 004)	608	1941	Eligible, Contributing to Lambert Field Historic District
22		Avionics Shop	-	616	1986	Not Evaluated (Age)
23		Egress & Explosives	Egress & Explosives (Building 079)	609	1953	Not Eligible
24		Avionics	Avionics (Building 110)	610	1975	Not Eligible

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
25		Traffic Control	Traffic Control (Building 085)	615	1973	Not Eligible
26		Tunnel	Tunnel	-	c. 1944	Eligible, Contributing to Lambert Field Historic District
27		West Triturator	-	323	1975	Not Eligible
28		South Firehouse Medical Stores	-	410	1967	Not Eligible
29	-	*Quonset Hut*	-	*340*	-	*No Longer Extant*
30	-	*Trailer*	-	*341*	-	*No Longer Extant*

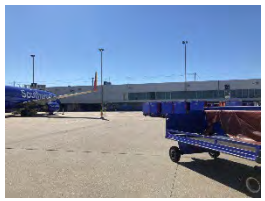
Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
31		Checkpoint Station	-	322	c. 2000	Not Evaluated (Age)
32		SwissPort Maintenance Shop	-	308	c. 1997	Not Evaluated (Age)
33		SwissPort Office Building	-	309	c. 1997	Not Evaluated (Age)
34		Host Commissary	-	307	1967	Not Eligible
35		Building Maintenance	-	315	1967	Not Eligible

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
36		Lambert Substation	-	419	c. 1995	Not Evaluated (Age)
37		Old Airfield Lightning Vault	-	411	1981	Not Eligible
38		Airline Service Maintenance	-	310	1956	Not Eligible
39		Boiler Shop West Power Plant	-	406	1956	Not Eligible
40		Checkpoint Terminal 1	-	312	c. 2002	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
41		Garage Generator Enclosure	-	342	-	
42		Super Park LIB Office Lot A	-	112	c. 2000	Not Evaluated (Age)
43		Super Park LIB Toll Booths Lot A	-	113	c. 2000	Not Evaluated (Age)
44		Super Park Long Term Parking Lot A	Super Park Long Term Parking (Lot A)	114	1972	Not Eligible
45		Bus Port T2 Express Bus Pick Up Building	-	116	1968	Not Eligible

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
46		Former FAA Radar Facility Building	-	-	1972	Not Eligible
47		Terminal 1 Parking Garage	-	110	1972	Not Eligible
48		Concourse A	-	103	1956	Not Eligible
49		FAA Tower	-	108	2000	Not Evaluated (Age)
50		Concourse B	-	104	1956	Not Eligible

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
51		Terminal 1	Terminal Building	101	1956	Eligible
52		Concourse C	-	105	1956	Not Eligible
53		Concourse D	-	106	1997	Not Evaluated (Age)
54		East Cooling Towers	-	118	1997	Not Evaluated (Age)
55		Terminal 2 Substation	-	115	1998	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
56		Terminal 2 Metro Platform	-	454	c. 1997	Not Evaluated (Age)
57		Terminal 2 Parking Garage	-	109	1998	Not Evaluated (Age)
58		Terminal 2 & Concourse E	-	102	1997	Not Evaluated (Age)
59		Terminal 2 Garage Exit Booth Structures (3)	-	452	1998	Not Evaluated (Age)
60		Terminal 2 Storm Water Pump Station	-	633	1998	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
61		Generator Building Terminal 2	-	107	1998	Not Evaluated (Age)
62		Guard Shack T2 Delivery Docks	-	450	c. 2002	Not Evaluated (Age)
63		East Metrolink Power Station	-	220	c. 1997	Not Evaluated (Age)
64		East Ramp Pump Station Building	-	629	c. 2000	Not Evaluated (Age)
65		Snow Melt Pad Boiler Building	-	630	c. 2000	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
66		Parking Lot E Guard Shack	-	429	c. 2016	Not Evaluated (Age)
67		Checkpoint 7S	-	120	c. 1997	Not Evaluated (Age)
68		East Triturator	-	628	c. 1997	Not Evaluated (Age)
69		Building 201/Gate 6s Shed	-	456	c. 1997	Not Evaluated (Age)
70		Covered/Unenclosed Area	-	214	c. 1997	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
71		Cargo #2	-	205	c. 1997	Not Evaluated (Age)
72		Cargo #3	-	201	c. 1997	Not Evaluated (Age)
73		FAA RTR-C Site Building	-	219	c. 2000	Not Evaluated (Age)
74		Cargo #4	-	202	c. 1997	Not Evaluated (Age)
75		Cargo #1	-	204	c. 1997	Not Evaluated (Age)

Map Number	Photo	Current Name	Historic Name	Airport Building Number	Year Built	NRHP Status
76		Cargo #5	-	203	c. 1997	Not Evaluated (Age)
77		Snow Contractor Maintenance Building	-	216	c. 2006	Not Evaluated (Age)
78		Utility (Multipurpose) Building	-	215	c. 1997	Not Evaluated (Age)

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Advanced Planning
April 2023

Section 106 Survey Map
Area 1

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Section 106 Survey Map
Area 2

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
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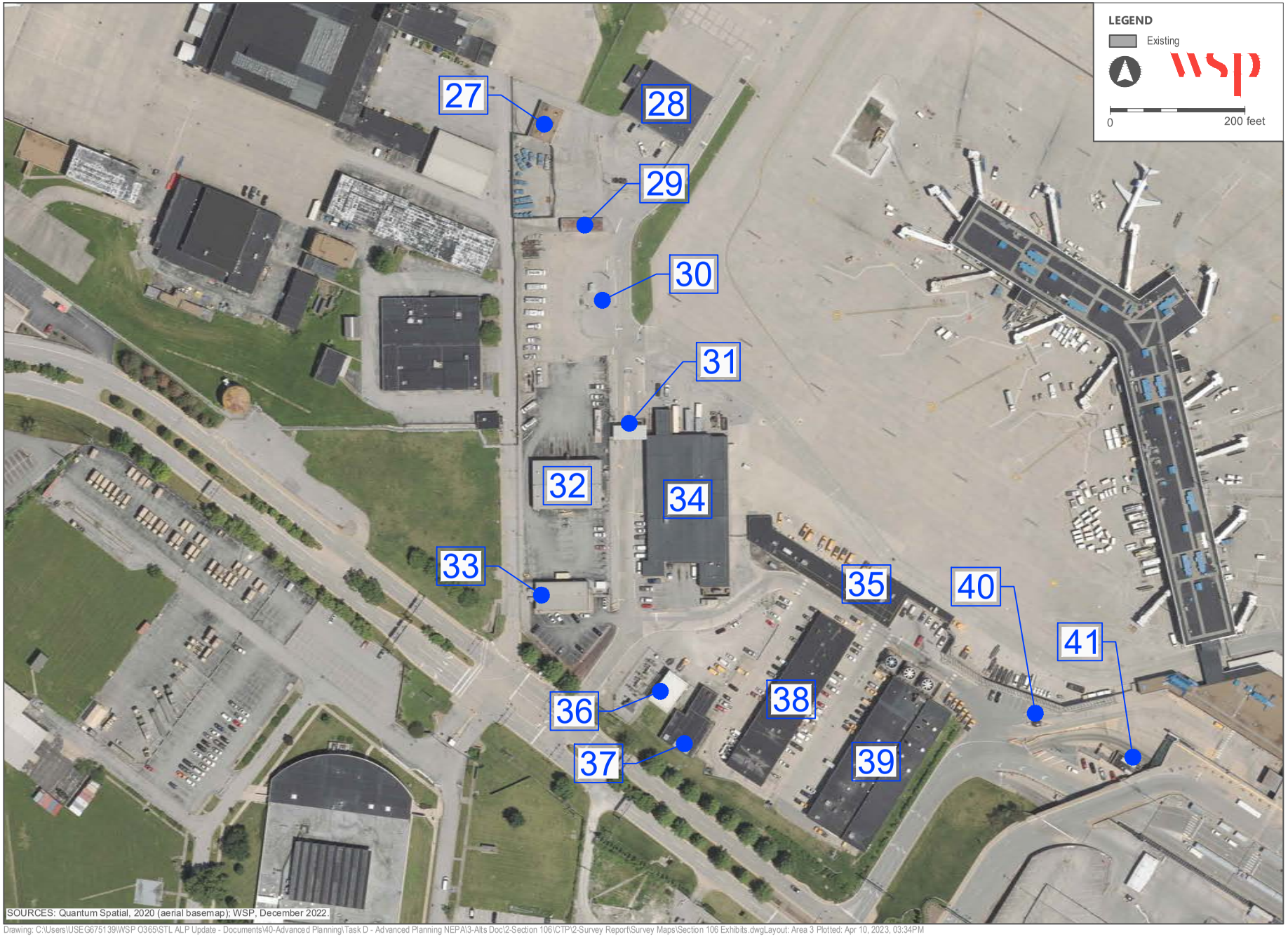
April 2023

Section 106 Survey Map
Area 3



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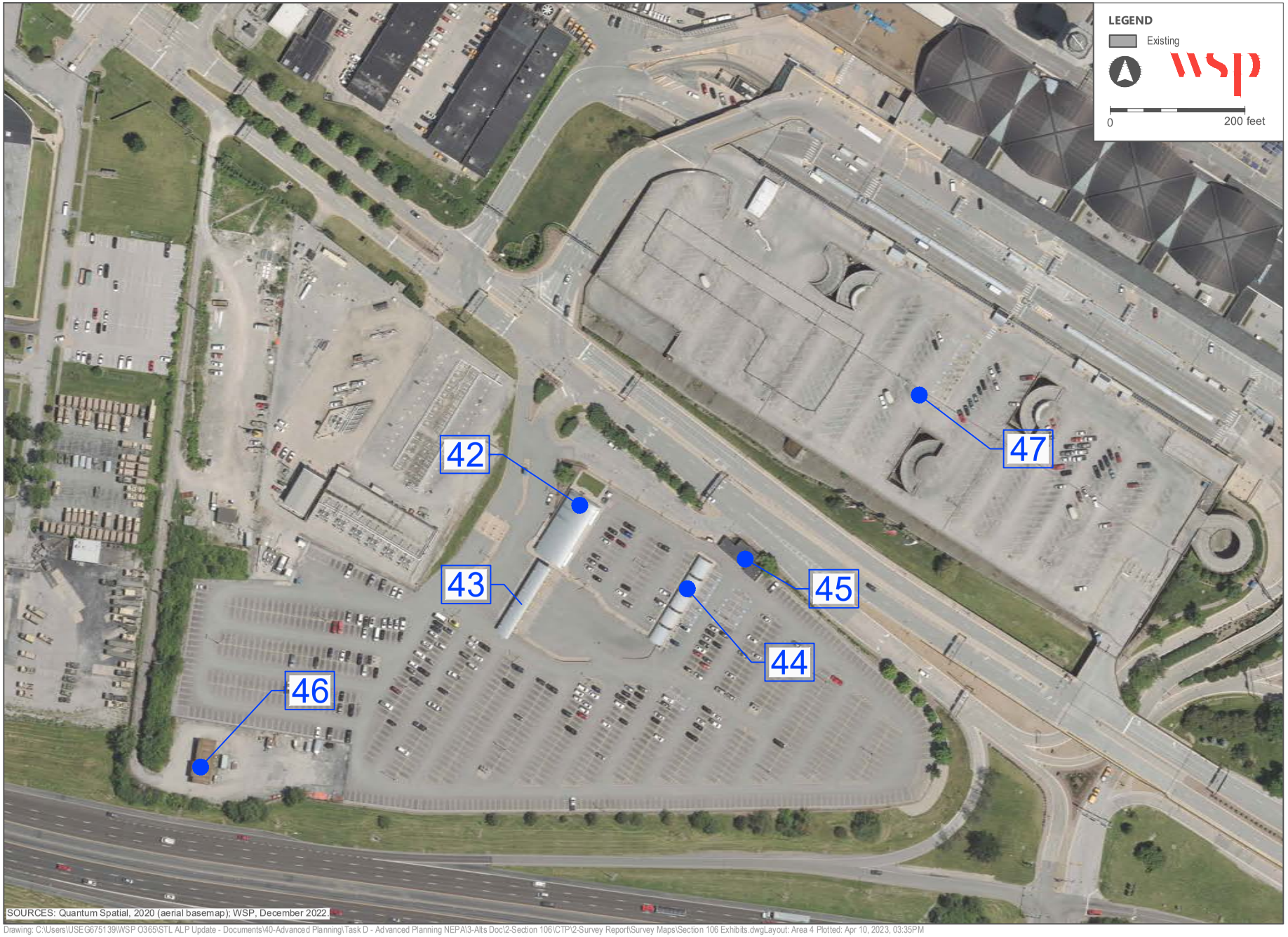
Advanced Planning
April 2023

Section 106 Survey Map
Area 4



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Advanced Planning
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Section 106 Survey Map
Area 5

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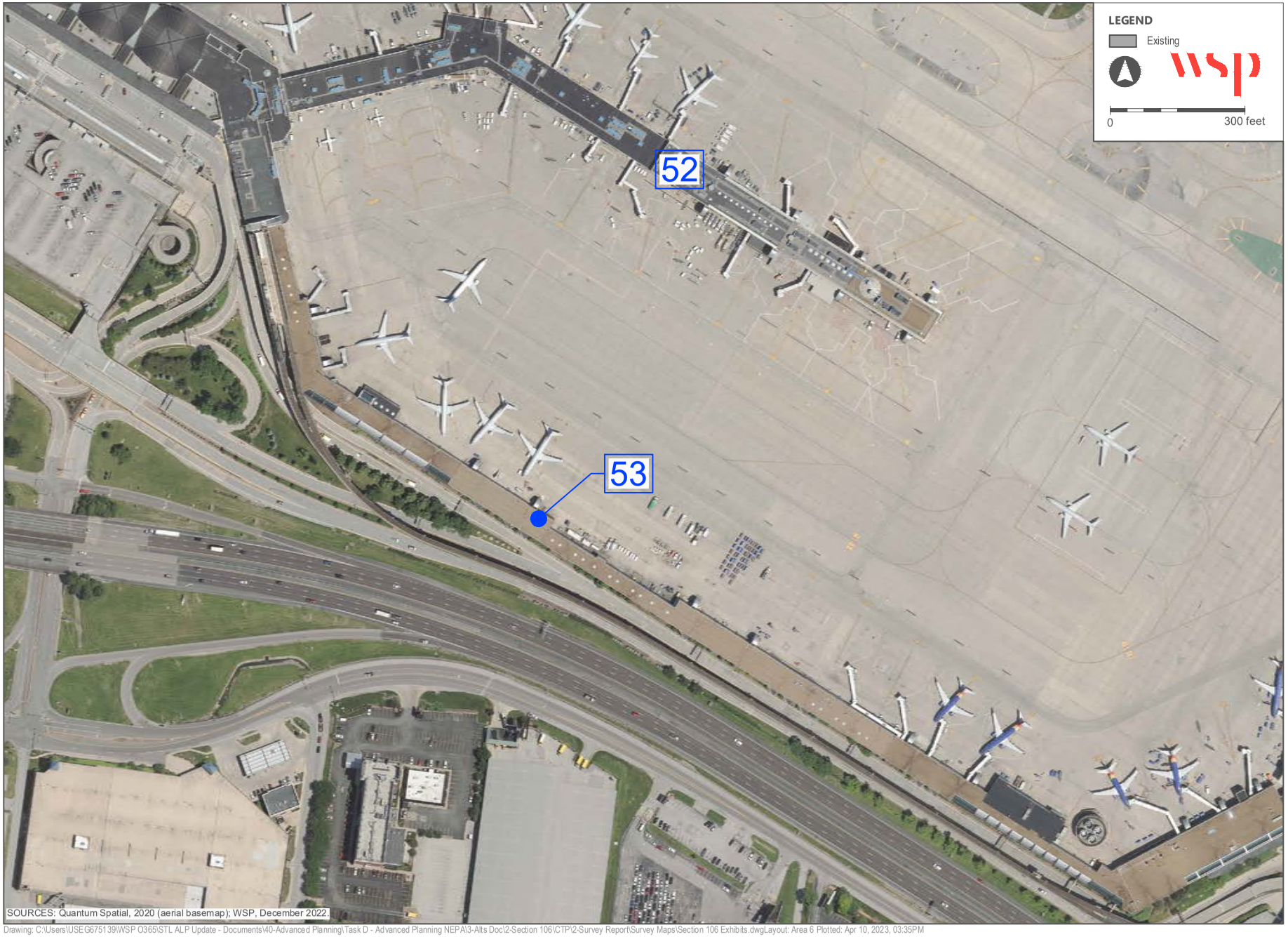
April 2023

Section 106 Survey Map
Area 6



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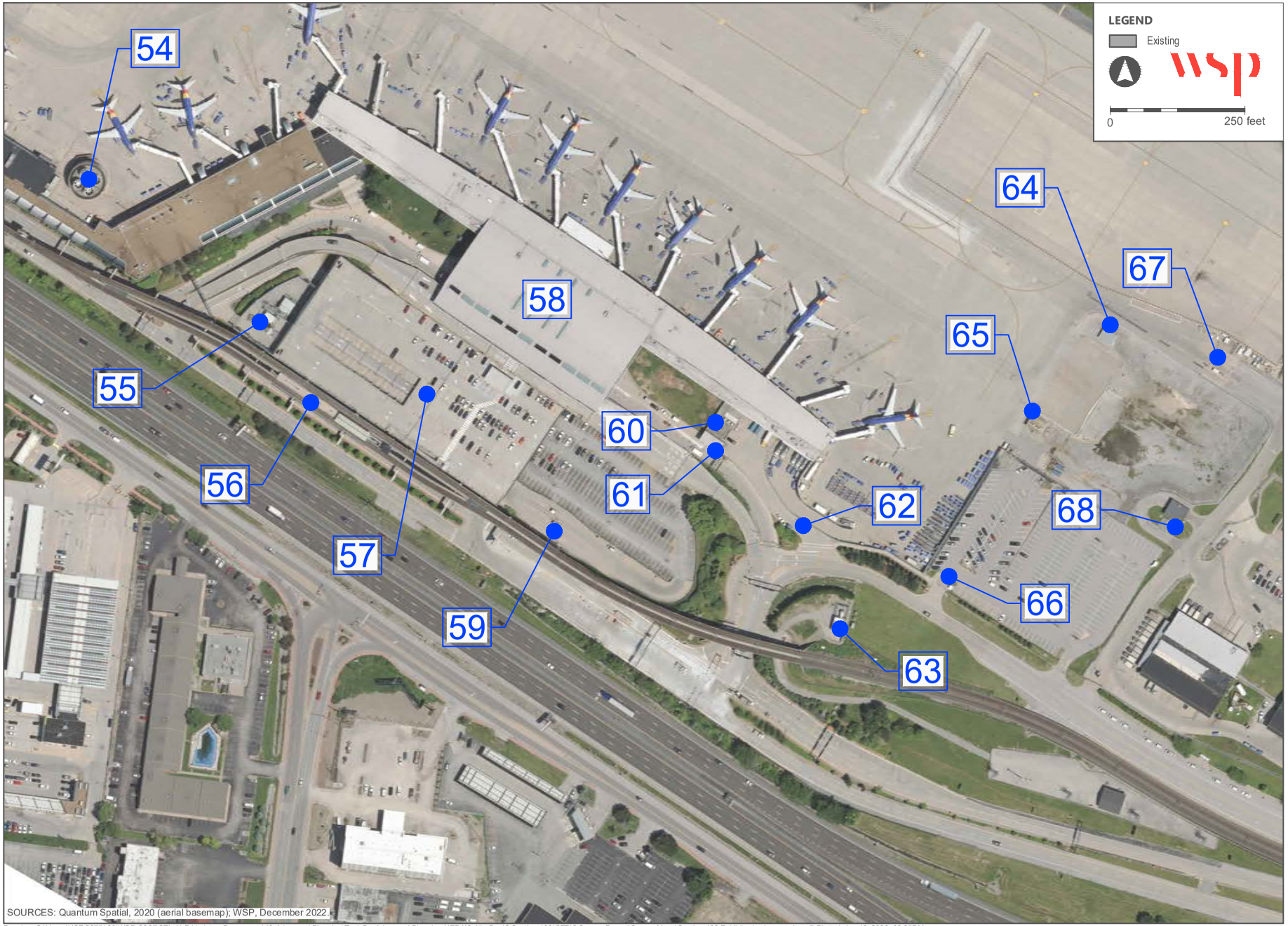
Advanced Planning
April 2023

Section 106 Survey Map
Area 7



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Advanced Planning
April 2023

Section 106 Survey Map
Area 8

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0002		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10900	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744761 Long.: -90.376686	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Ozark Air Lines Hangar Maintenance Docks		9. Present/other name (if known): AA Hangar Maintenance Docks (Building 302)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air related	11b. Current use: Transportation/air related

HISTORICAL INFORMATION

12. Construction date: 1981	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Side, right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c.1981 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Triangular	33. Exterior wall cladding: Metal	
27. No. of stories: 1 ½ , 5	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

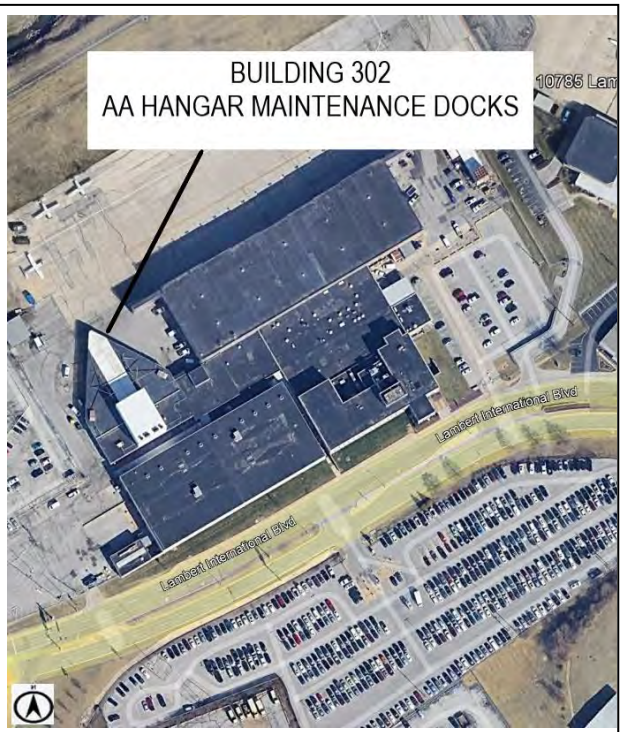
OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)



SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking east toward the west façade from Lambert International Boulevard at Coldwater Creek.

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Ozark Air Lines

Ozark Air Lines started operations in St. Louis in 1943 offering passenger service between the city and Springfield. After a brief period in which its license was revoked by the Civil Aeronautics Board, the company secured the rights to operate the routes of Parks Air Transport in September 1950. St. Louis became its hub, and the airline served the Midwest region including, Chicago, Tulsa, and Memphis, TN. By the 1955, the airline had expanded service to 35 cities including, Indianapolis and Nashville, as well as medium-sized cities like Wichita, KS and Sioux City, IA. In the continuing growth during the 1950s and 1960s, the airline diversified its fleet by using DC-3x, Martin 4-0-4s, a piston-engine aircraft, and Fairchild F-27s, a turboprop aircraft. "St. Louis supported Ozark's growth by constructing a new 130,000 square-foot maintenance facility and office building west of the passenger terminal at Lambert. Ozark first occupied the space in 1964.[1] In the mid-1960s, the airline began to expand service to the Eastern seaboard and added key service to the western part of the country in Denver by 1966. At this time the airline transitioned to jet engine aircraft with the adoption of DC-9s and DC-10s. By the 1970s service expanded to the Southeast with Atlanta and several cities in Florida as new destinations. In 1979 the airline got a contract to fly from Washington Dulles to Champaign and Peoria, IL. By 1986, Ozark held 26.3 percent of the air traffic at St. Louis, while TWA held 56.5 percent, and talks about a possible merger had begun. Finally, in September of that year, the Department of Transportation approved the merger. On October 27, 1986, Ozark ceased to exist and TWA took over the building

Daniel L. Rust, *The Aerial Crossroads of America: St. Louis's Lambert Airport* (St. Louis: Missouri History Museum Press, 2016), 148.

complex on Lambert International Boulevard.

Deregulation

The economic downturn of the early 1970s and rise in fuel prices resulting from the energy crisis of 1973-74 led to a $100 million in airline industry losses. In order to avoid the bankruptcy that had befallen the rail industry, the Civil Aeronautics Board (CAB) started regulatory reforms in the mid-1970s which called for phasing out airline economic regulation. Both houses of Congress passed airline deregulation legislation by large majorities in 1978. President Carter signed the Airline Deregulation Act into law in late October 1978. As many as 150 new airlines formed by the end of the year and a new era in the airline industry began. TWA decided to adopt St. Louis as its hub in order to reduce operating costs, increase regional market dominance, and increase passenger loads. But deregulation turned out to be a mixed blessing for the airlines and for passengers. Some airlines did not survive, and in order to stay competitive, TWA increased fares over 100 percent from St. Louis to Kansas City, Los Angeles, New York, and Chicago. By 1983, Lambert had become the sixth-busiest airport in the country and TWA was offering 178 daily flights to St. Louis. Then TWA began to suffer from lagging sales, debt, and higher operating costs because of the Ozark acquisition in 1986. In January of 2001, American Airlines announced an agreement to purchase TWA wishing to preserve jobs and the important hub in St. Louis. TWA filed for bankruptcy to get rid of unwanted obligations. The two companies merged in April of that year with American paying $742 million in cash and taking on the other airline's debt of $2 billion; $15.5 million of those was owed to Lambert Airport. TWA flew its last flight on December 1, 2001, and American Airlines took over the large complex on Lambert International Boulevard.

AA Hangar Maintenance Docks (Building 302)

From 1964 until the 1970s, the large complex remained unchanged. In 1981 the Ozark Air Lines hangar maintenance docks was built to complement the western expansion of the 1964 shop and to provide additional maintenance facilities.

In 1972 AA Hangar Hush House (Building 300) was built northeast of the complex; in c.1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the 1964 shop's east elevation; and by c.2006, a metal shed roof was added to the north elevation of the c.1997 addition.

Significance

AA Hangar Maintenance Docks (Building 302) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

AA Hangar Maintenance Docks (Building 302) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a much later addition to Ozark Air Lines' existing complex at the airport and does not appear significant in the history of the airline or of the airport.

AA Hangar Maintenance Docks (Building 302) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

AA Hangar Maintenance Docks (Building 302) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a is a common and utilitarian example of a metal-clad aviation maintenance hangar of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

AA Hangar Maintenance Docks (Building 302) is situated directly west of the Missouri Air National Guard campus and southwest of an international airport; the area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. The building is surrounded by concrete-covered driveways and parking lots; there is an open section of Coldwater Creek along the northwest.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

AA Hangar Maintenance Docks (Building 302) is a one-and-a-half building occupying a triangular footprint on the north, with a one-story building occupying a rectangular footprint on the south and featuring a five-story tall addition. The entire building is clad in corrugated metal panels, has no windows, has a flat roof of bituminous membrane with metal coping covers; and the flat roof of the tall addition features metal exhaust flue above the southern parapet. The west elevation features a metal louver and a metal door.

Additions
c.1981, AA Shop & Office Building (Building 304) was extended to the west and connected to the east elevation of AA Hangar Maintenance Docks (Building 302) .

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Perspective view looking east toward the west façade of maintenance docks and stores building from Lambert International Boulevard at Coldwater Creek.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0003		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10900	Street (name) Lambert International Boulevard
5.City:	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744374 Long.: -90.375880	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Ozark Air Lines Stores		9. Present/other name (if known): AA Stores (Building 303)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air related	11b. Current use: Transportation/air related

HISTORICAL INFORMATION

12. Construction date: 1981	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Side, left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Cast stone	
27. No. of stories: 2	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.): 1
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the south façade from Lambert International Boulevard


STL
Parking
B

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

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[1] Daniel L. Rust, *The Aerial Crossroads of America: St. Louis's Lambert Airport.,*(St. Louis: Missouri History Museum Press, 2016), 148.

complex on Lambert International Boulevard.

Deregulation

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AA Stores (Building 303)

From 1964 until the 1970s, the Ozark Air Lines' large complex remained unchanged. In 1981 AA Stores (Building 303) was built to serve as an aircraft and engine parts storage facility which featured loading docks on the west elevation which were easily accessed from the boulevard.

In 1972 the AA Hangar Hush House (Building 300) was built northeast of the complex; in 1981, the shop building was extended west connecting to AA Hangar Maintenance Docks (Building 302) and AA Stores (Building 303); in 1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the shop's east elevation; and by 2006, a metal shed roof was added to the north elevation of the 1997 addition.

Significance

AA Stores (Building 303) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

AA Stores (Building 303) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a much later addition to Ozark Air Lines' existing complex at the airport and does not appear significant in the history of the airline or of the airport.

AA Stores (Building 303) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

AA Stores (Building 303) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a storage facility of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

AA Stores (Building 303) is situated directly west of the Lambert Field Historic District and southwest of the airport; the area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. The building occupies the southwest corner of the American Airlines complex. There is a large asphalt-covered parking lot and three concrete-covered driveways directly west of the building; there is an open section of Coldwater Creek along the northwest. There are landscaped front yards directly south of the building and concrete sidewalks front the south façade along the boulevard. There is a concrete walkway and staircase with an eastern retaining concrete wall leading from the sidewalk into the building complex at the southeast corner of the building.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

AA Stores (Building 303) is a long, two-story cast stone-clad building that sits on a concrete base and occupies a rectangular footprint facing south onto the boulevard. The building has a flat roof of bituminous membrane, metal coping covers, and metal exhaust ventilators and pipes along the north. Elevation walls and corners are clad in cast stone block, while the parapet is concrete beam. The walls of the south façade are clad in panels of fluted concrete block, have no windows, but there are three vertical metal louvers centered at the first floor. The west elevation features six loading dock openings with metal rolldown gates.

Original to the building, is a one-story, fluted concrete block-clad building extension at the southwest corner; it has a flat roof of bituminous membrane, metal exhaust ventilators and other mechanicals, and metal coping covers. The building has no windows along the south façade; there is a single large loading opening at the west elevation with a metal rolldown gate.

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the west elevation from Lambert International Boulevard

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0004		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10900	Street (name) Lambert International Boulevard
5.City: St. Louis	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745176 Long.: -90.375606	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Ozark Air Lines Hangar		9. Present/other name (if known): AA Hangar (Building 301)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air related	11b. Current use: Transportation/air related

HISTORICAL INFORMATION

12. Construction date: 1964	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1964	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Transportation/Air-Related Engineering	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☒ individually eligible ☐ district potential (☐ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Center	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c.2000 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete	
27. No. of stories: 5	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Center Umbrage	41. Further description of building features and associated resources on continuation page. ☒

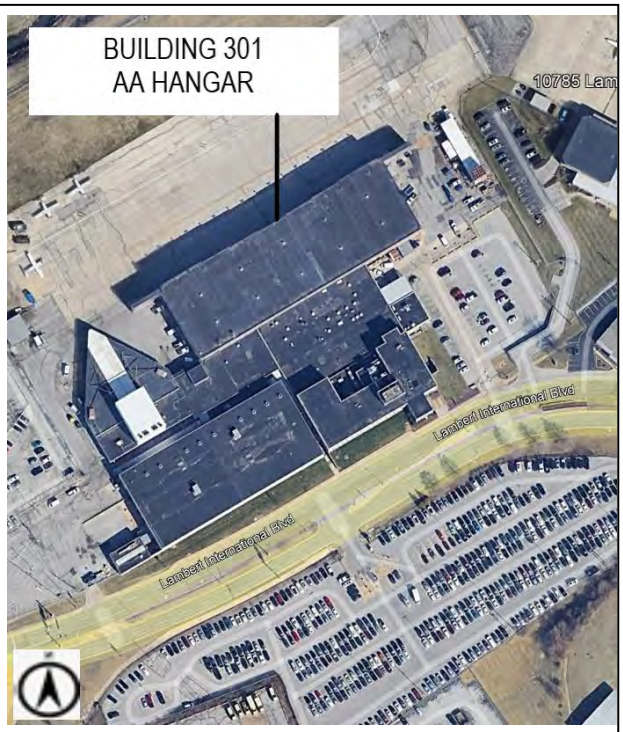
OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/04/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)



SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking southwest toward the north façade from Runway 6-24.

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Ozark Air Lines

Ozark Air Lines started operations in St. Louis in 1943 offering passenger service between the city and Springfield. After a brief period in which its license was revoked by the Civil Aeronautics Board, the company secured the rights to operate the routes of Parks Air Transport in September 1950. St. Louis became its hub, and the airline served the Midwest region including, Chicago, Tulsa, and Memphis, TN. By the 1955, the airline had expanded service to 35 cities including, Indianapolis and Nashville, as well as medium-sized cities like Wichita, KS and Sioux City, IA. In the continuing growth during the 1950s and 1960s, the airline diversified its fleet by using DC-3x, Martin 4-0-4s, a piston-engine aircraft, and Fairchild F-27s, a turboprop aircraft. "St. Louis supported Ozark's growth by constructing a new 130,000 square-foot maintenance facility and office building west of the passenger terminal at Lambert. Ozark first occupied the space in 1964."[1] In the mid-1960s, the airline began to expand service to the Eastern seaboard and added key service to the western part of the country in Denver by 1966. At this time the airline transitioned to jet engine aircraft with the adoption of DC-9s and DC-10s. By the 1970s service expanded to the Southeast with Atlanta and several cities in Florida as new destinations. In 1979 the airline got a contract to fly from Washington Dulles to Champaign and Peoria, IL. By 1986, Ozark held 26.3 percent of the air traffic at St. Louis, while TWA held 56.5 percent, and talks about a possible merger had begun. Finally, in September of that year, the Department of Transportation approved the merger. On October 27, 1986, Ozark ceased to exist and TWA took over the building

[1] Daniel L. Rust, *The Aerial Crossroads of America: St. Louis's Lambert Airport* (St. Louis: Missouri History Museum Press, 2016), 148.

complex on Lambert International Boulevard.

Deregulation

The economic downturn of the early 1970s and rise in fuel prices resulting from the energy crisis of 1973-74 led to a $100 million in airline industry losses. In order to avoid the bankruptcy that had befallen the rail industry, the Civil Aeronautics Board (CAB) started regulatory reforms in the mid-1970s which called for phasing out airline economic regulation. Both houses of Congress passed airline deregulation legislation by large majorities in 1978. President Carter signed the Airline Deregulation Act into law in late October 1978. As many as 150 new airlines formed by the end of the year and a new era in the airline industry began. TWA decided to adopt St. Louis as its hub in order to reduce operating costs, increase regional market dominance, and increase passenger loads. But deregulation turned out to be a mixed blessing for the airlines and for passengers. Some airlines did not survive, and in order to stay competitive, TWA increased fares over 100 percent from St. Louis to Kansas City, Los Angeles, New York, and Chicago. By 1983, Lambert had become the sixth-busiest airport in the country and TWA was offering 178 daily flights to St. Louis. Then TWA began to suffer from lagging sales, debt, and higher operating costs because of the Ozark acquisition in 1986. In January of 2001, American Airlines announced an agreement to purchase TWA wishing to preserve jobs and the important hub in St. Louis. TWA filed for bankruptcy to get rid of unwanted obligations. The two companies merged in April of that year with American paying $742 million in cash and taking on the other airline's debt of $2 billion; $15.5 million of those was owed to Lambert Airport. TWA flew its last flight on December 1, 2001, and American Airlines took over the large complex on Lambert International Boulevard.

Ozark Air Lines Hangar
Ozark Air Lines Hangar (Building 301) was built in 1964 for Ozark Air Lines along with the office and shop building as part of the airline's expansion of its facilities at Lambert St. Louis Municipal Airport, which it used as its operational hub.. It functioned as a maintenance and storage facility for the airline's aircraft.

From 1964 until the 1970s, the Ozark Air Lines complex remained unchanged. In 1972, the AA Hangar Hush House (Building 300) was built northeast of the complex; in 1981, the shop building was extended west connecting to AA Hangar Maintenance Docks (Building 302) and AA Stores (Building 303); in 1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the shop's east elevation; and by 2006, a metal shed roof was added to the north elevation of the 1997 addition.

Significance

Ozark Air Lines Hangar (Building 301) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Ozark Air Lines Hangar (Building 301) is significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The building and was built in 1964 to serve as an aircraft and maintenance hangar for Ozark Air Lines, following the construction of the new, modern Lambert-St. Louis Municipal Airport in 1956. Starting in the early 1950s, Ozark Air Lines made St. Louis its operational hub expanding service through the Midwest, the Eastern seaboard and western parts of the country during the 1960s. Construction of the office and shop building demonstrated Ozark Air Lines' extensive investment at the airport.

Ozark Air Lines Hangar (Building 301) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Ozark Air Lines Hangar (Building 301) is significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. The 1964 hangar is a good example of the consecutive-rectangular hangar type used in the aircraft industry for weather protection and for the maintenance, repair, manufacture, assembly and storage of airplanes. The consecutive-rectangular type is designed to house aircraft to be stored beside each other. The steel frame structure is clad in concrete and metal and features steel posts supporting steel trusses which in turn support the roof deck. The tall and large sliding hangar doors fold onto themselves when open and feature an outrigger on each end to allow the extension of the doors beyond the width of the hangar. This design facilitated storage of increasingly larger aircraft that were then being used by airlines during this time.

The property was not evaluated under Criterion D as part of this assessment.

Ozark Air Lines Hangar (Building 301) retains integrity of location, design, materials, workmanship, feeling, and association. Integrity of setting has been slightly diminished through alterations at the airport over the years to accommodate changing technologies and modernization of the aviation industry

Therefore, the property is eligible for inclusion in the NRHP.

Its period of significance is 1964, the building's date of construction and representing Ozark Air Lines' investment into St. Louis for its

operational hub and preparation for larger commercial aircraft.

The historic property boundary is the hangar footprint.

Collectively with the adjacent Ozark Air Lines office and shop, the original 1964 Ozark Air Lines Office, Shop, and Hangar complex constitutes a single historic property eligible under Criteria A and C as described above and on the Ozark Air Lines Shop & Office Building survey form.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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St. Louis Public Library, Digital Collection.

TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Building 301-AA Hangar is situated directly west of the Missouri Air National Guard campus and southwest of an international airport; the area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. The building is surrounded by concrete-covered driveways and parking lots; there is an open section of Coldwater Creek along the northwest; and landscaped yards directly east in a neighboring parcel.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Building 301-AA Hangar is a five-story concrete building with a rectangular footprint, a flat roof of bituminous membrane, metal exhaust cylinders, metal coping covers, with a metal-clad top floor. The building features no windows and a building-wide opening at the north façade. The opening features a series of tall folding metal doors; at each end are external, metal-clad pockets to receive the folding doors. There is series of single and paired spotlights above the north-facing parapet.

Additions
c. 2000 the external, metal-clad pockets for the large doors were installed at each end of the building.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking northwest toward the south and east elevations from Lambert International Boulevard

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking northwest toward the east elevation from Lambert International Boulevard

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0005		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10900	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744841 Long.: -90.375120	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Ozark Air Lines Shop & Office Building		9. Present/other name (if known): AA Shop & Office Building (Building 304)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Commerce/Trade; business Transportation/Air-related	11b. Current use: Commerce/Trade; business Transportation/Air-related

HISTORICAL INFORMATION

12. Construction date: 1964	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1964	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Transportation/Air-Related Architecture	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☒ individually eligible ☐ district potential (☐ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed, DH, casement
24. Vernacular or property type:	31. Chimney placement: Side, left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: International Style; Brutalism	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c. 1981, c.1997, c.2006 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: U; rectangular	33. Exterior wall cladding: Brick, concrete, pebble dash, powdered coated aluminum	
27. No. of stories: 1; 2	34. Foundation material: Concrete	
28. No. of bays (1st floor): 23	35. Basement type: Full	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Platform Side	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking north toward the south façade from Lambert International Boulevard


35

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Ozark Air Lines

Built in 1964, the Ozark Air Lines Shop & Office Building (now called the AA Shop & Office Building, Building 304) originally served Ozark Air Lines. The airline started operations in St. Louis in 1943 offering passenger service between the city and Springfield. After a brief period in which its license was revoked by the Civil Aeronautics Board, the company secured the rights to operate the routes of Parks Air Transport in September 1950. St. Louis became its hub, and the airline served the Midwest region including, Chicago, Tulsa, and Memphis, TN. By the 1955, the airline had expanded service to 35 cities including, Indianapolis and Nashville, as well as medium-sized cities like Wichita, KS and Sioux City, IA. In the continuing growth during the 1950s and 1960s, the airline diversified its fleet by using DC-3x, Martin 4-0-4s, a piston-engine aircraft, and Fairchild F-27s, a turboprop aircraft. "St. Louis supported Ozark's growth by constructing a new 130,000 square-foot maintenance facility and office building west of the passenger terminal at Lambert. Ozark first occupied the space in 1964."[1] In the mid-1960s, the airline began to expand service to the Eastern seaboard and added key service to the western part of the country in Denver by 1966. At this time the airline transitioned to jet engine aircraft with the adoption of DC-9s and DC-10s. By the 1970s service expanded to the Southeast with Atlanta and several cities in Florida as new destinations. In 1979 the airline got a contract to fly from Washington Dulles to Champaign and Peoria, IL. By 1986, Ozark held 26.3 percent of the air traffic at St. Louis, while TWA held 56.5 percent, and talks about a possible merger had begun. Finally, in September of that year, the

[1] Daniel L. Rust, *The Aerial Crossroads of America: St. Louis's Lambert Airport* (St. Louis: Missouri History Museum Press, 2016), 148. I don't know where the Bourne and Roberts source is but the4 quote is from Rust so I changed the citation to reflect that

Department of Transportation approved the merger. On October 27, 1986, Ozark ceased to exist, and TWA took over the building complex on Lambert International Boulevard.

Deregulation

The economic downturn of the early 1970s and rise in fuel prices resulting from the energy crisis of 1973-74 led to a $100 million in airline industry losses. In order to avoid the bankruptcy that had befallen the rail industry, the Civil Aeronautics Board (CAB) started regulatory reforms in the mid-1970s which called for phasing out airline economic regulation. Both houses of Congress passed airline deregulation legislation by large majorities in 1978. President Carter signed the Airline Deregulation Act into law in late October 1978. As many as 150 new airlines formed by the end of the year and a new era in the airline industry began. TWA decided to adopt St. Louis as its hub in order to reduce operating costs, increase regional market dominance, and increase passenger loads. But deregulation turned out to be a mixed blessing for the airlines and for passengers. Some airlines did not survive, and in order to stay competitive, TWA increased fares over 100 percent from St. Louis to Kansas City, Los Angeles, New York, and Chicago. By 1983, Lambert had become the sixth-busiest airport in the country and TWA was offering 178 daily flights to St. Louis. Then TWA began to suffer from lagging sales, debt, and higher operating costs because of the Ozark acquisition in 1986. In January of 2001, American Airlines announced an agreement to purchase TWA wishing to preserve jobs and the important hub in St. Louis. TWA filed for bankruptcy to get rid of unwanted obligations. The two companies merged in April of that year with American paying $742 million in cash and taking on the other airline's debt of $2 billion; $15.5 million of those was owed to Lambert Airport. TWA flew its last flight on December 1, 2001, and American Airlines took over the large complex on Lambert International Boulevard.

International Style

International Style describes a type of design that developed at the Bauhaus school in Germany and with Le Corbusier in France during the 1920s, before spreading to America in the 1930s, where it became the dominant style in American architecture during the middle decades of the 20th century. Although not as fashionable for residential use, in the United States, the International Style was especially suited to skyscraper architecture, where its sleek, modern look became synonymous with corporate modernism during the period 1955-70. German émigré Mies van der Rohe became the style's most prolific designer in America. The style was characterized by an almost complete absence of architectural ornamentation, box-shaped buildings, large expanses of windows, smooth surfaces, flat roofs, and cantilevered extensions with glass and steel as the predominant building materials. The popular style quickly influenced institutional and civic architecture across the United States during the mid-twentieth century, leading to a proliferation of buildings that eschewed ornamentation and exhibited simple and sometimes austere exteriors with variations in massing, materials, and fenestration.

Brutalism

More a design philosophy than a style, Brutalism originated in the 1950s with younger British architects and spread quickly in the United States in the 1960s and 1970s Brutalism emphasized monumental, sculptural forms with exposed concrete surfaces, often textured by wood forms, and mixed with exposed brick. The trend for textured concrete came directly from French architect Le Corbusier's use of "béton brut", or raw concrete evidenced in his post-war work. The poured-in-place concrete is imprinted with the texture of the wood form and exposed in interior and exterior surfaces. Brutalism embraces the roughness of concrete, or the heavy simplicity of its natural forms used sometimes in highly sculptural shapes through the plasticity of poured concrete. Brutalist buildings have a heavy mass and scale, and their highly sculptural shapes are generally stacked together in various ways creating an unbalanced look.

Character-defining features include raw and exposed materials emphasizing stark forms; sculptural forms; heavily-textured surfaces and massiveness created by large areas of brick or concrete; small window openings; combination and interplay of solids and voids; and exposed mechanical systems. The large brick or concrete surfaces are often interrupted by deep-shadow penetrations or breaks on the wall plane; or vertical slots or tall openings with horizontal slots. Louis Kahn's Yale Art Gallery of 1953 is considered the first building of this raw aesthetic in America.

Ozark Air Lines Shop & Office Building

The Ozark Air Lines Shop & Office Building were built in 1964 along with the large hangar to the north as part of the airline's expansion of its facilities at Lambert St. Louis Municipal Airport, which it used as its operational hub. The building functioned as a regional office and as a shop facility for the airline's aircraft.

From 1964 until the 1970s, Ozark Air Lines Shop & Office Building remained unchanged. In 1972 the Hangar Hush House (Building 300) was built northeast of the complex; in 1981, the shop building was extended west connecting to Hangar Maintenance Docks (Building 302) and Stores (Building 303); in 1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the shop's east elevation; and by 2006, a metal shed roof was added to the north elevation of the 1997 addition

Significance

Ozark Air Lines Shop & Office Building (Building 304) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Ozark Air Lines Shop & Office Building (Building 304) is significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The building was built in 1964 to serve as offices and maintenance shop for Ozark Air Lines, following the construction of the new, modern Lambert-St. Louis Municipal Airport in 1956 and the expansion of the jet age in air travel. Starting in the early 1950s, Ozark Air Lines made St. Louis its operational hub expanding service through the Midwest, the Eastern seaboard and western parts of the country during the 1960s. Construction of the office and shop building demonstrated Ozark Air Lines' extensive investment at the airport.

Ozark Air Lines Shop & Office Building (Building 304) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Ozark Air Lines Shop & Office Building (Building 304) is significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. The building is a good example of the International Style with Brutalist influences as applied to corporate office architecture popularized by the United States from the 1950s to the early 1970s. It features separate and distinct orthogonal volumes, the square entrance volume and the large rectangular office block, brought together harmoniously in plan with the shop building at rear and the larger hangar building directly north built that same year, unifying the complex into one single entity. The inherent monumentally the building bestows along the streetscape is achieved by the character-defining feature of a block-like effect of the building façade with solid, large, and expansive planes of brick and the imposing concrete entrance pavilion. In contrast, the windows are set in slender bays on the wall plane. The effect is an interplay of solids and voids, which is a character-defining feature of this modern aesthetic. The block-like effect of the building's geometric shape, scale, and massing along the street, its uniform glazing pattern, and its use of modest yet elegant materials are characteristics of the International Style.

The property was not evaluated under Criterion D as part of this assessment.

Ozark Air Lines Shop & Office Building (Building 304) retains integrity of location, materials, workmanship, feeling, and association. Integrity of design has been slightly diminished by the extension of the shop building to the west and the small addition to the east and its integrity of setting has been slightly diminished through alterations at the airport over the years to accommodate changing technologies and modernization of the aviation industry.

Therefore, the property is eligible for inclusion in the NRHP.

Its period of significance is 1964 the building's date of construction and representing Ozark Air Lines' investment into St. Louis for its operational hub and preparation for larger commercial aircraft.

Due to shop building's extension to the east and west, the historic property boundary is collectively the footprint of the office building and its connected shop.

Collectively with the adjacent Ozark Air Lines office and shop, the original 1964 Ozark Air Lines Office, Shop, and Hangar complex constitutes a single historic property eligible under Criteria A and C as described above and on the Ozark Air Lines Hangar survey form.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Ozark Air Lines Shop & Office Building (Building 304) is situated directly west of the Lambert Field Historic District and southwest of Terminal 1; the area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. The building occupies the southeast corner of the American Airlines complex, which follows a downward slope to the north. There is a large asphalt-covered parking lot and a concrete-covered driveway directly east of the building; there is an open section of Coldwater Creek along the northwest. There are stone-clad planting beds and landscaped front yards directly south of the building and concrete sidewalks front the south façade along the boulevard. There western retaining concrete wall and concrete walkway leading from the sidewalk into the building complex at the southwest corner of the building.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

The three-story plus basement office building along the south occupies a U-shaped footprint facing south along the boulevard and has a one-story shop building directly at the rear with a rectangular footprint, which connects to the large hangar the north. The buildings have flat roofs of bituminous membrane, with metal chimney flues along the north edge of the shop's roof. The office building features large mechanical equipment on the roof with a metal enclosure; metal fixed and double-hung windows with powder-coated aluminum spandrels above and below them; and the basement floor with metal casements.

A pebble dash and concrete side platform lead to a projecting two-story square volume serving as the entrance to the office building, southeast of the south facade. The building features concrete piers dividing the facades into three bays; there are tall, fixed metal windows at the first floor, brick header-clad spandrels above, and fixed metal windows at the second floor, topped by a concrete parapet.

The south façade and the secondary east and west elevations of the office building feature a tripartite organization with the brick-clad basement floor with stone stringcourse supporting the brick-clad first floor, and the alternating bays of the second floor in pebble-dash and powder-coated aluminum spandrels and window units, then a cantilever stone canopy topped by the low stone parapet wall.

<u>Additions</u>
c.1981, the shop building was extended west connecting to Building 302 Maintenance Docks and Building 303 Stores;
c.1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the shop's east elevation;
c.2006, a metal shed roof was added to the north elevation of the c. 1997 addition.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the south façade and east elevation from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the south façade entrance and west elevation from Lambert International Boulevard

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the west elevation from Lambert International Boulevard

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0006		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: St. Louis	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745795 Long.: -90.374730	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Ozark Air Lines Hangar Hush House		9. Present/other name (if known): AA Hangar Hush House (Building 300)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air related	11b. Current use: Transportation/air related

HISTORICAL INFORMATION

12. Construction date: 1972	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Side, right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system:	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete	
27. No. of stories: 1, 2	34. Foundation material: Concrete	
28. No. of bays (1st floor):	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Closed Side, left	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez WSP, Inc.	44. Survey date: 10/04/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking northeast toward the west façade from Lambert International Boulevard.


SPILL CART
N40285
N40250

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

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complex on Lambert International Boulevard.

Deregulation

The economic downturn of the early 1970s and rise in fuel prices resulting from the energy crisis of 1973-74 led to a $100 million in airline industry losses. In order to avoid the bankruptcy that had befallen the rail industry, the Civil Aeronautics Board (CAB) started regulatory reforms in the mid-1970s which called for phasing out airline economic regulation. Both houses of Congress passed airline deregulation legislation by large majorities in 1978. President Carter signed the Airline Deregulation Act into law in late October 1978. As many as 150 new airlines formed by the end of the year and a new era in the airline industry began. TWA decided to adopt St. Louis as its hub in order to reduce operating costs, increase regional market dominance, and increase passenger loads. But deregulation turned out to be a mixed blessing for the airlines and for passengers. Some airlines did not survive, and in order to stay competitive, TWA increased fares over 100 percent from St. Louis to Kansas City, Los Angeles, New York, and Chicago. By 1983, Lambert had become the sixth-busiest airport in the country and TWA was offering 178 daily flights to St. Louis. Then TWA began to suffer from lagging sales, debt, and higher operating costs because of the Ozark acquisition in 1986. In January of 2001, American Airlines announced an agreement to purchase TWA wishing to preserve jobs and the important hub in St. Louis. TWA filed for bankruptcy to get rid of unwanted obligations. The two companies merged in April of that year with American paying $742 million in cash and taking on the other airline's debt of $2 billion; $15.5 million of those was owed to Lambert Airport. TWA flew its last flight on December 1, 2001, and American Airlines took over the large complex on Lambert International Boulevard.

AA Hangar Hush House (Building 300)

From 1964 until the 1970s, Ozark Air Lines' large complex remained unchanged. In 1972 AA Hangar Hush House (Building 300)was built northeast of the complex to serve as a testing location for aircraft engines.

In 1981, the shop building was extended west connecting to AA Hangar Maintenance Docks (Building 302) and AA Stores (Building 303); in c.1997, a small one-story brick-clad building with a flat roof and metal exhaust vents was added to the shop's east elevation; and by c.2006, a metal shed roof was added to the north elevation of the c.1997 addition.

Significance

AA Hangar Hush House (Building 300) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

AA Hangar Hush House (Building 300) House is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a later addition to Ozark Air Lines' existing complex at the airport and does not appear significant in the history of the airline or of the airport.

AA Hangar Hush House (Building 300) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

AA Hangar Hush House (Building 300) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of an aircraft engine testing facility of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Lambert, Albert Bond and William B. Robertson. "Early History of Aeronautics in St. Louis." Reprint from *Missouri Historical Society Collections* 5, no. 3 (1928): 237-255.

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Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

AA Hangar Hush House (Building 300)is situated directly west of the Lambert Field Historic District and southwest of St. Louis Lambert International Airport. The area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. The building is surrounded by concrete and asphalt-covered driveways and parking lots; there is an open section of Coldwater Creek along the northwest; and landscaped yards directly east in a neighboring parcel.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

AA Hangar Hush House (Building 300) is a one-and-a-half story concrete building with a rectangular footprint, a flat roof of bituminous membrane, metal coping covers, with a with a one-and-a-half story metal-covered opening at the north elevation. The building rises to three-stories at the southern end featuring a flat roof with a grid of chimney openings. There is a small CMU block one-story addition on the west façade with a flat roof and metal coping covers and a single metal door. The building features no windows.

Photographer:	Date:	Description:
Hansel A. Hernandez	October 4, 2022	Looking southwest toward the east façade and north elevation from Missouri Air National Guard complex

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0007		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10895	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745013 Long.: -90.373715	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Community America Credit Union		9. Present/other name (if known): Community America Credit Union (Building 316)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Commerce/Trade; financial institution	11b. Current use: Commerce/Trade; financial institution

HISTORICAL INFORMATION

12. Construction date: 1978; 1997	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner:	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Standing seam metal	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: Modern Movement	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1997 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick, pebble dash	
27. No. of stories: 1	34. Foundation material: concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.): 1
29. Roof type: Flat	36. Front porch type/placement: Portico Side, right	41. Further description of building features and associated resources on continuation page. ☒

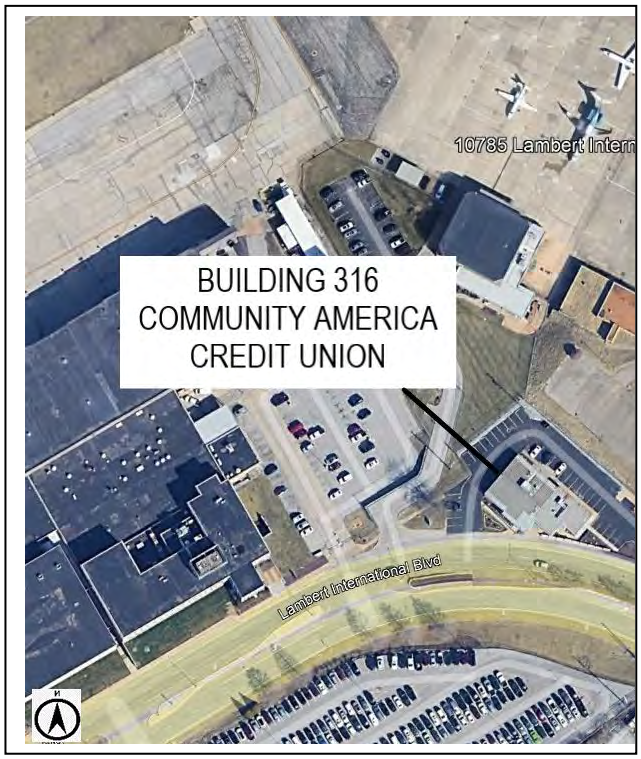
OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)



SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the south façade from Lambert International Boulevard

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Community America Credit Union (Building 316)

TWA pilot George Duvall founded Community America Credit Union in 1940 as the TWA Club Credit Union. By the following year, the credit union had more than $20,000 in assets and 644 members. In 1978, the branch building was built along Lambert International Boulevard, mostly to serve airport employees and their families. The building expanded its footprint east in around 1997 and added a drive-thru station, according to historic aerials photographs. In 1992, the company changed its name to Members American Credit Union, and in 1998, after American Airlines took over TWA, the bank merged with Midwest United Credit Union. Today, the company is based in Lenexa, Kansas, has 32 locations, a membership of over 250,000 members, and assets valued at $4.6 million.

<u>Significance</u>

Community America Credit Union (Building 316) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Community America Credit Union (Building 316) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The building is not associated with air-related transportation and does not

appear significant in the history of the airport or airlines that used the airport as an operational hub.

Community America Credit Union (Building 316) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Community America Credit Union (Building 316) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. Although the building does present some of the features of Modern Movement styles, like proportion and scale, classical columns and stylized entablature, it is not an outstanding example of the style, and research does not indicate architectural significance. Further, the building was substantially altered and expanded in the 1990s.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Krell, Edwin D. "New St. Louis Air Terminal Building Opens: Public Service Role Stressed." *St. Louis Globe-Democrat*, March 11, 1956. PDF download.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Community America Credit Union (Building 316) is situated southwest of the Lambert Field Historic District, St. Louis Lambert International Airport, and southeast of the American Airlines complex. The area is enframed by the southernmost edge of Runway 6-24, the westernmost edge of Runway 12R-30L, and Lambert International Boulevard on the south. There are asphalt-covered parking lots at the east, west, and north, along with two asphalt-covered driveways along the south. There is a short concrete sidewalk along the boulevard, as well as a short concrete walkway and a small, landscaped yard in front of the building. There is brick-clad stepped wall with stone copings separating the bank from the roadway and there is a landscaped right-of-way farther east along the boulevard; and a chain link fence separates the bank property from the Missouri Air National Guard campus and the American Airlines complex.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Community America Credit Union (Building 316) is an altered building that occupies a rectangular footprint north of the boulevard and is comprised of a square building on the west and a setback square building to the east; all roofs are flat standing seam metal panels with roof mechanical equipment. The white brick-clad walls feature tall duranodic bronze aluminum fixed windows and doors and a wrap-around entablature of pebble dash panels slightly projecting from the building plane. The west portico features a cantilever roof supported by a square concrete column, while the east portico features a cantilever roof supported by a round brick-clad column.

Additions

c.1997, a setback addition is built to the east of the bank and the car-thru ATM machine station is installed at the rear is on a concrete slab

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the east and north elevations from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the south façade and west elevation from Lambert International Boulevard


Community
America
CREDIT UNION

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0008		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.747301 Long.: -90.374406	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Equipment (Building 107)		9. Present/other name (if known): JetLinx Hush House (Building 613)	
10. Ownership: ☒ Private ☐ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1981	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Metal	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: T	33. Exterior wall cladding: Metal	
27. No. of stories: 1, 3	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.): 1
29. Roof type: Vault	36. Front porch type/placement: Recessed Center	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/04/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking northwest toward the south façade and east elevation from Building 601

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

JetLinx Hush House (Building 613)

JetLinx Hush House (Building 613)was constructed in 1981 as hush house to test airplane engines. It is currently privately owned and operated.

Significance

JetLinx Hush House (Building 613) was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

JetLinx Hush House (Building 613) is located along the western boundary of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and an open section of Coldwater Creek and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. A large concrete-covered courtyard leading to both runways is located south and west of the building.

Outbuliding
There is a small, one-story, concrete building with a metal roof at the north elevation

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

JetLinx Hush House (Building 613) is a two-story hangar, which faces toward the southwest and occupies a T-shaped footprint. The hangar has a concave roof and is entirely clad in metal; it has metal-clad rectangular wing on the east and west elevations. There is single metal door on the west elevation. The south façade features a large curved opening with metal sliding doors with a large metal truss supporting reflector lights in front. At the rear is the one-and-a-half story metal cylindrical wind tunnel.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking north toward the south facade from Coldwater Creek

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking west toward the east elevation from Runway 12R-30L

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0010		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745776 Long.: -90.374086	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Fuel Systems Dock (Building 115)		9. Present/other name (if known): Fuel Systems Dock (JetLinx) (Building 612)	
10. Ownership: ☒ Private ☐ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1978	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1978, 1992 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Square, T	33. Exterior wall cladding: Brick, metal	
27. No. of stories: 1, 5	34. Foundation material: Concrete	
28. No. of bays (1st floor): 6	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.): 2
29. Roof type: Flat	36. Front porch type/placement: Recessed Center	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/04/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking northwest toward the south façade and east elevation from Lambert International Boulevard

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

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Fuel Systems Dock (JetLinx) (Building 612)

Fuel Systems Dock (JetLinx) (Building 612)was constructed in 1978 and it was used as a hangar, which has undergone alterations. It is currently privately owned and operated.

Significance

Fuel Systems Dock (JetLinx) (Building 612) was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War.

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History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Fuel Systems Dock (JetLinx) (Building 612) is located along the western boundary of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The building is at the foot of a landscaped hill on the south and has a landscaped front yard and a concrete walkway in front. There is an asphalt-covered driveway leading from the boulevard to the building enclosed by a chain link fence; there's an asphalt-covered parking lot at the buildings southwest corner; and a large concrete-covered courtyard leading to both runways. The American Airlines Ground Operations complex is directly east. A chain link fence separates the building from the MoANG Building 605 building to the east.

Outbuildings
There are two metal electrical cabinets along the front of the east elevation; and there is a metal car shed along the west elevation of duranodic bronze aluminum posts and corrugated flat roof.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Fuel Systems Dock (JetLinx) (Building 612) consists of a five-story corrugated metal-clad hangar building occupying a square footprint with chamfered corners and a one-and-a-half, T-shaped, brick-clad office building attached at the hangar's southeast corner. All roofs are flat with bituminous membrane, metal coping covers, and mechanical equipment.

The south façade of the office building features a recessed entrance with metal and glass infill and double doors; windows are large fixed tinted glass; there is a set of double metal doors at the easternmost bay. The north elevation features duranodic bronze aluminum double-hung windows and sliding doors and a metal door. The hangar's façade faces north and features a tall and long roll down gate. At the hangar's parapet are surface-mounted letters, "Jetlinx." There is a metal ship ladder along the hangar's east elevation.

Additions
1978, loading dock and locked storage space added;
1992, oil/water separator added.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking south toward the north elevation from Runway 12R-30L

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/2022	Looking north toward the south façade from Lambert International Boulevard

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0012		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745525 Long.: -90.373235	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Aircraft Maintenance (Building 12)		9. Present/other name (if known): Aircraft Maintenance (Building 605)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1942	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement: Fixed, casements, sash 1/1
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1988 ☒ Altered Date(s): 1980, 1990 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick	
27. No. of stories: 2	34. Foundation material: Concrete	
28. No. of bays (1st floor): 8	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Recessed Center, right	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north façade and west elevation from Building 601


225
XRS

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Aircraft Maintenance (Building 605)

Built in 1942 as a storehouse, Aircraft Maintenance (Building 605) was eventually converted to an aircraft maintenance facility.

Significance

Aircraft Maintenance (Building 605) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch

History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Aircraft Maintenance (Building 605) is located along the western boundary of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The building is at the foot of a hill to the south with a concrete-covered ramp and parking lot at the south elevation, and a large concrete-covered courtyard on the north.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Aircraft Maintenance (Building 605) is a two-story, brick-clad building that sits on a concrete foundation and is covered by a flat roof with bituminous membrane, stone copings, and metal coping covers. The building features a rectangular footprint and is oriented an approximate northwest-southeast axis among other airport support facilities. The north-facing façade features a concrete staircase with pipe handrails at the center bay leading to a set of double metal doors beneath a cantilevered metal canopy. Fenestration across this elevation and throughout appears altered though spacing is generally regular: window openings feature replacement metal fixed, double-hung, and casement windows. Other openings are infilled with metal. The west elevation features surface-mounted metal chimney flues while the east elevation features a concrete loading dock with concrete staircase and pipe handrails covered by a cantilevered metal canopy. The south elevation features a metal staircase leading to a metal door on the second floor.

Additions

1988, exterior stairs added;
1990, extensive interior remodeling: walls and doors removed and added, ceiling, plumbing, electrical systems upgraded.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south toward the north façade from Building 601

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0013		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745978 Long.: -90.372143	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Hangar Maintenance (Building 001)		9. Present/other name (if known): Hangar Maintenance (Building 601)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1942	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☒ replacement Pane arrangement: Fixed, multi-light
24. Vernacular or property type:	31. Chimney placement: Side, right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1944 ☒ Altered Date(s): 1981, 1983, 1985, 1987, 1988, 1990, 1997 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Square, U	33. Exterior wall cladding: Metal, brick	
27. No. of stories: 1, 2, 3	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat; low gable	36. Front porch type/placement: Recessed Centered; 3-stories	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north façade and west elevation from Runway 12R-30L

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

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The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Hangar Maintenance (Building 601)

Hangar Maintenance (Building 601)was built in 1942 as an administration building and main hangar at the Air National Guard Base at Lambert Field (ANGLF). The building has undergone alterations, the first being the addition of the administration wing in 1944. Other alterations included replacing the flooring in 1981, an electrical upgrade in 1983, upgraded patrol-control room and lavatories in 1985, a new roof in 1987, a new control tower in 1988, interior remodeling and window replacement in 1990, and a new drop ceiling added in 1997.

Significance

Hangar Maintenance (Building 601)is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Hangar Maintenance (Building 601) is located along the north boundary of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There building is surrounded by concrete-covered taxiways leading to the two runways.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation page

Hangar Maintenance (Building 601) is comprised of a large, low-gabled, three-story hangar building occupying a square footprint on the west side of the parcel and an administration wing forming a U occupying the east side, which is made up of one- and two-story buildings with flat roofs surrounding an eastern courtyard. The administration building's bituminous roofs feature several mechanical units and metal coping covers.

The hangar building is clad in brick, steel, and corrugated duranodic bronze aluminum. The north façade and south elevation feature a wide bay with ten tall folding metal and glass doors; each door features six panels arranged two wide and three high, and each panel has twelve lights. Below the north parapet there are painted letters spelling, "Missouri Air National Guard." At the northeast corner of the hangar is the five-story control tower, it rests steel beams above the western roof of the administration wing and is completely clad in duranodic bronze aluminum panels.The west elevation has several contemporary, metal-clad storage facilities on the ground floor; a brick-clad, flat roof second story with replacement, fixed metal windows and a three-story, brick-clad stair tower with a flat roof, and clerestory metal windows on the third floor.

The brick-clad, flat roof administration wing's north façade features a projecting two-story wing with full-height brick piers and replacement sliding and fixed metal windows; the set back wings feature exterior terraces with metal handrails, metal doors and replacement fixed metal windows. The elevations in the U-shaped courtyard are one- and two-stories high with metal coping covers and altered masonry openings of duranodic bronze aluminum infill and replacement fixed metal windows and doors.

Additions
1944, the administration wing

Alterations
1981, the flooring was replaced;
1983, electrical upgrade;
1985, patrol-control room and bathrooms were upgraded;
1987, new roof;
1988, control tower
1990, interior remodeling included a weight room, replacement doors and windows, and upgraded ventilation system;
1997, new drop ceiling with light and offices added.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the north façade and east elevation from Runway 12R-30L

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Detail of control tower at the north façade from Runway 12R-30L

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0014		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745300 Long.: -90.372419	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Engine Shop (Building 002)		9. Present/other name (if known): Engine Shop (Building 606)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1941	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☒ replacement Pane arrangement: Fixed, casement, multi-light
24. Vernacular or property type:	31. Chimney placement: Side right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame, CMU	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1984, 1989 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Metal, brick, CMU	
27. No. of stories: 3	34. Foundation material: Concrete	
28. No. of bays (1st floor): 3	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Recessed Center	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north façade and west elevation from Building 601

ADDITIONAL INFORMATION:

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Engine Shop (Building 606)

Engine Shop (Building 606)was built in 1941 and was used as an engine assembly and repair hangar. Alterations to the building include the replacement of exterior wall and hangar doors in 1984 as well as a 1989 remodeling of wall sections, doors, and windows.

Significance

Engine Shop (Building 606) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

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History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Engine Shop (Building 606) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The building faces a large concrete-covered courtyard; there is an asphalt covered driveway and a green lawn directly south.

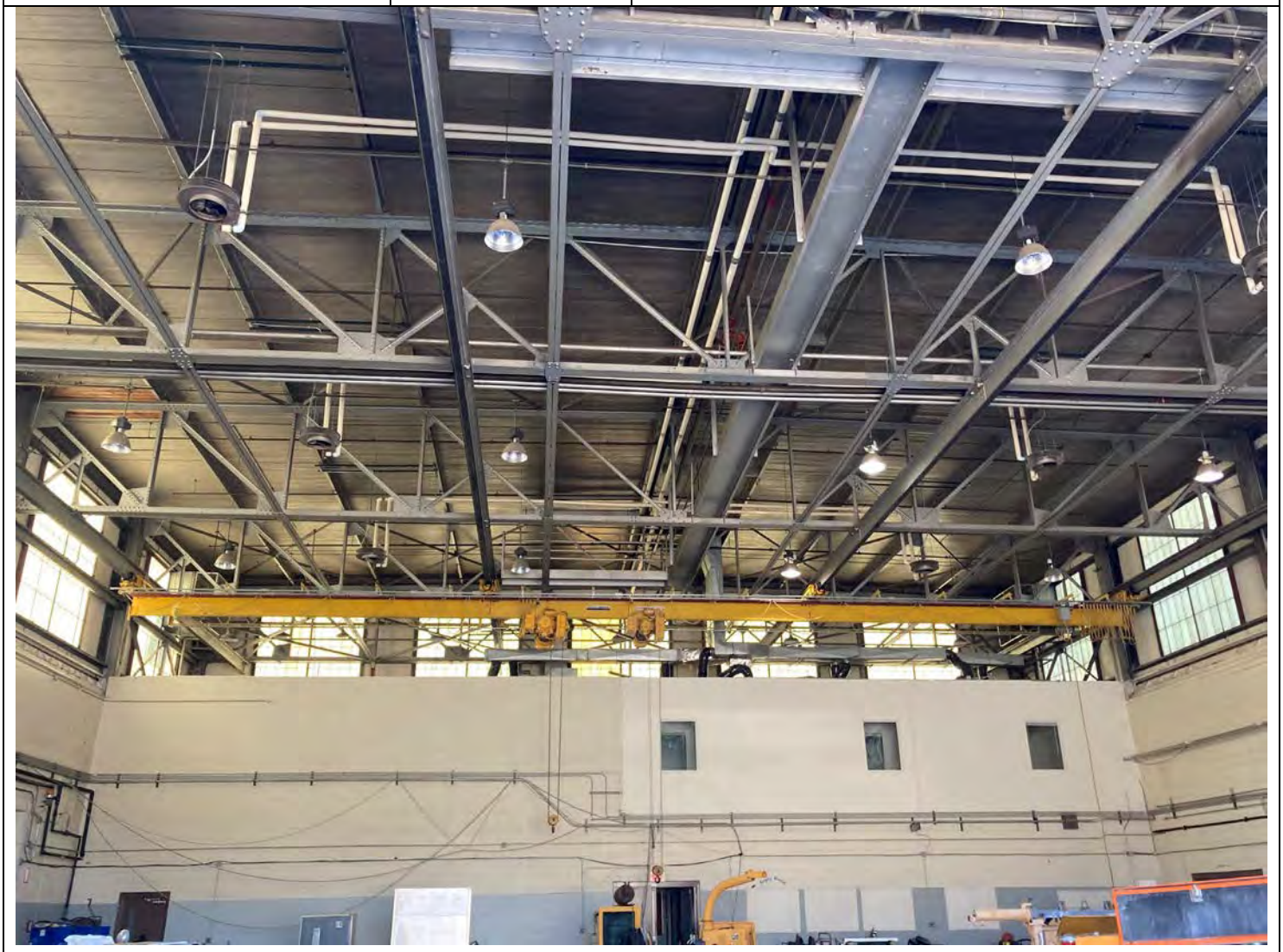
41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Engine Shop (Building 606) sits on a concrete foundation and occupies a large square footprint and is composed of ta hree-story, CMU block, center, metal-clad hangar building which is flanked by two brick and CMU block two-story office volumes on the east and west, and a one-story office volume at the rear south elevation. All roofs are flat with bituminous membrane and metal coping covers and with mechanical equipment. The hangar building features a large center opening without doors and five sets metal multi-light windows, two-wide by five-tall on the east, west, and south elevations. The north façade of the two flanking wings feature large infilled masonry openings with metal and replacement duranodic bronze aluminum casement windows along the bottom. The east, west, and south elevations feature infilled masonry openings with metal and replacement duranodic bronze aluminum casement windows along the bottom, while the south elevation also has a metal rolldown gate and a metal door. Metal ship ladders are found at the east and west elevation leading to roofs.

Alterations
1984, hangar doors and exterior walls replaced;
1989 remodeling removed wall sections, doors, and windows

Photographer:	Date:	Description:
Hansel A. Hernandez	11/03/2022	Looking south toward the north façade from Building 601

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	View of hangar interior. Looking south toward the north façade from Building 601



MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0015		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744964 Long.: -90.372807	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Shop/ A / M /Ogrl (Building 047)		9. Present/other name (if known): Shop (Building 611)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1944	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Side left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: CMU block	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): n.d. ☒ Altered Date(s): 1976, 1982, 1992 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: T	33. Exterior wall cladding: CMU block, brick	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the north façade and east elevation from Building 608

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Shop (Building 611)

Shop (Building 611) was built in 1944 and was originally used as an armory. It has undergone renovations from 1976 to 1992 when a metal wall with panels was installed in 1976, HVAC compressed air installed in 1982, and an HVAC system installed in 1992. Bomb storage additions to the east and west were installed at an unknown date..

Significance

Shop (Building 611) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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Schlinkmann, Mark, "Plans for International Freight Complex at Lambert Collapse; Operator Alleges City Improperly Ended Deal," *St. Louis Post-Dispatch*, September 19, 2019. AviationPros.com. Accessed November 9, 2022. https://www.aviationpros.com/airports/airports-municipalities/news/21106348/plans-for-international-freight-complex-at-lambert-collapse-operator-alleges-city-improperly-ended-deal.

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TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Shop (Building 611) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The building sits at the foot of a hill and lawn on the south; there is an asphalt covered driveway directly north of the building.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Shop (Building 611) is a plain one-story, CMU block and brick building occupying a T-shaped footprint with a slightly projecting volume on the north. The flat concrete roofs have bituminous membrane and mechanical equipment. The east and west additions have flat wooden roofs with a slight pitch. The building is painted white. The north façade features four metal roll down gates and the projecting volume has two metal doors.

Additions
n.d., east and west storage additions;

Alterations
1976, metal wall with panels installed;
1982, HVAC equipment installed;
1992, HVAC equipment installed

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the north façade from Building 608

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0016		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744563 Long.: -90.372447	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Water Storage (Building 41)		9. Present/other name (if known): Water Storage (Building 623)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1943	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☐ building(s) ☐ site ☒ structure ☐ object	30: Roof material: Concrete	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c.1981 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Round	33. Exterior wall cladding: Steel	
27. No. of stories: 2	34. Foundation material: Concrete	
28. No. of bays (1st floor):	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.): 1
29. Roof type: Concave	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south toward the north façade from Building 606.

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

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The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After WWII, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Water Storage (Building 623)

Water Storage (Building 623) dates from 1943 and used as water storage facility. In 1981, a small, one-story, low gable, metal-clad building with a metal chimney flue was added to the northwest wall.

Significance

Water Storage (Building 623) was previously determined not eligible. The property is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from early World War II through the Cold War.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Water Storage (Building 623) is located along the south of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The structure is surrounded by a green lawn. A chain link fence separates the structure from an asphalt-covered frontage driveway.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Water Storage (Building 623) is a two-story concrete covered structure occupies a circular footprint, has a concave roof of concrete. A metal ship's ladder and handrails on the east leads to the roof. Heavy metal corrosion stains are found on the roof and parts of the walls.

Additions
c.1981, small, one-story, low gable, metal-clad building added to the northwest wall with a metal chimney flue.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0017		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745508 Long.: -90.3712542	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Storage & Aircraft Support (Building 108)		9. Present/other name (if known): Storage & Aircraft Support (Building 602)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1979	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Metal	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Metal	
27. No. of stories: 1 ½	34. Foundation material: Concrete block	
28. No. of bays (1st floor): 3	35. Basement type:	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Low gable	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the south façade and east elevation from Lambert Field Street

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

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Storage & Aircraft Support (Building 602)

Storage & Aircraft Support (Building 602) was constructed in 1979 and served as a storage facility.

Significance

Storage & Aircraft Support (Building 602) was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012 and consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Storage & Aircraft Support (Building 602) is located along the east boundary of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There are asphalt-covered driveways on the east and south, and a large asphalt parking along the north.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Storage & Aircraft Support (Building 602) is a low gable, steel framed and corrugated metal-clad storage building with a metal roof resting on concrete block footings and occupies a rectangular footprint at the southeast end of the large Building 601. The south façade features three large openings; all other elevations are plain and metal-clad.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward the east elevation from Lambert Field Street

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0018		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745262 Long.: -90.371381	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Weapons Release (Building 008)		9. Present/other name (if known): Weapons Release (Building 603)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1941	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement: Sash, 1/1
24. Vernacular or property type:	31. Chimney placement: Side right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1944 ☒ Altered Date(s): 1978, 1990 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick	
27. No. of stories: 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward the east façade from Lambert Field Street

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air Naval Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Weapons Release (Building 603)

Weapons Release (Building 603) was built in 1941 and used as a maintenance facility. The first additions to the building date from 1944, with a paint shop and storage being added. The electrical system was upgraded in 1978 and the exterior was renovated in 1990 that altered the building's appearance.

Significance

Weapons Release (Building 603)was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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St. Louis Public Library, Digital Collection.

TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Weapons Release (Building 603) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There is a small asphalt-covered parking lot at the east façade and asphalt-covered driveways along the north, east, and south.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Weapons Release (Building 603) occupies a rectangular footprint facing Lambert Field Street, with the east facade and west elevation making up the short ends of the building, while the north and south elevation make up the long ones. It is brick-clad building of no discernible style, flat roof with bituminous membrane and metal coping covers. The brick-clad east façade features a tall masonry opening with a metal door and metal transom, a large garage opening with a rolldown gate, and replacement metal one-over-one, double-hung windows with stone sills. The north elevation features eleven large garage openings, some feature metal rolldown gates, while others have been altered with cast stone infill to accommodate duranodic bronze aluminum doors and transoms. The west and south elevation is clad in cast stone and also feature duranodic bronze aluminum doors and transoms.

Additions
1944, paint shop and storage;

Alterations
1978, electrical system upgrade;
1990, new windows and trim.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the east façade and north elevation from Lambert Field Street

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0019		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745187 Long.: -90.371998	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Paint Shop (Building 006)		9. Present/other name (if known): Paint Shop (Building 617)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1942	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
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26. Plan shape: Rectangular	33. Exterior wall cladding: Brick	
27. No. of stories: 2	34. Foundation material: Concrete	
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29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the west façade and north elevation from Building 601


6

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

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Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

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During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Paint Shop (Building 617)

Paint Shop (Building 617) was built in 1942 to serve as a spray paint booth. At an unspecified date, the building underwent alterations when its masonry openings were closed up.

Significance

Paint Shop (Building 617) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Paint Shop (Building 617) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There is an asphalt covered driveway along the west façade and green lawn along the south.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Paint Shop (Building 617) sits on a slab of concrete occupying a rectangular footprint and is part of a row of three building fronting Building 606. The brick-clad, two-story building has a flat roof of bituminous membrane and metal coping covers. The west façade is higher than the rear of the building, features a center metal roll down gate at the ground floor and two bricked-up masonry openings on the second floor. The north elevation features full-height brick piers with stone capitals, two metal doors, and a metal staircase attached to the westernmost bay leading to a metal door on the second floor.

Alterations
n.d., masonry openings bricked up

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking east toward the west façade from Building 601

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0020		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745108 Long.: -90.372013	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Pump House (Building 005)		9. Present/other name (if known): Pump House (Building 608B)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1941	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U.S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Side left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1978, 1987 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick, concrete	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking east toward the west façade from Building 606

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

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Pump House (Building 608B)

Pump House (Building 608B) was built in 1941 as the water fire pump station. Alterations to the building include the installation of a deluge system in 1978 and a spill pit in 1987.

Significance

Pump House (Building 608B) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

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History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Pump House (Building 608B) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There is an asphalt covered driveway along the west façade and green lawn along the south.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Pump House (Building 608B) sits on a slab of concrete occupying a rectangular footprint and is part of a row of three building fronting Building 606. The brick-clad, one-story building has a flat concrete slab roof of bituminous membrane and metal coping covers. The west and east parapets rise above the flat roof. The west façade features a former larger opening now bricked in featuring a set of double metal doors.

Alterations
1978, deluge system installed;
1987, spill pit installed.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0021		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744982 Long.: -90.372137	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): General Purpose Aircraft Shop (Building 004)		9. Present/other name (if known): General Purpose Aircraft Shop (Building 608)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1941	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1977, 1978, 1993 ☐ Moved Date(s): ☐ Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick, limestone	
27. No. of stories: 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 7	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking east toward the west façade from Building 606

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices. The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

General Purpose Aircraft Shop (Building 608)

General Purpose Aircraft Shop (Building 608)was built in 1941 and was used as the ordnance and carburetor shop. In 1977 the building was altered with new windows to the north, the east elevations were filled, drop ceiling was installed, and overhead doors were installed. The lighting and electrical system were updated in 1978. In 1993, the ductwork was also updated..

Significance

General Purpose Aircraft Shop (Building 608) is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

General Purpose Aircraft Shop (Building 608) is located along the center of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There is an asphalt covered driveway along the west façade and green lawn along the south.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

General Purpose Aircraft Shop (Building 608) sits on a slab of concrete occupying a rectangular footprint and is part of a row of three buildings fronting Building 606. The brick-clad, one-and-a-half story building has a flat roof of bituminous membrane and metal coping covers. The west façade features a limestone-clad bay at the north with a side light and a metal entry door; the remaining bays feature a single metal door and tall masonry openings with metal rolldown gates.

Alterations
1977, new windows on the north, east elevation openings filled, drop ceiling installed, overhead doors installed;
1978, lighting and electrical system updated;
1993, ductwork updated.

Photographer:	Date:	Description:
Hansel A. Hernandez	11/03/2022	Looking northeast toward the west façade and south elevation from Building 606

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0023		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744683 Long.: -90.371910	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Egress & Explosives (Building 079)		9. Present/other name (if known): Egress & Explosives (Building 609)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1953	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement: Fixed, multi light
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1979, 1983 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete stucco	
27. No. of stories: 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 3	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Open Side	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the east façade and north elevation from Building 610.

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

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The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Egress & Explosives (Building 609)

Egress & Explosives (Building 609) was constructed in 1953 and used as a paint and inflammables storage facility. Beginning in 1979, the building was altered with the replacement of its doors and windows and in 1983 the roof was replaced.

Significance

Egress & Explosives (Building 609) was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Egress & Explosives (Building 609) is located along the south of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. The structure is surrounded by a green lawn along the south and west, and there is an asphalt-covered parking lot along the east façade.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Egress & Explosives (Building 609) occupies a rectangular footprint, it rests on a concrete slab foundation, faces east onto Lambert Field Street, has a flat roof of bituminous membrane and metal coping covers, and is currently covered in concrete stucco or an elastomeric coating. A high concrete landing along the east façade serves as a porch with a concrete staircase at the northern end and metal pipe handrails. A metal porch shed roof is supported by slender metal posts. There are two single metal doors and a set of tall metal double doors and two fixed wood windows with two lights.

Alterations
1979, replacement windows and doors;
1983, roof replacement.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward the east façade and north from Building 610.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0024		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744743 Long.: -90.3712898	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Avionics (Building 110)		9. Present/other name (if known): Avionics (Building 610)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1975	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed
24. Vernacular or property type:	31. Chimney placement: Side left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1978, 1991, 1992 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Square	33. Exterior wall cladding: Brick, metal	
27. No. of stories: 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: N/A	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the east façade and south façade from Lambert Field Street

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices.

The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

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Avionics (Building 610)

Avionics (Building 610)was built in 1975 to design and test aviation systems. In 1978, metal cladding was added to the parapet along two bays of the east façade, overhead door moved, and exterior ramp installed. Further alterations included new ceiling light installed in 1991 and a new fire protection system installed in 1992.

Significance

Avionics (Building 610) was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Avionics (Building 610) is located at the southeast corner of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. There is an asphalt-covered lot on the east and asphalt-covered driveways on the south, east, and west, and there is an asphalt-covered parking lot directly at the rear (north).

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Avionics (Building 610) occupies a square footprint facing east onto Lambert Field Street, has a flat roof of bituminous membrane with metal coping covers, and mechanical equipment and HVAC exhaust vents. The parapet rises a foot higher on the east and west. The east façade and all remaining elevations feature a combination of duranodic bronze aluminum rolldown gates and sets of double doors. There is one fixed square window and a metal ships ladder on the north elevation.

Alterations
1978, metal cladding was added to the parapet along two bays of the east façade, overhead door moved, exterior ramp installed;
1991, ceiling lights installed;
1992, mechanical fire protection system installed.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the south and west elevation from Lambert International Boulevard

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0025		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744480 Long.: -90.371160	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Traffic Control (Building 085)		9. Present/other name (if known): Traffic Control (Building 615)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: 1973	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed, sliding
24. Vernacular or property type:	31. Chimney placement: Side, left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Fluted concrete panels, metal	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 1	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Recessed Side	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the east façade and north elevation from Lambert Field Street.

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Military History at Lambert Airport

Prior to the Missouri Air National Guard Base at Lambert Field (ANGLF), the Naval Air Station (NAS) had occupied facilities at Lambert Field. Navy reserves began meeting in a shed outside Lambert Field in 1925 with Major Albert Bond Lambert donating a plane for them to use. In 1930, the Navy designated their unit as a Naval Reserve Aviation Base. From 1932 to 1942 the unit used a hangar on the northwest corner of the airport built by the city of St. Louis. The large hangar featured a concrete ramp for parking aircraft, shop and offices were attached on both sides of the structure. A parachute loft was in the rafters of the hangar. No barracks existed since the group consisted of two officers and 10 enlisted men in 1932. Additional fields were established to handle the training schedule at Lambert Field however, it became obvious the original base could not accommodate the increasing number of students and the aircraft needed in the training; ramp space had to be borrowed from other airlines and plane manufacturers. "In 1941, construction was started on the southwest corner of the airport of what was to become NAS, St. Louis, Missouri."[1] The site was located on the north side of Natural Bridge Road, just east of Coldwater Creek, and had large hangars and repair shops, a steam plant, garages, an underground re-fueling systems, a sewage treatment plant, and administrative office. Soon after, additional construction began on the south side of the road, primarily living quarters for the cadets and enlisted men and many air defense ancillary structures.

[1] Engineering-Environmental Management, Inc., *Final Report Cultural Resources Survey Missouri Air National Guard Property at Lambert Field and Fort Leonard Wood, Missouri* (Denver: Engineering-Environmental Management, Inc., 2006), 3-14.

The second control tower was built atop the Navy hangar once the airport expanded to the east. And once the Navy left Lambert Field, a larger, higher tower was built near the front gate of the naval base with a building at its base to house the local Federal Aviation Administration offices.The Naval Air Station at Lambert came to provide all crash, fire, rescue services, snow removal at the airport, and the medical department and its hospital provided emergency care for the area. After the attack on Pearl Harbor, there was a surge in the enrollment of sailors based at the Lambert base. After the war, the base continued operating and began using jet planes. Then in the fall of 1957 NAS St. Louis received de-commissioning orders from Washington, D.C. and closed in the winter of 1958.

The 131st is a unit of the Missouri Air National Guard and dates to 1923 as an observation squadron at Lambert Field. During World War II the unit was in active wartime service in the Pacific but was also engaged in stateside training until 1944 when it mobilized to Australia as part of the 71st Tactical Reconnaissance Group.

After World War II, the 110th Squadron returned to Lambert and became the 110th Fighter Squadron of the 71st Fighter Wing, Missouri Air National Guard. In 1950, the 71st Wing became the 131st Composite Wing and became active for Korean War service in March 1951 as the 131st Fighter Bomber Wing. It moved to Bergstrom Base in Texas temporarily, then in July 1951, it transferred to Tactical Air Command, moving to George Air Force Base in California to become the 110th Fighter Bomber Squadron. Its personnel deployed to Korea during this period, 1951-1952, and reverted to state control in late 1952, returning to the southwest corner of Lambert. It then re-formed as a bombing unit and became the 110th Bombardment Squadron.

During the rest of the 1950s the unit became the 110th Fighter Interceptor Squadron with the conversion to jet planes, coming under the Air Defense Command. After the Navy Reserve departed their facilities at Lambert, the 110th moved from its cramped quarters at the southwest corner of Lambert to the former NAS St. Louis buildings in February 1958. In 1960, the unit became the 110th Tactical Fighter Squadron. From 1961 to 1961 the squadron went to Europe during the Berlin Wall crisis when the United States activated National Guard and Reserve units, including the 110th. Once tensions in Europe decreased in the summer of 1962, the unit returned to Lambert. The Missouri Air National Guard continued training operations at Lambert from 1962 to 1973 during the Vietnam War, and from 1968-1977 it continued training and providing air transport for the Missouri governor and other state officials. At the height of the Cold War during the 1970s avionics, jet fuel, and support buildings were added to NAS-St. Louis for it to be capable of handling new technological requirements of jet aircraft. In addition, other buildings and structures were added to the base in the 1980s centered around support facilities as new headquarter buildings, traffic checkpoints, and storage. During this time the unit became the 110th Tactical Fighter Squadron at Lambert and was deploying overseas for demonstrations and live-fire exercises in Italy, the Gulf of Mexico, the United Kingdom in 1982, and Germany in 1988.

Traffic Control (Building 615)

Traffic Control (Building 615)was constructed in 1973 to serve as entry security to the Air National Guard Base at Lambert Field (ANGLF) complex. The building underwent alterations in 1987 with metal cladding added to the cantilever and in 1988 with the addition of a new bituminous roof membrane.

Significance

Traffic Control (Building 615)was previously determined not eligible. The building is excluded from the adjacent Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012, consists of seven contributing buildings and one contributing structure. The Historic District is significant under Criterion A during the period of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

Boeschenstein, C. K. "Described as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat*, March 28, 1954. PDF download.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Traffic Control (Building 615) is the entry to the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. A green lawn is south and west of the booth surrounded by a chain-link fence, a concrete sidewalk and an asphalt-covered driveway on east, and there is an asphalt-covered parking lot directly at the rear (north). There is a boom barrier or gate with steel bollards at the southeast corner of the building.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Traffic Control (Building 615) occupies a rectangular footprint perpendicular to Lambert Field Street, it rests on a concrete slab, has a flat roof of bituminous membrane with metal coping covers, is clad in fluted concrete panels, with ribbons of fixed and sliding duranodic bronze aluminum windows in wood frame, mullions, and sills on the east façade and the north and south elevations. The recessed entrance portico on the east façade leads to a metal door on the south.
The parapet is clad in metal panels projecting from the building plane; there are light fixtures bolted to the cladding. The west elevation is clad in cast stone and features a metal ships ladder to the roof and concrete steps with pipe railing leading to an upper metal door.

Alterations
c.1987, metal cladding added to cantilever parapet; c.1988, new bituminous roof membrane added.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the east façade and south elevation from Lambert Field Street

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0026		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.743641 Long.: -90.371136	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Tunnel		9. Present/other name (if known): Tunnel	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Defense/Air Facility	11b. Current use:

HISTORICAL INFORMATION

12. Construction date: c.1944	15. Architect:	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1942-1955	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Military	17. Original or significant owner: U. S. Navy	20. National Register eligible? ☐ individually eligible ☒ district potential (☒ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☐	22. Sources of information on continuation page. ☒	

ARCHITECTURAL INFORMATION

23. Category of property: ☐ building(s) ☐ site ☒ structure ☐ object	30: Roof material: Concrete	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Poured-in-place, reinforced concrete	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete	
27. No. of stories: 1	34. Foundation material: Concrete	
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29. Roof type:	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

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Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south toward the north pedestrian tunnel entrance from Lambert Field Street.

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

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Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

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Tunnel

The tunnel was constructed c.1944 to connect the north and south halves of the Air National Guard Base at Lambert Field (ANGLF) under Lambert International Boulevard (Natural Bridge Road).

Significance

The Tunnel is a contributing resource to the Lambert Field Historic District, which was previously determined NRHP-eligible and documented in 2006 and 2012. The district was determined significant under Criteria A with a period of significance of 1942-1955 and is unified by the military and general aviation that has continued from World War II through the early Cold War. The district consists of seven contributing buildings and one contributing structure.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

Charles Trefts Photographs Collection. The State Historical Society of Missouri, Manuscript Collection.

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Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

The Tunnel is situated at the southeastern-most corner of the Missouri Air National Guard complex, which is enframed by the American Airlines Ground Operations Center complex on the west, the intersection of the southernmost edge of Runway 6-24 and the westernmost edge of Runway 12R-30L on the northwest, Lambert International Boulevard on the south, and Lambert Field Street on the east. A green lawn is north of the tunnel and a concrete sidewalk is on the south and east, as well as a landscaped median farther south separating the east- and west-bound lanes of the boulevard.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

The rectangular concrete tunnel runs under Lambert International Boulevard and connects the northern and southern halves of the Missouri Air National Guard complex. The north end of the tunnel is located south of Building 615-Traffic Control. The tunnel is accessed by a concrete walkway surrounded by the landscaped right-of-way on the west and a concrete retaining wall supporting a metal pipe handrail.

Photographer:	Date:	Description:
Hansel A. Hernandez	11/03/2022	Looking south toward the north pedestrian tunnel entrance from Lambert Field Street.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0027		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10863	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745722 Long.: -90.370710	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): West Triturator (Building 323)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1975	15. Architect: Ross & Baruzzini, Inc., architects, engineers Wachter, Inc., contractors	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Center	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick, pebble dash	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 2	35. Basement type:	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Closed Side	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the east façade and north elevation from Airfield Service Road

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

West Triturator (Building 323)

West Triturator (Building 323) was built in 1975 to operate as the airport and airline waste disposal system and discharges into the city sewer. The building has not changed in size or footprint.

Significance

West Triturator (Building 323) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

West Triturator (Building 323) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a part of airport expansions that occurred beginning in the late 1960s and does not appear significant in the history of the airport

West Triturator (Building 323) is not eligible for inclusion in the NRHP under Criterion B because research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

West Triturator (Building 323) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a facility housing a waste grinder and water flush system of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

West Triturator (Building 323) is located west of Terminal 1 (Building 105) and enframed by southernmost edge of Runway 12R-30L to the north, Concourse A to the east, and the Lambert Field Historic District complex to the west. There are asphalt-covered driveways and parking lots along the east and south, and large concrete courtyard to the north. Building 410 South Firehouse Medical Stores is directly northeast.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

West Triturator (Building 323) is a one-story building which sits on a concrete slab occupying a rectangular footprint; it faces east, has a flat roof of bituminous membrane with metal coping covers. Pebble dash panels project from the buildings parapet. The southern half of the east façade is made up of brick walls enclosing a garage while the northern half is a closed porch of cast stone jalousies or screens with square metal posts supporting the roof. There two sets of chain link gates on the northern half. There are six steel bollard fronting the façade at openings.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward the east façade from Airfield Service Road

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0028		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.745774 Long.: -90.370092	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): South Firehouse Medical Stores (Building 410)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1967	15. Architect: Marshall M. Burton & Associates, architects Nothum Brothers Construction Co.	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☒ replacement Pane arrangement: Fixed
24. Vernacular or property type:	31. Chimney placement: Offset left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Square	33. Exterior wall cladding: Brick, metal	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 7	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking north toward the south façade from Airfield Service Road

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

South Firehouse Medical Stores (Building 410)

South Firehouse Medical Stores (Building 410) building was built in 1967 as a base for medical personnel for airport emergencies, but also as an on-site fire-and-rescue facility to respond to accidents and crashes, emergency landings at the airport. Emergency. Newer north and west firehouses have been built at the airport; consequently, the south firehouse is currently used for EMS staging.

Significance

South Firehouse Medical Stores (Building 410) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

South Firehouse Medical Stores (Building 410) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a part of airport expansions that occurred beginning in the late 1960s and does not appear significant in the history of the airport.

South Firehouse Medical Stores (Building 410) is not significant under Criterion B, association with lives of persons significant in our

past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

South Firehouse Medical Stores (Building 410) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common example of a utilitarian building of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion*. St. Louis: n.d.

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Mobley, Jane. *Home Place: A Celebration of Life in Bridgeton, Missouri*. Kansas City: The Lowell Press, 1993. PDF download.

Patterson, Steve. "Carrollton: A Walkable Suburban Subdivision in 1956." *Urban Review Saint Louis*. October 8, 2013. https://www.urbanreviewstl.com/2013/10/carrollton-a-walkable-suburban-subdivision-in-1956/.

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St. Louis Public Library, Digital Collection.

TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

South Firehouse Medical Stores (Building 410) is located west of Terminal 1 and enframed by the southernmost edge of Runway 12R-30L to the north, Concourse A to the east, and the Missouri Air National Guard complex to the west. There are asphalt-covered driveways and parking lots along the south, and large concrete courtyard to the north. Building is directly southwest 323 West Triturator is directly southwest.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

South Firehouse Medical Stores (Building 410) is a one-story building sitting on a concrete slab and occupies a rectangular footprint facing south; it has a flat roof of bituminous membrane with mechanical equipment and metal coping covers. The roof is cantilevered over the façade which features alternating brick-clad bays and vertical metal sash windows and solid spandrels. There is a single metal door at the eastern end and many electrical conduit and boxes attached to the masonry façade. There is a small CMU block-clad, one-story addition on the west elevation with a flat bituminous roof with metal coping covers and mechanical equipment, fixed metal windows, and a single metal door along the south façade.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the south façade and west elevation from Airfield Service Road

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0034		2. Survey name: STL Consolidated Terminal Program		
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard	
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.744059 Long.: -90.370092		7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):			9. Present/other name (if known): Host Commissary (Building 307)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known):		11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1967	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Offset right	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c.1997 ☒ Altered Date(s): c.1981 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Brick	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

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Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez,	10/03/2022	Looking north toward the south façade from Airport Access Road

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Host Commissary (Building 307)

Host Commissary (Building 307) was built in 1967 as an operations base for HMSHost, a large airport food and beverage service provider. Aside from some additions to the north elevation, the building continues to operate in the same capacity.

Significance

Host Commissary (Building 307) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Host Commissary (Building 307) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a part of airport expansions that occurred beginning in the late 1960s and does not appear significant in the history of the airport

Host Commissary (Building 307) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are

demonstrably important within a local, State, or national historic context.

Host Commissary (Building 307) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a plain, brick-clad storage building of no discernible style, whose type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Bradley, Betsy, Jan Cameron, Andrea Gagen, Bob Bettis, Peter Meijer, Kristen Minor, Kate Kearney, and Christine Madrid French. *Thematic Survey of Modern Movement Non-Residential Architecture, 1945-1975, in St. Louis City*. Portland: Peter Meijer Architect, PC, 2013.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Host Commissary (Building 307) Host Commissary is located west of Terminal 1 (Building 105) and enframed by the southernmost edge of Runway 12R-30L to the north, Concourse A to the east, and the Lambert Field Historic District to the west. Concourse A is located directly northwest. There are asphalt-covered driveways along the south and west, and asphalt-covered parking lot along the south, and a large concrete courtyard to the northwest.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Host Commissary (Building 307) is a buff color, brick-clad, one-story storage/office building which sits on a concrete slab and occupies a rectangular footprint with two square volumes projecting from the façade and facing south onto Airport Access Road. The building has a flat roof of bituminous membrane and metal coping covers. The façade features a recessed center loading dock with a single metal door and two large rolldown gate openings, and a cantilevered metal canopy; while the two projecting volumes feature a metal rolldown gate on the west and two metal louvers on the east. The eastern volume features a cast stone jalousie/screen concealing mechanical equipment along the south. The north elevation loading dock features concrete stairs leading to metal doors on each end; a cantilevered center metal canopy above a row of large openings with metal rolldown gates; and a projecting, one-story, flat roof, rectangular, brown brick-clad volume with concrete stairs and a single metal door.

Additions
c.1981, the building was extended and enlarged towards the north;
c.1997, one-story extension at north elevation.

Photographer:	Date:	Description:
Hansel A. Hernandez,	10/03/2022	Looking northwest toward the south façade and east elevation from Airport Access Road

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez,	10/03/2022	Looking south toward the north elevation from Runway 12R-30L

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0035		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.743744 Long.:-90.369201	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): Building Maintenance (Building 315)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known):	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1967	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement: Fixed
24. Vernacular or property type:	31. Chimney placement: Offset left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: CMU block	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): c.1981 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Irregular	33. Exterior wall cladding: CMU block	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 10	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north façade from Runway 12R-30L

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Building Maintenance (Building 315)

Building Maintenance (Building 315), completed in 1967, was part of a 1966 improvement plan at Lambert St. Louis Municipal Airport which expanded maintenance facilities and added the fourth dome included in Hellmuth, Yamasaki, and Leinweber's original plan for the Terminal Building. The building functions as offices for personnel who maintain the terminal. The building has been consistently extended or shortened to the east and west beginning in the 1980s.

Significance

Building Maintenance (Building 315) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Building Maintenance (Building 315) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. Although the building has functioned as a maintenance office facility for the St. Louis-Lambert Airport since it was built in 1967, its construction does not appear significant in the history of the airport.

Building Maintenance (Building 315) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Building Maintenance (Building 315) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a maintenance shop building of no discernible style, which has been extended and shortened to the east and west. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

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Kneller, Janet and Meredith Hawkins Trautt. *Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field*. Research Report: 680. Archaeological Research Center of St. Louis, Inc. November 2012.

Krell, Edwin D. "New St. Louis Air Terminal Building Opens: Public Service Role Stressed." *St. Louis Globe-Democrat*, March 11, 1956. PDF download.

Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion*. St. Louis: n.d.

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Mobley, Jane. *Home Place: A Celebration of Life in Bridgeton, Missouri*. Kansas City: The Lowell Press, 1993. PDF download.

Patterson, Steve. "Carrollton: A Walkable Suburban Subdivision in 1956." *Urban Review Saint Louis*. October 8, 2013. https://www.urbanreviewstl.com/2013/10/carrollton-a-walkable-suburban-subdivision-in-1956/.

Peters, Frank. "Minoru Yamasaki's Pivotal Building Years in St. Louis." *St. Louis Post-Dispatch*, February 16, 1986. In Yamasaki, Minoru, Vertical File, Missouri Historical Society Library, St. Louis.

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Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016.

Schlinkmann, Mark, "Plans for International Freight Complex at Lambert Collapse; Operator Alleges City Improperly Ended Deal," *St. Louis Post-Dispatch*, September 19, 2019. AviationPros.com. Accessed November 9, 2022. https://www.aviationpros.com/airports/airports-municipalities/news/21106348/plans-for-international-freight-complex-at-lambert-collapse-operator-alleges-city-improperly-ended-deal.

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TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Building Maintenance (Building 315) is located west of Terminal 1 and enframed by the southernmost edge of Runway 12R-30L to the north, Concourse A (Building 103) to the east, and the Lambert Field Historic District to the west. There are asphalt-covered driveways along the south and a small asphalt-covered parking lot along south, and a large concrete taxiway to the northwest. A metal barrier wall covers the south elevation along Airport Access Road.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Building Maintenance (Building 315) is a CMU, one-story office building that sits on a concrete slab and occupies an irregular/polygonal footprint, northwest to southeast along Airport Access Road, and faces north toward Runway 12R-30L. The building has a flat roof of bituminous membrane, metal coping covers, and mechanical equipment. The plain façade features sets of double- and single metal doors, as well as fixed duranodic bronze aluminum windows.

Alterations
Beginning in the 1980s, the building the building has been extended or shortened to the east and west.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north façade and west elevation from Runway 12R-30L

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0037		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.743234 Long.: -90.370079	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): Old Airfield Lighting Vault (Building 411)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known):	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1981	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner:	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement: Offset right, offset left	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: CMU block	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c. 2000 ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Fluted concrete panels, CMU block	
27. No. of stories: 1, 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 4	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement: Platform side	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

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Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the west façade and north elevation from Airport Access Road

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Old Airfield Lighting Vault (Building 411)

Old Airfield Lighting Vault (Building 411)was built in 1981 to serve as the primary electrical power feeder for the airfield lighting system. In c.2000, a small addition was built at the building's west elevation. The building is currently empty now and used for storage.

Significance

Old Airfield Lighting Vault (Building 411) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Old Airfield Lighting Vault (Building 411) is not significant under Criterion A, for its lack of association with events that have made a significant contribution to the broad patterns of our history. Although the building has functioned as an airfield lighting storage facility for the St. Louis-Lambert Airport since it was built in 1981, it was built considerably late in the airport's history and does not appear significant in the history of the of the airport.

Old Airfield Lighting Vault (Building 411) is not significant under Criterion B, association with lives of persons significant in our past.

Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Old Airfield Lighting Vault (Building 411) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a CMU block and concrete panel-clad storage building of no discernible style, whose type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

Boeschenstein, C. K. "Described as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat*, March 28, 1954. PDF download.

Bradley, Betsy, Jan Cameron, Andrea Gagen, Bob Bettis, Peter Meijer, Kristen Minor, Kate Kearney, and Christine Madrid French. *Thematic Survey of Modern Movement Non-Residential Architecture, 1945-1975, in St. Louis City*. Portland: Peter Meijer Architect, PC, 2013.

Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Building 411 Old Airfield Light Vault is located west of Terminal 1 and enframed by Airport Access Road along the west and north, Lambert International Boulevard along the south, and by Building 310 Airline Service Maintenance Shop to the east. There is a concrete-covered parking lot along the east façade and a concrete-covered driveway beyond. The building is at the foot of a landscaped right-of-way directly south which slopes upward toward the boulevard and has some grown trees.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Old Airfield Lighting Vault (Building 411) is a fluted concrete panel-clad and CMU block one-story building which sits on a concrete slab and occupies a rectangular footprint, facing east. The building consists of a slender one-and-and a half volume with a wider and off-center one-story volume on the south. The building has a flat roof of bituminous membrane, metal coping covers, and mechanical equipment. The east façade features a north loading dock and ramp with metal pipe handrails, a set of double metal doors, and two tall metal louvers; while the north elevation features a large center opening filled in with CMU flanked by two metal louvers. The north-facing setback of the southern building features a large opening with a metal gate and a metal louver. The west elevation features a tall metal louver. The addition to the west elevation matches the original building in design and cladding material a large opening with a metal gate along the north elevation.

Additions
c.2000, a one-story rectangular volume added to the west.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southeast toward the north and west elevations from Airport Access Road

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0038		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.7435156 Long.: -90.369461	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): Airline Service Maintenance (Building 310)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1956; 1966	15. Architect: Hellmuth, Yamasaki & Leinweber; William C E Becker Structural Engineer; Ferris & Hamig, Mechanical Engineer	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed, casement
24. Vernacular or property type:	31. Chimney placement: Center	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☒ Altered Date(s): 1966 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Steel, brick	
27. No. of stories: 1 ½	34. Foundation material: Concrete	
28. No. of bays (1st floor): 17	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/22	Looking northwest toward the east façade and the south elevation from Lambert International Boulevard

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Airline Service Maintenance (Building 310)

Airline Service Maintenance (Building 310) building was built along with the new airport terminal in 1956 and serves as a maintenance facility for the vehicles used in the maintenance of the runways and taxiways. It was included in the airport master plan developed by Hellmuth, Yamasaki, and Leinweber although designed and constructed to be a utilitarian support facility. When the airport expanded in 1966, the building was doubled in size through a large extension to the south. Research did not indicate that alterations to this building were part of Hellmuth, Yamasaki, and Leinweber's original plan for the airport, unlike the Terminal Building, which supported construction of additional domes as part of the building's design.

Significance

Airline Service Maintenance (Building 310) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Airline Service Maintenance (Building 310) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. Although the building functioned as a maintenance facility for the new Lambert St.

Louis Municipal Airport, substantial alterations to the building in the 1960s doubled the building's original footprint. Research did not indicate Hellmuth, Yamasaki, and Leinweber's original master plan for the new airport included expansion of this building. As a support building that was later substantially altered, it is unable to convey the same Jet Age-era trends or significance as expressed in the Terminal Building.

Airline Service Maintenance (Building 310) is not eligible for inclusion in the NRHP under Criterion B because research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Airline Service Maintenance (Building 310) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a maintenance shop building of no discernible style with a footprint that was increased more than 50 percent when it was extended to the south in 1966. No historical documentation has been found regarding this expansion program, and its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

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Krell, Edwin D. "New St. Louis Air Terminal Building Opens: Public Service Role Stressed." *St. Louis Globe-Democrat*, March 11, 1956. PDF download.

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Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016.

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St. Louis Public Library, Digital Collection.

TWA Collection (118, 275), The State Historical Society of Missouri, Manuscript Collection.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Airline Service Maintenance (Building 310) is located west of Terminal 1 and enframed by Airport Access Road along the north, Lambert International Boulevard along the south, and by West Power Plant (Building 406) to the east. There are asphalt and concrete-covered driveways and parking lots surrounding the building. The building is at the foot of a landscaped right-of-way directly south which slopes upward toward the boulevard and has some grown trees.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Airline Service Maintenance (Building 310) is a one-and-a-half story building which sits on a concrete slab and occupies a rectangular footprint facing east. The building has a flat roof of bituminous membrane, metal coping covers, and mechanical equipment. The east façade and secondary west elevation are distributed as a series of alternating bays of tall, multi-light, fixed metal windows above a brick-clad bulkhead, and large openings with metal rolldown gates, and some single metal doors, while the north and south elevations feature solid brick walls and a center bay of tall, multi-light, fixed metal windows and a slim bay of metal door and multi-light windows above.

Additions
c.1967, the building was extended to the south, doubling its footprint.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/22	Looking northeast toward the west elevation from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/22	Looking southwest toward the east façade and north elevation from Airport Access Road


POWER PLANT
SHOPS
490757
DELTA

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0039		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.743056 Long.: -90.369154	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): Boiler Shop West Power Plant (Building 406)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1956; 1966	15. Architect: Hellmuth, Yamasaki & Leinweber; William C E Becker Structural Engineer; Ferris & Hamig, Mechanical Engineer	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed, encasement
24. Vernacular or property type:	31. Chimney placement: Center, cluster	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel Frame	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1966 ☒ Altered Date(s): c. 1995 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Steel, brick	
27. No. of stories: 1 ½, 2	34. Foundation material: Concrete	
28. No. of bays (1st floor): 12	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): John H. Perry, WSP Inc.	44. Survey date: 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the west façade and south elevation from Lambert International Boulevard


307
301
CAUTION
ICY SURFACE

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Boiler Shop West Power Plant (Building 406)

Boiler Shop West Power Plant (Building 406) building was built along with the new airport terminal in 1956 and serves as a power and steam facility to the other maintenance building at the airport. As part of the airport's upgrade and expansion plan of 1966, the building was extended to the east, doubling in size and footprint.

Significance

Boiler Shop West Power Plant (Building 406) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Boiler Shop West Power Plant (Building 406) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. Although the building functioned as a maintenance facility for the new Lambert St. Louis Municipal Airport, substantial alterations to the building in the 1960s doubled the building's original footprint. Research did not indicate Hellmuth, Yamasaki, and Leinweber's original master plan for the new airport included expansion of this building. As a support building that was later substantially altered, it is unable to convey the same Jet Age-era trends or significance as expressed in the Terminal Building.

Boiler Shop West Power Plant (Building 406) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Boiler Shop West Power Plant (Building 406) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a maintenance shop building of no discernible style with a footprint that was increased more than 50 percent when it was extended to the east in 1966. No historical documentation has been found regarding this expansion program, and its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

Boeschenstein, C. K. "Described as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat*, March 28, 1954. PDF download.

Bradley, Betsy, Jan Cameron, Andrea Gagen, Bob Bettis, Peter Meijer, Kristen Minor, Kate Kearney, and Christine Madrid French. *Thematic Survey of Modern Movement Non-Residential Architecture, 1945-1975, in St. Louis City*. Portland: Peter Meijer Architect, PC, 2013.

Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

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Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion*. St. Louis: n.d.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow.* Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Boiler Shop West Power Plant (Building 406) is located west of Terminal 1 (Building 105) and enframed by Airport Access Road along the north, Lambert International Boulevard along the south, and by Airline Service Maintenance (Building 310) to the west. There are asphalt and concrete-covered driveways and parking lots surrounding the building. The building is at the foot of a landscaped right-of-way directly south which slopes upward toward the boulevard and has some grown trees.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Boiler Shop West Power Plant (Building 406) is a one-and-a-half- and two-story building which sits on a concrete slab and occupies a rectangular footprint facing west. The building has a flat roof of bituminous membrane, metal coping covers, and mechanical equipment. The northern and southern portions of the west façade feature large bays of tall, multi-light, fixed and casement metal windows above a brick-clad bulkhead, whereas the middle portion of the building features bays of solid brick with metal louvres, single metal doors and metal rolldown gates. The two-story east elevation features large bays of tall, multi-light, fixed and casement metal windows above a brick-clad bulkhead and a single metal door. The south elevation features plain solid brick walls with a concrete loading dock, a rolldown gate, and bay of tall windows. The north elevation features a solid brick wall with rolldown gate and three turbines, extending a few feet west from the building plane.

Additions

1966, building extension to the east

c.1995, three turbines atop a concrete slab on the north elevation were replaced with new and larger ones

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the west façade and south elevation from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the west and south elevations from Airport Access Road

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0044		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10730	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.740735 Long.: -90.368697	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known): Super Park Long Term Parking (Lot A) (Building 114)		9. Present/other name (if known): Super Park Long Term Parking (Lot A) (Building 114)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/road-related (vehicular)	11b. Current use: Transportation/road-related (vehicular)

HISTORICAL INFORMATION

12. Construction date: 1972	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☐ building(s) ☐ site ☒ structure ☐ object	30: Roof material: Metal	37.Windows: ☐ historic ☒ replacement Pane arrangement: Fixed
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel frame, concrete	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c.1968, 2000, 2006, 2010 ☒ Altered Date(s): c.1986, 1989 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Irregular	33. Exterior wall cladding: Corrugated galvanized steel (CGS), stainless steel, aluminum, precast concrete panels	
27. No. of stories:	34. Foundation material: Concrete	
28. No. of bays (1st floor):	35. Basement type:	40. No. of outbuildings (describe in box 40 cont.): 17
29. Roof type: Vault, flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): Hansel A. Hernandez, WSP, Inc.	44. Survey date: 11/29/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no

ARCHITECTURAL/HISTORIC INVENTORY FORM

National Register Status:	Other:
☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south east toward the north parking lot entrance from east-bound Lambert International Boulevard

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Super Park Long Term Parking (Lot A) (Building 114)

Aerial photography shows the site of Super Park Long Term Parking (Lot A) (Building 114) as open farmland from the 1930s until the late 1950s, when the original Lambert Field was operating a mile northwest. In 1968, Bus Port (Building 116) was erected on the site's northern boundary, along the eastbound lanes of Lambert International Boulevard. At the time of construction of Terminal 1 Parking Garage in 1972, the lot to the south had been cleared, paved with asphalt, and laid into sections with a center east-west axial lane, and the below-grade ramp and tunnel connecting to northern parking garage was located along the northern portion. The lot has received several additions and alterations beginning in the mid-1980s with the canopy added to the tunnel in 1986 and a new city bus shelter erected along Lambert International Boulevard. In 2000, Super Park LIB Office (Lot A) (Building 112) and Super Park LIB Toll Booths (Lot A) (Building 113) were built as well as three bus shelters in 2006.

Significance

Super Park Long Term Parking (Lot A) (Building 114) was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Super Park Long Term Parking (Lot A) (Building 114) is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The facility was constructed as a part of airport expansions that occurred beginning in the late 1960s and does not appear significant in the history of the airport.

Super Park Long Term Parking (Lot A) (Building 114) is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Super Park Long Term Parking (Lot A) (Building 114) is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a vehicular parking lot of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

Boeschenstein, C. K. "Described as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat*, March 28, 1954. PDF download.

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Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

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Gonzalez, Daniels. "At Kinloch Field, Theodore Roosevelt became the first U.S. President to Travel by Plane." *St. Louis Magazine*, January 2, 2018. https://www.stlmag.com/history/where-the-president-first-flew-kinloch-field-and-early-flight/.

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Jackson, James K., PE, STL Airport Operations. Interview. October 26, 2022, November 3, 2022, November 8, 2022. By Hansel A. Hernandez. Email.

Kneller, Janet and Meredith Hawkins Trautt. *Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field*. Research Report: 680. Archaeological Research Center of St. Louis, Inc. November 2012.

Krell, Edwin D. "New St. Louis Air Terminal Building Opens: Public Service Role Stressed." *St. Louis Globe-Democrat*, March 11, 1956. PDF download.

Lambert, A. B. *A Municipal Airport for St. Louis: A Suggestion*. St. Louis: n.d.

Lambert, Albert Bond and William B. Robertson. "Early History of Aeronautics in St. Louis." Reprint from *Missouri Historical Society Collections* 5, no. 3 (1928): 237-255.

Missouri Digital Heritage. "Plat book of St. Louis County, Missouri." Accessed November 2, 2022. https://mdh.contentdm.oclc.org/digital/collection/moplatbooks/id/1961.

Mobley, Jane. *Home Place: A Celebration of Life in Bridgeton, Missouri*. Kansas City: The Lowell Press, 1993. PDF download.

Patterson, Steve. "Carrollton: A Walkable Suburban Subdivision in 1956." *Urban Review Saint Louis*. October 8, 2013. https://www.urbanreviewstl.com/2013/10/carrollton-a-walkable-suburban-subdivision-in-1956/.

Peters, Frank. "Minoru Yamasaki's Pivotal Building Years in St. Louis." *St. Louis Post-Dispatch*, February 16, 1986. In Yamasaki, Minoru, Vertical File, Missouri Historical Society Library, St. Louis.

The Red Schoolhouse and BHS Reunion 1938-1960. "Berkeley Historical Facts." Accessed November 2, 2022. http://barkerreunion.blogspot.com/p/berkeley-historical-facts.html.

Rust, Daniel L. *The Aerial Crossroads of America: St. Louis's Lambert Airport*. St. Louis: Missouri History Museum Press, 2016.

Schlinkmann, Mark, "Plans for International Freight Complex at Lambert Collapse; Operator Alleges City Improperly Ended Deal," *St. Louis Post-Dispatch*, September 19, 2019. AviationPros.com. Accessed November 9, 2022. https://www.aviationpros.com/airports/airports-municipalities/news/21106348/plans-for-international-freight-complex-at-lambert-collapse-operator-alleges-city-improperly-ended-deal.

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Wong, Daniel. "The History of St. Louis-Based Carrier Ozark Air Lines." *Simple Flying*, July 26, 2022. Accessed December 19, 2022. https://simpleflying.com/ozark-air-lines-history/.

Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Super Park Long Term Parking (Lot A) (Building 114) is located southwest of Terminal 1 and is enframed by east-bound Lambert International Boulevard along the north, Dwight D. Eisenhower Highway along the south, Airflight Drive on the east, and the southern campus of the Missouri Air National Guard base (MoANG) on the west. There is a concrete sidewalk along the north and landscaped rights-of-way with some trees along the east and south.

There is a city bus shelter along east-bound Lambert International Boulevard, west of the Bus Port (Building 116). Super Park LIB Office (Lot A) (Building 112) is located along north entrance driveway to the lot and west of Super Park Long Term Parking (Lot A) (Building 114); Super Park LIB Toll Booths (Lot A) (Building 113) are located directly south of the office building. There are three bus shelters inside the lot at different locations. A small checkpoint booth sits on a concrete median at the north entrance driveway. An unused, one-story, CMU block former radar facility building lies at the southwest corner of the lot.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Although of an irregular footprint, the 1972 Super Park Long Term Parking (Lot A) (Building 114) consists of an asphalt-covered, triangle-shaped parking lot, with its point towards the east; at the southwest corner of the triangle is an extra parking lot which belonged the a former FAA Radar Facility. There is a main east-west axis lane at the center, from the point to the base of the triangle, which widens transforming into seven lanes at the exit toll booths. The lot's parking sections are laid perpendicularly to the axis with lanes between them. There are two driveways along the northwest corner and a bus exit driveway directly east of these which merges onto the boulevard. The entry driveway extends south to the southwest parking lot. Along the center north area of the lot is a rectangular sloped ramp connecting the lot underground to the parking garage north of the boulevard. The perimeter of the ramp has a concrete

curb. The 1986 metal canopy covers the span of the rectangular sloped ramp The ramp has low and tapered concrete bulkheads supporting the steel barrel vault-shaped armature of the canopy. The armature is comprised of five sections clad in corrugated galvanized steel (CGS) linked by fixed arched metal windows. The rear wall of the last section is a tall metal and glass elliptical fanlight or sunburst.

Bus Port (Building 116)

The 1968 south-facing concrete building sits on a concrete foundation occupying an irregular footprint. It has a flat roof of bituminous membrane with metal coping covers, and mechanical equipment. The upper third of the building features a projecting duranodic bronze aluminum-clad parapet. The façade consists of bays of tall, fixed duranodic bronze aluminum windows and a set of double doors; the north elevation features bays of tall, fixed duranodic bronze aluminum windows; the west elevation features a set of double doors. A few feet west of the building is a duranodic bronze aluminum and glass bus shelter facing onto the boulevard; it has a flat roof.

Super Park LIB Office (Lot A) (Building 112)

The 2000 south-facing building sits on a raised concrete foundation occupying a rectangular footprint. The building is clad in precast concrete panels atop a rectangular concrete bulkhead. The vaulted ceiling is clad in standing seam metal. There is a metal fence and handrails around the building's perimeter. The façade features a set of double metal and glass doors, fixed single metal windows, and a semicircular metal canopy on tiebacks above the doors. The east elevation features metal doors and tall, divided, fixed metal windows with metal canopies on brackets; the west elevation features two metal doors and three fixed windows. The rear elevation has metal doors and a grass rear yard.

Super Park LIB Toll Booths (Lot A) (Building 113)

Built 2000. There are seven elliptical concrete curbs serving as platforms for the seven toll booths and the steel canopy structure. The post and beam canopy has a vaulted ceiling clad in standing seam metal, partially suspended by wires from beams above the canopy roof. The toll booths are rectangular and of blue-painted metal and glass.

Additions/Alterations
c.1968, Building 116 Bus Port erected at the northern boundary, along east-bound Lambert International Boulevard; altered in 1989;
1986, canopy added to tunnel; new city bus shelter erected along Lambert International Boulevard;
c.2000, Super Park LIB office building and toll booths are built;
c.2006, three lot bus shelters added;
c.2010, checkpoint booth added to median at northwest driveways.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northeast toward the tunnel to Terminal 1 parking garage from the surface parking lot

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward bus shelter installed in 2006 from surface parking lot

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-002-0046		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10730	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.740295, Long.: -90.370647	7. Township/Range/Section: T: R: S:
8.Historic name (if known):		9. Present/other name (if known): Former FAA Radar Facility Building	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): FAA Radar Facility Building	11b. Current use: Storage

HISTORICAL INFORMATION

12. Construction date: 1975	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Bituminous Membrane	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type:	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernable style	32. Structural system: Steel Frame	39. Changes (describe in box 41 cont.): ☐ Addition(s) Date(s): ☐ Altered Date(s): ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete Masonry Unit	
27. No. of stories: 1	34. Foundation material: Concrete	
28. No. of bays (1st floor): 2	35. Basement type: Unknown	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☐

OTHER

42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): John H. Perry, Ph.D. WSP Inc.	44. Survey date: 10/03/2022 45. Date of revisions: 11/30/2022

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south toward west façade and north elevation from surface parking lot

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998, and the main terminal thus becoming Terminal 1, and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

The site of Former FAA Radar Facility Building is located to the southwest of Terminal 1 and adjacent to the surface parking lot. Aerial photographs from the 1950s show the site as farmland. By 1972, aerial photographs show the building under construction and completed by c. 1975 as a radar facility. The building no longer operates as a radar facility for the FAA.

Significance

Former FAA Radar Facility Building was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Former FAA Radar Facility Building is not significant under Criterion A because it lacks association with events that have made a significant contribution to the broad patterns of our history. Research did not indicate the building played an important role at the airport or with aviation activities in St. Louis, likely abandoned as a result of changing technologies.

Former FAA Radar Facility Building is not significant under Criterion B because research did not indicate an association with the lives of persons significant in our past.

Former FAA Radar Facility Building is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of an airport support facility of no discernible style. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

"Berkeley Now City in County," July 30, 1937. In Berkeley, Mo., Vertical File, Missouri Historical Society Library, St. Louis.

Blaschum, Pamela, Director of the TWA Museum. Interview. October 26, 2022. By Hansel A. Hernandez. Telephone Interview.

Boeschenstein, C. K. "Described as the 'Grand Central of the Air' St. Louis' New Air Terminal to Be One of Nation's Best." *St. Louis Globe-Democrat*, March 28, 1954. PDF download.

Bradley, Betsy, Jan Cameron, Andrea Gagen, Bob Bettis, Peter Meijer, Kristen Minor, Kate Kearney, and Christine Madrid French. *Thematic Survey of Modern Movement Non-Residential Architecture, 1945-1975, in St. Louis City*. Portland: Peter Meijer Architect, PC, 2013.

Branneky, Laorraine A., Carl Boenker, Doris Baruzzini. *Bridgeton: Since 1794*. Bridgeton: Historical Commission of the City of Bridgeton, Missouri, 1968. PDF download.

Charles Trefts Photographs Collection. The State Historical Society of Missouri, Manuscript Collection.

Cinema Treasures. "Skyline Drive-In." Accessed November 2, 2022. http://cinematreasures.org/theaters/28124.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Former FAA Radar Facility Building is located southwest of Terminal 1 and on the western end of Surface Parking Lot A. Asphalt and concrete-covered parking lots surround the building. Interstate 70 borders the southern end of the site.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Former FAA Radar Facility Building is a rectangular single-story concrete masonry unit building constructed in 1975. It sits on a concrete occupying a rectangular footprint facing west with the parapet projecting from the roof. The flat roof is made of bituminous membrane. The façade features a cantilevered canopy on three metal posts, two wooden doors, and metal louver. The north elevation is plain with three louvers. The south elevation contains no features while the east elevation also features a small cantilevered canopy and some mechanical equipment.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0047		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10785	Street (name) Lambert International Boulevard
5.City: Bridgeton	Vicinity: ☐	6. Geographical Reference: Lat.: 38.741927, Long.: -90.366933	7. Township/Range/Section: T: 46N R: 6E S: 6
8.Historic name (if known):		9. Present/other name (if known): Terminal 1 Parking Garage (Building 110)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1972	15. Architect:	18. Previously surveyed? ☐ Cite survey name in box 22 cont. (page 3)
13. Significant date/period:	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance:	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☐ individually eligible ☐ district potential (☐ C ☐ NC) ☒ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☐ building(s) ☐ site ☒ structure ☐ object	30: Roof material: Concrete	37.Windows: ☐ historic ☐ replacement Pane arrangement:
24. Vernacular or property type: Parking Structure	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: No discernible style	32. Structural system: Steel and Concrete	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): c. 1995 ☒ Altered Date(s): c. 1995, 2010-2012 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Rectangular	33. Exterior wall cladding: Concrete, glass and steel	
27. No. of stories: 4	34. Foundation material: Concrete	
28. No. of bays (1st floor):	35. Basement type:	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☐

OTHER

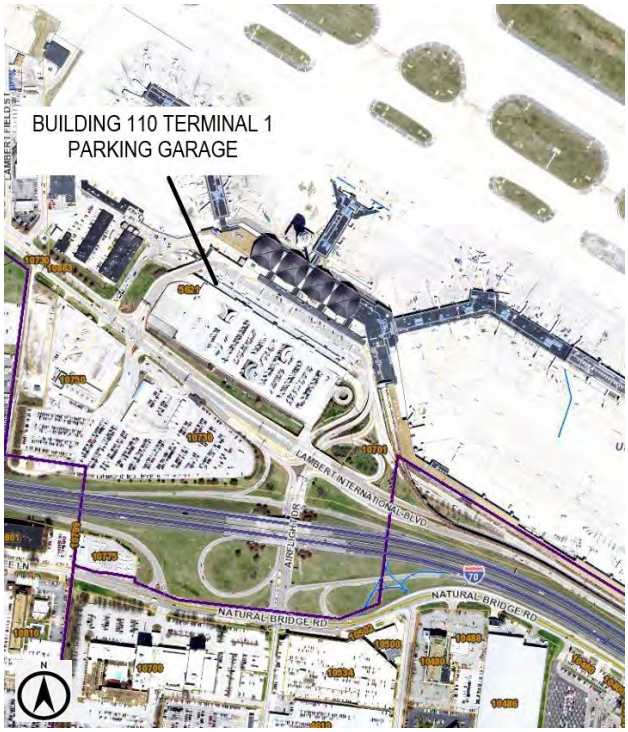
42. Current owner/address: STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	43.Form prepared by (name and org.): John H. Perry, Ph.D. WSP Inc.	44. Survey 10/03/2022 45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

ARCHITECTURAL/HISTORIC INVENTORY FORM

LOCATION MAP (include north arrow)

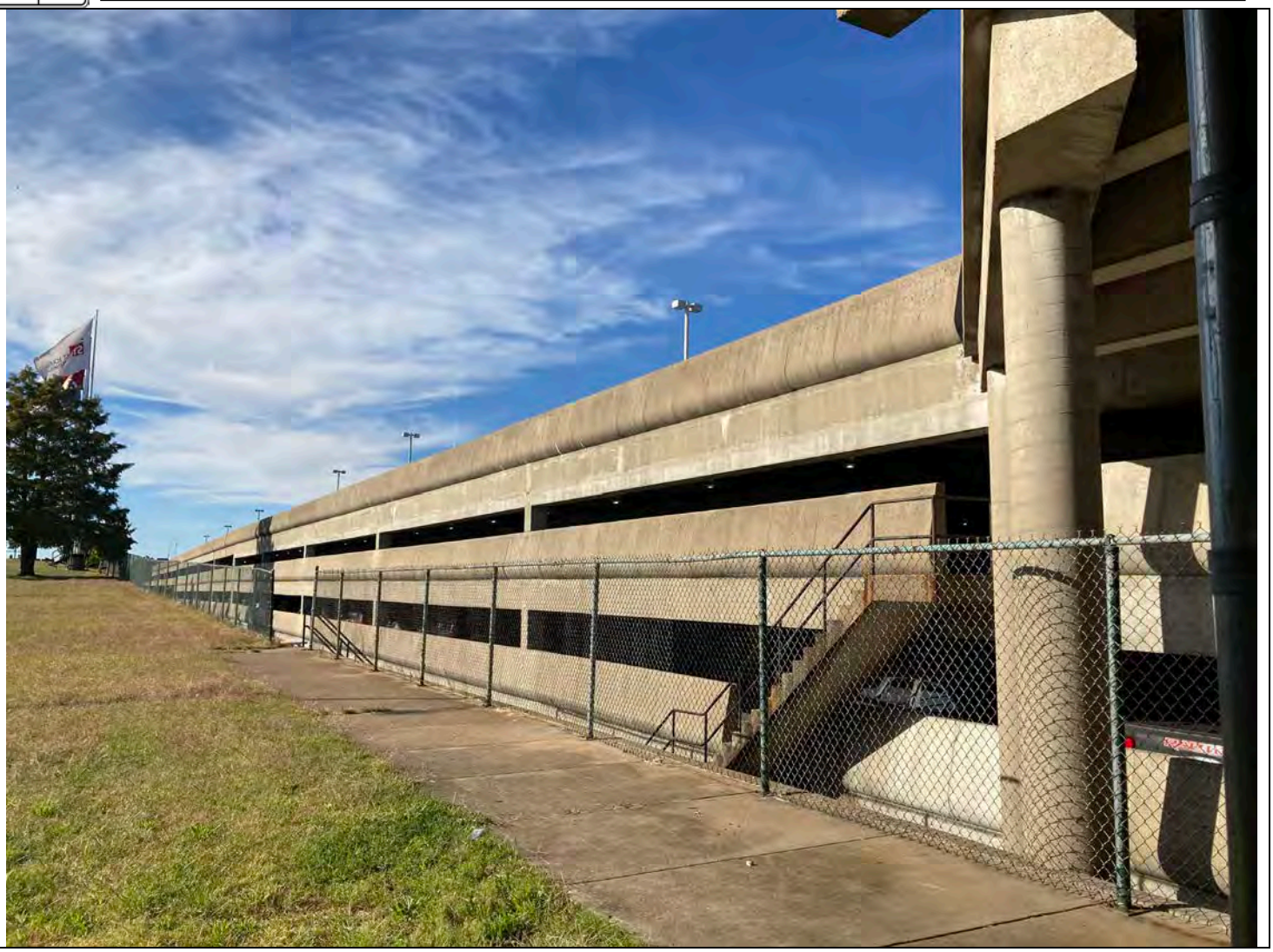


SITE MAP/PLAN (include north arrow)

See Survey Map Set

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest at south elevation from Lambert International Boulevard



ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Terminal 1 Parking Garage (Building 110)

Terminal 1 Parking Garage (Building 110) resulted from the airport's growth in passenger and freight traffic following the terminal's completion in 1956.The City of Saint Louis Airport Commission's 1969-70 annual report *Keeping Pace with Progress* identified the need to expand vehicular access to the airport, and construction of Building 110 Terminal 1 Parking Garage began in July 1969 on a 3,000-space parking garage at a cost of $8.5 million. The Commission wanted the future parking garage to be as close as possible to the original terminal so it could become integrated with the terminal and airport's functionality, and the progress report featured images of its construction that showed the structure's proximity to and incorporation with vehicular and pedestrian access at both the passenger and finger levels of the terminal. When completed in 1972, further connections to the terminal were created by two steel and glass staircase structures affixed to the garage's northeast elevation. The parking garage was later altered in 1995 through construction of a circular car ramp on its southeast side as part of an access road redesign project that included replacement of the original tollbooths. This ramp complemented the original semi-circular vehicular ramps that connected all levels of the structure, while the straight ramps were severed or altered as the traffic flow pattern in the garage changed. Another alteration in 1995 included a new center steel and glass staircase located between the two original ones that flank it. In 2010-2012, all three northeast elevation staircases were altered for elevator access.

Significance

Building 110 Terminal 1 Parking Garage was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

Building 110 Terminal 1 Parking Garage is not significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The garage was built for St. Louis-Lambert Airport to alleviate parking capacity concerns in 1972. It is not associated with aviation improvements at the airport and was not built in concert with the airport's construction in the 1950s.

Building 110 Terminal 1 Parking Garage is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

Building 110 Terminal 1 Parking Garage is not significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. It is a common and utilitarian example of a parking garage with modest Brutalist references. It was later altered in 1995 with a new vehicular ramp and 2010-2012 alterations to the northeast staircases for elevator access. Its type and features do not indicate architectural significance.

The property was not evaluated under Criterion D as part of this assessment.

Therefore, the property is not eligible for inclusion in the NRHP.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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Wright, John A., Ina Watson, J. Luther Covington, and Victoria Cothran. *Kinloch: Yesterday Today and Tomorrow*. Kinloch: Kinloch History Committee, 1983. PDF download.

40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

Terminal 1 Parking Garage (Building 110) is located southwest of Terminal 1 and is connected to arrivals and departures circulation roadways. It is surrounded by arrivals and departures roadways as well as Lambert International Boulevard.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

Terminal 1 Parking Garage (Building 110) is a rectangular, four-story, reinforced concrete parking garage built in 1972 and later altered in 1995 and 2010-2012. The garage is constructed partially below grade and located on a northwest-southeast axis parallel to Terminal 1 and is surrounding by terminal access roads on three sides and Lambert International Boulevard along its southwest elevation. Each level within the parking garage is nearly identical, although the top, rooftop level contains pedestrian and vehicular circulation elements not visible elsewhere as well as three tollbooths on the northwest corner. Overall, the parking garage is characterized by its horizontality and massing, with modest references to Brutalism exhibited in its railings, ramps, and pedestrian features. Elevations are generally similar with terminal connections on its northeast elevation.

Vehicular access to and within the garage is provided by three ramps that connect the garage to access roads or certain levels of the garage and four interior semi-circular ramps that connect all levels of the structure. Two of these interior ramps feature semi-circular double concrete staircases for pedestrian access while an additional three interior single concrete staircases are located further south. Curved, concrete coverings provide shelter over both the double and single concrete pedestrian staircases. Connecting the northeast elevation of the parking garage with the terminal are three staircases enclosed in glass and steel that pass at grade and under terminal arrivals and departures roads to allow pedestrian access. The center glass and steel staircase structure dates from 1995 and was altered in 2010-2012 while the two flanking glass and steel staircase structures are original to the 1972 garage with alterations completed between 2010-2012.

Alterations

c. 1995 the parking garage underwent a redesign with the addition of a circular vehicle ramp to the southeast side of garage as part of access road redesign project and the original tollbooths were replaced and two of the three straight ramps were removed or altered to accommodate different traffic flow patterns within the garage. A new steel and glass staircase structure was added to the northeast elevation between the two original ones.

c. 2010-2012 three flanking northeast elevation staircases underwent alterations for elevator access while center staircase remained unaltered.

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward the south elevation and tunnel connecting to surface parking lot from lower parking level

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking southwest toward the 1995 east ramp from Terminal 1

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking northwest toward the upper level parking lot from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking west toward double staircase canopy from upper level parking lot from Lambert International Boulevard

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2022	Looking south toward single staircase canopy from upper level parking lot from Terminal 1

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE, P.O. Box 176, Jefferson City, MO 65102

ARCHITECTURAL/HISTORIC INVENTORY FORM

1. Survey No. SL-AS-001-0051		2. Survey name: STL Consolidated Terminal Program	
3. County: St. Louis		4. Address (Street No.) 10701	Street (name) Lambert International Boulevard
5.City: St. Louis	Vicinity: ☐	6. Geographical Reference: Lat.: 38.742801 Long.: -90.366230	7. Township/Range/Section: T: T: 46N R: 6E S: 6
8.Historic name (if known): Terminal Building		9. Present/other name (if known): Terminal 1 (Building 101)	
10. Ownership: ☐ Private ☒ Public		11a. Historic use (if known): Transportation/air-related	11b. Current use: Transportation/air-related

HISTORICAL INFORMATION

12. Construction date: 1956; 1966	15. Architect: Hellmuth, Yamasaki & Leinweber, arch.; William C. E. Becker, struct. eng.; Ferris & Hamig, mech. eng.; L & R Construction Co.; V & M Contracting Co., general contractors 4th Dome Hellmuth, Obata &Kassabaum, arch.; William C. E. Becker, struct. eng.; Ferris & Hamig, mech. eng. C. Rallo Contracting Co., Inc., general construction; Haughton Elevator Co., elevator & moving stairways; Natkin & Company, plumbing and drainage; Phil L. Miller Plumbing & Heating, heating and AC; Briner Electric Co., electrical work	18. Previously surveyed? ☒ Cite survey name in box 22 cont. (page 3)
13. Significant date/period: 1956-1966	16. Builder/contractor:	19. On National Register? ☐ individual ☐ district Cite nomination name in box 22 cont. (page 3)
14. Area(s) of significance: Transportation	17. Original or significant owner: City of St. Louis	20. National Register eligible? ☒ individually eligible ☐ district potential (☐ C ☐ NC) ☐ not eligible ☐ not determined
21. History and significance on continuation page. ☒		22. Sources of information on continuation page. ☒

ARCHITECTURAL INFORMATION

23. Category of property: ☒ building(s) ☐ site ☐ structure ☐ object	30: Roof material: Copper; bituminous membrane	37.Windows: ☒ historic ☐ replacement Pane arrangement: Fixed, multi-light
24. Vernacular or property type: Airport terminal	31. Chimney placement:	38. Acreage (rural): Visible from public road? ☐
25. Architectural Style: Neo Expressionist	32. Structural system: Steel frame; reinforced concrete	39. Changes (describe in box 41 cont.): ☒ Addition(s) Date(s): 1966, 1972, 1975, c. 1990s ☒ Altered Date(s): c.1979, 2011 ☐ Moved Date(s): ☐Other Date(s): Endangered by:
26. Plan shape: Irregular	33. Exterior wall cladding: Aluminum, concrete, stainless steel, cast stone, glass	
27. No. of stories: 3	34. Foundation material: Concrete	
28. No. of bays (1st floor): 7	35. Basement type: Full	40. No. of outbuildings (describe in box 40 cont.):
29. Roof type: Vault, flat	36. Front porch type/placement:	41. Further description of building features and associated resources on continuation page. ☒

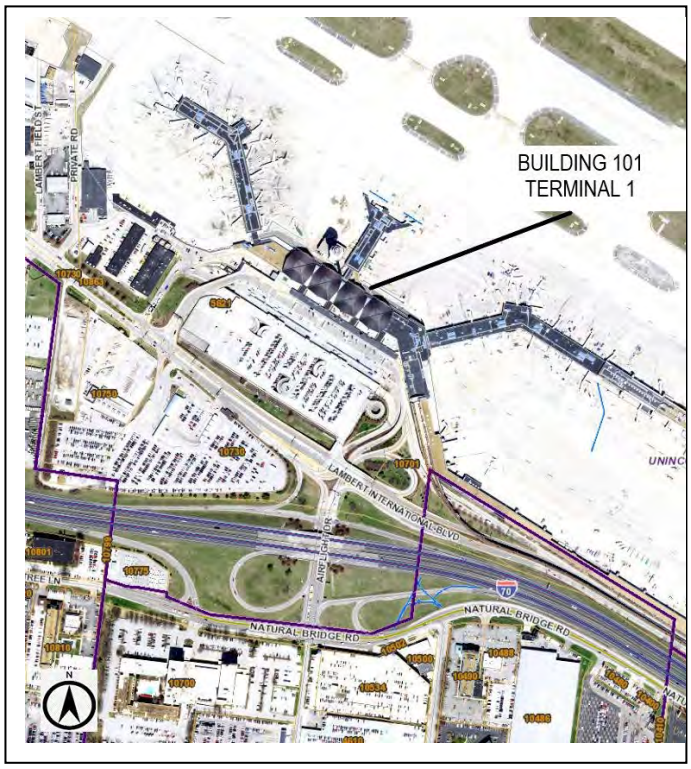
ARCHITECTURAL/HISTORIC INVENTORY FORM
~~OTHER~~

42. Current owner/address:	43.Form prepared by (name and org.):	44. Survey date: 10/03/2022
STL Airport Administration 10701 Lambert International Blvd. St. Louis, MO 63145	Hansel A. Hernandez, WSP, Inc.	45. Date of revisions:

FOR SHPO USE

Date entered in inventory:	Level of survey ☐ reconnaissance ☐ intensive	Additional research needed? ☐ yes ☐ no
National Register Status: ☐ listed ☐ in listed district Name: ☐ pending listing ☐ eligible (individually) ☐ eligible (district) ☐ not eligible ☐ not determined	Other:	

LOCATION MAP (include north arrow)



SITE MAP/PLAN (include north arrow)

PHOTOGRAPH

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking northwest toward the south façade from front Departures drop off marginal road

ARCHITECTURAL/HISTORIC INVENTORY FORM

ADDITIONAL INFORMATION:

21. (cont.) History and significance. Expand box as necessary, or add continuation pages.

Lambert Field to St. Louis Lambert International Airport

The airport is located between the cities of Berkeley and Bridgeton, Missouri, which developed as agricultural communities northwest of St. Louis. Areas cleared for farmland were suitable for aviation activities beginning in the early 20th century. In the first decades of the 20th century, Kinloch (now Berkeley) hosted the Aero Club of St. Louis, formed in September 1906 at the Kinloch Flying Field. Prominent local citizen and aviation enthusiast Albert Bond Lambert founded the organization and championed aviation in St. Louis by hosting events and races that demonstrated this new aviation technology. After the sudden closure of the airfield due to lease disputes in 1912, Lambert sought to reopen Kinloch without success. However, other airfields appeared during this period in Anglum (later Robertson) and North Broadway. Lambert organized the Missouri Aeronautical Society to train balloon pilots following United States entry into World War I in April 1917. In 1920, Lambert and the Missouri Aeronautical Society leased 170 acres in Bridgeton to establish the St. Louis Flying Field, later renamed Lambert St. Louis Flying Field (and colloquially known as Lambert Field) in 1923.

During the 1920s and 1930s, Lambert Field served as a site for recreational flying, a stop on the new transcontinental airmail service, as well as military posts. In 1923, the Missouri Air National Guard (MoANG) began operating from Lambert Field, and a naval air station was established shortly thereafter in 1925. With the lease for Lambert Field expiring in 1925, Lambert purchased the flying field and in 1927 offered it to the City of St. Louis, which purchased Lambert Field the following year and subsequently developed and opened Lambert-St. Louis Municipal Airport in 1930 with a dedicated passenger terminal opening in 1933. While projects to extend the airport's runways continued throughout the decade, the increase in passenger travel and freight traffic strained the 1933 terminal. Land adjacent to the airport developed into locations for airplane manufacturing, and during World War II, the airport and vicinity experienced a surge of military traffic and became a manufacturing center for aircraft builder Curtiss-Wright.

Following World War II, the airport struggled with capacity issues and the expansion of civilian air travel. In 1951, the airport engaged the architectural firm Hellmuth, Yamasaki, and Leinweber to design a new terminal, maintenance buildings, and supporting airport operation facilities. Minoru Yamasaki, the terminal's principal designer, created a terminal with three distinctive groin-vaulted domes inspired by Jet Age design motifs and extensively utilizing glass-and-steel construction that allowed for unencumbered interiors, free-flowing natural light, and a sense of flight. Construction on the expansive airport overhaul and new terminal commenced in 1953 and was completed in 1956.

Following the terminal's completion in 1956, Lambert St. Louis Municipal Airport experienced almost continuous change and expansion. The naval air station vacated the airport in 1958 and relocated to Niagara Falls, New York. By 1962, it was the sixth-busiest airport in the United States, and with increasing air travel, it was fast outgrowing its runways and facilities. A secondary airport serving the greater St. Louis area opened in 1964 (Spirit of St. Louis Airport), and Lambert-St. Louis Municipal Airport expanded by building its fourth dome at the main terminal in 1966. Plans for the 1956 terminal show that the original design could support up to six domes, though only four were ever completed. In 1970, the airport's official name became St. Louis International Airport, though it was later revised to Lambert-St. Louis International Airport in 1971 following outcry by aviation community organizations and Charles Lindbergh to acknowledge Lambert's contribution to aviation in the city. The airport continued to expand during this time and added a four-level, 3,000-car parking garage in front of the domed terminal in 1972 as part of a larger facility expansion and modernization project that began in the late 1960s. A new international concourse opened east of the easternmost terminal dome in 1974, and continued expansion throughout the 1980s made Lambert-St. Louis International Airport a major hub for Trans World Airlines. Upon the completion of Terminal 2 in 1998 and a new runway to the west in 2006, the airport reached its current footprint. MoANG departed from the airport in 2009 and the airport name was revised to St. Louis Lambert International Airport in 2016.

Minoru Yamasaki (1912-1986)

Yamasaki was a first generation Japanese-American architect born in Seattle, Washington. After finishing degrees at the University of Washington and New York University, he settled in Detroit in 1945 and joined the firm of Smith Hichman & Gryllis as head of the design department. He designed the annex to the Federal Reserve Branch Bank in Detroit, which became the first major postwar building and International Style building in that city. With two other members of the staff, he founded Hellmuth, Yamasaki & Leinweber in 1949 with offices in Detroit and St. Louis. The 1956 project for the new Lambert-St. Louis Municipal Airport won the AIA First Honor Award and brought Yamasaki critical acclaim. He developed a signature style of tall, narrow windows, antiquity-inspired arches and vaults, and open ground-level spaces. In 1957, Yamasaki founded Yamasaki & Associates. Other significant projects include the McGregor Memorial Conference Center at Wayne State University in Detroit (1958), the Reynolds Metal Company Building in Detroit (1959), the Dhahran Air Terminal, Saudi Arabia (1961), the U. S. Science Pavilion at the Seattle World's Fair (1962), the North Shore Congregation Israel in Glencoe, Illinois (1964), the World Trade Center in New York (1972), and the Century Plaza Towers in Los Angeles (1975). He died in 1986.

Terminal Building Design and Alterations

When completed, the Terminal Building was described as "the Grand Central of the Air" in reference to the great hall at New York's

Grand Central Terminal. Its principal designer, Minoru Yamasaki, focused on creating a terminal interior space that could be as airy, open, and uncluttered as the business of an air terminal could allow; he wanted it to be a "gateway" similar to the arch that his friend, architect Eero Saarinen had designed a few years earlier for the St. Louis waterfront. His design distributed functions inside the new terminal into three distinct levels: an "apron" or lower level of service facilities and the ramp area for aircraft; a "finger floor" for arriving and departing passengers in the middle; and a top level known as the passenger floor for ticketing agents, departing passengers, and the public. Conceptually, the fingers, or passenger concourses, broke new ground and were highly influential in airport design: they were to be enclosed heated walkways projecting from the terminal building into the runways with active gate positions where airlines would pick up and drop off passengers. The concept of passenger concourses was highly influential and became the new paradigm in airport design in years to come, manifested most prominently in Saarinen's 1962 design for the TWA Flight Center at New York's Idlewild Airport (John F. Kennedy International Airport).

After trying other types of roofing to cover the 412-long new terminal, Yamasaki sought inspiration from the Ancient World and settled on three copper-sheathed 120-foot square groin vaults, 32 feet high, and powerfully braced on the upper side with concrete ribs that reach a depth of about seven feet at the outside ends. The outside edges of the 4 ½-inch shells are thickened for extra resistance. To brace the vault support corners against outward thrust, heavy diagonal reinforcing bars were also added. The terminal featured three passenger concourses with twenty-eight gates capable of accommodating 1.2 million passengers each year. In 1956, the new terminal became the first building in St. Louis to receive a National AIA Honor award. The bold, innovative, and influential dome scheme, as designed by Yamasaki for Lambert, put St. Louis at the forefront of airport design as it once had been in the early years of aviation. Hellmuth, Obata & Kassabaum, Yamasaki's former firm, added a fourth dome in 1966 based on his designs.

Later airport projects had a major impact on the Terminal Building. These include construction of Terminal 1 Parking Garage, a 4-level, 3,000-car parking garage built in front of Terminal 1 that opened in 1972, an international wing added east of the Terminal Building's fourth dome in 1975, and removal and replacement of the entrance canopies on the south side of the Terminal Building in 1979. The terminal's original concourses also underwent changes, particularly lengthening, over the years and in 1979 were extensively modified including widening and double-decking. Changes in the 1990s include the additions of Concourses D and E southeast of Terminal 1, a new control tower, and a Metrolink station. Changes throughout the Terminal Building's non-public lower levels include window and opening modifications and later-constructed minor additions that occurred at unknown dates.

Significance

The Terminal Building was evaluated for the National Register of Historic Places (NRHP) by applying the Criteria for Evaluation (36 C.F.R. § 60.4) and using guidelines set forth in the NRHP Bulletin "How to Apply the National Register Criteria for Evaluation."

The Terminal Building is significant under Criterion A, association with events that have made a significant contribution to the broad patterns of our history. The Terminal Building was part of an extensive project to replace the 1930 Lambert Airfield, St. Louis' original airport, and when finished in 1956, the Terminal Building was one of the most advanced in the country. Its capacity improvements made Lambert St. Louis Municipal Airport one of the few civilian airports in the country able to handle the new generation of jetliners. The creation of the new Lambert St. Louis Municipal Airport made a significant contribution to the economic and urban development history of the City of St. Louis. During its first decade, the airport became St. Louis' symbolic gateway for those arriving by air.

The Terminal Building is not significant under Criterion B, association with lives of persons significant in our past. Research did not indicate any significant historical associations with individuals whose specific contributions to history can be identified or are demonstrably important within a local, State, or national historic context.

The Terminal Building, which is limited to the terminal and its four domes, is significant under Criterion C, properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction. The Terminal Building is emblematic of early Jet Age architecture, a Modernistic design aesthetic which blended ideals and concepts of flight and futurism. Jet Age architecture began being constructed in earnest following the opening of the Terminal Building in St. Louis, which became a harbinger for subsequent airport redevelopment and design efforts at Los Angeles International Airport (1961), TWA Flight Center at Idlewild Airport (1962), and Dulles International Airport (1962). Further, the Terminal Building is the work of a master, Minoru Yamasaki, who was a prominent and influential Modern architect throughout the twentieth century. The Terminal Building's vaulted ceilings, use of natural light and high windows, and expansive and open interior space are notable characteristics of Jet Age architecture and the work of Yamasaki.

The property was not evaluated under Criterion D as part of this assessment.

Terminal 1 (Building 101), comprising only the terminal and its four domes, retains integrity of location, design, workmanship, materials, feeling, and association. While some modifications have occurred to the terminal as part of later concourse construction, air traffic control tower construction, passenger drop-off, and Metrolink access, the building's iconic domes and interior ticketing spaces remain largely unaltered. Its integrity of setting has been diminished over time due to construction of newer airport facilities, modifications to the concourses, construction of the air traffic control tower, and major changes to the Terminal 1 (Building 101) views facing south, which are now blocked by a concrete parking garage and obscure views toward the terminal. The Terminal Building retains its integrity of feeling as a mid-century, Jet Age airport terminal and its integrity of association with air travel modernization during the twentieth century.

Extensive alterations to the three 1956 concourses substantially diminished the integrity of design, workmanship, and materials such that they no longer have the ability to convey Yamasaki's original design intent. Similarly, their integrity of feeling and association have also been greatly diminished by the subsequent additions and alterations and no longer express a sense of Jet Age or mid-century airport design or function. Thus, the concourses are considered noncontributing to the Terminal Building and are excluded from its historic property boundary.

Therefore, the Terminal Building, comprising its terminal and four domes, are eligible for inclusion in the NRHP.

Its period of significance is 1956-1966, the building's date of construction through construction of the fourth dome.

Due to subsequent additions and alterations, the historic property boundary for the Terminal Building is the footprint of the original terminal comprising the four domes.

22. (cont.) Sources of information. Expand box as necessary, or add continuation pages.

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40. (cont.) Description of environment and outbuildings. Expand box as necessary, or add continuation pages.

The Terminal Building is framed by the southern edge of Runway 12R-30L along the north, by Lambert International Boulevard along the south, various airport support facilities on the west, and Concourse D on the east. Asphalt and concrete-paved driveways and taxiways, as well as concrete sidewalks, surround the building. A large concrete parking structure is located directly southwest.

41. (cont.) Description of primary resource. Expand box as necessary, or add continuation pages.

The Terminal Building is comprised of a passenger terminal and three passenger concourses, which sit on concrete foundations and occupy an irregular/polygonal footprint, south of Runway 12R-30L and facing south toward Lambert International Boulevard.

The terminal is a south-facing, linear one-story passenger building featuring triple-height domes at street level with a basement and a sub-basement facing the runway at its rear elevation. The façade features four square pavilions, each topped with concrete groin vaults which spring from the ground, braced on the upper side with concrete ribs, and sheathed with standing seam copper. The domes feature limestone-clad fasciae framing triple-height metal-framed glazed curtain walls. Tall, arched metal and tinted glass skylights link the domes creating a continuous 412-foot-long terminal. Each dome has an open concrete terrace facing the street; the westernmost terrace features a metal-and-glass shelter housing an exhaust chimney and an AstroTurf dog area. A long, flat, concrete and metal-clad canopy at curbside fronts the terminal building from east to west, but only partially at the westernmost dome. Flat-roof, enclosed entrance vestibules lead from the street canopy into the terminal's interior at each skylight. The easternmost vestibule irregularly abuts the southeast corner of the fourth dome. The terminal's east elevation features a one-story, L-shaped addition on the easternmost dome that connects to Building 105 Concourse C and to the Metrolink Station platform. The terminal also has below-grade levels facing north toward the runway. The west elevation features a below grade, two-story extension serving as a loading dock and connecting to

Building 103 Concourse A. Along the north elevation of the terminal building, some sections of the 1956 finger and apron sub levels design remain visible; they feature ribbons of tall, fixed metal windows on both levels with stone spandrels between them; however the majority have been considerably altered with new additions and new solid metal cladding and glazing or filled-in with new cast stone cladding.

Between the terminal building and the parking garage to the south is a below-grade access road and a building-wide cast stone and concrete retaining wall with double functions: providing direct access to the apron or arrival lower/ baggage claim level of the terminal, as well as intermodal transportation access for taxis, car share services, and city buses. Stair and ramp metal-and-glass enclosures, bus shelters, and exit canopies are found at curbside and appear to be later additions. At the road median are additional bus shelters consisting of steel beams supporting metal canopies with glass rear walls.

Concourse A (Building 103)

The three-story, flat roof, L-shaped building is connected to the west addition to the westernmost dome. It is divided into an open lower level featuring concrete columns that support the metal-clad passenger level featuring ribbons of tall, fixed metal windows. At intervals, the passenger level features metal doors used to connect to the moveable passenger boarding bridges.

Concourse B (Building 104)

The short, three-story, flat roof, Y-shaped building is connected to the rear elevation of the terminal building. It is divided into a lower level which is open, featuring concrete columns and bays with metal doors and rolldown gates. At the east and west elevations, the metal-clad passenger level has ribbons of tall, fixed metal windows. At intervals, the passenger level also features metal doors used to connect to the moveable passenger boarding bridges. The northernmost, splayed portion of the concourse is clad in Exterior Insulation Finishing System (EIFS), an insulation composite cladding system. At the center of the two splayed wings is a small control tower used by the Airport Operations Center for daily airfield maintenance. At the east elevation of the concourse there are two two-story, T-shaped enclosed staircase towers with a cast stone-clad base and an EIFS-clad upper floor.

Concourse C (Building 105)

The flat roof, L-shaped building is connected to the southeast addition, east of the fourth dome, and is the longest of the three original concourses due to later extensions. From Gate 1 to Gate 21, the concourse is three stories high and is divided into a lower level which is open, featuring concrete columns, and bays with single and double metal doors and rolldown gates. The metal-clad passenger level has ribbons of tall, fixed metal windows, and a metal-clad parapet above. At intervals, the passenger level features metal doors used to connect to the moveable passenger boarding bridges. There is a small control tower atop Gate 10 used by the Airport Operations Center for daily airfield maintenance. From Gate 22 and to Gate 36, the concourse rises to four stories in height, is clad in metal panels with a continuous ribbon of fixed windows at the second floor and a short ribbon of smaller fixed metal windows at the third floor along the north and south elevations. Along the north and south elevations of the taller extension, there are two- and three-story enclosed concrete staircase towers attached to the sides of the building.

FAA Tower (Building 108)

Located behind the two westernmost domes of the terminal, and directly west of Building 104 Concourse B, is the c. 1998 air traffic control tower, which is part of a three-story office building facing north toward the runway. It occupies a rectangular footprint with a flat roof of bituminous membrane and a mechanical equipment metal enclosure. The façade is clad in concrete panels with ribbons of duranodic bronze aluminum fixed metal windows of dark-tinted glass, which are staggered across the façade at the east and west of the ground floor, at the east of the second floor, and across the third floor. The western corner features two upper floors of dark metal windows with faceted bays cantilevered above a recessed ground floor. Rising at the rear is the fifteen-story, steel-frame control tower, which is clad in precast concrete panels and flares outward as it reaches the top octagonal observation floor. Each of the eight large observation duranodic aluminum windows is recessed from concrete fasciae at lintel and sill. The conical roof terminates in an octagonal duranodic aluminum and glass inverted conical observation booth. Atop the booth is a recessed metal observation deck with metal railing. The entire tower's concrete is scored with deep-set joints. There is a single, small, center window opening at the lower level of the west elevation.

Additions and alterations
1972, four-level, 3,000-car parking structure built in front of Terminal 1;
c.1975, new international wing added to the east of the fourth dome;
c.1979, widening and double-decking of Concourses A, B, and C; three entrance canopies replaced by continuous linear metal canopy;
c. late 1990s, new Concourses D and E added southeast of Terminal 1; new control tower built; new Metrolink platform added to south of c.1975 international wing;
2011, domes' roof copper sheathing and glass windows replaced after tornado damage.

Photographer:	Date:	Description: 1952 model of new St. Louis Airport by Hellmuth, Yamasaki, Lienwebber. Source: *Economic Studies Terminal Building and Area Design for the City of St. Louis.* St. Louis Public Library Special Collections

Photographer:	Date:	Description: Looking northeast toward Dome 1 under construction, ca.1954. Source: *The Aerial Crossroads of America: St. Louis's Lambert Airport* by Daniel L. Rust

Photographer:	Date:	Description: 1955 construction photograph. Source: Airport Operations Office

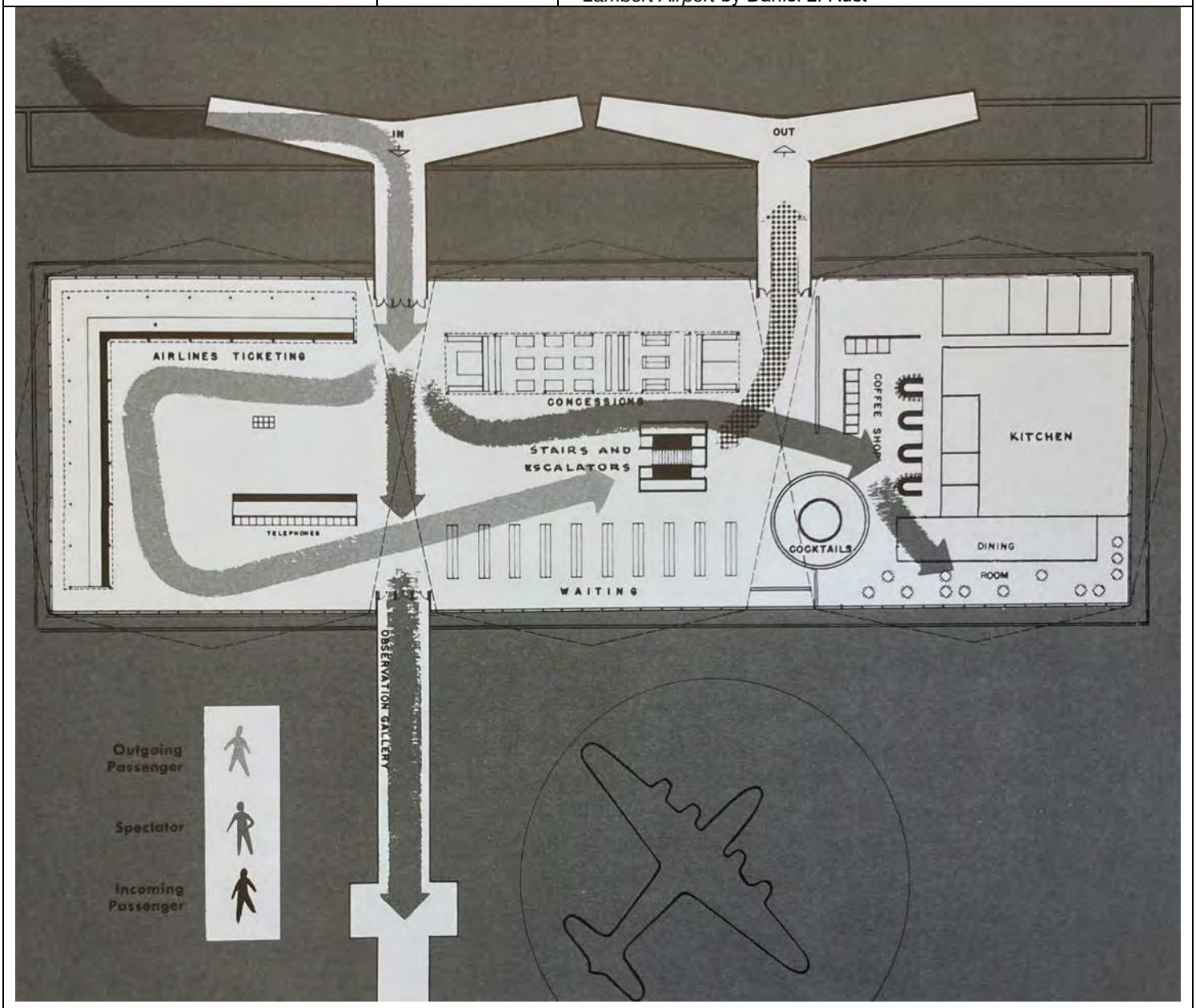
Photographer:	Date:	Description: Looking southwest toward rear of Terminal 1. March 1956. Source: *The Aerial Crossroads of America: St. Louis's Lambert Airport* by Daniel L. Rust

Photographer:	Date:	Description:
		Terminal 1 exterior. 1956 photograph. Source: State Historical Society Library, STL Airport Archives

Photographer:	Date:	Description: Terminal 1 Interior. 1956 photograph. Source: State Historical Society Library, STL Airport Archives

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
		Detail of circulation pattern from airport opening ceremony brochure. March 1956. Source: *The Aerial Crossroads of America: St. Louis's Lambert Airport* by Daniel L. Rust



ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking northeast toward south façade and west elevation of Dome 1 and control tower from Terminal 1 Parking Structure

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/2	Looking east toward the front canopy at Domes 1 and 2 from Terminal 1 Departure upper access road

ARCHITECTURAL/HISTORIC INVENTORY FORM

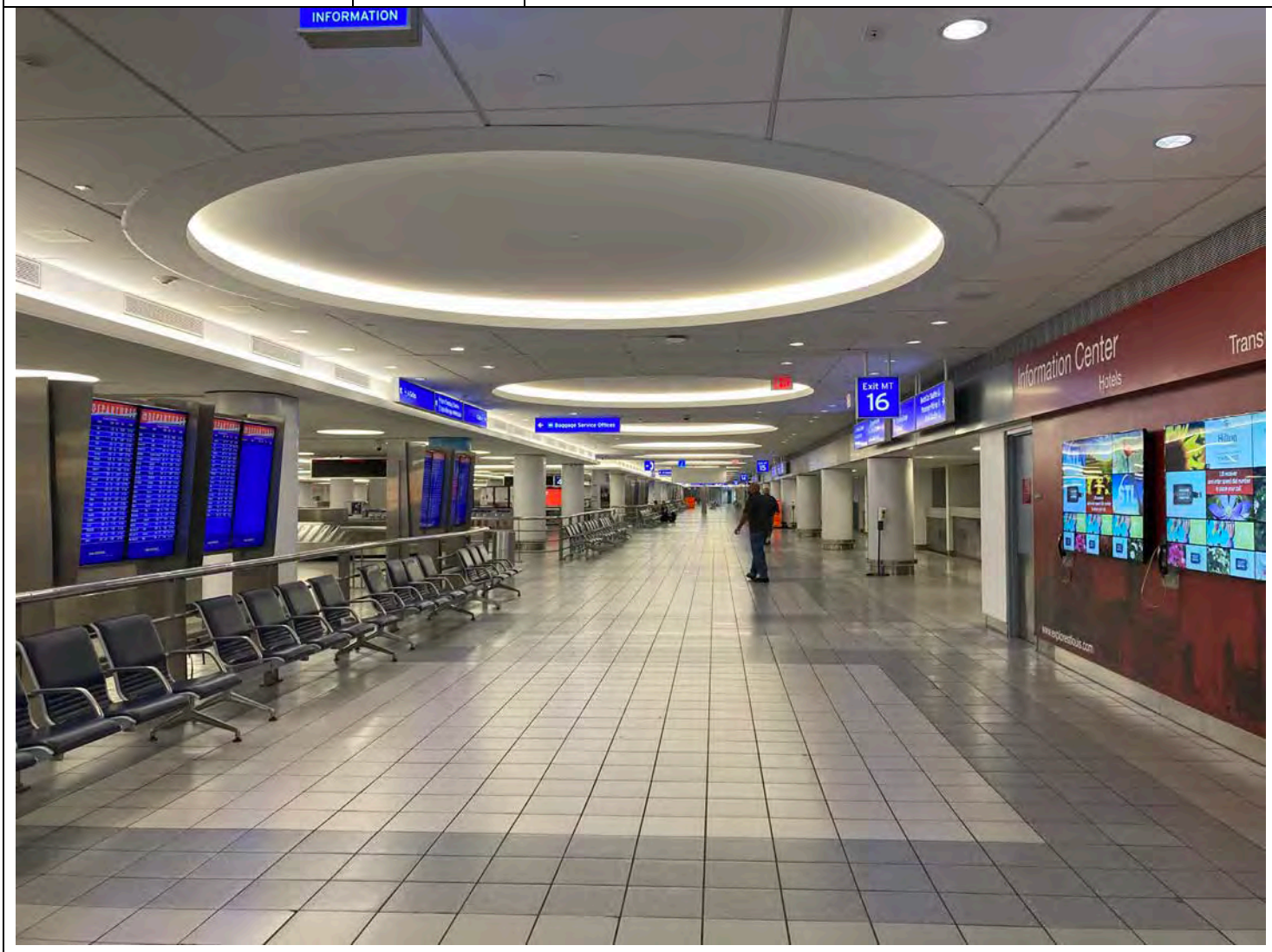
Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking west toward the south facing courtyard of Dome 4 from former International Terminal

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/222	Looking east toward the interior of upper level of Domes from former International Terminal

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/04/222	Looking west toward Terminal 1 baggage claim are at lower level from exit gate 18



ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking south toward the north elevation of Dome 1 from Runway 12R-30L

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking southwest toward east elevation of Concourse B and control tower from Runway 12R-30L

ARCHITECTURAL/HISTORIC INVENTORY FORM

Photographer:	Date:	Description:
Hansel A. Hernandez	10/03/222	Looking northwest toward the south elevation of Concourse C from Concourse D

SHPO Letter of Adverse Effect

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

August 8, 2023

St Louis Airport Authority
Attn: Gerald Beckmann
10701 Lambert International Blvd
St. Louis, MO 63145

Re: **SHPO Project Number: 156-SL-23** – Consolidated Terminal Program (CTP); St. Louis Lambert International Airport (STL), St. Louis County, Missouri (FAA)

Dear Gerald Beckmann:

Thank you for submitting information to the State Historic Preservation Office (SHPO) regarding the above-referenced project for review pursuant to Section 106 of the National Historic Preservation Act, P.L. 89-665, as amended (NHPA), and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which require identification and evaluation of historic properties.

We have reviewed the information regarding the above-referenced project and have included our comments on the following page(s). Please retain this documentation as evidence of consultation with the Missouri SHPO under Section 106 of the NHPA. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties. **Please be advised that, if the current project area or scope of work changes, such as a borrow area being added, or cultural materials are encountered during construction, appropriate information must be provided to this office for further review and comment.**

If you have questions please contact the SHPO at (573) 751-7858 or call/email Amy Rubingh, (573) 751-4589, amy.rubingh@dnr.mo.gov. If additional information is required please submit the information via email to MOSection106@dnr.mo.gov.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Brian Stith
Deputy Director Division of State Parks and
Deputy Missouri State Historic Preservation Officer

CC: Scott Tener, FAA
Guy Blanchard, WSP USA Inc.
Jennifer Kuchinski, WSP USA Inc.

SHPO Project Number: **156-SL-23** – Consolidated Terminal Program (CTP); St. Louis Lambert International Airport (STL), St. Louis County, Missouri (FAA)

COMMENTS:

We have reviewed the information provided concerning the above referenced project. Based on the information provided the project consists of the demolition of the Lambert Field Historic District, which is listed in the National Register of Historic Places. Therefore, we concur with your determination that the proposed project will have an **adverse effect** on historic properties. A Memorandum of Agreement (MOA) that outlines the steps needed to mitigate the adverse effect for this project will need to be drafted. Final stipulations in the MOA should be determined in consultation with the Federal Aviation Administration (FAA), our office, the Advisory Council on Historic Preservation (ACHP), if participating, and any other interested parties.

The FAA should forward the necessary adequate documentation as described to the ACHP at e106@achp.gov. Pending receipt of the Council's decision on whether it will participate in consultation, no action shall be taken which would foreclose Council consideration of alternatives to avoid or satisfactorily mitigate any adverse effect on the property in question. Please be sure to copy us on any correspondence to the ACHP.

SHPO Reviewer: Amy Rubingh, (573) 751-4589, amy.rubingh@dnr.mo.gov

SHPO Concurrence of Revised APE

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Michael L. Parson
Governor

Dru Buntin
Director

April 8, 2024

St Louis Airport Authority
Attn: Gerald Beckmann
10701 Lambert International Blvd
St. Louis, MO 63145

Re: **SHPO Project Number: 156-SL-23** – Consolidated Terminal Program (CTP); St. Louis Lambert International Airport (STL) – Revised Area of Potential Effect, 10701 Lambert International Blvd, St. Louis, St. Louis County, Missouri (FAA)

Dear Gerald Beckmann:

Thank you for submitting information to the State Historic Preservation Office (SHPO) regarding the above-referenced project for review pursuant to Section 106 of the National Historic Preservation Act, P.L. 89-665, as amended (NHPA), and the Advisory Council on Historic Preservation's regulation 36 CFR Part 800, which require identification and evaluation of historic properties.

We have reviewed the information regarding the above-referenced project and have included our comments on the following page(s). Please retain this documentation as evidence of consultation with the Missouri SHPO under Section 106 of the NHPA. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties. **Please be advised that, if the current project area or scope of work changes, such as a borrow area being added, or cultural materials are encountered during construction, appropriate information must be provided to this office for further review and comment.**

If you have questions please contact the SHPO at (573) 751-7858 or call/email Amy Rubingh, (573) 751-4589, amy.rubingh@dnr.mo.gov. If additional information is required please submit the information via email to MOSection106@dnr.mo.gov.

Sincerely,

STATE HISTORIC PRESERVATION OFFICE

Brian Stith
Deputy Director Division of State Parks and
Deputy Missouri State Historic Preservation Officer

c: Scott Tener, FAA
Guy Blanchard, WSP USA Inc.
Jennifer Kuchinski, WSP USA Inc.

SHPO Project Number: **156-SL-23** – Consolidated Terminal Program (CTP); St. Louis Lambert International Airport (STL) – Revised Area of Potential Effect, 10701 Lambert International Blvd, St. Louis, St. Louis County, Missouri (FAA)

COMMENTS:

Based on the information provided, we continue to concur that the consolidated terminal program at St. Louis International Airport will have an **adverse effect** on Lambert Field Historic District which is an NRHP-eligible property. The revised area of potential effects for the project includes demolition of Concourse D which has been determined not eligible for listing in the NHPA and reconfiguration of the roadways and highway surrounding the Missouri Air National Guard Facilities. The revised area of potential effects does not add any new buildings for mitigation.

A Memorandum of Agreement (MOA) that outlines the steps needed to mitigate the adverse effect for this project will need to be drafted. Final stipulations in the MOA should be determined in consultation with the Federal Aviation Administration (FAA), our office, the Advisory Council (if participating) and any other interested parties.

The FAA should forward the necessary adequate documentation as described to the Executive Director, Advisory Council on Historic Preservation, the Pension Building, 401 F Street NW, Suite 308, Washington, DC 20001-2637 or via their website at https://www.achp.gov/e106-email-form. Pending receipt of the Council's decision on whether it will participate in consultation, no action shall be taken which would foreclose Council consideration of alternatives to avoid or satisfactorily mitigate any adverse effect on the property in question. Please be sure to copy us on any correspondence to the ACHP.

SHPO Reviewer: Amy Rubingh, (573) 751-4589, amy.rubingh@dnr.mo.gov

FAA Coordination Letter to Tribes

U.S. Department
of Transportation
**Federal Aviation
Administration**

Central Region
Iowa, Kansas,
Missouri, Nebraska

901 Locust
Kansas City, Missouri 64106
(816) 329-2600

December 2, 2022

CERTIFIED MAIL

<NAME> [See Attached List]
<ADDRESS>

Section 106 Consultation
St. Louis Lambert International
St. Louis, St. Louis County, Missouri

Dear <NAME>:

Environmental Assessments (EA) are being prepared for proposed undertakings at the St. Louis Lambert International Airport (airport sponsor) subject to the National Environmental Policy Act (NEPA). In conjunction with the NEPA process, the Federal Aviation Administration (FAA) intends to complete Section 106 of the National Historic Preservation Act (NHPA), as implemented through 36 CFR 800. The intent of this letter is to request your input on properties of cultural or religious significance that may be affected by the proposed projects and invite you to participate in the Section 106 consultation process.

Consistent with the Airport's Master Plan, STL proposes two multi-phase improvement projects:

- Consolidated Terminal Program (CTP)
- West Airfield Program (WAP)

Consolidated Terminal Program (CTP)

The sponsor proposes to consolidate air carrier and passenger operations currently at Terminals 1 and 2 into a new, single terminal and linear concourse at Terminal 1. The existing concourses (A, B, and C) connected to Terminal 1 would be demolished. Terminal 2 and the connecting Concourse D would remain in place, be decommissioned as an airline passenger terminal, and be repurposed for some other Airport function, which will be determined in the course of future planning. Project activities would not increase the number of passengers or aircraft operations.

Terminal 1's existing domes, previously determined to be eligible for listing in the National Register of Historic Places (NRHP), would remain as part of a new head house that includes passenger processing, ticketing, immigration and customs services, and baggage claim areas. The spaces directly under the domes would continue to serve as the terminal ticketing area with interior layout improvements to increase operational efficiency. The level beneath the ticketing area, Baggage Claim, would be expanded to accommodate additional baggage claim units. A new security checkpoint would be constructed between Terminal 1's domed entry hall and the proposed linear concourse. The new security checkpoint would consolidate all security screening

in a single location. After clearing the security checkpoint, passengers would access the new concourse, which will accommodate up to 62 gates. In order to construct the new concourse and associated improvements, existing airport facilities west and south of Terminal 1 would be demolished and/or relocated, including the former Missouri Air National Guard facility, which was also previously determined NRHP-eligible and is currently vacant.

Associated improvements include demolition and reconstruction of the existing parking garage adjacent to Terminal 1. The new parking garage would exist within a substantially similar footprint. Roadway circulation improvements are also proposed for Lambert International Boulevard and connections to Interstate 70 within or near existing on-airport access roads.

West Airfield Program (WAP)

The sponsor proposes to relocate the airfield maintenance facility (AFM) and construct a west deicing pad (WDP). Associated improvements include demolition of the existing AFM facility, realignment of access roads to new AFM facility, realignment of taxiway system, and construction of storm water detention.

The drivers of the AFM campus relocation are the periodic flooding of the facility, consolidating deicing operations for eastbound departures at a larger west deicing pad which requires relocation of the AFM, and remediation of nonstandard Taxiway T. Existing deicing facilities are beyond capacity at STL. During peak periods, the deicing positions are fully utilized, requiring aircraft to seek deicing on the eastern pads, thus affecting hold over times and resulting in an inefficient airfield with potential for safety risks (such as unnecessary taxiing during winter operations). Without improvements to west end deicing, the existing system far exceeds capacity almost every hour of the morning push which can lead to significant system delays downstream.

The AFM buildings were built in the late 70s and early 80s. All are reaching the end of their service life, requiring significant maintenance and replacement projects. Furthermore, the buildings were also sized for maintenance and storage building standards that no longer meet FAA standards for clearance around equipment during its storage and/or maintenance. In many cases, there is not adequate, safe working or maneuvering room inside the buildings around equipment. Many of the buildings were also sized for equipment and machinery that no longer is in use and that was much smaller in size than today's modern equipment

The preferred site offers the space needed to house modern airport maintenance equipment. Further, the preferred location is outside the planned relocation area for the Taxiway T project to address FAA Design standards, is outside of the planned location for a future consolidated West Deicing pad, and is at a higher elevation, eliminating existing flooding issues.

Both, CTP and WAP, project activities would occur in areas where similar airport infrastructure and facilities currently exist. Current airport operations would continue throughout construction, limiting discernible changes to existing noise and other atmospheric effects. No changes are proposed to existing flight patterns or runway configurations, which have been continuously altered and expanded over multiple decades. Roadway circulation improvements, including connections to Interstate 70, would be consistent with existing roadway infrastructure near and within the airport property.

Ground-disturbing activities required for project implementation would occur in areas previously disturbed through decades of airport improvements. Further, prior archaeological field investigations were conducted as part of a 1997 Environmental Impact Statement, and no archaeological sites were identified within the current proposed project footprints as part of that EIS. As a result, a vertical or archaeological APE has not been delineated for this undertaking.

Two exhibits are attached to this letter for informational purposes. **Exhibit A** is a general location map and **Exhibit B** shows the proposed undertakings as described above.

The FAA is the lead federal agency for the NEPA document. Jim Johnson, Director, FAA Central Region Airports Division, will be making the final FAA decision on the environmental determination.

To help in our preparation of the EA, we would appreciate your input (via mail or e-mail) within thirty (30) days. If you have questions or require additional information, please contact me at 816-329-2639 or scott.tener@faa.gov.

Sincerely,

Scott Tener
Environmental Specialist

Attachment (Vicinity Map, Project Map)

FAA Coordination Letter List of Contacts/Recipients

Tribal Coordination – Environmental Evaluation 11/28/2022
Consolidated Terminal Program (CTP)
St. Louis Lambert International Airport, St. Louis, St. Louis County, Missouri

This website is recommended by ACHP: https://egis.hud.gov/TDAT/

Contact	Delivered	Response Returned	Action Requested
Mr. Bobby Komardley, Chairman Apache Tribe of Oklahoma PO Box 1330 Anadarko, OK 73005	12/13/22	1/23/23-No Response	Cert Mail#70220410000331736290
Mr. Paul Barton, THPO Eastern Shawnee Tribe of Oklahoma 12705 South 705 Road Wyandotte, OK 74370	12/13/22	**1/9/23-No Adverse Effect**	Cert Mail#70220410000331736283
Ms. Amy Scott Cultural Preservation Department Iowa Tribe of Oklahoma 335588 E 750 Road Perkins, OK 74059	12/12/22	1/23/23-No Response	Cert Mail#70220410000331736276
Ms. Crystal Douglas, THPO Kaw Nation P.O. Box 50 Kaw City, OK 74641	12/10/22	1/23/23-No Response	Cert Mail#70220410000331736269
Ms. Nellie Cadue Director, Land Department Kickapoo Tribe in Kansas 1107 Goldfinch Rd Horton, KS 66439	12/8/22	1/23/23-No Response	Cert Mail#70220410000331736252
Ms. Diane Hunter, THPO Miami Tribe of Oklahoma P.O. Box 1326 Miami, OK 74355	Email: 12/2/22	1/23/23-No Response	dhunter@miamination.com
Mr. Thomas Parker, THPO Omaha Tribe of Nebraska P.O. Box 368 Macy, NE 68039	12/8/22	1/23/23-No Response	Cert Mail#70220410000331736245
Dr. Andrea Hunter, THPO Osage Nation 627 Grandview Avenue Pawhuska, OK 74056	12/12/22	1/18/23-Request for more info.	Cert Mail#70220410000331736238 **Email 1/29/24-Request to be signatory and include monitoring**

			since MOA will be needed with SHPO. Email 4/6/2023-Request archaeological monitoring during construction, no MOA needed.
Mr. Craig Harper, Chief Peoria Tribe of Indians of Oklahoma PO Box 1527 Miami, OK 74355	12/12/22	1/23/23-No Response	Cert Mail#70220410000331736221
Mr. Shannon Wright, THPO Ponca Tribe of Nebraska PO BOX 288 Niobrara NE 68760	12/9/22	1/23/23-No Response	Cert Mail#70220410000331736214
Mr. Everett Bandy, THPO Quapaw Tribe of Indians PO Box 765 Quapaw, OK 74363-0765	12/20/22	1/23/23-No Response	Cert Mail#70220410000331736207
Mr. William Tarrant, THPO Seneca-Cayuga Nation PO Box 453220 Grove, OK 74345	USPS 1/9/23	1/23/23-No Response	Cert Mail#70220410000331736191

Eastern Shawnee Tribe of Oklahoma Letter

EASTERN SHAWNEE
CULTURAL PRESERVATION DEPARTMENT
70500 East 128 Road, Wyandotte, OK 74370

January 9, 2023

US Department of Transportation Federal Aviation
901 Locust
Kansas City, Missouri 64106

RE: ***St. Louis Lambert International, St. Louis, St. Louis County, Missouri***

Dear Mr. Tener,

The Eastern Shawnee Tribe has received your letter regarding the above referenced project(s) within St. Louis County, Missouri. The Eastern Shawnee Tribe is committed to protecting sites important to Tribal Heritage, Culture and Religion. Furthermore, the Tribe is particularly concerned with historical sites that may contain but not limited to the burial(s) of human remains and associated funerary objects.

As described in your correspondence, and upon research of our database(s) and files, we find our people occupied these areas historically and/or prehistorically. However, the project proposes **NO Adverse Effect** or endangerment to known sites of interest to the Eastern Shawnee Tribe. Please continue project as planned. However, should this project inadvertently discover an archeological site or object(s) we request that you immediately contact the Eastern Shawnee Tribe, as well as the appropriate state agencies (within 24 hours). We also ask that all ground disturbing activity stop until the Tribe and State agencies are consulted. Please note that any future changes to this project will require additional consultation.

In accordance with the NHPA of 1966 (16 U.S.C. § 470-470w-6), federally funded, licensed, or permitted undertakings that are subject to the Section 106 review process must determine effects to significant historic properties. As clarified in Section 101(d)(6)(A-B), historic properties may have religious and/or cultural significance to Indian Tribes. Section 106 of NHPA requires Federal agencies to consider the effects of their actions on all significant historic properties (36 CFR Part 800) as does the National Environmental Policy Act of 1969 (43 U.S.C. § 4321-4347 and 40 CFR § 1501.7(a). This letter evidences NHPA and NEPA historic properties compliance pertaining to consultation with this Tribe regarding the referenced proposed projects.

Thank you, for contacting the Eastern Shawnee Tribe, we appreciate your cooperation. Should you have any further questions or comments please contact our Office.

Sincerely,

Paul Barton

Paul Barton, Tribal Historic Preservation Officer (THPO)
Eastern Shawnee Tribe of Oklahoma
(918) 666-5151 Ext:1833
THPO@estoo.net

Osage Nation
Historic Preservation Office Letter

Osage Nation Historic Preservation Office

Date: January 18, 2023 **File: 2223-4404MO-12**

FAA, St. Louis Lambert International Airport: Consolidated Terminal Program (CTP) and West Airfield Program (WAP), St. Louis County, Missouri

Federal Aviation Administration, Central Region
Scott Tener
901 Locust
Kansas City, MO 64106

Dear Mr. Tener,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project listed as FAA, St. Louis Lambert International Airport: Consolidated Terminal Program (CTP) and West Airfield Program (WAP), St. Louis County, Missouri. **The Osage Nation requests copies of archaeological survey reports for ST-158 and PU-206, two former surveys within the APE performed by Rex Walters.**

In accordance with the National Historic Preservation Act, (NHPA) [54 U.S.C. § 300101 et seq.] 1966, undertakings subject to the review process are referred to in 54 U.S.C. § 302706 (a), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation anticipates reviewing and commenting on the archaeological survey reports for ST-158 and PU-206.**

Should you have any questions or need any additional information please feel free to contact Luke Morris at luke.morris@osagenation.nsn.gov. Thank you for consulting with the Osage Nation on this matter.

Andrea A. Hunter, Ph.D.
Director, Tribal Historic Preservation Officer

Luke A. Morris, MA
Archaeologist

627 Grandview Ave. * Pawhuska, OK 74056 Telephone 918-287-5328 * Fax 918-287-5376
www.osagenation-nsn.gov/who-we-are/historic-preservation * HistoricPreservation@osagenation-nsn.gov

Osage Nation
Request to be MOA Signatory
Letter

Tener, Scott (FAA)

From: Luke Morris <luke.morris@osagenation-nsn.gov>
Sent: Monday, January 29, 2024 5:12 PM
To: Tener, Scott (FAA)
Subject: FAA Consolidated Terminal Program: St. Louis Lambert International Airport

Mr. Tener,

The Osage Nation is requesting to be a signatory for the Consolidated Terminal Program, with included monitoring stipulations.

Thank you for consulting The Osage Nation on this matter.

Respectfully,

Luke Morris
Archaeologist, MA
Osage Nation Historic Preservation Office
627 Grandview Avenue,
Pawhuska, OK 74056

Starting October 1, 2022 the Osage Nation Historic Preservation Office is changing the project notification process. **All project notifications and reports must be emailed to s106@osagenation-nsn.gov** Include the Lead Agency, Project Name, and Project Number on the subject line.

IMPORTANT: This email message may contain confidential or legally privileged information and is intended only for the use of the intended recipient(s). Any unauthorized disclosure, dissemination, distribution, copying, or the taking of any action in reliance on the information herein is prohibited. Emails are not secure and cannot be guaranteed to be error-free. They can be intercepted, amended, or contain viruses. Anyone who communicates with us by email is deemed to have accepted these risks. Osage Nation is not responsible for errors or omissions in this message and denies any responsibility for any damage arising from the use of email. Any opinion and other statements contained in this message and any attachment are solely those of the author and do not necessarily represent those of the Osage Nation.

From: Luke Morris
Sent: Thursday, January 25, 2024 3:46 PM
To: 'Tener, Scott (FAA)' <scott.tener@faa.gov>
Subject: RE: Consultation on Several Airport Projects, FAA Central Region

Scott,

This list is great. I was wondering about the status of Dodge City but didn't have time to inquire yet.

I don't recall two separate APE delineated in any NEPA documentation, though I don't recall the document. Normally, two separate NEPA projects require two separate notifications. Can you share a KMZ of the St. Louis Consolidated Terminal Program, or a map? KMZ format is preferred if available. It would help ONHPO assess distances to known resources without approximating. Then, I can confirm whether The Osage Nation is requesting signatory status and monitoring stipulations in the MOA.

Thankfully, future monitoring mitigations should usually be much less time consuming. ONHPO was especially sensitive with MOA edits due to the burials adjacent to the project boundaries at Boeing Site Development.

Thank you for consulting The Osage Nation on this matter.

Respectfully,

Luke Morris
Archaeologist, MA
Osage Nation Historic Preservation Office
627 Grandview Avenue,
Pawhuska, OK 74056

Starting October 1, 2022 the Osage Nation Historic Preservation Office is changing the project notification process. **All project notifications and reports must be emailed to s106@osagenation-nsn.gov** Include the Lead Agency, Project Name, and Project Number on the subject line.

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From: Tener, Scott (FAA) <scott.tener@faa.gov>
Sent: Thursday, January 25, 2024 3:21 PM
To: Luke Morris <luke.morris@osagenation-nsn.gov>
Subject: Consultation on Several Airport Projects, FAA Central Region

Luke,

We currently have several airport projects in the Central Region that we are consulting on. Trying to eliminate any confusion as the emails will start overlapping and might start looking the same. I also wanted to provide a status update and ask a question.

1. **St. Louis, MO – Boeing** – Approved monitoring plan per MOA, 1/23/24. Boeing is moving forward with the project and you should start to see monitoring reports shortly.

2. **St. Louis, MO – West Airfield Program** – We issued a NEPA determination of a Finding of No Significant Impact (FONSI), 1/24/24. No MOA was requested for this project. As requested in your 4/6/23 email, we included archaeological monitoring during construction as a project requirement. The project schedule is still to be determined; however; we will consult with you regarding this monitoring plan as we get closer to construction. We expect that the monitoring plan will be very similar to the one that was recently completed with Boeing.

3. **St. Louis, MO – Consolidated Terminal Program** – We have initiated the environmental assessment and expect it to be completed in September 2024. This project was coordinated with you concurrently with the West Airfield Program noted above. We assumed that your 4/6/23 response applied to both projects and that the archaeological monitoring should be included as mitigation in the NEPA determination. However, after subsequent consultation with the SHPO, an MOA is needed with the SHPO to mitigate for adverse effects due to proposed building demolition. **Since we are negotiating an MOA with the SHPO anyway, do you want to be an invited signatory to the MOA and include the archaeological monitoring as part of the MOA?** I expect the MOA and subsequent monitoring plan to be very similar to the ones we completed for the Boeing project.

4. **Kansas City, MO – Solar Facility Project** – Giving you a heads up, we are initiating an environmental assessment for a proposed 200 acre solar facility located on airport property currently being used for agricultural purposes. I will be initiating consultation with you shortly, probably by the end of next week.

5. **Dodge City, KS – Terminal Building Project** – We issued a NEPA determination for this project, 5/22/23. No MOA was requested for this project. As requested in your 4/28/23 email, we included archaeological monitoring during construction as a project requirement. The project schedule is still to be determined; however; we will consult with you regarding the monitoring plan as we get closer to construction.

Please let me know if you would like to be an invited signatory to the St. Louis Consolidated Terminal MOA and have the archaeological monitoring included.

Please let me know if you have any questions,

Scott Tener
Environmental Program Manager

FAA Central Region Airports Division
901 Locust St., Room 364
Kansas City, Missouri 64106-2325
T 816.329.2639 | F 816.329.2611
http://www.faa.gov/airports/central/

Section 106 MOA

MEMORANDUM OF AGREEMENT AMONG
THE FEDERAL AVIATION ADMINISTRATION,
MISSOURI STATE HISTORIC PRESERVATION OFFICER,
CITY OF ST. LOUIS AIRPORT AUTHORITY, AND THE OSAGE NATION
IMPLEMENTING
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR
THE CONSOLIDATED TERMINAL PROGRAM,
ST. LOUIS LAMBERT INTERNATIONAL AIRPORT ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

WHEREAS, as part of the Section 106 of the National Historic Preservation Act (NHPA) consultation process, this Memorandum of Agreement (MOA) was developed, pursuant to 36 C.F.R. § 800.6(c), to govern the resolution of adverse effects on historic properties associated with the proposed Undertaking, as described below, and fulfillment of the signatories' responsibilities under Section 106 (36 C.F.R. Part 800); and

WHEREAS, the Federal Aviation Administration (FAA) and the Missouri State Historic Preservation Officer (SHPO) are Signatories to this MOA due to the nature of their legal responsibility under the NHPA; and

WHEREAS, the FAA is the lead Federal agency for compliance with Section 106 and has approval authority for the proposed Undertaking pursuant to 49 U.S.C. §§ 40103 and 47107, approval of the Airport Layout Plan for the St. Louis Lambert International Airport (Airport) and the Airport intends to seek grant(s) from the FAA through the Airport Improvements Program (AIP), the Bipartisan Infrastructure Law (BIL), or other federal funding programs as authorized by Congress to assist in constructing the proposed Undertaking; and

WHEREAS, an Environmental Assessment (EA) was prepared in accordance with requirements set forth in the National Environmental Policy Act (NEPA) of 1969, as amended; 36 C.F.R. § 800.8, the regulations implementing Section 106 of the NHPA, encourages Federal agencies to integrate the Section 106 and NEPA processes; and

WHEREAS, the City of St. Louis Airport Authority (STLAA) proposes a multi-phase improvement project to consolidate air carrier and passenger operations currently at Terminals 1 and 2 into a new, single terminal and linear concourse centered on the location of the existing Terminal 1 (Undertaking). The Undertaking would include the following:

- Construct a consolidated terminal (up to 62 gates) to replace Terminals 1 and 2 including a reconfigured check-in lobby (passenger processor) that incorporates the historic terminal domes, new consolidated security screening centered between the check-in lobby and the concourse, a Federal Inspection Service (customs) accessible to all carriers, and new baggage claim area on the lower level;
- Construct a two-level passenger drop-off and pick-up curb with departures on the upper level and arrivals on the lower level;
- Construct a new parking garage and ground transportation center directly across from the terminal;
- Reconfigure terminal access road system to improve driver wayfinding and decision making;

- Demolish various structures to accommodate the new consolidated terminal, including the former Missouri Air National Guard (MoANG) Campus, South Fire House Medical Storage, Credit Union Building, the Terminal 1 Parking Garage, Fuel Consortium Facilities (Swissport), phased demolition of existing Concourses A, B, C and D, and other support facilities;
- Close Terminal 2 and mothballing until a potential reuse of Terminal 2 is identified; and

WHEREAS, in consultation with the SHPO, the FAA defined the project's Area of Potential Effects (APE) (**Appendix A**) in accordance with 36 C.F.R. 800.16(d) for direct effects and indirect effects, and the SHPO concurred with the APE in a letter dated December 14, 2022; this APE was subsequently modified and the SHPO concurred with the revised APE in a letter dated April 12, 2024; and

WHEREAS, the FAA determined, and the SHPO concurred, that the Ozark Airlines Office, Shop, and Hangar is eligible for listing in the National Register of Historic Places (NRHP), under Criterion A for its association with aviation modernization and technological improvements at St. Louis Lambert International Airport during the mid-twentieth century and under Criterion C for its architecture reflecting International Style and Brutalist influences; and

WHEREAS, the FAA determined, and the SHPO concurred, that the Lambert Field Historic District (Missouri Air National Guard Facility, MoANG) was previously determined eligible for listing in the NRHP in 2006 and reconfirmed eligible in 2023 under Criteria A for its association with military aviation during World War II and the Cold War; and

WHEREAS, the FAA determined, and the SHPO concurred, that the airport's commercial passenger Terminal Building was previously determined NRHP-eligible in 2013 and reconfirmed eligible in 2023 under Criterion A for its association with mid-twentieth century transportation improvements in St. Louis and under Criterion C for its Modern architecture emblematic of the Jet Age and work of master architect Minoru Yamasaki; and

WHEREAS, the FAA determined, and the SHPO concurred, that the Navy Operational Support Center/Marine Corps Reserve Center will be treated as NRHP-eligible for purposes of this project only; and

WHEREAS, the FAA determined and the SHPO concurred in letters dated August 8, 2023, and April 12, 2024, that the proposed Undertaking will have an adverse effect on the Lambert Field Historic District and the FAA consulted with the SHPO pursuant to 36 C.F.R. Part 800 of the regulations implementing Section 106 of the NHPA (54 U.S.C. § 306108); and

WHEREAS, the FAA determined that there are no alternatives that completely avoid or minimize the adverse effect to the Lambert Field Historic District due to current and future aeronautical needs; and

WHEREAS, the FAA provided opportunity for the Apache Tribe of Oklahoma, Eastern Shawnee Tribe of Oklahoma, Iowa Tribe of Oklahoma, Kaw Nation, Kickapoo Tribe in Kansas, Miami Tribe of Oklahoma, Omaha Tribe of Nebraska, The Osage Nation, Peoria Tribe of Indians of Oklahoma, Ponca Tribe of Nebraska, Quapaw Nation, and Seneca-Cayuga Nation (Tribes) to consult on the proposed Undertaking's potential to affect properties with religious and cultural significance; and

WHEREAS, the FAA recognizes that the Tribes possess the knowledge, experience, and oral tradition to

identify and evaluate historic properties of traditional, religious, and cultural importance; and

WHEREAS, The Osage Nation accepted the invitation to participate in the consultation and, in correspondence dated January 29, 2024, The Osage Nation accepted the invitation to be an Invited Signatory to this MOA; and

WHEREAS, in a letter dated April 12, 2023, and resent on May 22, 2023, the FAA invited the City of Bridgeton, City of Florissant, St. Louis County Landmarks, Florissant Valley Historical Society, and Historic Florissant, Inc. to participate as consulting parties and no party accepted; and

WHEREAS, STLAA accepted FAA's invitation to participate as an Invited Signatory to this MOA; and

WHEREAS, in accordance with 36 C.F.R. § 800.6(a)(1), the FAA consulted with the Advisory Council on Historic Preservation (ACHP), provided the required documentation on August 22, 2023, and invited the ACHP to participate in this MOA; the ACHP, via letter to FAA dated August 25, 2023, chose not to participate in the consultation pursuant to 36 C.F.R. §800.6(a)(1)(iii); and

WHEREAS, the public was afforded the opportunity to review and comment on the proposed Undertaking's alternatives and scope of environmental issues to be addressed during a public scoping meeting held on December 15, 2022, and no comments were received regarding the proposed demolition of the Lambert Field Historic District or on effects to the Terminal Building, Navy Operational Support Center/Marine Corps Reserve Center, or Ozark Airlines Office, Shop, and Hangar. Notices of the opportunities to comment on the Draft EA, Draft MOA, and the Draft Section 4(f) Evaluation were published in the St. Louis Post Dispatch newspaper, the City's website, and were sent to governmental agencies and other parties who expressed interest in commenting on the proposed project. These documents were released for public review and open to comment from July 3, 2024 to August 16, 2024; and

WHEREAS, the FAA considered the views of the consulting parties and reviewed all comments received by the close of the comment period for the Draft EA, Draft MOA, and Draft Section 4(f) Evaluation and will provide responses in the Final EA; and

WHEREAS, the FAA shall submit an executed copy of this MOA and supporting documentation, pursuant to 36 C.F.R. § 800.11(f), to the ACHP prior to approving the proposed Undertaking; and

NOW, THEREFORE, the FAA and SHPO (Signatories) and the STLAA and The Osage Nation (Invited Signatories), hereinafter inclusively known as Signatories, are parties to this MOA and agree that the proposed Undertaking shall be carried out in accordance with the following stipulations in order to resolve the adverse effect on historic properties of the proposed Undertaking.

STIPULATIONS

If the FAA issues a determination approving the proposed Undertaking as described in the Environmental Assessment, the FAA, in coordination with the SHPO, The Osage Nation, and STLAA shall ensure that the following mitigation measures are carried out:

I. APPLICABILITY

A. This MOA establishes procedures for consultation and coordination among the FAA, the SHPO, The Osage Nation, and STLAA for compliance with Section 106 of the NHPA regarding the proposed Undertaking. This MOA also establishes the mitigation measures that must be completed to resolve the adverse effects of the proposed Undertaking.

B. Completion of the procedures and mitigation measures in this MOA resolves the adverse effects associated with the proposed Undertaking and satisfies FAA's section 106 responsibilities with respect to the proposed Undertaking.

II. ROLES AND RESPONSIBILITIES

A. The director of the FAA Central Region, Airports Division is the federal agency official responsible for compliance with this MOA.

B. The FAA shall ensure that its personnel or individuals carrying out historic preservation compliance work on its behalf meet the Secretary of the Interior's Professional Qualification Standards (36 C.F.R. Part 61) and have the knowledge to assess the resources within the proposed Undertaking's APE with a minimum of two years' experience conducting fieldwork in Missouri. The Osage Nation will be consulted on the selection of the archaeological firm prior to any formalized agreements between STLAA and the proposed archaeological firm.

C. STLAA is responsible for the selection and retention of an archaeological monitoring firm.

D. The FAA remains responsible for all determinations of NRHP eligibility and effect. The FAA may not delegate consultation for findings and determinations to professional services consultants.

III. APPENDICES TO THE MOA

A. Appendix A: Area of Potential Effects

B. Appendix B: Points of Contact

IV. COMMUNICATION

A. Project correspondence related to compliance with the stipulations in this MOA shall be submitted to the FAA, SHPO, STLAA, and The Osage Nation concurrently.

B. The FAA, SHPO, STLAA, and The Osage Nation shall each designate a consultation representative. The points of contact for each are provided in **Appendix B**. Changes to the consultation representatives shall be provided to the FAA, SHPO, STLAA, and The Osage Nation within seven (7) calendar days of such change.

V. MITIGATION MEASURES

In recognition of the demolition of the NRHP-eligible Lambert Field Historic District and project activities within and adjacent to the NRHP-eligible Terminal Building, along with the possibility of buried archeological resources, the mitigation measures listed below fully resolve or avoid adverse effects of the proposed Undertaking.

A. PHOTOGRAPHIC RECORD

1. Prior to the demolition of the Lambert Field Historic District, STLAA shall create a drone video of the exterior of each building and create a photographic record of the Lambert Field Historic District.

2. The photographs shall be in accordance with the National Register Photo Policy Standards.

3. Photographs and video shall be taken with a high-resolution digital camera, should be clear, well-composed, and provide an accurate visual representation of the property and its significant features. They must illustrate the qualities discussed in the description and NRHP statement of significance. Photographs and video should show historically significant features and, with assistance from the STLAA, any alterations that have affected the property's historic integrity. Photographs and video should show the principal facades and the setting in which the property is located. Additions, alterations, intrusions, and dependencies should appear in the photographs and video. Include views of interiors, outbuildings, landscaping, or unusual features if they contribute to the significance of the property.

4. STLAA shall submit the initial photographs to the SHPO for review. STLAA shall consult with the SHPO on the selection of 15-20 photographs of each of the facilities to be submitted in digital format for archival purposes. The SHPO shall provide final approval within thirty (30) calendar days of submittal of the photographs.

5. Within thirty (30) calendar days following final approval of the photographs to be archived by the SHPO, STLAA shall provide to the SHPO an archival CD with drone video, original TIFF photographic images, photo key, and map documenting the location and direction of each photograph.

6. The STLAA and the SHPO shall be the repository for this information.

7. The drone video and photographic record may be submitted in advance of the remaining mitigation measures.

8. After the SHPO concurs that this Photographic Record stipulation is complete, demolition of the Lambert Field Historic District can proceed.

B. PHYSICAL DISPLAY

1. STLAA shall create a permanent display as part of the Consolidated Terminal Program. The permanent display shall illustrate the military history at the Airport including buildings comprising the Lambert Field Historic District.

2. The display's content shall include history and images of the facilities and may include any salvaged items that are reasonable and appropriate to display, images of the original plans for the construction of the facilities (if available), or any other information suitable for display.

3. The display shall also include a QR code leading people to the website described at

Stipulation V.C.

4. The FAA and SHPO shall consult on the creation of the display and provide final approval within thirty (30) calendar days of submittal of the display's design and content.

5. The STLAA shall install the permanent display within twelve (12) months after completion of the Consolidated Terminal Program (CTP) and it shall remain on exhibit for a minimum of ten (10) years.

6. STLAA shall provide a final report to the FAA and SHPO including display text and content and photographs of the placement of the display to complete this stipulation.

7. The demolition of the Lambert Field Historic District can proceed prior to completion of the Physical Display stipulation.

C. WEBSITE

1. STLAA shall create a webpage that conveys the history of the Airport and Lambert Field Historic District including both the military and civilian uses.

2. The website content shall include historical information and images, for example:

   information from cultural resources reports, NRHP listing, images, recordation photos, drone footage, etc.

3. The FAA and SHPO shall consult on the creation of the website and provide final approval within thirty (30) calendar days of submittal of the website's design and content.

4. The history webpage shall be hosted by the STLAA and linked to the St. Louis Lambert International Airport website for a minimum of ten (10) years.

5. The demolition of the Lambert Field Historic District can proceed prior to completion of the Website History stipulation.

D. DESIGN REVIEW

1. To avoid an adverse effect on the Terminal Building, STLAA shall submit project design plans affecting the Terminal Building to the SHPO for review and comment.

2. STLAA will design and implement the improvements at the Terminal Building to ensure consistency with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, particularly the *Standards for Rehabilitation*, to preserve character-defining features of the historic property. STLAA will seek to avoid damaging or destroying materials, features, or finishes that contribute to the Terminal Building's significance or undertake actions that diminish the historic integrity of the building while also considering accessibility, operational, security, economic, and technical feasibility.

3. STLAA will submit project plans to SHPO for review and comment at 60% and 90% design. A review period of 30 days will be provided and run concurrently with STLAA review of design plans. To the extent feasible, STLAA will incorporate comments into the design plans; disagreements regarding the Terminal Building design plans will be resolved in accordance with Stipulation VIII of this MOA.

4. If adverse effects on the Terminal Building cannot be avoided as a result of design modifications as determined in consultation between FAA, SHPO, and STLAA, this MOA may be amended pursuant to Stipulation IX to incorporate additional mitigation measures.

E. ARCHAEOLOGICAL MONITORING

1. STLAA will provide archaeological monitoring for all ground-disturbing activities within the APE associated with construction of the CTP.
    a. Ground-disturbing activities include, but are not limited to, any invasive actions within the ground surface, regardless of previous disturbances or prior construction. Grading, trenching, surface scraping, hydrovac daylighting of utilities, and other forms of excavation are all common construction disturbances to the ground surface.
    b. Drilling activities are not included in the archaeological monitoring. However, if archaeological resources are uncovered during drilling activities, the drilling activity shall immediately stop and the Project Archaeologist shall be notified. The drilling activity will not resume until the Project Archaeologist has evaluated the site and given clearance to resume drilling work.
    c. Removal of foundations, footings, parking lots, or concrete slabs will all be monitored if underlying or adjacent soil disturbance is anticipated.

2. STLAA shall contract with a Project Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (36 C.F.R. Part 61), with a minimum of two years' experience working in the State of Missouri, to provide construction archaeological monitoring.
    a. The Osage Nation will be consulted on the selection of the Project Archaeologist prior to any formalized agreements between STLAA and the proposed archaeological firm.
    b. STLAA is responsible for the selection and retention of the archaeological monitoring firm.

3. STLAA, in coordination with the Project Archaeologist, will create an Archaeological Monitoring Plan. The plan shall include, at a minimum: project description, monitoring approach, maps, schedule, construction personnel training (as detailed below), and monitoring documentation.
    a. The FAA shall consult with The Osage Nation and SHPO on the draft Archaeological Monitoring Plan and will receive comments within fifteen (15) calendar days of submittal of the draft plan.
    b. The FAA shall forward the final proposed Archaeological Monitoring Plan to The Osage Nation and SHPO for concurrence before finalization. The final Monitoring Plan shall be in effect prior to ground-disturbing activities being authorized by STLAA.

4. Prior to the start of ground-disturbing activities, the Project Archaeologist shall provide training to construction personnel who will be directly involved in soil disturbing activity

regarding the identification of archaeological resources and actions to be taken if an inadvertent discovery is found.

a. Construction workers would be required to stop work in the immediate vicinity and notify the archaeologist if an inadvertent discovery is made. The archaeologist will observe all ground-disturbing activities, but any missed resources will be immediately reported.

5. The Project Archaeologist shall monitor all ground-disturbing activities and actively observe soil as disturbances occur to ensure no cultural resources are present.
   a. Due to the varying nature of archaeological deposits in the ground, the archaeologist will continuously observe ground being exposed by the work, located in a safe adjacent position that is close enough to identify artifacts when exposed. If ground-disturbing activities are conducted at two locations at the same time, multiple archaeologists are required to continue work at both locations simultaneously.
   b. Personnel without an archaeological graduate degree are not qualified to identify the full suite of artifacts possible onsite. An archaeologist must be present for ground-disturbing activities. No disturbances will be conducted if an archaeologist is not actively observing the work and assessing the soil for archaeological deposits.

6. The Project Archaeologist shall complete and submit daily monitoring reports using The Osage Nation's standard form, including the pedostratigraphic soil column encountered and other archaeological information necessary for reviewers to assess the potential for archaeological discoveries. The daily reports can be summarized in the weekly report but will be disseminated each day to the FAA, SHPO, The Osage Nation, and STLAA.

7. If issues or concerns are noted by a reviewing party, further consultation will be expediently conducted between FAA and any stakeholding party including tribes participating in the MOA.

8. At the end of each week of ground-disturbing activities, if discoveries are made, the Project Archaeologist shall summarize the daily monitoring and submit a report within five (5) business days to the FAA, SHPO, The Osage Nation, and STLAA.

9. Within sixty (60) calendar days of the end of ground-disturbing activities, the Project Archaeologist shall provide another monitoring closure project report to the FAA, SHPO, The Osage Nation, and STLAA.
   a. The Osage Nation, STLAA, FAA, and SHPO shall provide review and comment of the report within thirty (30) calendar days of submittal.
   b. The final report shall be the indicator that the archaeological monitoring is complete.

10. If discovery of archaeological resources are found outside previously reported boundaries of identified archaeological sites, or previously unidentified discoveries (types, forms, or materials) are made within any portion of the project, soil disturbance activities within a 100-foot radius of the discovery shall be stopped and the STLAA, FAA, The Osage Nation, and SHPO shall be contacted for further consultation. The FAA shall notify interested tribes for further consultation. See Section VII POST-REVIEW DISCOVERIES and the Archaeological Monitoring Plan.

VI. REPORTING AND MONITORING

A. Annual Report: STLAA shall provide an annual report beginning one (1) year after the execution date of this MOA to the FAA, SHPO, and The Osage Nation summarizing the progress made toward completion of each stipulation.

B. Completion Report: Within sixty (60) calendar days after all stipulations of this MOA have been fulfilled, STLAA shall provide the FAA, SHPO, and The Osage Nation with a brief written report of its completion of the stipulations as outlined.

C. Should any Signatory be unsatisfied with the progress of STLAA in meeting the stipulations of this MOA, the Signatories shall consult to address the problem(s) according to Stipulation IX DISPUTE RESOLUTION.

VII. POST-REVIEW DISCOVERIES

The proposed Undertaking is not anticipated to affect archaeological resources; however, archaeological monitoring during construction ground disturbing activities is required.

A. Archaeological Monitoring

1. In the event that there is a discovery of (i) archaeological material, (ii) historic properties, or (iii) unanticipated effects on historic properties during construction, soil disturbance activities and/or work within a 100-foot radius of the findings shall stop immediately and the Project Archaeologist shall contact STLAA. Unanticipated effects on historic properties include all discoveries that were not previously evaluated during NHPA Section 106 consultation, in addition to previously evaluated cultural resources. The aforementioned properties could have a renewed NRHP eligibility status when all findings are assessed on a holistic scale.

2. The STLAA shall immediately notify and later coordinate with the FAA, The Osage Nation, and SHPO. Soil disturbance activities would not resume within the avoidance buffer without consultation between the FAA, The Osage Nation, and SHPO.

3. No further soil disturbance activities within a 100-foot radius of the discovery shall proceed until the requirements of 36 C.F.R. § 800.13 have been satisfied, as applicable, including consultation with federally recognized tribes that may attach traditional cultural and religious significance to the discovered property.

4. Archaeological monitoring will follow procedures in the Archaeological Monitoring Plan to be drafted under Stipulation V.D.3.

B. Human Remains
In the event of an inadvertent discovery of human remains, even if such remains are in fragmentary form, STLAA shall ensure the following occurs.

1. Any STLAA employee, the Project Archaeologist, contractor, subcontractor, or other individual who knows or has reason to know that he or she has inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony during construction or maintenance activities must immediately notify or ensure notification of the STLAA Primary Contact, see Appendix B, Points of Contact.

2. STLAA shall immediately notify local law enforcement in accordance with Missouri Revised Statute §194.406 by telephone of the discovery of unmarked human remains.
   a. Local law enforcement will investigate the human remains and contact the Medical Examiner Office.

3. A tiered buffer zone shall be established around the point of discovery. STLAA shall ensure that all ground disturbing activities are immediately stopped within a 100-meter (328-foot) radius buffer zone and all above ground construction activities are immediately stopped within a 100-foot radius buffer zone around the point of discovery. Terminal aircraft operations and passenger processing activities will be allowed to continue uninterrupted. In general, for construction safety and security reasons, the construction site will be appropriately marked off and secured from public access. Only construction personnel will be allowed into the construction areas. With both buffer zones established around the inadvertent discovery, the remains will be respected and protected. During the expedited post-discovery consultation, the SHPO, The Osage Nation, and FAA will consult on an appropriate distance around the remains until mitigation is completed.

4. STLAA shall assume responsibility for implementing additional measures, as appropriate, to protect the discovery from looting and vandalism until the requirements of the Missouri unmarked human burial law (Missouri Revised Statute §§194.400-410) have been completed, but must not remove or otherwise disturb any human remains or other items in the immediate vicinity of the discovery. Natural material will be used to cover the remains from exposure and plain view. Natural material is any product that comes from plants, animals, or the ground which is not man-made. Natural materials include non-synthetic cloth, bamboo, wood, soil, etc. Any natural materials would be organic in origin, the opposite of synthetic. Chemically processed/treated natural materials are also requested to be avoided. The preferred material is cotton or linen canvas.

5. The STLAA shall notify the FAA, and the FAA shall notify the SHPO and the Tribes by telephone and email immediately after the discovery of human remains, funerary objects, sacred objects, items of cultural patrimony, or burial furniture and inform them of the steps already taken to address the discovery. See Appendix B, Points of Contact.

6. Upon notification of human remains, funerary objects, sacred objects, items of cultural patrimony, or burial furniture to FAA, SHPO, and the Tribes, a coordination meeting between the Signatory parties to this MOA will be held within 72-hours to determine if the buffer zone may be reduced to accommodate/resume ground disturbing activities as to not delay construction of the CTP.

7. Other than for crime scene investigation, no excavation, examination, photographs, or analysis of human remains shall be conducted by the STLAA, FAA, or any other professional

without first consulting with the Tribes. Upon discovery of human remains suspected of being Native American, the STLAA and FAA shall consult with the Tribes and SHPO to determine how to treat the remains per Missouri Revised Statute §§194.400-410.

a. Should unforeseen, unusual circumstances arise, law enforcement may request that photographs be taken of Native American remains in the case of a looting crime scene. These photographs will, however, be taken only after consultation with the claimant Tribes. After conclusion of the criminal case, all photographs of human remains will be turned over to The Osage Nation or other claimant tribe for destruction.
b. The Osage Nation and claimant Tribes shall be given the opportunity to visit the location and be provided an on-site orientation of the location where the human remains were discovered prior to any further disturbance or excavation in the location. Any adjustments to the buffer zone area will be made in consultation with The Osage Nation or other claimant Tribes and SHPO.
c. The FAA will consult with The Osage Nation and claimant Tribes regarding any proposed treatment and final disposition of the human remains and/or funerary objects. It is the preference of The Osage Nation that, wherever possible, burials are left in place and any further project activities avoid the burial with an appropriate buffer area, to be determined by The Osage Nation and claimant Tribes on a case-by-case basis.
d. If human remains require removal, STLAA, together with FAA, shall draft a mitigation plan for removal in consultation with The Osage Nation, claimant Tribes, and the SHPO. STLAA will then implement the mitigation plan for removal.
e. The Osage Nation and claimant Tribes will consult with the FAA regarding specific handling, curation, and repatriation of any human remains and funerary objects.
f. STLAA may resume construction activities in the area of the discovery upon receipt of written authorization from the FAA.

8. If, after a determination by a qualified physical anthropologist, forensic scientist, or other experts in consultation with SHPO, Tribes, and other consulting parties, the human remains are not Native American then FAA, in consultation with the SHPO shall determine how to treat the remains per Missouri Revised Statute §§194.400-410.

VIII. CHANGES IN PROJECT SCOPE

In the event of any changes to the project scope, the following measures shall be implemented in consultation with the Signatories to this MOA:

A. The FAA will determine if changes to project scope require revisions to the APE. If FAA determines the APE will need to be modified, FAA, in coordination with STLAA and in consultation with the SHPO, shall revise the APE as needed to incorporate any additional areas where the Undertaking has the potential to affect historic properties.

B. Following the Undertaking's established standards and methodologies, STLAA, on behalf of the FAA, shall carry out additional investigations within the revised APE to identify historic properties that may be affected by the Undertaking.

C. The FAA, in coordination with STLAA, shall assess and document the Undertaking's effects on any newly identified historic properties and explore measures to avoid, minimize, or mitigate effects on these properties in consultation with the SHPO and Section 106 consulting parties.

D. The FAA, in coordination with STLAA, shall prepare appropriate documentation and notify the Section 106 consulting parties of any changes in the Undertaking's effects on historic properties and shall provide an opportunity for review and comment. If the existing effects assessments to historic properties remain unchanged following modifications to the project scope, or if no additional properties are identified that require further evaluation, FAA will notify all Signatories and no additional consultation is required.

E. If a change in project scope results in adverse effects to historic properties, the FAA, in coordination with all Signatories, shall consult to amend the MOA in accordance with Stipulation X AMENDMENT.

F. All review and comment periods in Stipulation VIII CHANGES IN PROJECT SCOPE are subject to thirty (30) calendar days. These steps may be combined in order to expedite consultation.

IX. DISPUTE RESOLUTION

Should any Signatory to this MOA object to any actions carried out or proposed with respect to the implementation of this MOA, they should notify the FAA, and the FAA shall consult with the objecting party to resolve the objection within fifteen (15) calendar days. FAA shall notify the other signatories to this MOA of the objection within fifteen (15) calendar days and invite their views and recommendations as needed to resolve the objection. If the FAA determines that such objection cannot be resolved, the FAA shall:

A. Forward all documentation relevant to the dispute, including the FAA's proposed resolution, to the ACHP. The ACHP shall provide the FAA with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the FAA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. The FAA shall then proceed according to its final decision.

B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, the FAA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the FAA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the signatories and the ACHP and provide the signatories and the ACHP with a copy of such written response within fifteen (15) calendar days of the ACHP review period.

C. FAA may then proceed according to its decision. The signatories remain responsible for carrying out all the other actions subject to the terms of this MOA that are not the subject of the dispute.

X. AMENDMENT

Any signatory to this agreement may propose to the other signatories that this MOA be amended, whereupon the signatories shall consult in accordance with 36 C.F.R. § 800.6(c)(7) to consider such an amendment. Any such amendment proposed shall be adopted immediately upon the written concurrence of the signatories. Upon adoption, the FAA shall file the amendment with the ACHP.

XI. TERMINATION

A. If any Signatory to this MOA determines that its terms will not, or cannot be carried out, that Signatory shall immediately consult with the FAA to attempt to develop an amendment per Stipulation X AMENDMENT. If within forty-five (45) calendar days (or another time period agreed to by all Signatories) an amendment cannot be reached, any Signatory may terminate the MOA upon written notification to the other Signatories.

B. Once the MOA is terminated and prior to work continuing on the proposed Undertaking, FAA must either (a) execute another MOA or agreement with different terms pursuant to 36 C.F.R. § 800.6 or (b) take into account and respond to the comments of the ACHP under 36 C.F.R. § 800.7. FAA shall notify the Signatories as to the course of action it shall pursue. The FAA shall undertake its obligations pursuant to applicable statutes, regulations, and Orders.

XII. EFFECTIVE DATE AND DURATION

A. This MOA will be effective on the date the last Signatory signs the MOA.

B. This MOA will expire if its terms are not carried out within ten (10) years from the Effective Date.

C. Five (5) years after execution, if the project has not begun, and prior to expiration of the MOA, the Signatories shall consult to re-evaluate the terms of the MOA and, if needed, terminate or begin consultation for an extension in accordance with Stipulation X AMENDMENT.

XIII. ELECTRONIC SIGNATURES

Each party agrees a person may execute this document by electronic symbol or process attached to or logically associated with the document, with an intent to sign the document and by a method that must include a feature to verify the identity of the signer and the authenticity of the document, commonly referred to as verified electronic signature. Each party further agrees to accept in-person signature with ink for such party who agrees but does not wish to or have access to adequate technology to sign electronically.

XIV. COUNTERPARTS

This document may be signed in two or more counterparts, each of which shall be deemed an original for all purposes, and all of which when taken together shall be considered one and the same agreement.

EXECUTION of this MOA by the Signatories (FAA, SHPO, STLAA, and The Osage Nation) and the implementation of its terms evidences that the FAA has taken into account the effects of this proposed Undertaking on historic properties and afforded the ACHP an opportunity to comment. The Signatories to this MOA represent that they have the authority to sign for and bind the entities on behalf of whom they sign.

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MEMORANDUM OF AGREEMENT AMONG
THE FEDERAL AVIATION ADMINISTRATION,
MISSOURI STATE HISTORIC PRESERVATION OFFICER,
CITY OF ST. LOUIS AIRPORT AUTHORITY, AND THE OSAGE NATION
IMPLEMENTING
SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT FOR
THE CONSOLIDATED TERMINAL PROGRAM,
ST. LOUIS LAMBERT INTERNATIONAL AIRPORT ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

Signatory: Federal Aviation Administration

By: RODNEY N JOEL Digitally signed by RODNEY N JOEL Date: 2024.08.22 20:29:11 -05'00' Date: August 22, 2024

Rodney Joel, Acting Director, Central Region, Airports Division
ACE-600

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Signatory: Missouri State Historic Preservation Officer

By: David Kelly Date: 8/27/24
David Kelly, Director, Division of State Parks and Deputy State Historic Preservation Officer

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Invited Signatory: City of St. Louis Airport Authority, St. Louis Lambert International Airport

By: _____ Date: 8/28/24
Rhonda K Hamm-Niebruegge, Airport Director

MEMORANDUM OF AGREEMENT AMONG
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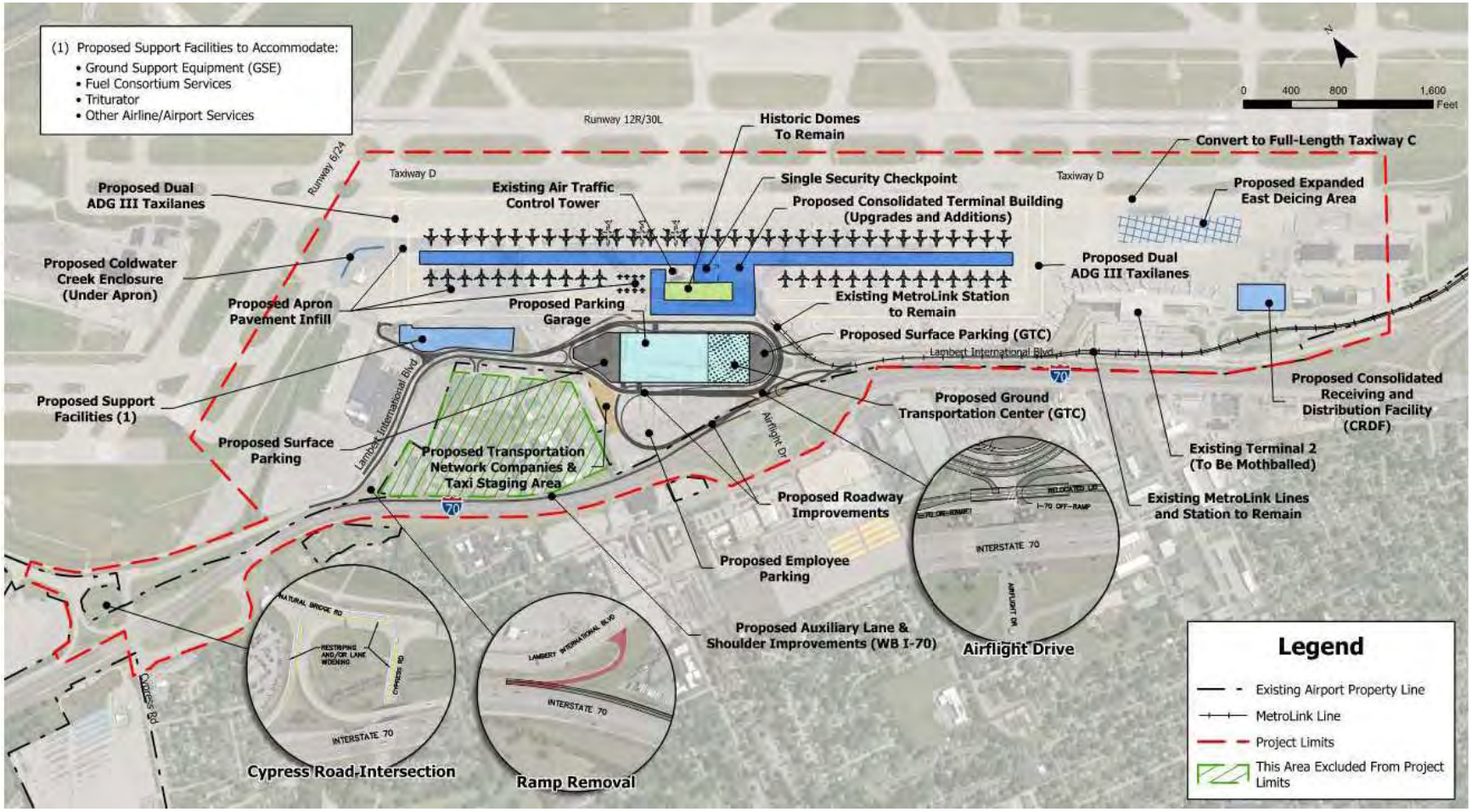
Invited Signatory: The Osage Nation

By: _____ Date: 10/10/24

Geoffrey M, Standing Bear, Principal Chief

Appendix A

Area of Potential Effects Map (Project Limits Identified by Red Dashed Line Below)



Appendix B

Points of Contact

Federal Aviation Administration	**Missouri State Historic Preservation Officer**
Primary Contact: Rodney Joel Acting Director, Central Region Airport Division Airports Division (ACE-600), Room 364 901 Locust St. Kansas City, MO 64106-2325 816-329-2600 Rodney.Joel@faa.gov **Secondary contact:** Scott Tener Environmental Specialist 901 Locust St., Room 364 Kansas City, MO 64106-2325 816-329-2639 Scott.Tener@faa.gov	**Primary contact:** Charles Horton Historic Preservation Specialist PO Box 176 Jefferson City, MO 65102 573-526-4591 Charles.Horton@dnr.mo.gov **Secondary contact:** Amy Rubingh Historic Preservation Specialist PO Box 176 Jefferson City, MO 65102 573-751-4589 Amy.Rubingh@dnr.mo.gov
City of St. Louis, Airport Authority	
Primary contact: Gerald Beckmann Deputy Director PO Box 10212 St. Louis, MO 63145-0212 314-551-5034 GABeckmann@flystl.com **Secondary contact:** Jason Christians Assistant Director PO Box 10212 St. Louis, MO 63145-0212 314-551-5008 jachristians@flystl.com	

The Osage Nation **Primary contact:** Dr. Andrea A. Hunter THPO, Osage Nation Historic Preservation Office (ONHPO) 627 Grandview Ave Pawhuska, OK 74056 918-287-5328 ahunter@osagenation-nsn.gov **Secondary contact:** Luke Morris Archaeologist, ONHPO 627 Grandview Ave Pawhuska, OK 74056 918-287-5328 luke.morris@osagenation-nsn.gov **Inadvertent Discovery Secondary contact:** Sarah O'Donnell NAGPRA Coordinator, ONHPO 627 Grandview Ave Pawhuska, OK 74056 918-287-5522 sodonnell@osagenation-nsn.gov	

Advisory Council on Historic Preservation

October 21, 2024

Scott Tener, P.E.
Environmental Specialist
Federal Aviation Adminstration
Central Region Airports Division

Ref: *Proposed Consolidated Terminal Improvement Program at the St Louis Lambert International Airport*
St. Louis, St. Louis County, Missouri
ACHP Project Number: 019960

Dear Mr. Tener:

On October 21, 2024, the Advisory Council on Historic Preservation (ACHP) received a copy of the executed Section 106 agreement document (Agreement) for the referenced undertaking. In accordance with 36 CFR § 800.6(b)(1)(iv), the ACHP acknowledges receipt of the Agreement. The filing of the Agreement and implementation of its terms fulfills the requirements of Section 106 of the National Historic Preservation Act and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800).

We appreciate receiving a copy of this Agreement for our records. Please ensure that all consulting parties are provided a copy of the executed Agreement in accordance with 36 CFR § 800.6(c)(9). If you have any questions or require additional assistance, please contact Max Sickler at (202) 517-0220 or by e-mail at msickler@achp.gov and reference the ACHP Project Number above.

Sincerely,

Lucrecia Brooks
Historic Preservation Technician
Office of Federal Agency Programs

Appendix H:
Sponsor Land Use Assurance Letter

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

April 17, 2024

Todd M. Madison, P.E.
Airports Capacity Program Manager and Missouri Planner
FAA Central Region Airports Division, ACE-630
901 Locust, Room 634
Kansas City, MO 64106-2325

Re: Consolidated Terminal Program (CTP) – Land Use Commitment

Dear Mr. Madison,

The City of St. Louis assures that, per 49 U.S.C. §47107(a)(10), appropriate action, including requests to controlling municipalities regarding the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the St. Louis Lambert International Airport ® to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. This applies to both existing and planned land uses.

More specifically, while the City of St. Louis owns the land upon which the St. Louis Lambert International Airport® sits and operates, it does not have the jurisdiction to unilaterally change zoning laws or other administrative functions related to land use. However, the City of St. Louis has done everything reasonable to meet the above referenced requirements, including a Part 150 Study and acquisition of noise land to render surrounding land use compatible with airport operations. The City of St. Louis continues to work with surrounding municipalities and property owners to remove obstructions to airspace, limit hazardous wildlife, and implement zoning changes where possible. However, the City of St. Louis may only request such zoning changes, and has no power to implement or affect zoning in these municipalities. Despite this, the City of St. Louis has and will continue to protect the St. Louis Lambert International Airport ® from incompatible land use in other ways.

Sincerely,

Gerald A. Beckmann
Airport Deputy Director, Planning & Development

Appendix I:
Aircraft Noise Assessment

NOISE ANALYSIS METHODOLOGY

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
CONSOLIDATED TERMINAL PROGRAM

ST. LOUIS, ST. LOUIS COUNTY, MISSOURI
MAY 2024

PREPARED FOR:

FEDERAL AVIATION ADMINISTRATION

PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.

CMT

TABLE OF CONTENTS

INTRODUCTION

The National Environmental Policy Act (NEPA) mandates the disclosure of potential impacts caused by a Sponsor's Proposed Action for federally funded programs. In the context of airport improvements, the Federal Aviation Administration (FAA) has developed two key guidance documents--FAA Order 1050.1F – Environmental Impacts: Policies and Procedures and FAA Order 5050.4B – NEPA Implementing Instructions for Airport Actions. These documents provide clear direction and robust methodologies for evaluating aircraft noise. The noise analysis for this project is necessitated by the potential changes in runway utilization, which could lead to shifts in the noise contours and potentially introduce new non-compatible land use within the 65 DNL contour.

The noise analysis presented in this appendix used the FAA's Aviation Environmental Design Tool (AEDT) Version 3f. The FAA requires using AEDT to allow for a consistent review of NEPA-required noise assessments. Numerous input parameters are needed to execute the AEDT model, including the configuration of an airport's runways, the number of operations by aircraft type and time of day, and meteorological data. As noted on the AEDT website:

> "*AEDT is a software system that models aircraft performance in space and time to estimate fuel consumption, emissions, noise, and air quality consequences. AEDT is a comprehensive tool that provides information to FAA stakeholders on each of these specific environmental impacts. AEDT facilitates environmental review activities required under NEPA by consolidating the modeling of these environmental impacts in a single tool.*"[1]

The following sections describe the metrics used to evaluate aircraft noise, the guidelines by which a noise impact would be identified, and the results of the aircraft noise assessment.

NOISE METRICS

Sound is energy transferred through the air that our ears detect as small changes in air pressure—the more sound energy, the louder the sound. Noise, in its simplest definition, is unwanted sound. Because noise is subjective, some sounds, like a distant train whistle, can be pleasant for some, while others may be annoyed and consider it noise. The time at which the sound occurs also contributes to its relative annoyance. For instance, a person who likes train whistles may be annoyed by this same sound if it happens in the middle of the night while trying to sleep. Even sounds that are pleasant at one volume can become noise as they get louder. Noise has an objective, physical, and subjective non-physical component that considers a person's perception or reaction to a sound.

The human ear hears sound pressures over a wide range. Decibels (dB), measured on a logarithmic scale, correspond to how our ears interpret sound pressure levels. The human ear also responds to different pitches or frequencies of sound differently. We are less able to hear

[1] FAA, 2023, Aviation Environmental Design Tool: https://aedt.faa.gov/

low frequencies like the rumble of thunder but more readily able to hear high frequencies like a baby's cry. The A-weighted measurement scale is used to better account for differences in how people respond to sound. This scale most closely approximates the relative loudness of sounds in the air as perceived by the human ear. It provides a more effective way to evaluate the effect of noise exposure on humans by focusing on those parts of the frequency spectrum where we hear most.

A day-night average sound level (DNL) reflects a person's cumulative exposure to sound over 24 hours, expressed as the noise level for an average day of a year. DNL provides a mechanism to measure environmental noise simply and uniformly. DNLs consider the amount of noise from each aircraft operation and the total number of operations throughout the day. The FAA and other federal agencies use DNL as the primary measure of aircraft noise impact because DNLs correlate well with the results of attitudinal surveys regarding noise. DNLs also account for the increased sensitivity to noise at night by artificially increasing each noise event that occurs during nighttime hours (i.e., 10:00 pm to 6:59 am) by 10 dBA.

To illustrate the extent of aircraft noise surrounding an airport, DNL contour lines of 65, 70, and 75 dBA are overlaid on maps. Like topographical maps showing terrain elevation in an area, the noise "contours" help compare changes to aircraft noise exposure in communities adjacent to an airport. The shape of the noise contours depends on many factors, including the number and type of aircraft arriving and departing over an area, the time of day that the aircraft operations occur, and the use of each of an airport's runways.

FAA NOISE COMPATIBLE LAND USE GUIDELINES

The FAA's guidelines establish the compatibility of various land uses with differing levels of aircraft noise. These guidelines are defined in Appendix A to Title 14, Part 150 of the Code of Federal Regulations (14 CFR 150). The FAA's land use compatibility table is provided in Table 1. These guidelines show the compatibility parameters for land uses such as residences, schools, churches, nursing homes, hospitals, and libraries. Notably, all land uses exposed to aircraft noise levels below DNL 65 dBA are considered compatible with aircraft noise.

TABLE 1: FAA LAND USE COMPATIBILITY GUIDELINES

Land Use	Average Daily DNL (Expressed in dBA)					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and Nursing Homes	Y	25	30	N	N	N

Land Use	Average Daily DNL (Expressed in dBA)					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Churches, Auditoriums and Concert Halls	Y	25	30	N	N	N
Government Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, Businesses and Professional	Y	Y	25	30	N	N
Wholesale and Retail – Building Materials, Hardware and Farm Equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail Trade - General	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communications	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, General	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and Optical	Y	Y	25	30	N	N
Agricultural (except livestock) and Forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and Fishing, Resource Production and Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas and Spectator Sports	Y	Y(5)	Y(5)	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits and Zoos	Y	Y	N	N	N	N
Amusements, Parks, Resorts and Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables and Water Recreation	Y	Y	25	30	N	N

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dBA and 30 dBA should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dBA, thus, the reduction requirements are often stated as 5, 10 or 15 dBA over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2) Measures to achieve NLR 25 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3) Measures to achieve NLR of 30 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4) Measures to achieve NLR 35 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal level is low.
(5) Land use compatible provided special sound reinforcement systems are installed.
(6) Residential buildings require an NLR of 25.
(7) Residential buildings require an NLR of 30.
(8) Residential buildings not permitted.

Notes:
1. The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part

150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.
2. SLUCM=Standard Land Use Coding Manual.
3. Y (Yes)=Land Use and related structures compatible without restrictions.
4. N (No)=Land Use and related structures are not compatible and should be prohibited.
5. NLR=Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
6. 25 or 30=Land use and related structures generally compatible; measures to achieve Noise Level Reduction of 25 or 30 dBA (i.e., a weighted sound level) must be incorporated into design and construction of structure. Noise Level Reduction is the amount of noise reduction in decibels achieved through incorporation of building sound insulation treatments (between outdoor and indoor levels) in the design and construction of a structure (14 CFR § 150.7). Building sound insulation treatments typically consist of acoustical replacement windows and doors.

Sources: 14 C.F.R. § 150 Airport Noise Compatibility Planning, Appendix A, Table 1.

NOISE MODELING AND ANALYSIS

This section provides the STL-specific flight operations data input into AEDT and presents the AEDT-derived aircraft noise contours. The data and contours are provided for existing (Year 2022) conditions and future (Years 2032 and 2037) forecast conditions with a Proposed Action and without the Proposed Action (i.e., the No Action alternative). The year 2032 reflects the first full year of activity after the completion of the planned consolidated terminal, and 2037 reflects a typical five-year future point in time. The Proposed Action, a consolidated terminal that is identified in the master plan for STL, would not cause any change in airport activity levels but would likely shift some aircraft operations to STL's Runway 11-29 and rebalance departures from Runway 30L and Runway 29 when the FAA operates STL in northwest flow. With the Proposed Action, arrivals under both the northwest and southeast flows would presumably also change as follows:

- Northwest flow – Aircraft using west gates at STL would arrive on Runway 29, and aircraft using east gates would arrive on Runway 30R.
- Southeast flow – Aircraft using west gates would arrive on Runway 11, and aircraft using east gates would arrive on Runway 12L.
- When possible, outside of peak traffic periods, the FAA will emphasize the use of Runway 12L/30R for arrivals.

EXISTING (2022) CONDITIONS

AEDT Input Data

STL has four runways, three northwest/southeast parallel runways (11/29, 12L/30R, and 12R/30L), and Runway 6/24, a northeast/southwest crosswind runway. Runway 12R/30L is the longest runway on the airfield at 11,020 feet. Table 2 and Figure 1 list and illustrate the runways' dimensions and locations.

TABLE 2: AIRFIELD RUNWAY DIMENSIONS – EXISTING (2022) CONDITION

Runway	Runway Length (Ft)	Runway Width (Ft)
11/29	9,000	150
12R/30L	11,019	200
12L/30R	9,002	150

Runway	Runway Length (Ft)	Runway Width (Ft)
6/24	7,606	150

Note: Runway 12R/30L is currently being reduced in width from 200 to 150 feet. This change did not affect the noise analysis or the resulting noise contours.

Source: AEDT3f.

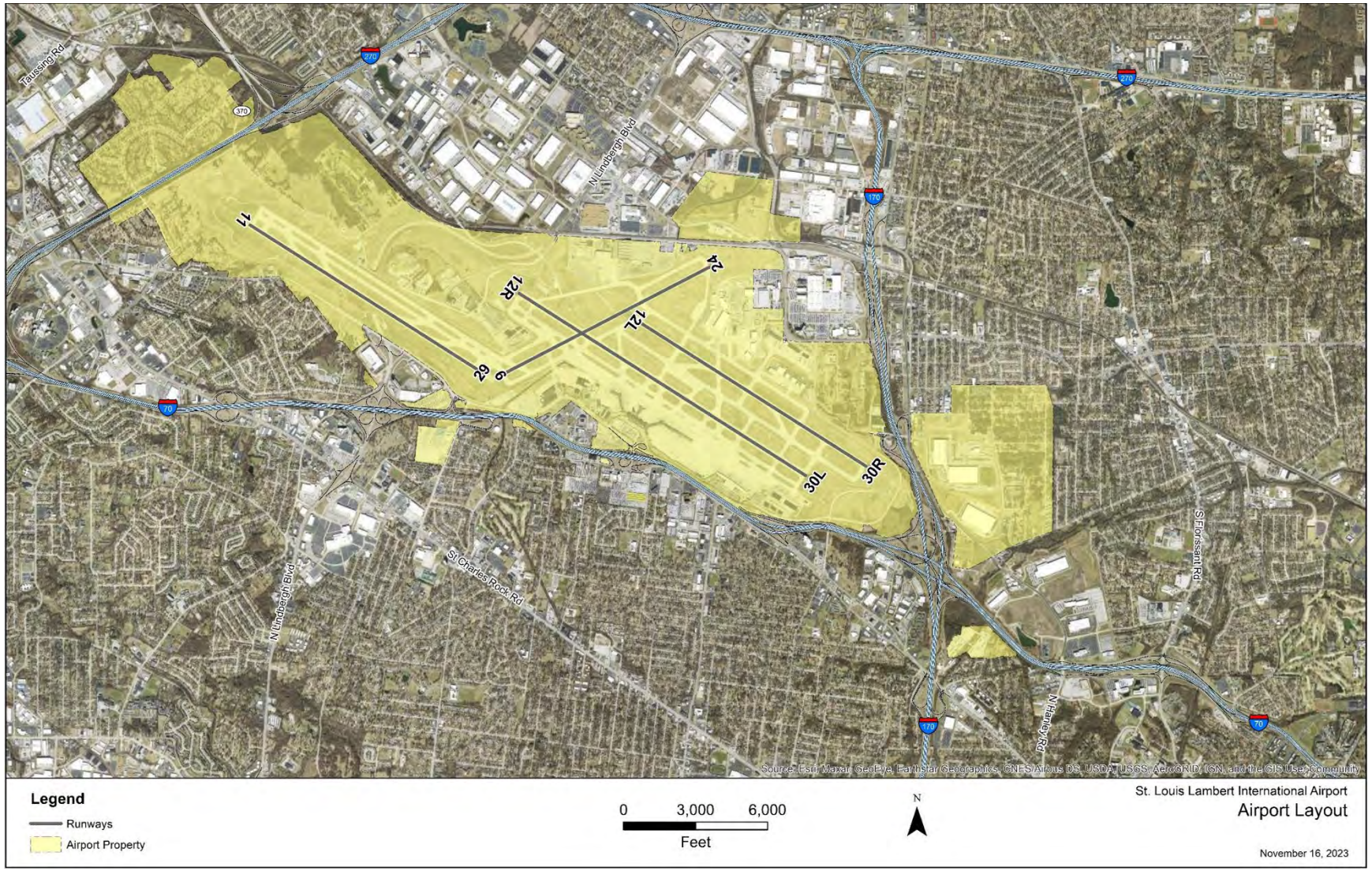
Information concerning aircraft operations was collected from the Airport's Noise and Operations Monitoring System (NOMS), Boeing, STLAA, and STL Air Traffic Control Tower (ATCT) staff. The average number of day/night operations, aircraft fleet mix, and departure stage length percentages were extracted from the NOMS from August 1, 2021, through July 31, 2022. These data are provided in Tables 2, 3, and 4. To consider the changes in runway operational philosophies by different ATCT managers and to exclude runway construction-related closures, composite runway use data was extracted from the NOMS from January 1, 2016, through July 31, 2022. These data are presented in Tables 5 and 6.

The AEDT uses airport-specific ground tracks and vertical flight profiles to compute three-dimensional flight paths for each modeled aircraft operation. The "default" AEDT vertical profiles, which consist of altitude, speed, and thrust settings, are compiled from data provided by aircraft manufacturers. The aircraft track usage for AEDT, obtained from STL's NOMS for the period January 1, 2019, through December 31, 2019, is presented in Table 7. The modeled departure, arrival, and Runway 12L/30R touch-and-go flight tracks, also representative of January 1 through December 31, 2019, are depicted in Figures 2, 3, and 4, respectively.

99.9% of local flight operations at STL are associated with flight testing activity of newly manufactured fighter jet aircraft from the Boeing plant. Local military flight operations data for the noise analysis was derived from The Boeing Company's Environmental Assessment for Site Development for Aircraft Assembly and Flight Testing, published by Jacobs in September 2023.[2] Since military flight track data is not available in the NOMS system, STLAA and STL ATCT staff were consulted to develop an accurate representation of the touch-and-go pattern used by Boeing fighter jets. These touch-and-go operations are limited to the northernmost parallel runway 12L/30R in an effort to confine the flight path to compatible land uses, including Boeing property.

[2] The Boeing Company, 2023, Draft Environmental Assessment for Site Development for Aircraft Assembly and Flight Testing, 3.11 Noise and Noise-Compatible Land Use.

FIGURE 1: AIRPORT LAYOUT



Source: STL Airport Layout Plan, dated May 11, 2023.

TABLE 3: PERCENT OPERATIONS BY TIME OF DAY: AUGUST 1, 2021 – JULY 31, 2022

Aircraft Category	Day (7:00 a.m.- 9:59p.m.)	Night (10:00 p.m.- 6:59 a.m.)	Total
Departures			
Passenger Carrier (Commercial Jets)	85%	15%	100%
Passenger Carrier (C402, C208, P212)	92%	8%	100%
Cargo	8%	92%	100%
Air Taxi/General Aviation	90%	10%	100%
Military (Local)	98%	2%	100%
Military (Itinerant)	98%	2%	100%
All Departures	**85%**	**15%**	**100%**
Arrivals			
Passenger Carrier (Commercial Jets)	86%	14%	100%
Passenger Carrier (C402, C208, P212)	98%	2%	100%
Cargo	27%	73%	100%
Air Taxi/General Aviation	93%	7%	100%
Military (Local)	92%	8%	100%
Military (Itinerant)	92%	8%	100%
All Arrivals	**87%**	**13%**	**100%**

Note: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff. Local military operations are performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and operate to or from the airport. A designated practice is within a 20-mile radius of the tower. Itinerant military operations are operations performed by an aircraft, either instrument flight rules (IFR), special visual flight rules (SVFR), or visual flight rules (VFR), that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.

Sources: St. Louis Lambert International Airport Noise and Operation Management System, August 1, 2021 – July 31, 2022; CMT, Inc., 2024.

TABLE 4: FLEET MIX AND OPERATIONS: AUGUST 1, 2021 – JULY 31, 2022

Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
Passenger Carrier / Cargo	178	Boeing 737-700	737700	36,472	99.92
	6585	Boeing 737-800/900	737800	30,548	83.69
	2546	Bombardier CRJ-700/900	CRJ9-ER	22,704	62.20
	3071	Embraer E175L/S	EMB175	10,225	28.01
	967	Airbus A319	A319-131	9,713	26.61
	997	Airbus A320/A320neo	A320-211	6,045	16.56
	6532	Tecnam P2012	BEC58P	4,870	13.34

Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
	4129	Boeing 737 MAX 8	7378MAX	4,004	10.97
	2117	Cessna 402	BEC58P	3,457	9.47
	2456	Airbus A321/A321neo	A321-232	3,027	8.29
	2106	Cessna 208 Caravan	CNA208	2,321	6.36
	4089	Boeing 757-200	757PW	1,918	5.25
	457	Boeing 767-300/ER	7673ER	1,916	5.25
	2560	Embraer ERJ 170	EMB170	1,718	4.71
	5301	Airbus A220-100	737700	1,247	3.42
	154	Boeing 737-400	737400	1,292	3.54
	1746	Embraer 145	EMB145	802	2.20
	88	Boeing 717-200	717200	724	1.98
	3049	Bombardier CRJ-200	CL600	555	1.52
	704	Airbus A300-600	A300-622R	437	1.20
	6092	Embraer 135	EMB145	255	0.70
	6633	Airbus A220-300	737700	130	0.36
	1095	Airbus A330-300	A330-343	53	0.15
Air Taxi / General Aviation	6070	Cessna 560 Citation XLS	CNA560XL	2,029	5.56
	3047	Cessna Citation Sovereign/Latitude/Longitude	CNA680	1,875	5.14
	1239	Bombardier Challenger 300/600	CL600	1,756	4.81
	6552	Embraer Legacy, Phenom 100/300	CNA510	1,711	4.69
	2028	Learjet 35/45/55/60/75, Hawker 800	LEAR35	1,256	3.44
	1976	Gulfstream 200/280	IA1125	855	2.34
	1489	Pilatus PC-12	CNA208	722	1.98
	1292	Citation II/Bravo, Beechjet 400	CNA55B	626	1.72
	1927	Gulfstream V/G500	GV	419	1.15
	6067	Cessna Citation CJ1/CJ3	CNA525C	285	0.78
	1603	Raytheon King Air, Super King Air	DHC6	273	0.75
	5189	Gulfstream IV/G400	GIV	269	0.74
	4804	Dassault Falcon 2000	CNA750	242	0.66
	1309	Cessna 750 Citation X, Dassault Falcon	CNA750	228	0.62
	1323	Dassault Falcon 50/900, Falcon 7X	FAL900EX	221	0.61
	4215	Gulfstream G650	G650ER	193	0.53
	1265	Cessna 172/177	CNA172	188	0.52
	6071	Honda HA-420 Hondajet	CNA510	141	0.39
	26	Bell 206 Jet Ranger	B206L	59	0.16
Military	1807	Boeing F-15E, F-15EX	F15A	1,150	3.15
	4236	Boeing F/A-18E/F Super Hornet	F-18	931	2.55

Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
	1791	McDonnell Douglas A-4 Skyhawk	A4C	340	0.93
	1862	Boeing T-7A Red Hawk	T-38A	219	0.60
	1532	Raytheon T-6A Texan II	CNA208	43	0.12
	1403	Boeing C-17 Globemaster	C17	11	0.03
	3170	Lockheed C-130 Hercules	C130E	11	0.03
			Total:	**160,486**	**439.69**

Notes: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff. AEDT = Aviation Environmental Design Tool and ANP = Aircraft Noise and Performance.

Sources: St. Louis Lambert International Airport Noise and Operation Management System, August 1, 2021 – July 31, 2022; The Boeing Company; CMT, Inc., 2024.

TABLE 5: DEPARTURE STAGE LENGTH PERCENTAGES: AUGUST 1, 2021 – JULY 31, 2022

Aircraft Type(s)	AEDT ANP ID	Stage 1	Stage 2	Stage 3	Total
		<500nm	501-1,000 NM	1,001-1,500 NM	
Boeing 737-700	737700	47%	42%	11%	100%
Boeing 737-800/900	737800	33%	34%	33%	100%
Bombardier CRJ-700/900	CRJ9-ER	50%	50%	--	100%
Embraer ERJ135/145	EMB14L	35%	65%	--	100%
Cessna 402	BEC58P	100%	--	--	100%
Embraer ERJ 175	EMB175	--	77%	23%	100%
Bombardier CRJ-200	CL600	100%	--	--	100%
Airbus A319-100	A319-131	60%	--	40%	100%
Cessna 208 Caravan	CNA208	100%	--	--	100%
Airbus A321-200	A321-232	50%	--	50%	100%
Airbus A320-200	A320-211	50%	--	50%	100%
Boeing 717-200	717200	100%	--	--	100%
Embraer ERJ 170	EMB170	50%	50%	--	100%
Boeing 767-300	767300	82%	--	18%	100%
Boeing 737-400	737400	100%	--	--	100%
Boeing 757-200	757PW	100%	--	--	100%
Airbus A300-600	A300-622R	100%	--	--	100%
Boeing 737 MAX 8	737MAX8	50%	--	50%	100%
MD-11	MD11PW	100%	--	--	100%
DC-10	DC1010	100%	--	--	100%
A220	--	100%	--	--	100%
Tecnam P212	--	100%	--	--	100%

Source: St. Louis Lambert International Airport Noise and Operation Management System, August 1, 2021 – July 31, 2022; CMT, Inc., 2024.

TABLE 6: RUNWAY USE PERCENTAGES – DEPARTURES: JANUARY 1, 2016 - JULY 31, 2022

Aircraft Category	Runway								Total
	12L	30R	12R	30L	11	29	6	24	
Daytime (7:00 am-9:59 pm)									
Passenger Carrier (Commercial Jets)	20%	1%	25%	41%	0%	13%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	16%	2%	27%	50%	0%	4%	1%	0%	100%
Cargo	35%	6%	8%	47%	0%	4%	0%	0%	100%
Air Taxi/General Aviation	27%	17%	13%	18%	0%	24%	0%	1%	100%
Military (Local)	7%	8%	36%	39%	0%	0%	0%	10%	100%
Military (Itinerant)	33%	13%	10%	30%	0%	4%	1%	9%	100%
All Daytime	**22%**	**4%**	**23%**	**38%**	**0%**	**13%**	**0%**	**0%**	**100%**
Nighttime (10:00 pm-6:59 am)									
Passenger Carrier (Commercial Jets)	22%	2%	25%	41%	0%	10%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	25%	17%	19%	35%	0%	3%	1%	0%	100%
Cargo	42%	6%	6%	45%	0%	1%	0%	0%	100%
Air Taxi/General Aviation	29%	11%	17%	20%	0%	23%	0%	0%	100%
Military (Local)	7%	8%	36%	39%	0%	0%	0%	10%	100%
Military (Itinerant)	49%	15%	16%	14%	0%	3%	0%	3%	100%
All Nighttime	**25%**	**5%**	**21%**	**37%**	**0%**	**11%**	**0%**	1%	**100%**

Note: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff.

Source: St. Louis Lambert International Airport Noise and Operation Management System, January 1, 2016 – July 31, 2022; CMT, Inc., 2024.

TABLE 7: RUNWAY USE PERCENTAGES – ARRIVALS: JANUARY 1, 2016 - JULY 31, 2022

Aircraft Category	Runway								Total
	12L	30R	12R	30L	11	29	6	24	
Daytime (7:00 am-9:59 pm)									
Passenger Carrier (Commercial Jets)	16%	46%	18%	5%	12%	2%	0%	1%	100%
Passenger Carrier (C402, C208, and P212)	12%	24%	22%	15%	11%	7%	0%	9%	100%
Cargo	33%	52%	9%	3%	2%	0%	0%	1%	100%
Air Taxi/General Aviation	17%	45%	12%	6%	15%	3%	0%	2%	100%
Military (Local)	48%	52%	0%	0%	0%	0%	0%	0%	100%
Military (Itinerant)	33%	48%	9%	8%	1%	0%	0%	1%	100%
All Daytime	**15%**	**44%**	**17%**	**6%**	**13%**	**3%**	**0%**	**2%**	**100%**
Nighttime (10:00 pm-6:59 am)									
Passenger Carrier (Commercial Jets)	13%	37%	27%	12%	10%	1%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	10%	23%	29%	22%	5%	2%	0%	9%	100%
Cargo	31%	47%	10%	11%	1%	0%	0%	0%	100%
Air Taxi/General Aviation	16%	39%	16%	10%	15%	2%	0%	2%	100%
Military (Local)	48%	52%	0%	0%	0%	0%	0%	0%	100%
Military (Itinerant)	39%	27%	24%	7%	3%	0%	0%	0%	100%
All Nighttime	**15%**	**38%**	**23%**	**12%**	**10%**	**1%**	**0%**	**1%**	**100%**

Note: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff.

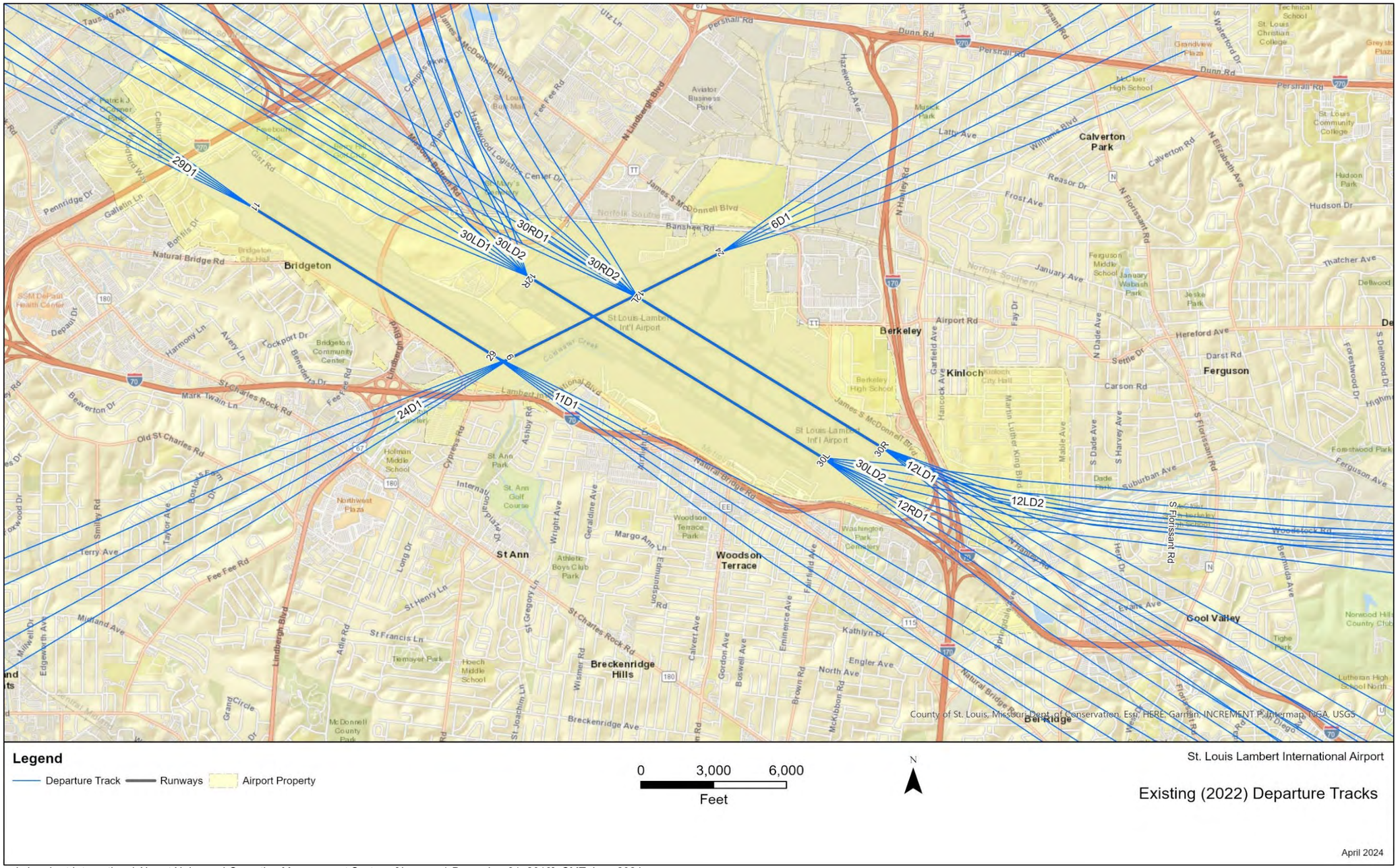
Source: St. Louis Lambert International Airport Noise and Operation Management System, January 1, 2016 – July 31, 2022; CMT, Inc., 2024.

TABLE 8: AIRCRAFT FLIGHT TRACK USE PERCENTAGES

RWY	Track																						
	11A1	11D1	12LA1	12LD1	12LD2	12RA1	12RD1	12RD2	24A1	24D1	29A1	29D1	30LA1	30LD1	30LD2	30RA1	30RD1	30RD2	6A1	6D1	12LDT	12LAT	30RDT	30RAT
Arrivals																								
12L			100%																					
30R																100%								
12R						100%																		
30L													100%											
11	100%																							
29											100%													
6																			100%					
24									100%															
Departures																								
12L				45%	55%																			
30R																	68%	32%						
12R							50%	50%																
30L														65%	35%									
11		100%																						
29												100%												
6																				100%				
24										100%														
Touch and go (arrivals)																								
12L																						100%		
30R																								100%
Touch and go (Departures)																								
12L																					100%			
30R																							100%	

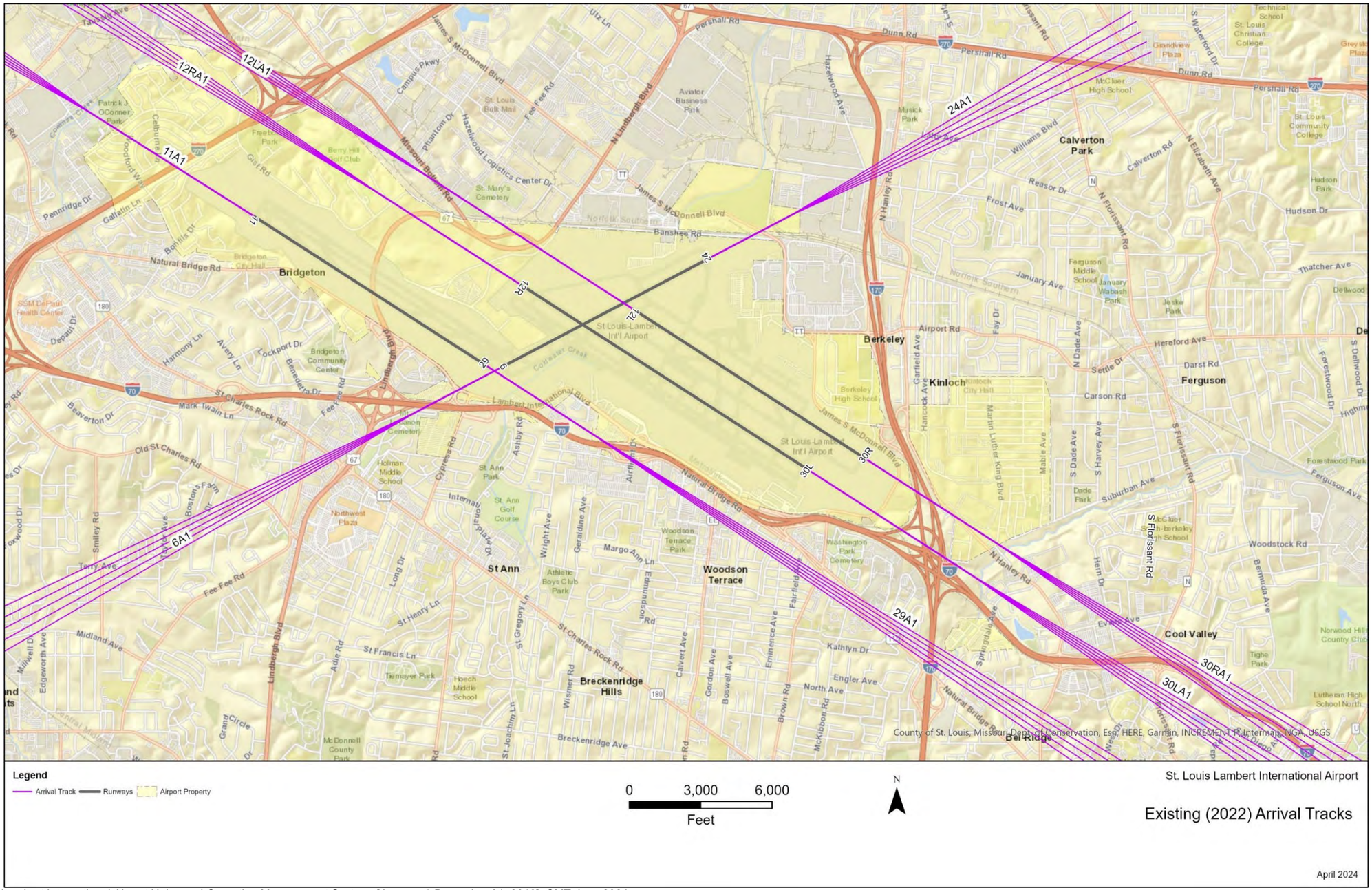
Sources: St. Louis Lambert International Airport Noise and Operation Management System, January 1, 2019 – December 31, 2019; CMT, Inc., 2024.

FIGURE 2: EXISTING (2022) DEPARTURE TRACKS



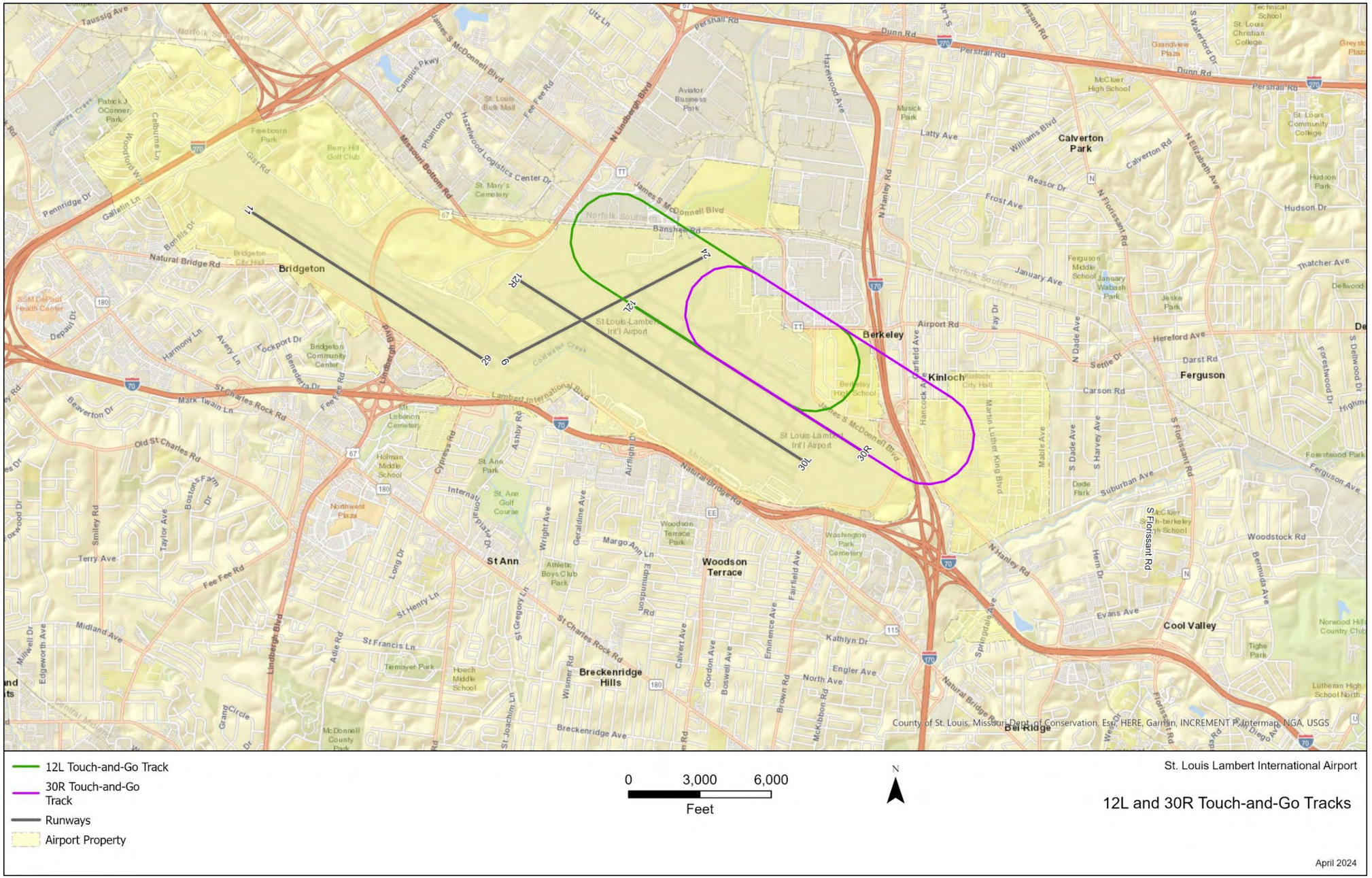
Sources: St. Louis Lambert International Airport Noise and Operation Management System, [January 1-December 31, 2019]; CMT, Inc., 2024.

FIGURE 3: EXISTING (2022) ARRIVAL TRACKS



Sources: St. Louis Lambert International Airport Noise and Operation Management System, [January 1-December 31, 2019]; CMT, Inc., 2024.

FIGURE 4: 12L AND 30R TOUCH-AND-GO TRACKS



Sources: St. Louis Lambert International Airport Noise and Operation Management System, [January 1-December 31, 2019]; CMT, Inc., 2024

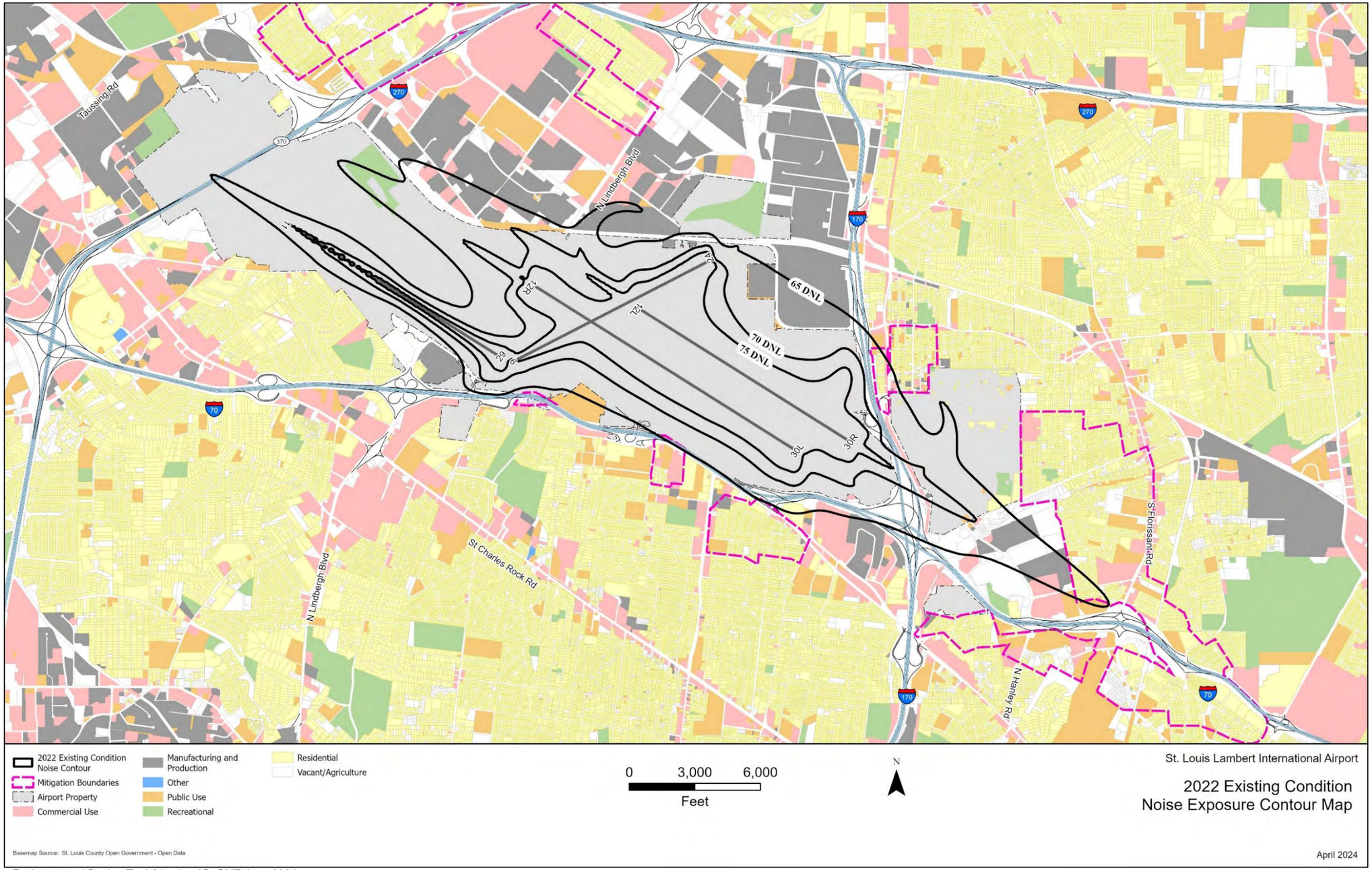
Noise Contours

Figure 5 depicts the existing (Year 2022) DNL 65, 70, and 75 dBA contours. The DNL 65 dBA contour encompasses 1,139 acres of airport property and 692 acres of non-airport property.

As illustrated, most of the DNL 65 dBA contour lies within the existing airport property boundary. The recreational area northwest of Runway end 12R on airport property is a golf course within the DNL 65 dBA to 70 dBA contours. It is considered compatible with aircraft noise per FAA's land use compatibility table (see Table 1). The public use area southeast of Runway end 30R on airport property is a church within the DNL 70 dBA and 75 dBA contours and is also considered compatible with aircraft noise.

Where the contour extends beyond the airport boundary, the land uses are either considered to be compatible with aircraft noise or in areas for which aircraft noise has previously been mitigated through acoustical treatment of eligible properties or purchased by the airport, and residents relocated. Commercial and manufacturing land uses are within the DNL 65 dBA northwest of Runway end 12L and are considered compatible with aircraft noise. The public use area southeast of Runway end 29, which is within the DNL 65 dBA contour, is used for government services and is considered compatible with aircraft noise. Furthermore, all residential areas within the DNL 65 dBA have been mitigated for aircraft noise.

FIGURE 5: EXISTING (2022) DNL 65-75 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

FUTURE (2032) NO ACTION ALTERNATIVE

AEDT Input Data

For the evaluation of future (2032) conditions without the Proposed Action (i.e., the No Action alternative), per the master plan, there would be no changes to STL's runways (length, width, or location) nor changes to the percent operations by time of day, runway or track utilization, or number/location of tracks when compared to the existing (2022) condition. The forecast aircraft operations and fleet mix for the future (2032) No Action alternative and departure stage lengths are presented in Tables 9 and Table 10. These data were derived using an FAA Approved Forecast developed as part of the STL master plan.

TABLE 9: FUTURE (2032) NO ACTION AND PROPOSED ACTION FLEET MIX AND OPERATIONS

General Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
Passenger Carry/ Cargo	5301	Airbus A220-100	737700	2,590	7.10
	967	Airbus A319	A319-131	3,457	9.47
	6400	Airbus A319neo	A319-131	5,099	13.97
	997	Airbus A320S	A320-211	347	0.95
	6398	Airbus A320neo	A320-270N	1,041	2.85
	2456	Airbus A321S	A321-232	2,219	6.08
	5976	Airbus A321neo	A321-232	2,219	6.08
	704	Airbus A300-600	A300-622R	834	2.28
	1095	Airbus A330-300	A330-343	520	1.42
	178	Boeing 737-700W	737700	15,757	43.17
	6585	Boeing 737-800	737800	7,289	19.97
	2412	Boeing 737-900ER	737800	360	0.99
	6662	Boeing 737 MAX 7	7378MAX	47,277	129.53
	6472	Boeing 737 MAX 8	7378MAX	30,302	83.02
	6406	Boeing 737 MAX 9	7378MAX	1,604	4.39
	457	Boeing 767-300/ER	7673ER	2,132	5.84
	3049	Bombardier CRJ-200	CL600	374	1.02
	2546	Bombardier CRJ-700	CRJ9-ER	828	2.27
	3998	Bombardier CRJ-900	CRJ9-ER	7,562	20.72
	2106	Cessna 208 Caravan	CNA208	11,089	30.38
	6532	Tecnam P2012	BEC58P	6,427	17.61
	2560	Embraer 170	EMB170	485	1.33
	3815	Embraer 175	EMB175	27,411	75.10
Air Taxi/ General Aviation	1239	Bombardier Challenger 300/600	CL600	3,082	8.44
	6070	Cessna 560 Citation XLS	CNA560XL	2,870	7.86
	3047	Cessna Citation Sovereign/ Latitude/Longitude	CNA680	2,262	6.20

General Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
	6552	Embraer Legacy, Phenom 100/300	CNA510	1,913	5.24
	2028	Learjet 35/45/55/60/75, Hawker 800	LEAR35	1,485	4.07
	1927	Gulfstream V/500	GV	1,347	3.69
	1292	Citation II/Bravo, Beechjet 400	CNA55B	1,344	3.68
	1976	Gulfstream 200/280	IA1125	1,313	3.60
	1309	Cessna 750 Citation X, Dassault Falcon 2000	CNA750	784	2.15
	1603	Raytheon King Air, Super King Air	DHC6	585	1.60
	5189	Gulfstream IV/G400	GIV	551	1.51
	1489	PC-12	CNA208	421	1.15
	1323	Dassault Falcon 50/900, Falcon 7X	FAL900EX	355	0.97
	31	Beechcraft 1900	1900D	318	0.87
	1776	Bombardier Global Express/5000	BD-700-1A10	303	0.83
	1196	Baron 58, Seminole, Cessna 310/ 414/421	BEC58P	184	0.50
	6286	Beech Bonanza, Diamond 40, Piper Malibu	GASEPV	173	0.47
	1265	Cessna 172/177	CNA172	107	0.29
	1324	Cirrus SR20/22	COMSEP	78	0.21
Future Military Aircraft	1807	Boeing F-15E, F-15EX	F15A	1,369	3.75
	4236	Boeing F/A-18E/F Super Hornet	F-18	931	2.55
	1862	Boeing T-7A Red Hawk	T-38A	219	0.60
	1532	Raytheon T-6A Texan II	JPATS	85	0.23
	1403	Boeing C-17 Globemaster	C17	11	0.03
	3170	Lockheed C-130 Hercules	C119L	11	0.03
			Total:	**199,324**	**546.09**

Note: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff.
AEDT = Aviation Environmental Design Tool and ANP = Aircraft Noise and Performance.
Sources: STL Master Plan and City of St. Louis staff, 2024.

TABLE 10: DEPARTURE STAGE LENGTH PERCENTAGES: 2032/2037

Aircraft Type(s)	AEDT ANP ID	Stage 1	Stage 2	Stage 3	Stage 6	Total
		<500nm	501-1,000nm	1,001-1,500nm	3,500-4,500nm	
Boeing 737-700	737700	47%	42%	11%	--	100%
Boeing 737-800/900	737800	33%	34%	33%	--	100%
Boeing 787-9	7879	--	--	--	100%	100%
Bombardier CRJ-700/900	CRJ9-ER	45%	55%	--	--	100%
Tecnam P2012	BEC58P	100%	--	--	--	100%
Embraer ERJ 175	EMB175	--	77%	23%	--	100%
Airbus A319-100	A319-131	60%	--	40%	--	100%
Cessna 208 Caravan	CNA208	100%	--	--	--	100%
Airbus A321-200	A321-232	50%	--	50%	--	100%
Airbus A320-200	A320-211	50%	--	50%	--	100%
Airbus A330-300	A330-343	--	--	--	100%	100%
Airbus 220-100/300	737700	100%	--	--	--	100%
Embraer ERJ 170	EMB170	50%	50%	--	--	100%
Boeing 767-300	767300	82%	--	18%	--	100%
Airbus A300-600	A300-622R	100%	--	--	--	100%
Boeing 737 MAX 8	737MAX8	50%	--	50%	--	100%
Airbus A320neo	A320-271N	--	100%	--	--	100%
Boeing 757F	757RR	100%	--	--	--	100%
Boeing 738F	737800	100%	--	--	--	100%

Source: STLAA staff and CMT, Inc.

Noise Contours

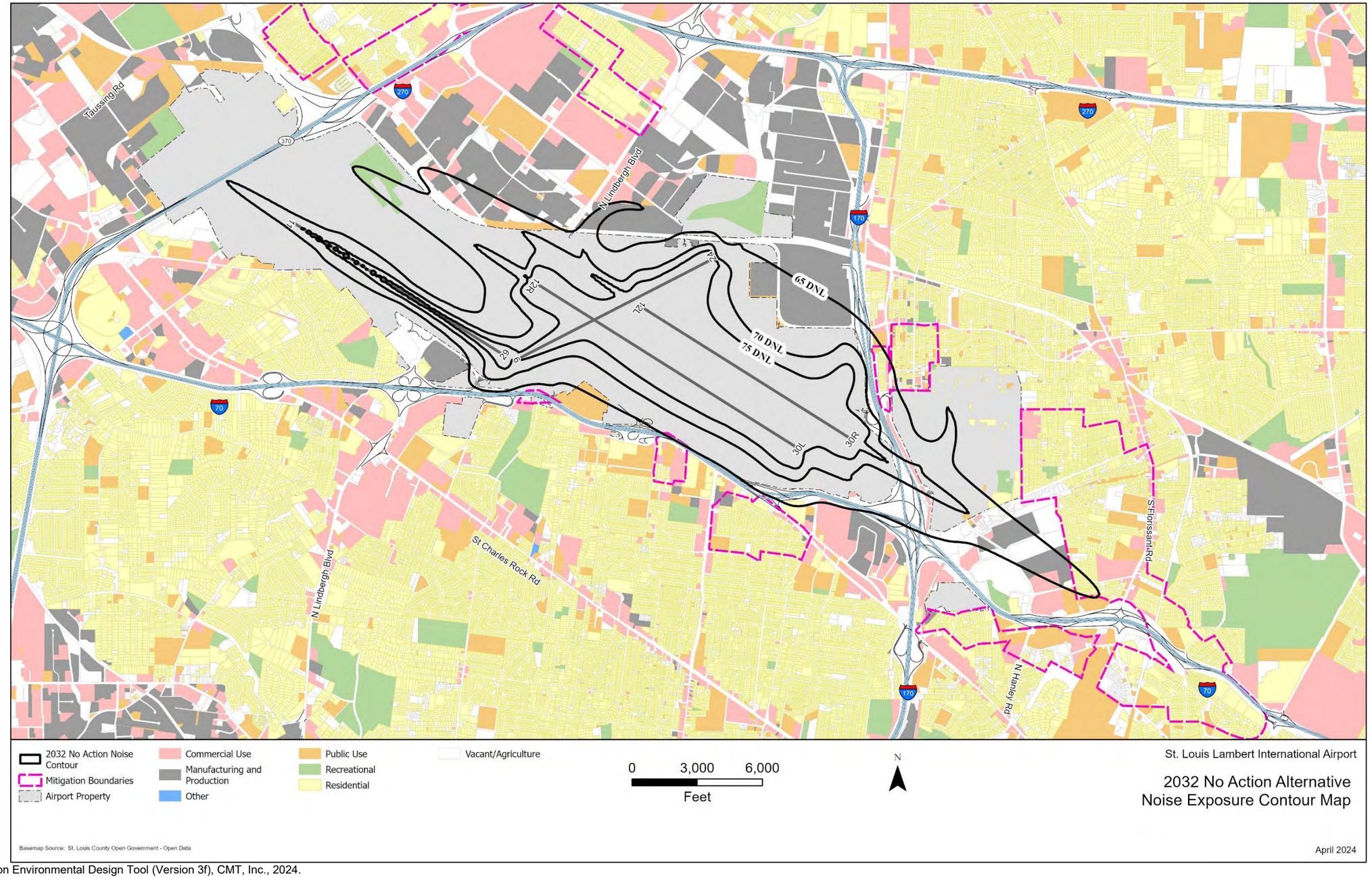
Figure 6 depicts the Future (2032) No Action alternative DNL 65, 70, and 75 dBA aircraft contours. The DNL 65 dBA contour encompasses 1,051 acres of airport property and 601 acres of non-airport property.

As illustrated, most of the DNL 65 dBA contour lies within the existing airport property boundary. The recreational area northwest of Runway end 12R on airport property is a golf course within the DNL 65 dBA to 70 dBA contours. It is considered compatible with aircraft noise per FAA's land use compatibility table (see Table 1). The public use area southeast of Runway end 30R on airport property is a church within the DNL 65 dBA and 70 dBA contours and is also considered compatible with aircraft noise.

Where the contour extends beyond the airport boundary, the land uses are either considered to be compatible with aircraft noise or in areas for which aircraft noise has previously been mitigated through acoustical treatment of eligible properties or purchased by the airport, and residents relocated. Commercial and manufacturing land uses within the DNL 65 dBA northwest of Runway end 12L and north of Runway 12L/30R are considered compatible with aircraft noise. The public use area southeast of Runway end 29, which is within the DNL 65 dBA contour, is used for

government services and is considered compatible with aircraft noise. Furthermore, all residential areas within the DNL 65 dBA have been mitigated for aircraft noise.

FIGURE 6: FUTURE (2032) NO ACTION DNL 65-75 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

FUTURE (2032) PROPOSED ACTION ALTERNATIVE

AEDT Input Data

For the evaluation of future (year 2032) conditions with the Proposed Action, there were no changes to STL's runways, modeled flight tracks, or flight track usage compared to the future 2032 No Action condition.

The number of annual operations by aircraft type for the future (2032) Proposed Action alternative was the same as the future (2032) No Action alternative, as well as the departure stage lengths (previously presented in Tables 9 and 10). Tables 11 through 13 provide the forecast percent of day and night operations and runway uses for the future (2032) Proposed Action alternative. This data was obtained from the FAA Approved Forecast developed as part of the STL master plan.

When compared to the (2032) No Action alternative, there was a general shift of aircraft operations toward Runways 11/29 and 12L/30R.

TABLE 11: PERCENT OPERATIONS BY TIME OF DAY: PROPOSED ACTION

Aircraft Category	Day (7:00 a.m.- 9:59 p.m.)	Night (10:00 p.m.- 6:59 a.m.)	Total
Departures			
Passenger Carrier (Commercial Jets)	86%	14%	100%
Passenger Carrier (C402, C208, and P212)	100%	0%	100%
Cargo	10%	90%	100%
Air Taxi/General Aviation	93%	7%	100%
Military(L)	98%	2%	100%
Military(I)	98%	2%	100%
All Departures	**86%**	**14%**	**100%**
Arrivals			
Passenger Carrier (Commercial Jets)	86%	14%	100%
Passenger Carrier (C402, C208, and P212)	100%	0%	100%
Cargo	22%	78%	100%
Air Taxi/General Aviation	94%	6%	100%
Military(L)	94%	6%	100%
Military(I)	94%	6%	100%
All Arrivals	**86%**	**14%**	**100%**
Touch-and-Go			
Military(L)	98%	2%	100%

Source: STLAA staff and CMT, Inc.

TABLE 12: RUNWAY USE PERCENTAGES – DEPARTURES: PROPOSED ACTION

Aircraft Category	Runway								Total
	12L	30R	12R	30L	11	29	6	24	
Daytime (7:00 a.m. - 9:59 p.m.)									
Passenger Carrier (Commercial Jets)	4%	1%	39%	30%	0%	26%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	4%	2%	39%	34%	0%	20%	0%	1%	100%
Cargo	41%	22%	5%	31%	0%	1%	0%	0%	100%
Air Taxi/General Aviation	34%	40%	10%	15%	0%	0%	0%	1%	100%
Military (Local)	7%	8%	36%	39%	0%	0%	0%	10%	100%
Military (Itinerant)	32%	10%	13%	41%	0%	4%	0%	0%	100%
Nighttime (10:00 p.m. -6:59 a.m.)									
Passenger Carrier (Commercial Jets)	8%	8%	33%	31%	0%	20%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cargo	42%	23%	4%	31%	0%	0%	0%	0%	100%
Air Taxi/General Aviation	26%	45%	10%	9%	0%	10%	0%	0%	100%
Military (Local)	7%	8%	36%	39%	0%	0%	0%	10%	100%
Military (Itinerant)	49%	15%	16%	14%	0%	3%	0%	3%	100%

Source: City of St. Louis staff and CMT, Inc.

TABLE 13: RUNWAY USE PERCENTAGES – ARRIVALS: PROPOSED ACTION

Aircraft Category	Runway								Total
	12L	30R	12R	30L	11	29	6	24	
Daytime (7:00 a.m. - 9:59 p.m.)									
Passenger Carrier (Commercial Jets)	20%	38%	2%	4%	20%	16%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	15%	22%	14%	15%	16%	15%	0%	3%	100%
Cargo	41%	53%	2%	2%	2%	0%	0%	0%	100%
Air Taxi/General Aviation	38%	55%	3%	3%	0%	0%	0%	1%	100%
Military (Local)	48%	52%	0%	0%	0%	0%	0%	0%	100%
Military (Itinerant)	38%	52%	10%	0%	0%	0%	0%	0%	100%
Nighttime (10:00 p.m. - 6:59 a.m.)									
Passenger Carrier (Commercial Jets)	17%	36%	13%	9%	15%	10%	0%	0%	100%
Passenger Carrier (C402, C208, and P212)	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cargo	38%	52%	5%	5%	0%	0%	0%	0%	100%
Air Taxi/General Aviation	35%	44%	4%	9%	6%	2%	0%	0%	100%

Aircraft Category	Runway								Total
	12L	30R	12R	30L	11	29	6	24	
Military (Local)	48%	52%	0%	0%	0%	0%	0%	0%	100%
Military (Itinerant)	39%	27%	24%	7%	3%	0%	0%	0%	100%
Military (Local)	48%	52%	0%	0%	0%	0%	0%	0%	100%

Source: STLAA staff and CMT, Inc. 2024.

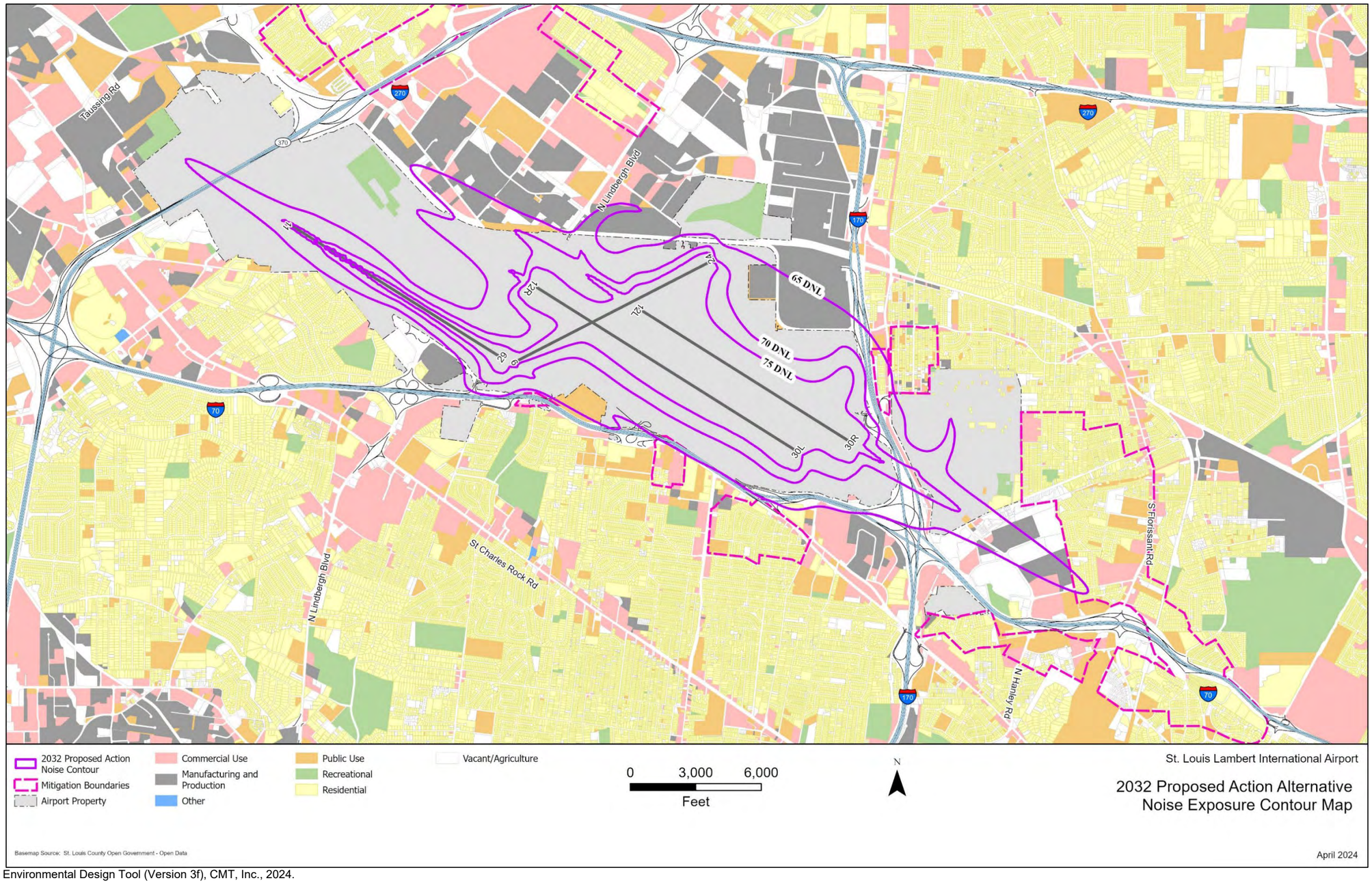
Noise Contours

Figure 7 depicts the future (2032) Proposed Action alternative DNL 65, 70, and 75 dBA contours. The DNL 65 dBA contour encompasses 1,064 acres of airport property and 590 acres of non-airport property.

As illustrated, most of the DNL 65 dBA contour lies within the existing airport property boundary. The recreational area northwest of Runway end 12R on airport property is a golf course not within the DNL 65 dBA contour. The public use area southeast of Runway end 30R on airport property is a church within the DNL 65 dBA contour. It is considered compatible with aircraft noise per FAA's land use compatibility table (see Table 1).

Where the contour extends beyond the airport boundary, the land uses are either considered to be compatible with aircraft noise or in areas for which aircraft noise has previously been mitigated through acoustical treatment of eligible properties or purchased by the airport, and residents relocated. Commercial and manufacturing land uses within the DNL 65 dBA northwest of Runway end 12L and north of Runway 12L/30R are considered compatible with aircraft noise. The public use area southeast of Runway end 29, which is within the DNL 65 dBA contour, is used for government services and is considered compatible with aircraft noise. Furthermore, all residential areas within the DNL 65 dBA have been mitigated for aircraft noise.

FIGURE 7: FUTURE (2032) PROPOSED ACTION DNL 65-75 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

FUTURE (2037) NO ACTION ALTERNATIVE

AEDT Input Data

For the evaluation of future (2037) conditions No Action alternative, there were no changes to STL's runways nor changes to the percent operations by time of day, runway or track utilization, departure stage length, or number/location of tracks when compared to the future 2032 No Action alternative. The forecast aircraft operations and fleet mix for the future (2037) No Action alternative are presented in Table 14.

TABLE 14: FUTURE (2037) FLEET MIX AND OPERATIONS

General Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
Passenger Carrie/ Cargo	5301	Airbus A220-100	737700	2,832	7.76
	967	Airbus A319	A319-131	3,777	10.35
	6400	Airbus A319neo	A319-131	5,572	15.27
	997	Airbus A320S	A320-211	376	1.03
	6398	Airbus A320neo	A320-270N	1,128	3.09
	2456	Airbus A321S	A321-232	2,404	6.59
	5976	Airbus A321neo	A321-232	2,404	6.59
	704	Airbus A300-600	A300-622R	819	2.24
	1095	Airbus A330-300	A330-343	520	1.42
	6662	Boeing 737 MAX 7	7378MAX	64,123	175.68
	6472	Boeing 737 MAX 8	7378MAX	45,907	125.77
	6406	Boeing 737 MAX 9	7378MAX	2,338	6.41
	457	Boeing 767-300/ER	7673ER	2,194	6.01
	3998	Bombardier CRJ-900	CRJ9-ER	8,161	22.36
	2106	Cessna 208 Caravan	CNA208	11,642	31.90
	6532	Tecnam P2012	BEC58P	6,798	18.62
	2560	Embraer 170	EMB170	530	1.45
	3815	Embraer 175	EMB175	31,068	85.12
	6440	Boeing 787-9	7879	208	0.57
Air Taxi / General Aviation	1239	Bombardier Challenger 300/600	CL600	3,253	8.91
	6070	Cessna 560 Citation XLS	CNA560XL	3,029	8.30
	3047	Cessna Citation Sovereign/ Latitude/Longitude	CNA680	2,387	6.54
	6552	Embraer Legacy, Phenom 100/300	CNA510	2,019	5.53
	2028	Learjet 35/45/55/60/75, Hawker 800	LEAR35	1,567	4.29
	1927	Gulfstream V/500	GV	1,422	3.90
	1292	Citation II/Bravo, Beechjet 400	CNA55B	1,418	3.88
	1976	Gulfstream 200/280	IA1125	1,385	3.79

General Category	AEDT Equipment ID	Aircraft Type(s)	AEDT ANP ID	Operations	
				Annual	Average Day
	1309	Cessna 750 Citation X, Dassault Falcon 2000	CNA750	828	2.27
	1603	Raytheon King Air, Super King Air	DHC6	617	1.69
	5189	Gulfstream IV/G400	GIV	582	1.59
	1489	PC-12	CNA208	442	1.21
	1323	Dassault Falcon 50/900, Falcon 7X	FAL900EX	374	1.02
	31	Beechcraft 1900	1900D	336	0.92
	1776	Bombardier Global Express/5000	BD-700-1A10	320	0.88
	1196	Baron 58, Seminole, Cessna 310/ 414/421	BEC58P	194	0.53
	6286	Beech Bonanza, Diamond 40, Piper Malibu	GASEPV	182	0.50
	1265	Cessna 172/177	CNA172	113	0.31
	1324	Cirrus SR20/22	COMSEP	82	0.22
Future Military Aircraft	1807	Boeing F-15E, F-15EX	F15A	1,369	3.75
	1862	Boeing T-7A Red Hawk	T-38A	876	2.40
	1532	Raytheon T-6A Texan II	CNA208	85	0.23
	1403	Boeing C-17 Globemaster	C17	11	0.03
	3170	Lockheed C-130 Hercules	C130E	11	0.03
			Total:	**215,703**	**590.97**

Note: Military operations were derived from data provided by The Boeing Company, STLAA, and STL ATCT staff.
AEDT = Aviation Environmental Design Tool and ANP = Aircraft Noise and Performance.
Source: STLAA staff and CMT, Inc, 2024.

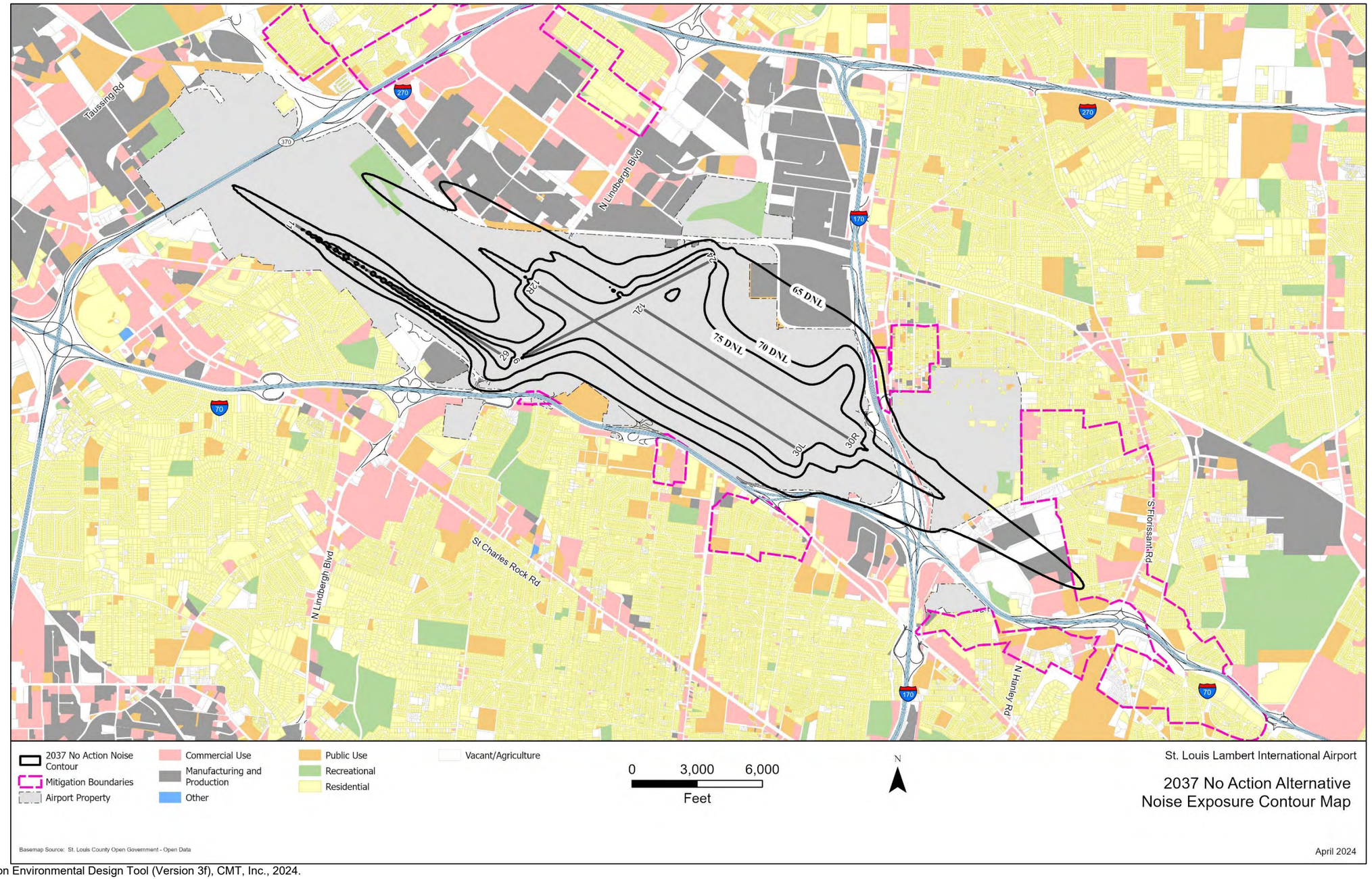
Noise Contours

Figure 8 depicts the future (2037) DNL 65, 70, and 75 dBA contours with the No Action alternative. The DNL 65 dBA contour encompasses 990 acres of airport property and 404 acres of non-airport property.

As illustrated, most of the DNL 65 dBA contour lies within the existing airport property boundary. The recreational area northwest of Runway end 12R on airport property is a golf course within the DNL 65 dBA to 70 dBA contours. It is considered compatible with aircraft noise per FAA's land use compatibility table (see Table 1). The public use area southeast of Runway end 30R on airport property is a church within the DNL 65 dBA and 70 dBA contours and is also considered compatible with aircraft noise.

Where the contour extends beyond the airport boundary, the land uses are either considered to be compatible with aircraft noise or in areas for which aircraft noise has previously been mitigated through acoustical treatment of eligible properties or purchased by the airport, and residents relocated. Commercial and manufacturing land uses within the DNL 65 dBA northwest of Runway end 12L and north of Runway 12L/30R are considered compatible with aircraft noise. All residential areas within the DNL 65 dBA have been mitigated for aircraft noise.

FIGURE 8: FUTURE (2037) NO ACTION DNL 65-75 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

FUTURE (2037) PROPOSED ACTION ALTERNATIVE

AEDT Input Data

For the evaluation of future year (2037) conditions with the Proposed Action, there were no changes to STL's runways when compared to the future (2037) No Action alternative. The modeled flight tracks and flight track utilization percentages were the same as the future (2037) No Action alternative.

The departure stage length, percent day/night operations, and runway use were the same as the future (2032) Proposed Action alternative (previously presented in Tables 10 and 12 through 14) and the number of annual operations by aircraft type were the same as the future (2037) No Action alternative (previously presented in Table 14).

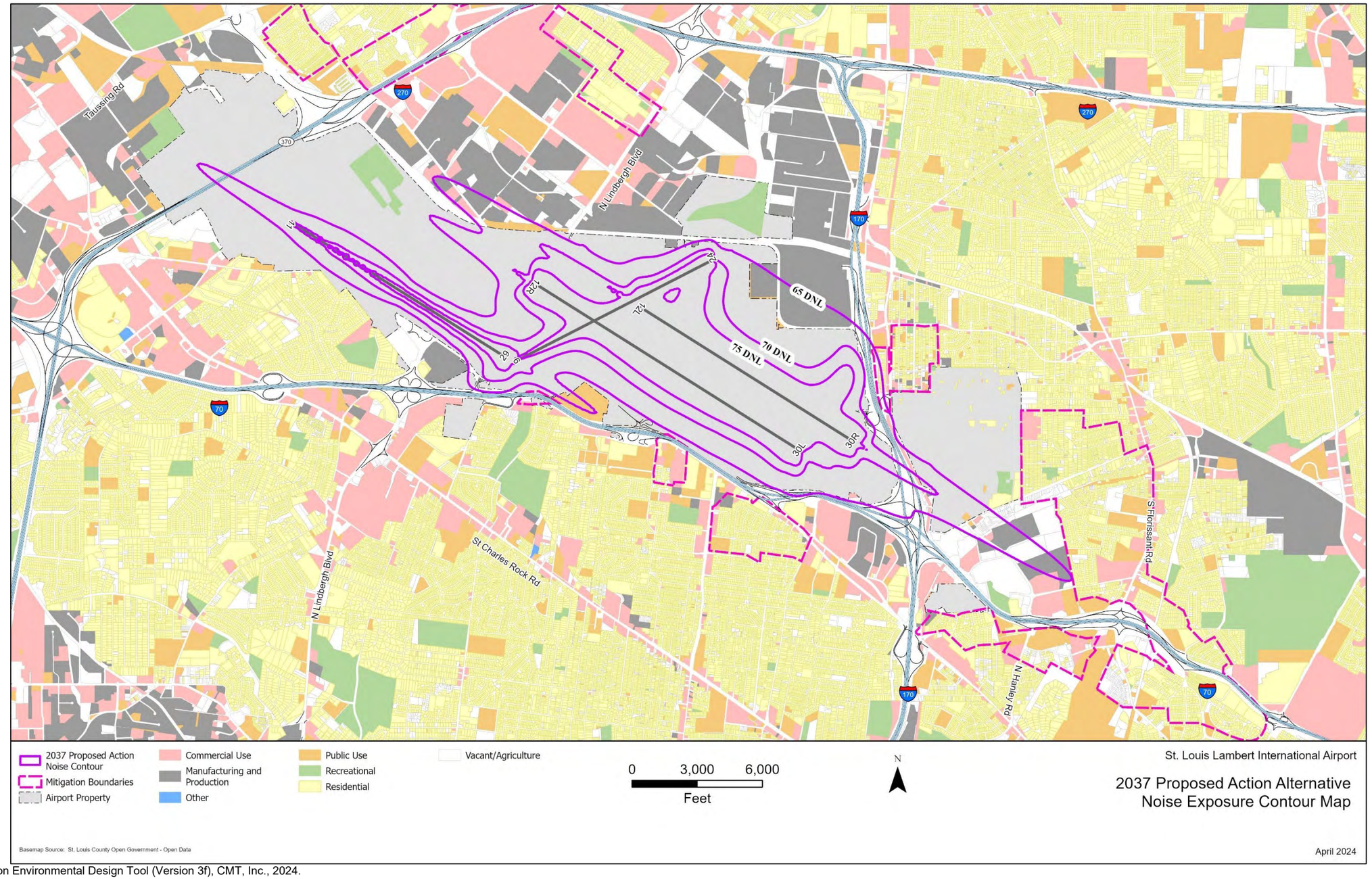
Noise Contours

Figure 9 depicts the future (2037) Proposed Action DNL 65, 70, and 75 dBA contours. The DNL 65 dBA contour encompasses 989 acres of airport property and 371 acres of non-airport property.

As illustrated, most of the DNL 65 dBA contour lies within the existing airport property boundary. The recreational area northwest of Runway end 12R on airport property is a golf course not within the DNL 65 dBA contour. The public use area southeast of Runway end 30R on airport property is a church within the DNL 65 dBA contour. It is considered compatible with aircraft noise per FAA's land use compatibility table (see Table 1).

Where the contour extends beyond the airport boundary, the land uses are either considered to be compatible with aircraft noise or in areas for which aircraft noise has previously been mitigated through acoustical treatment of eligible properties or purchased by the airport, and residents relocated. Commercial and manufacturing land uses within the DNL 65 dBA northwest of Runway end 12L and north of Runway 12L/30R are considered compatible with aircraft noise. The public use area southeast of Runway end 29, within the DNL 65 dBA contour, is used for government services and is considered compatible with aircraft noise. Furthermore, all residential areas within the DNL 65 dBA have been mitigated for aircraft noise.

FIGURE 9: FUTURE (2037) PROPOSED ACTION DNL 65-75 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

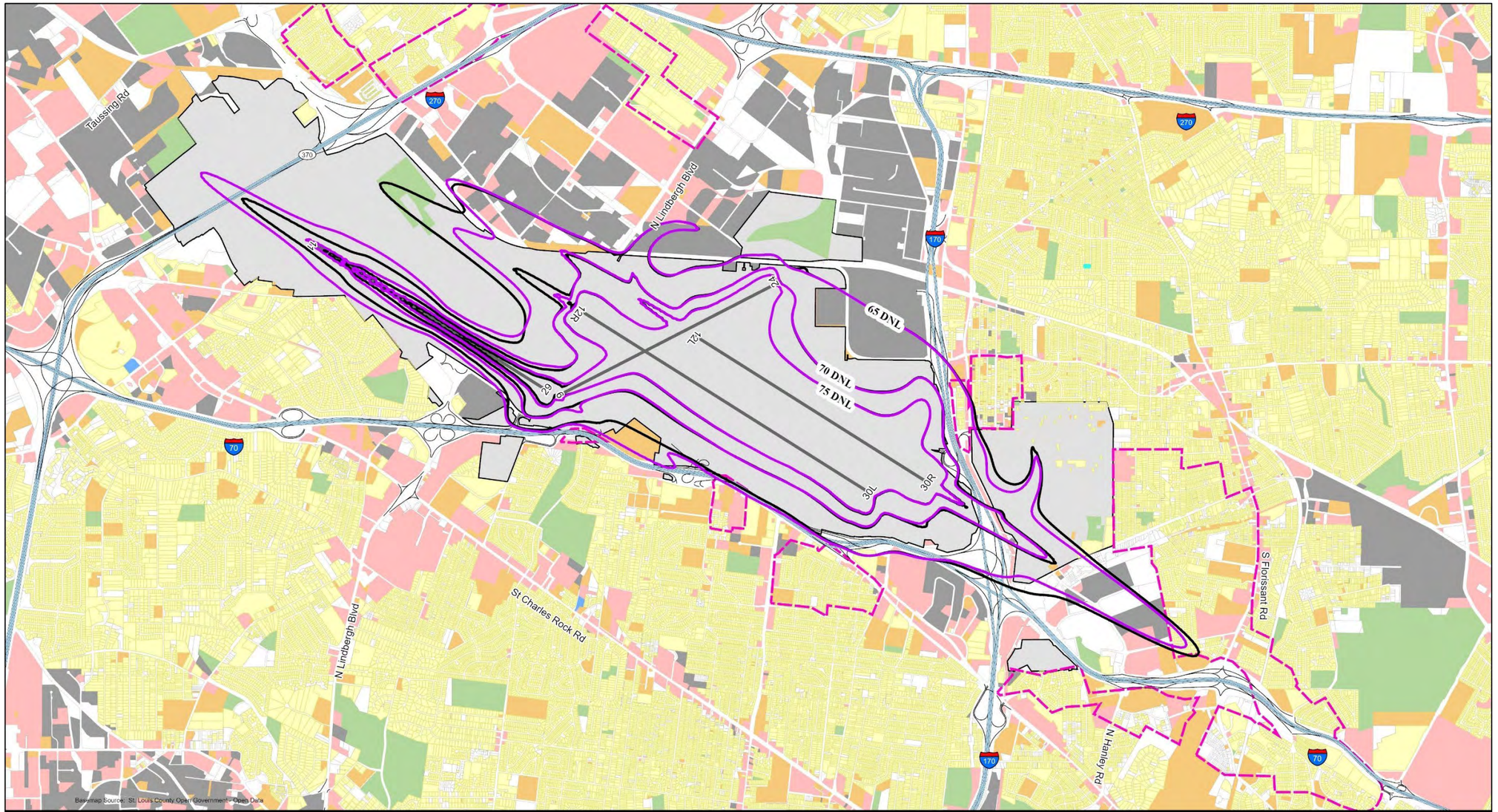
SIGNIFICANCE THRESHOLD

FAA guidance stipulates that a noise impact is considered significant when a proposed action results in noncompatible land use(s) being newly exposed to DNL 65 dBA or there is an increase of DNL 1.5 dBA or more at a noise-sensitive land use that without the action would be exposed to DNL 65 dBA. Figures 10 and 11 illustrate the changes to STL's aircraft noise contours in the future (2032 and 2037) with the Proposed Action.

In 2032, the DNL 65 dBA contour with the Proposed Action is outside of STL property in four areas (north of the Runway 12R end, north of Runway 12L/30R, south-southeast of the Runways 30L and 30R ends, and south-southeast of the Runway 6 end). The land uses north of Runway 12R end, and Runway 12L/30R is compatible with aircraft noise (i.e., in commercial/industrial uses and mitigated residential). South-southeast of STL, the No Action contour extends beyond the Proposed Action contour due to the anticipated changes in runway use with the Proposed Action. The fourth area, located south-southeast of Runway 6 end, is also considered to be compatible with aircraft noise (i.e., the property is categorized as public use). On airport property, there is a noise reduction for the recreational area northwest of Runway end 12R (golf course), and the public use area southeast of Runway end 30R (church) is considered compatible with aircraft noise. There is also a reduction in aircraft noise. As shown in Figure 10, in 2032, with the Proposed Action, the DNL 65 dBA contour would not encompass any noncompatible land uses.

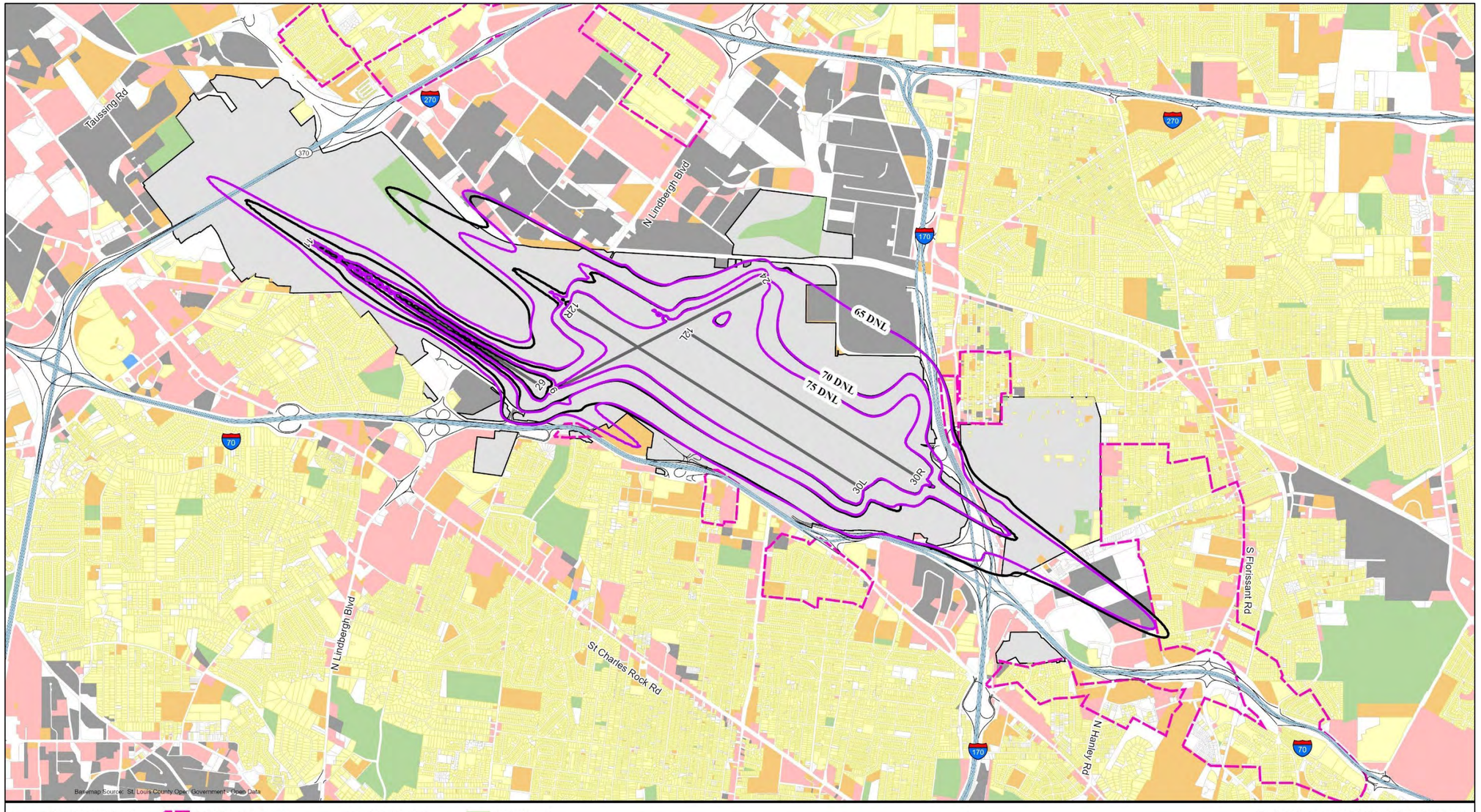
In 2037, the DNL 65 dBA contour with the Proposed Action is also outside STL property in four areas. The area northwest of STL that has compatible land uses, the area north-northeast of Runway 12L/30R that has compatible land uses, the area south-southeast of the Runways 30L and 30R ends where the No Action contour extends beyond the Proposed Action contour and the area south-southeast of the Runway 6 end that also has a compatible land use. Similar to 2032, aircraft noise decreases at the golf course northwest of Runway end 12R and southeast of Runway end 30R at the church. Furthermore, all residential areas within the DNL 65 dBA have been mitigated for aircraft noise. As shown in Figure 11, in 2037, with the Proposed Action, the DNL 65 dBA contour would not encompass any non-compatible land uses.

FIGURE 10: 2032 PROPOSED ACTION AND NO ACTION DNL 65 DBA CONTOURS



Sources: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

FIGURE 11: 2037 PROPOSED ACTION AND NO ACTION DNL 65 DBA CONTOURS



Source: Aviation Environmental Design Tool (Version 3f), CMT, Inc., 2024.

Appendix J:
Socioeconomic/EJ Assessment

Socioeconomic, Environmental Justice, and Children's Environmental Health and Safety Risks Analysis

The character of a community is largely determined by the people that live or work there. Associated factors that contribute to the characteristics of a community are business and labor markets, transportation systems, and utilities. The geography, geology, and climate of an area are also contributing factors. Any of the proposed actions that affect individuals within a community is a social impact. The FAA evaluates impacts of projects on three related categories – socioeconomics, environmental justice and children's environmental health and safety. A detailed evaluation of these three categories is provided below.

Socioeconomics

The evaluation of the proposed project's effects on the social and economic characteristics of affected communities, involves evaluating shifts in population, public service demands, roadway capacity, businesses, and economics. FAA Order 1050.1F Desk Reference indicates that the "*principal social impacts to be considered are those associated with relocation or other community disruption, transportation, planned development, and employment*."[1]

Factors to consider that may be applicable to socioeconomic resources, include, but are not limited to, the following:

- Inducing substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area).
- Disrupting or dividing the physical arrangement of an established community.
- Causing extensive relocation when sufficient replacement housing is unavailable.
- Causing extensive relocation of community businesses that would cause severe economic hardship for affected communities.
- Disrupting local traffic patterns and substantially reducing the levels of service of roads serving an airport and its surrounding communities.
- Producing a substantial change in the community tax base.

Environmental Justice

Executive Order (E.O.) 14096 - *"Revitalizing Our Nation's Commitment to Environmental Justice for All"* was enacted on April 21, 2023. E.O. 14096 on environmental justice does not rescind E.O. 12898 - *"Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,"* which has been in effect since February 11, 1994, and is currently implemented through DOT Order 5610.2C. This implementation will continue until further guidance is provided regarding the implementation of the new E.O. 14096 on environmental justice.

Executive Order 14096 (88 FR 25251, April 26, 2023) requires each Federal agency to include environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high, and adverse impacts of its programs, policies, and activities on minority and/or low-income populations. DOT Order 5610.2(a), Environmental Justice in Minority Populations and Low-Income Populations establishes how DOT, and its operating administrations would integrate EO 12898 with existing regulations and guidance. It states that it is the policy of

[1] FAA, Order 1050.1F, Desk Reference, July 2015, pg. 12-4

DOT to promote the principles of environmental justice through the incorporation of those principles into existing agency programs, policies, and activities. The Order goes on to state it is DOT's policy to promote the principles of environmental justice by considering them during or as a part of the planning and decision-making processes in the development of programs, policies, and activities, using the principles of NEPA, Title VI, the Uniform Act, and other applicable DOT statutes, regulations, and guidance. This Order provides guidance related to environmental justice impacts as follows: A *"disproportionately high and adverse effect on minority and low-income populations" is defined as an adverse effect that: "(1) is predominantly borne by a minority population and/or low-income population; or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or low-income population." The DOT Order also states that "[i]n making determinations regarding disproportionately high and adverse effects . . . mitigation and enhancement measures. . . and all offsetting benefits to the affected minority and low-income population may be taken into account . . ."*

Disproportionately high and adverse human health or environmental effects on minority and low-income populations may represent a significant impact.

Additional guidance provided in a document titled “Promising Practices for EJ Methodologies in NEPA Reviews”[2] (Promising Practices) was referenced for the specific steps used to identify minority and low-income populations presented in this analysis.

Children's Health and Safety Risk

Pursuant to *Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks*, Federal agencies are directed, as appropriate and consistent with the agency’s mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Environmental health and safety risks are defined as risks to health or safety that are attributable to products or substances that a child is likely to come in contact with or ingest such as air, food, drinking water, recreational waters, soil or products they might use or be exposed to. Disproportionate health and safety risks to children may represent a significant impact.

Proposed Action Surface Transportation Changes

The proposed Consolidated Terminal Plan includes roadway improvements to enhance the passenger experience and provide safe and efficient traffic operations, and in particular allow for a greater distance between the highway and the airport terminal to improve roadway safety. The proposed improvements include:

- Adding an auxiliary lane and shoulder improvements on the north side of I-70 from the Airflight Drive interchange to the existing west onramp at Lambert International Boulevard
- Airflight Drive intersection improvements that would remove direct access to Lambert International Boulevard
- Remove the ramp from Lambert International Boulevard onto westbound I-70
- Restripe and/or widen the lanes at the Cypress Road/Natural Bridge Road Intersection

[2] https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf

Results

Tables 1, 2 and 3 present demographic characteristics for the affected environment based on available geographic data from the U.S Census.[3] Because census geographies are used, the affected environment for this analysis differs from the project study area. The project study area includes the project construction limits and is included in the Proposed Action. The affected environment for this analysis includes the block groups (for minority and age population characteristics presented in Table 1), and census tracts (for disability and language characteristics presented in Table 1 and Table 2, respectively, and income characteristics presented in Table 3) that are wholly or partially within the project study area or have been identified as being potentially affected by the project. These census geographic areas were selected for the affected environment (also referred to affected community or AC on the attached exhibits) because they represent the smallest geographical unit available in the U.S. Census data, 2018-2022 5-year American Community Survey, for each characteristic examined.

Each census geography has limitations. The census block groups, and census tracts extend outside the project study area, thus including areas that could obscure the characteristics of the population within the affected area. The census blocks represent the affected area with only a slight geographical overrun, but the Census Bureau makes privacy-related changes to this detailed data that may result in mischaracterization of the population within a given census block. Because the census tracts and block groups that comprise the affected environment cover a larger area than the specific project limits, the data presented in Tables 1-3 represent a population slightly to moderately larger than that present within the project study area.

Minority and Low-Income Population Methods and Results

The *fifty percen*t and *meaningfully greater* analyses described in the Promising Practices document were used to identify minority populations in the affected environment. Along with minority status, limited English proficiency household data was also analyzed using the to further understand where minority populations within the affected community may be. The *meaningfully greater* analysis requires a reference community. St. Louis County, Missouri was selected as the reference community, also known as a community of comparison (COC), as shown on the attached exhibits. The purpose of comparing data for the reference community to that of the affected environment is to determine if there is a meaningfully greater minority population present within the affected environment when compared to the larger geographical area around the Airport. For the *meaningfully greater* analyses in this report, the populations in the affected community were analyzed compared to 125% of the reference community.

According to the American Community Survey (ACS) 5-year estimates (2018-2022), the total population in St. Louis County, the reference community, is approximately 998,684 and the total minority population is 369,270. The affected community has a total population of 66,519 with a minority population of 38,938. The total percentage of minorities in the affected community is 59%, which suggests an EJ population of concern according to the *fifty-percent* analysis.

The minority data in Tables 1 and Table 2 indicates the presence of a minority population in multiple census blocks per *fifty percen*t and *meaningfully greater* analysis. Because the minority population in the combined affected environment exceeds 50%, and the minority population exceeds 125% of the reference community in 43 of the 62 block groups in the affected environment, the Promising Practices document recommends a heightened focus on environmental justice issues. The minority data in Table 1 indicates the presence of a minority

[3] U.S. Census website: https://www.census.gov/data.html

population in multiple census blocks per *fifty percen*t and *meaningfully greater* analysis, highlighted in orange.

The following census tracts and the entirety of their associated block groups within the affected community were identified as having a minority population of EJ concern according to the *meaningfully greater* analysis: Census Tract 2114.02, Census Tract 2115, Census Tract 2127.01, Census Tract 2127.02, Census Tract 2131.04, Census Tract 2133.02, Census Tract 2134.02, Census Tract 2135, and Census Tract 2218. The following block groups were contained within a Census Tract in the affected community that had at least one identified minority population of EJ concern: Block Group 3, Census Tract 2131.03; Block Groups 1 and 3, Census Tract 2132.04; Block Groups 1 and 3, Census Tract 2133.01; Block Groups 2, 3, 4, and 5, 2134.01, Block Groups 1, 2, 3, and 4. Census Tract 2136; Block Groups 3, 4, 5, and 7, Census Tract 2147; Block Group 2, Census Tract 2148; and Block Group 1, Census Tract 2149.01.

Census Tracts that were over the *meaningfully greater* threshold for Overall Limited English Proficiency Households include the following: Census Tract 2131.03, Census Tract 2132. 03, Census Tract 2132.04, 2133.01, 2134.01, and 2135. A total of six census tracts had populations that were identified as over the *meaningfully greater* threshold for specific language groups compared to the reference community that were not over the threshold for overall Limited English Proficiency. Census Tract 2114.02 was over the *meaningfully greater* threshold for Other Indo-European language households with Limited English Proficiency. Census Tract 2131.04, 2133.02, 2134.02, 2136, and 2148 were over the *meaningfully greater* threshold for Spanish Households with Limited English Proficiency. Census Tract 2148 was also over the *meaningfully greater* threshold for Other Language Households with Limited English Proficiency. All of the census tracts that were identified as over the *meaningfully greater* threshold for Limited English Proficiency Households were also identified as having a minority EJ population of concern, with the exception of Census Tract 2132.03 which has populations over the established threshold for overall limited English proficiency, Spanish households with limited English proficiency, and other Indo-European language households with limited English proficiency.

The *Low-Income Threshold Criteria* analysis described in the Promising Practices document was used to identify low-income populations in the affected environment. The indicator of poverty selected represented the population poverty levels in comparison with the Census Bureau's poverty threshold.

The low-income data in Table 3 indicates the presence of low-income populations in multiple census blocks per the Low-Income Threshold Criteria analysis. The low-income population exceeds the reference community's percentage below poverty level in 13 of the 19 census tracts in the affected environment, highlighted in orange. The low-income population threshold chosen was 125% of the reference communities' population below poverty levels comparison with the Census Bureau's poverty threshold. Because the low-income population in the combined affected environment also exceeds the chosen threshold, the Promising Practices document recommends a heightened focus on environmental justice issues.

According to the American Community Survey (ACS) 5-year estimates (2018-2022), the total percent of individuals below poverty level for the reference community is 9.62%. A threshold of 125% of the reference community, equaling 12.02%, was used to conduct the *Low-income Threshold Criteria analysis*. The total population of low-income individuals in the affected community is 62,121, with 11,524 individuals being below the poverty level. Therefore, the combined low-income percentage of all census tracts in the affected community is 18.5% and is a low-income EJ population of concern. The following Census Tracts within the affected community were identified as having a low-income EJ population of concern: Census Tract 2115, Census Tract 2127.01, Census Tract 2127.02, Census Tract 2131.04, Census Tract 2132.04, Census Tract 2133.02, Census Tract 2134.01, Census Tract 2134,02, Census Tract 2135, Census Tract 2136, Census Tract 2147, Census Tract 2149.01, and Census Tract 2218.

The following census tracts were identified as having both minority and low-income EJ populations of concerns: Census Tract 2115, Census Tract 2127.01, Census Tract 2127.02, Census Tract 2131.04, Census Tract 2132.04, Census Tract 2133.02, Census Tract 2134.01, Census Tract 2134.02, Census Tract 2135, Census Tract 2136, Census Tract 2147, Census Tract 2149.01, and Census Tract 2218. Most of these census tracts are located in the southeastern portion of the affected community, with all the census tracts east of SR 67 having both minority and low-income EJ populations of concerns, except Census tract 2133.01 and Census Tract 2148. Only six census tracts within the affected community were not identified as having both populations of EJ concern, and only two have neither a minority or low-income EJ population of concern, 2131.02 and 2132.03. Three of the four Census Tracts located within the study area were identified as having both minority and low-income EJ populations of concern.

Other Traditionally Underrepresented Populations Methods and Results

Because other groups outside of minority and low income populations have the potential for adverse socioeconomic impacts from projects, these traditionally underrepresented populations were also evaluated for possible effects.

The *meaningfully greater* analyses described in the Promising Practices document were used to identify populations of individuals under 18 and 65 and over in the affected environment. The same reference community used from the minority and low-income analysis was used to analyze if any census tracts had other traditionally underrepresented populations of concern. The under 18 and 65 and over age group exceeds 125% of the reference community in 20 of the 62 and 14 of the 62 block groups in the affected environment, respectively. The overall disabled and ambulatory difficulty populations exceed 125% of the reference community in 10 of the 19 and 9 out of 19 census tracts. The age, disability and ambulatory difficulty data in Table 1 indicates the presence of traditionally underrepresented populations of concern in multiple block groups per *meaningfully greater* analysis, highlighted in orange. Based on this information, a heightened focus on socioeconomic issues was taken.

According to the American Community Survey (ACS) 5-year estimates (2018-2022), the total percent of individuals 18 and under for the reference community is 22.19%. A threshold of 125% of the reference community, equaling 27.74%, was used to conduct the analysis. The total percentage of individuals 65 and over for the reference community is 15.46%. A threshold of 125% of the reference community, equaling 19.32%, was used to conduct the analysis The following block groups within the affected community were identified as having an under 18 EJ population of concern: Block Group 1 and 2, Census Tract 2115; Block Group 1, Census Tract 2127.01; Block Group 3, Census Tract 2127.02; Block Group 2, Census Tract 2131.04; Block Group 2, Census Tract 2132.03; Block Group 1, Census Tract 2132.04; Block Group 1, Census Tract 2133.01, Block Groups 1 and 2, Census Tract 2133.02; Block Group 2 and 3, Census Tract 2134.01; Block Group 1, Census Tract 2134.02, Block Groups 1, 4, and 5, Census Tract 2136, Block Groups 2, 4, and 7. Census Tract 2147; and Block Group 2, Census Tract 2218. The following block groups within the affected community were identified as having a 65 and over EJ population of concern: Block Group 3, Census Tract 2115; Block Group 1, Census Tract 2127.02; Block Group 1, Census Tract 2131.03; Block Group 1 and 2, Census Tract 2132.03, Block 3, Census Tract 2132.04; Block Group 2, Census Tract 2133.01; Block group 2, Census Tract 2134.01; Block Group 1, Census Tract 2135; Block Group 6, Census Tract 2147; Block Group 2, 4, and 5, Census Tract 2148; and Block Groups 2, Census Tract 2149.01

According to the American Community Survey (ACS) 5-year estimates (2018-2022), the total percent of individuals with a disability for the reference community is 11.66%. A threshold of 125% of the reference community, equaling 14.57%, was used to conduct the analysis. The total percentage of individuals with ambulatory difficulties for the reference community was 5.86% (note that this dataset did not include children under the age five). A threshold of 125% of the reference community, equaling 7.31%, was used to conduct the analysis The following Census Tracts within the affected community were identified as having an overall disabled population of concern: Census Tract 2127.01, Census Tract 2131.04, Census Tract 2132.03, Census Tract 2133.01, Census Tract 2134.02, Census Tract 2135, Census Tract 2136, Census Tract 2148, Census Tract 2149.01, Census Tract 2218. The following block groups within the affected community were identified as having a ambulatory difficulty EJ population of concern: Census Tract 2115, Census Tract 2127.01, Census Tract 2131.04, Census Tract 2132.03, Census Tract 2133.01, Census Tract 2135, Census Tract 2136.

Table 1: Demographic Data and Population Characteristics

Geographic Area	Total Population	Minority		Under 18 Years		65 & Over		Disabled		Ambulatory Difficulty	
	Number	Number	%	Number	%	Number	%	Number	%	Number	%
Affected Area											
Census Tract 2114.02	2,101	-	-	-	-	-	-	199	9.47%	109	5.19%
Block Group 1	1681	1130	67.22%	191	11.36%	209	12.43%	-	-	-	-
Block Group 2	420	278	66.19%	32	7.62%	47	11.19%	-	-	-	-
Census Tract 2115	2,531		-	-	-	-	-	351	13.87%	295	11.66%
Block Group 1	832	795	95.55%	299	35.94%	99	11.90%	-	-	-	-
Block Group 2	834	825	98.92%	348	41.73%	111	13.31%	-	-	-	-
Block Group 3	865	793	91.68%	138	15.95%	181	20.92%	-	-	-	-
Census Tract 2127.01	3,321		-	-	-	-	-	669	20.14%	423	12.74%
Block Group 1	2,019	1746	86.48%	714	35.36%	309	15.30%	-	-	-	-
Block Group 2	1,302	1153	88.56%	327	25.12%	230	17.67%	-	-	-	-
Census Tract 2127.02	1,910		-	-	-	-	-	229	11.99%	134	7.02%
Block Group 1	278	154	55.40%	28	10.07%	65	23.38%	-	-	-	-
Block Group 2	976	814	83.40%	219	22.44%	73	7.48%	-	-	-	-
Block Group 3	656	587	89.48%	242	36.89%	0	0.00%	-	-	-	-
Census Tract 2131.02	508		-	-	-	-	-	54	10.63%	32	6.30%
Block Group 1	508	73	14.37%	99	19.49%	71	13.98%	-	-	-	-
Block Group 2	0	0	-	0	0.00%	0	0.00%	-	-	-	-
Census Tract 2131.03	3,271		-	-	-	-	-	343	10.49%	121	3.70%
Block Group 1	899	162	18.02%	179	19.91%	337	37.49%	-	-	-	-
Block Group 2	688	212	30.81%	130	18.90%	117	17.01%	-	-	-	-
Block Group 3	1,765	991	56.15%	459	26.01%	240	13.60%	-	-	-	-
Census Tract 2131.04	1,113		-	-	-	-	-	209	18.78%	189	16.98%
Block Group 1	100	48	48.00%	18	18.00%	6	6.00%	-	-	-	-
Block Group 2	1,137	622	54.71%	338	29.73%	219	19.26%	-	-	-	-
Census Tract 2132.03	4,417		-	-	-	-	-	732	16.57%	468	10.60%

Block Group 1	1,839	322	17.51%	118	6.42%	714	38.83%	-	-	-	-
Block Group 3	1,166	164	14.07%	345	29.59%	267	22.90%	-	-	-	-
Block Group 3	1,513	434	28.68%	396	26.17%	234	15.47%	-	-	-	-
Census Tract 2132.04	3,669		-	-	-	-	-	379	10.33%	232	6.32%
Block Group 1	1,565	773	49.39%	455	29.07%	274	17.51%	-	-	-	-
Block Group 2	1,113	470	42.23%	144	12.94%	122	10.96%	-	-	-	-
Block Group 3	1,189	593	49.87%	222	18.67%	236	19.85%	-	-	-	-
Census Tract 2133.01	3,549		-	-	-	-	-	859	24.20%	388	10.93%
Block Group 1	641	613	95.63%	258	40.25%	41	6.40%	-	-	-	-
Block Group 2	1,133	416	36.72%	168	14.83%	254	22.42%	-	-	-	-
Block Group 3	1,775	927	52.23%	469	26.42%	168	9.46%	-	-	-	-
Census Tract 2133.02	3,896		-	-	-	-	-	397	10.19%	253	6.49%
Block Group 1	911	683	74.97%	336	36.88%	52	5.71%	-	-	-	-
Block Group 2	1,817	902	49.64%	535	29.44%	136	7.48%	-	-	-	-
Block Group 3	1,168	776	66.44%	140	11.99%	109	9.33%	-	-	-	-
Census Tract 2134.01	4,686		-	-	-	-	-	558	11.91%	303	6.47%
Block Group 1	326	87	26.69%	42	12.88%	41	12.58%	-	-	-	-
Block Group 2	759	432	56.92%	218	28.72%	242	31.88%	-	-	-	-
Block Group 3	1,242	885	71.26%	478	38.49%	131	10.55%	-	-	-	-
Block Group 4	785	383	48.79%	124	15.80%	148	18.85%	-	-	-	-
Block Group 5	1,574	1451	92.19%	706	44.85%	104	6.61%	-	-	-	-
Census Tract 2134.02	1,771		-	-	-	-	-	291	16.43%	105	5.93%
Block Group 1	704	537	76.28%	314	44.60%	31	4.40%	-	-	-	-
Block Group 2	1,067	616	57.73%	231	21.65%	98	9.18%	-	-	-	-
Census Tract 2135	5,299		-	-	-	-	-	899	16.97%	425	8.02%
Block Group 1	1,029	725	70.46%	186	18.08%	318	30.90%	-	-	-	-
Block Group 2	2,038	1006	49.36%	432	21.20%	300	14.72%	-	-	-	-
Block Group 3	1,132	566	50.00%	178	15.72%	210	18.55%	-	-	-	-
Block Group 4	1,166	672	57.63%	123	10.55%	145	12.44%	-	-	-	-

Census Tract 2136	3,950		-	-	-	-	-	754	19.09%	419	10.61%
Block Group 1	1,795	1584	88.25%	585	32.59%	261	14.54%	-	-	-	-
Block Group 2	296	251	84.80%	36	12.16%	19	6.42%	-	-	-	-
Block Group 3	596	533	89.43%	104	17.45%	128	21.48%	-	-	-	-
Block Group 4	880	848	96.36%	296	33.64%	27	3.07%	-	-	-	-
Block Group 5	503	151	30.02%	224	44.53%	76	15.11%	-	-	-	-
Census Tract 2147	8,182		-	-	-	-	-	896	10.95%	390	4.77%
Block Group 1	1,198	295	24.62%	317	26.46%	152	12.69%	-	-	-	-
Block Group 2	802	353	44.01%	268	33.42%	115	14.34%	-	-	-	-
Block Group 3	1,127	548	48.62%	126	11.18%	31	2.75%	-	-	-	-
Block Group 4	849	517	60.90%	443	52.18%	24	2.83%	-	-	-	-
Block Group 5	2,147	1600	74.52%	437	20.35%	297	13.83%	-	-	-	-
Block Group 6	521	66	12.67%	26	4.99%	111	21.31%	-	-	-	-
Block Group 7	1,661	1300	78.27%	491	29.56%	96	5.78%	-	-	-	-
Census Tract 2148	4,567		-	-	-	-	-	994	21.76%	568	12.44%
Block Group 1	985	108	10.96%	126	12.79%	75	7.61%	-	-	-	-
Block Group 2	1,391	743	53.41%	195	14.02%	453	32.57%	-	-	-	-
Block Group 3	994	328	33.00%	264	26.56%	141	14.19%	-	-	-	-
Block Group 4	537	123	22.91%	47	8.75%	139	25.88%	-	-	-	-
Block Group 5	660	14	2.12%	150	22.73%	203	30.76%	-	-	-	-
Census Tract 2149.01	3,599		-	-	-	-	-	801	22.26%	211	5.86%
Block Group 1	2,268	1204	53.09%	605	26.68%	330	14.55%	-			
Block Group 2	1,333	344	25.81%	209	15.68%	319	23.93%	-			
Census Tract 2218	3,364		-	-	-	-	-	513	15.25%	345	10.26%
Block Group 1	1,961	1927	98.27%	542	27.64%	246	12.54%	-	-	-	-
Block Group 2	910	878	96.48%	304	33.41%	34	3.74%	-	-	-	-
Block Group 3	493	407	82.56%	106	21.50%	49	9.94%	-	-	-	-
Affected Area Combined Census Tracts	65,704	-	-	-	-	-	-	10,127	15%	5,410	8%
Affected Area Combined Block Groups	66,519	38,938	59%	16,280	24%	10,015	15%	-	-	-	-

Reference Community											
St Louis County	998,684	369270	36.98%	221598	22.19%	154378	15.46%	116,397	11.66%	58,429	5.85%
125% of COC	-	-	46.22%		27.74%		19.32%		14.57%		7.31%

Note: Orange shaded cells represent the presence of an EJ population of concern

Table 2: Demographic Data, Limited English Proficiency Households

Geographic Area	Total Households	Overall Limited English Proficiency		Spanish Households with Limited English proficiency:		Other Indo-European language Households with Limited English proficiency:		Asian and Pacific Island language Households with Limited English proficiency:		Other language Households with Limited English proficiency:	
	Number	Number	%	Number	%	Number	%	Number	%	Number	%
Affected Area											
Census Tract 2114.02	1111	8	0.72%	0	0.00%	8	0.72%	0	0.00%	0	0.00%
Census Tract 2115	1053	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2127.01	1344	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2127.02	688	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2131.02	210	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2131.03	1333	242	18.15%	199	14.93%	0	0.00%	35	2.63%	8	0.60%
Census Tract 2131.04	469	8	1.71%	8	1.71%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2132.03	1726	42	2.43%	16	0.93%	12	0.70%	14	0.81%	0	0.00%
Census Tract 2132.04	1501	134	8.93%	114	7.59%	0	0.00%	20	1.33%	0	0.00%
Census Tract 2133.01	1614	58	3.59%	16	0.99%	24	1.49%	18	1.12%	0	0.00%
Census Tract 2133.02	1586	8	0.50%	8	0.50%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2134.01	1851	57	3.08%	52	2.81%	0	0.00%	5	0.27%	0	0.00%
Census Tract 2134.02	630	11	1.75%	9	1.43%	0	0.00%	2	0.32%	0	0.00%
Census Tract 2135	2272	53	2.33%	17	0.75%	21	0.92%	15	0.66%	0	0.00%

Census Tract 2136	1597	20	1.25%	20	1.25%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2147	3110	25	0.80%	0	0.00%	0	0.00%	25	0.80%	0	0.00%
Census Tract 2148	2403	45	1.87%	30	1.25%	0	0.00%	0	0.00%	15	0.62%
Census Tract 2149.01	1630	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Census Tract 2218	1247	6	0.48%	6	0.48%	0	0.00%	0	0.00%	0	0.00%
Affected Area Combined Census Tracts	27375	717	3%	495	1.81%	65	0.24%	134	0.49%	23	0.08%
Reference Community											
St Louis County	413,258	6234	1.51%	1273	0.31%	2138	0.52%	2334	0.56%	489	0.12%

Note: Orange shaded cells represent the presence of an EJ population of concern

Table 3: Demographic Data, Income Characteristics

Geographic Area	TOTAL POPULATION	Below Poverty Level	
	Number	Number	%
Affected Area			
Census Tract 2114.02	2101	178	8.47%
Census Tract 2115	2531	600	23.71%
Census Tract 2127.01	3205	621	19.38%
Census Tract 2127.02	1898	642	33.83%
Census Tract 2131.02	508	25	4.92%
Census Tract 2131.03	3271	259	7.92%
Census Tract 2131.04	1113	507	45.55%
Census Tract 2132.03	4398	196	4.46%
Census Tract 2132.04	3669	631	17.20%
Census Tract 2133.01	3549	263	7.41%
Census Tract 2133.02	3896	823	21.12%
Census Tract 2134.01	4616	766	16.59%
Census Tract 2134.02	1771	568	32.07%
Census Tract 2135	5278	635	12.03%
Census Tract 2136	3928	1210	30.80%
Census Tract 2147	8242	1128	13.69%
Census Tract 2148	4567	454	9.94%
Census Tract 2149.01	3580	476	13.30%
Census Tract 2218	3329	1542	46.32%
Affected Area Combined Census Tracts	62121	11524	18.55%
Reference Community			
St Louis County	978,040	94,056	9.62%
125% of COC	-	-	12.02%

Note: Orange shaded cells represent the presence of an EJ population of concern

Economic Background

St. Louis Lambert International Airport Economic Impact Study, 2024

In January of 2024, Greater St. Louis Inc, a nonprofit organization, released an economic impact study of the St. Louis Lambert International Airport. The report included a historical and future economic analysis to demonstrate the benefit the airport brings to the region and what proposed changes to the airport would do for the local economy. For the historical economic impact analysis, data from 2019 was chosen to demonstrate a typical year of activity at the airport. The future economic impact analysis uses 2032 as the base year, as that was the expected completion date of the airport redevelopment described in the airport master plan. The study analyzes jobs, payroll, value added, and business revenues to assess the total impact of activity occurring on and off surrounding airport property in the region.

For the historical economic impact analysis, it was found that more than 102,800 jobs from on and off airport impacts generated approximately $7.5 billion in payroll, and $27.5 billion in business revenues, contributing $10.0 billion in value added to the region's economy, annually as of 2019. It is noted that there are currently three major global corporations that have headquarters in the St. Louis region that are directly tied to airport activity or require services provided by the airport, Bayer, Boeing, and Bunge, and how not only do these companies benefit the area by supplying jobs to the region, but they directly rely on the airport and its success to continue to remain in the region.

For the future economic impact analysis, it was found that in 2032, the anticipated impacts of on and off airport activity will provide over 133,500 jobs in the St. Louis region, which will result in almost $9.1 billion paid out in payroll, adding $12.5 billion to the GRP, and generation almost $32.4 billion in total business revenues. When comparing the value expected in 2032 to the historical value of the airport in 2019, it is anticipated the total payroll impacts will increase by 56%, the number of jobs will increase by 55%, and the total overall contribution of the expected increase in economic activity will increase by 53%.

Due to the large impact the airport has on the region and the amount of people and businesses that directly rely on the airport operations in their day to day lives, the surrounding communities are heavily interested in the airport's development and any future changes that may occur that would affect the economy of the local area.

Woodson Terrace Comprehensive Plan, 2011

According to the Woodson Terrace Comprehensive Plan that was prepared in 2011, the majority of the market segment that come or will come to the community will use I-70. The plan suggests that Woodson Terrace could be a hot spot for development due to the millions of visitors to the area per year (due to the airport), but is currently not living up to that potential due to the physical separation provided by I-70 between the airport and Woodson Terrace, as well as a lack of clear access from the airport to this area.

Public Involvement Considerations and Providing Meaningful Public Involvement During the NEPA Process

Public Involvement for the Consolidated Terminal Project began in February of 2020 and has become an important component of the proposed project due to concerns of surrounding community members on past airport redevelopment efforts that were viewed as a negative impact to their communities. In addition, the demographic data for the affected community indicates the need for a heightened focus on socioeconomic and environmental justice issues. Public outreach for the project has included agency and public scoping meetings, and a meeting with the Gateway Coalition. A timeline of public engagement and outreach activities, as well as implications on the socioeconomic, environmental justice and children's environmental health and safety analysis is detailed below.

1. **February 2020 Airport Survey:** On January 21, 2020, the East-West Gateway (EWG) Executive Advisory Committee (EAC) met and were asked by the EWG Board of Directors to have a conversation regarding how the St. Louis region can work collaboratively to strengthen and improve the airport for the benefit of the entire region. The Board of Directors directed staff to begin identifying a scope for the study of St. Louis Lambert International Airport. The following week, staff sent a survey to about 90 individuals – including the EWG BOD, EWG EAC, Lambert airport commissioners, leaders of other airports in the region, economic development leadership throughout the St. Louis region, and leaders of other regional organizations. The purpose of the survey was to gauge the interest in a study of Lambert, discern what regional leaders think is important to include in the scope of such a study, and determine what they would seek as outcomes of such a study. A total of 39 responses to the survey were received as of February 18, 2020. The main themes of the comments that focused on the socioeconomics of the area were related to the economic and community impacts the proposed action would have. The economic concerns were focused on the importance of the airport to the economic vitality of the region and how to greatest maximize this asset. The community concerns related to the location of the airport and how there are several low-income municipalities and unincorporated areas and that they should specifically be studied as the future of the airport is decided. The comments are provided in Appendix A of the EA.

2. **December 15, 2022 (10am-12pm, virtual)- Agency Scoping Meeting-** The Agency Scoping Meeting was attended by 17 representatives of state and local agencies, including the East-West Gateway Council of Governments, Metropolitan St. Louis Sewer District, Missouri State Historic Preservation Office, Missouri Department of Transportation and their I-70 design consultants, and St. Louis County. Other attendees included 20 representatives of the FAA Airports Division, FAA STL Air Traffic Control Tower, STL staff, and representatives of the STL Master Plan and NEPA teams[4]. The purpose of this meeting was to present the proposed project as well as another project happening at the airport. No comments related to socioeconomics, environmental justice, or children's environmental health and safety risks were noted. The comments are provided in Appendix A of the EA.

[4] *NEPA Agency and Public Scoping Minutes, St Louis International Airport*

3. **December 15, 2022 (4pm-7pm, in person)- Public scoping Meeting:** The purpose of this meeting was to share information about the proposed project, introduce the NEPA process, and gather public input about the scope of the alternatives and impacts to be evaluated. The Public Scoping Meeting was promoted on STL's social media platforms and the FlySTL website. Postcards with the Public Scoping Meeting details were sent to 14,110 residents and businesses within a one-mile radius of the airport. Email invitations were sent to 49 Master Plan project stakeholders and 101 individuals who subscribed for updates at the May 5, 2022, Master Plan Open House. Six social media posts were distributed by STL. A media advisory and press release were also distributed to regional new outlets. These tasks resulted in several promotional stories about the Public Scoping Meeting and comment process[5]. No comments related to socioeconomics, environmental justice, or children's environmental health and safety risks were noted. The comments are provided in Appendix A of the EA.

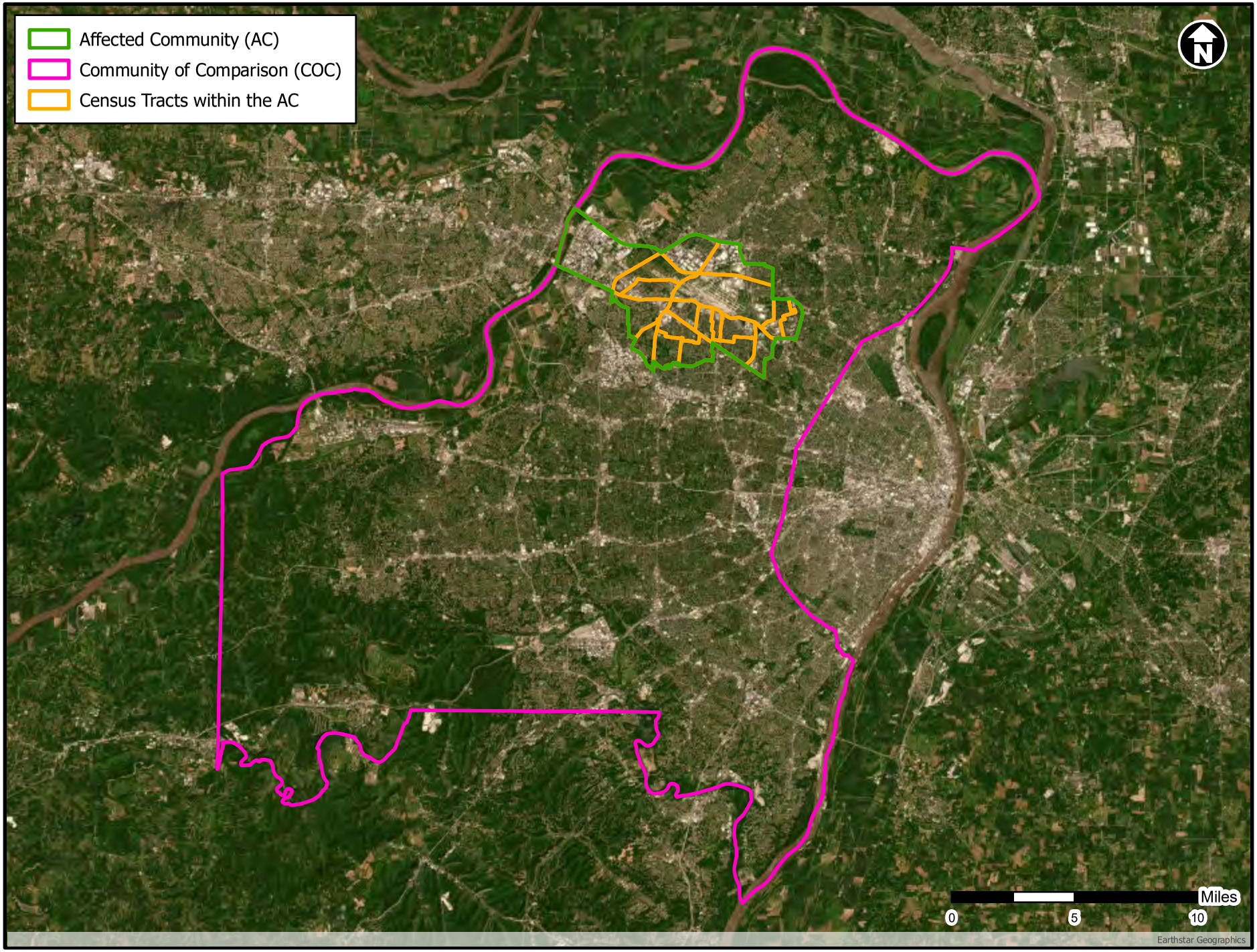
4. **November 21, 2023 (10:30am-12:15pm) - Gateway Airport Communities Coalition Briefing:** The purpose of this meeting was to recap the Airport planning requirements that led to the consolidated terminal proposal and to review the status of the planning process. A history of the access plan evolution with discussion of the Woodson Terrace tunnel project and the community concerns received to date occurred. Travel time and distance comparisons were presented for local access to the Airport. The focus of the briefing was on the terminal project and the planning of the roadways[6]. A total of 23 comments were received at the meeting. The themes of the comments were related to past airport expansion and distrust from that process, traffic, and roadway realignment, for both personal and public transportation, changes and concerns, surrounding property development, economic impacts, and other associated projects with the expansion not on airport property.

   To date, the stakeholders that have been the most vocal throughout each public involvement opportunity are the members of the Gateway Community Coalition, specifically the City of Woodson Terrace. The other communities to the south of the airport have been a part of the public involvement process but have not submitted formal comments or asked to be a part of the NEPA process. According to Woodson Terrace Mayor Larence P. Besmer, the community supports a strong and vibrant airport with efficient roadways but recognized that past public investment in these types of upgrades has physically separated communities close to the airport and severed the connection to such an important economic and job-creating engine for the area. The mayor stated that the community wanted the following listed items evaluated. The comments provided by Woodson Terrace on January 17, 2023 are provided in Appendix A of the EA.

   - Any potential unavoidable adverse environmental effects
   - The relationship between short-term uses of man's environment and the maintenance and enhancement of long-tern productivity
   - Any potential irreversible or irretrievable commitments of resources
   - Possible conflicts with land use plans, policies, and controls for the area
   - Energy and natural or depletable resource requirements and conservation potential of alternative and mitigation measures

[5] *NEPA Agency and Public Scoping Minutes, St Louis International Airport*
[6] *Gateway Airport Communities Coalition Briefing, WSP*

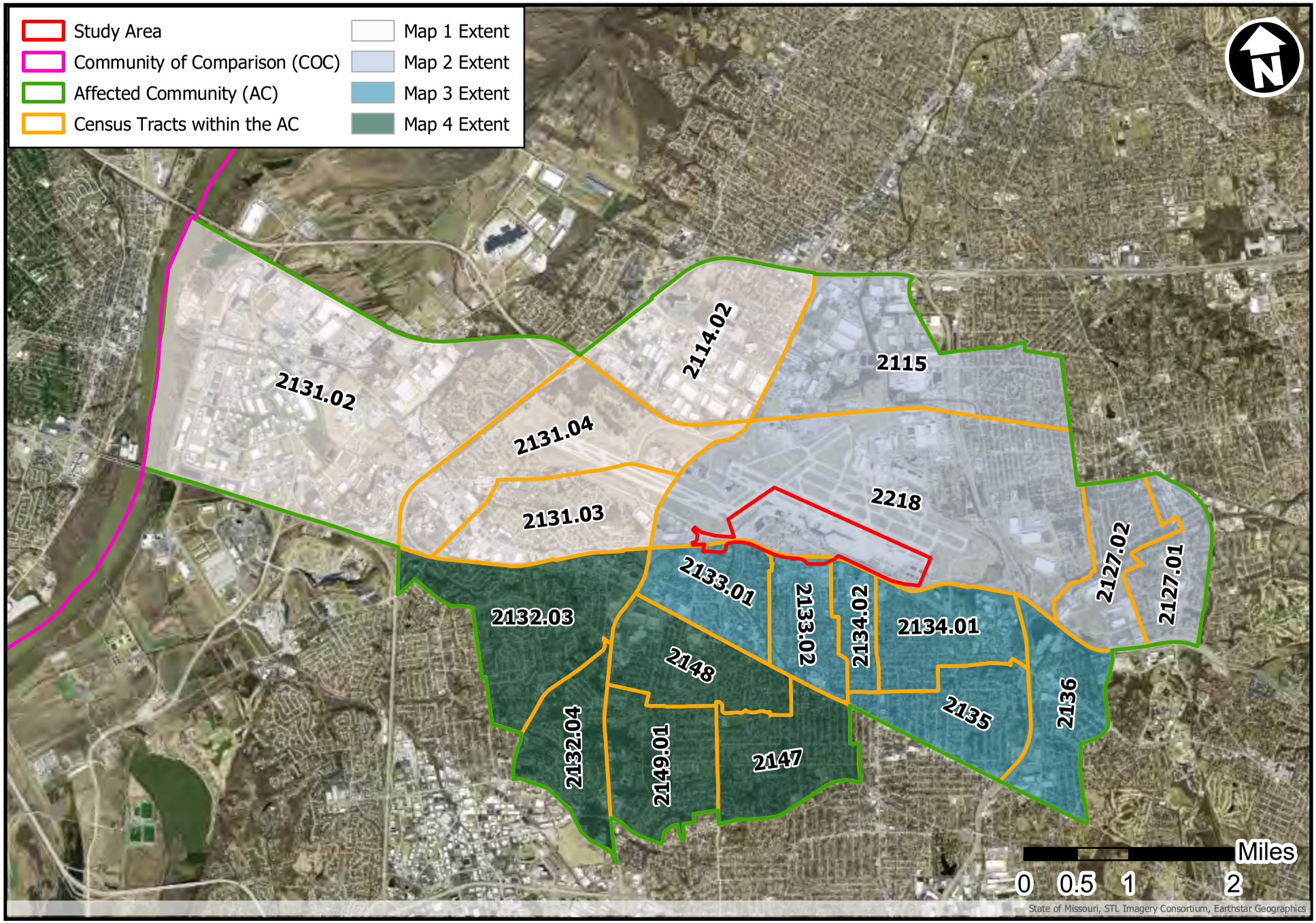
- Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- Mitigation of adverse environmental impacts
- Applicable economic and technical considerations, including the economic benefits of the proposed action.



St. Louis Lambert International Airport - Consolidated Terminal Program

Overall Socioeconomic Analysis Map

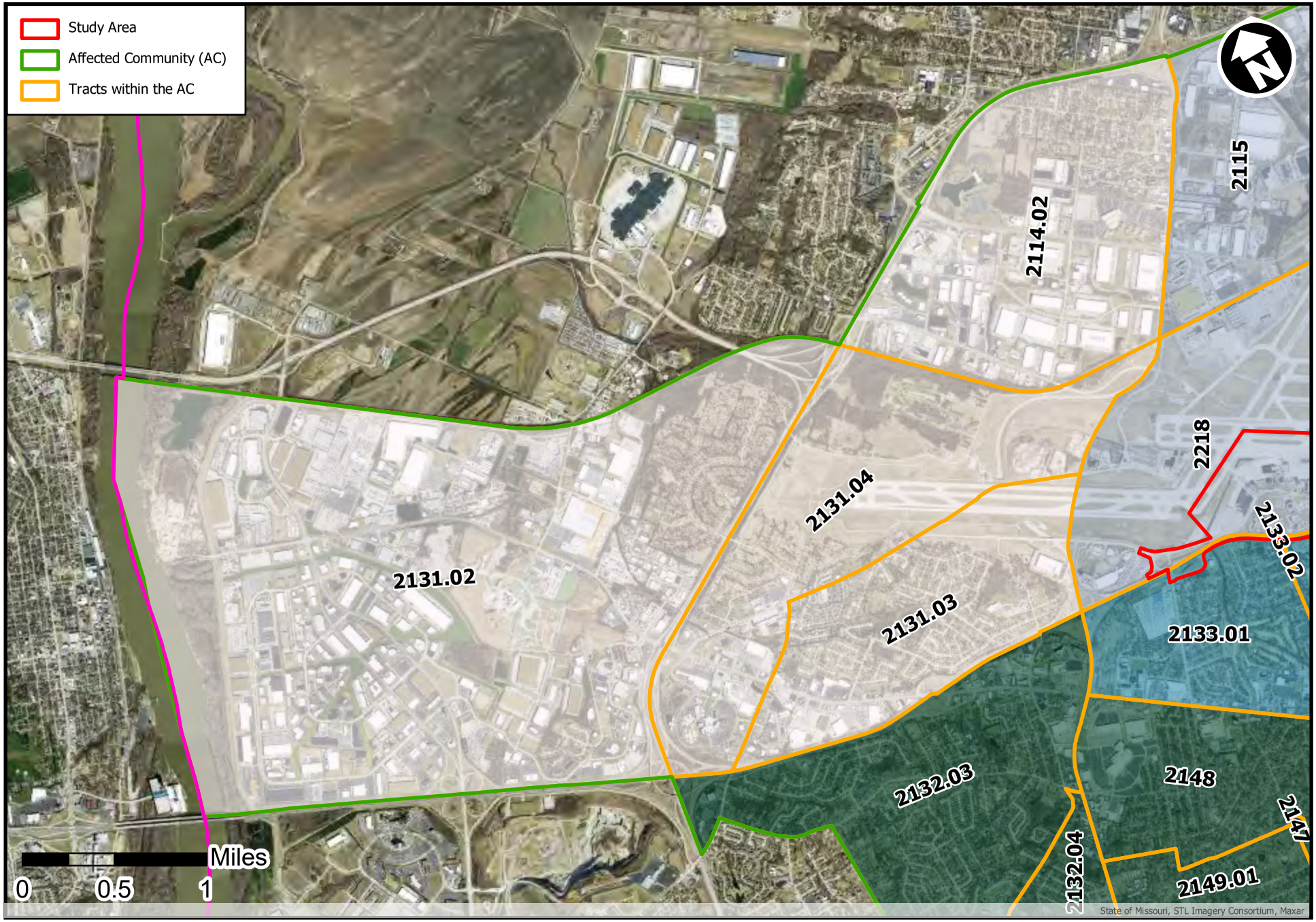
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program

Socioeconomic Analysis Map - Affected Communities

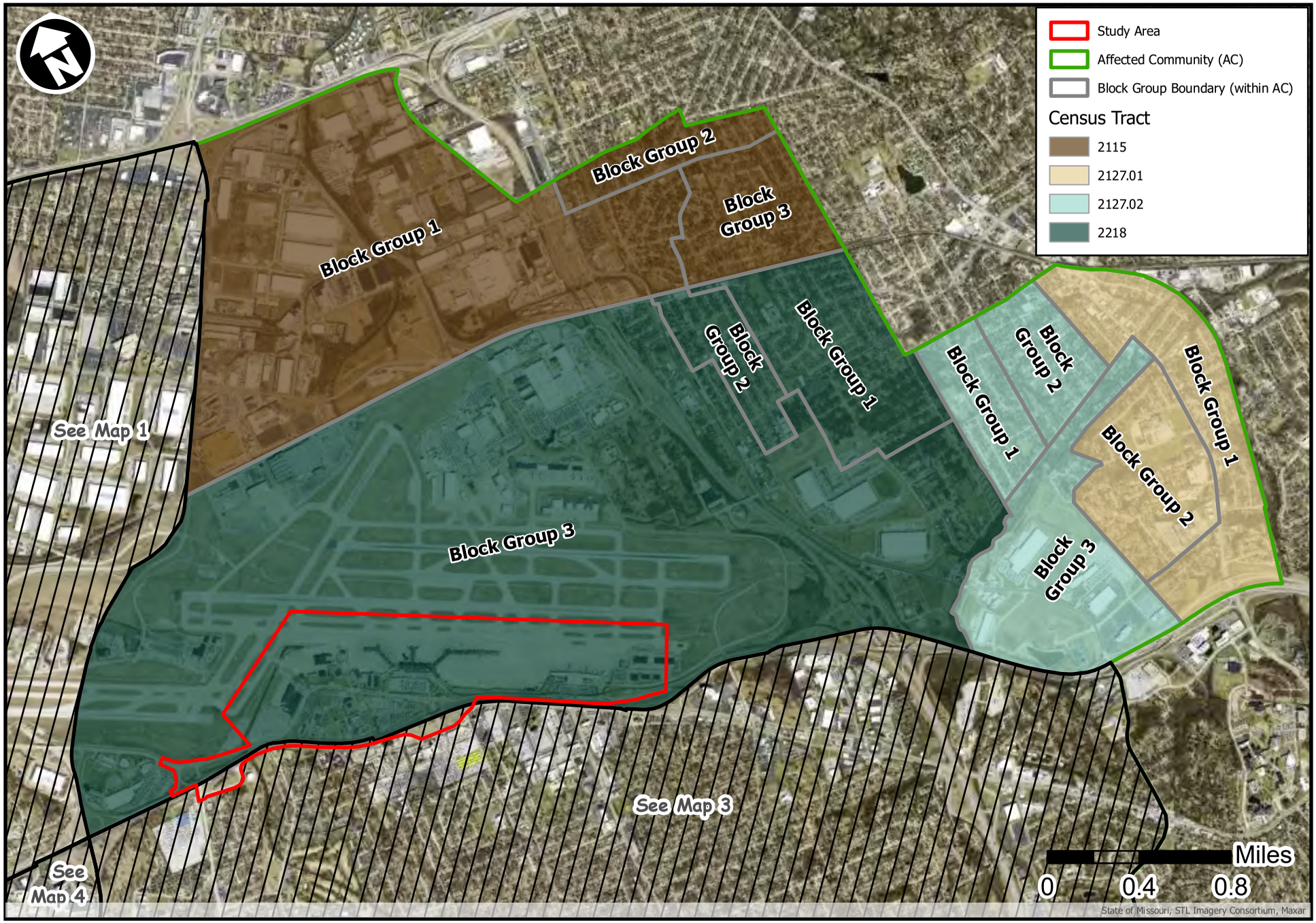
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program

Socioeconomic Analysis Map - Affected Communities (1 of 4)

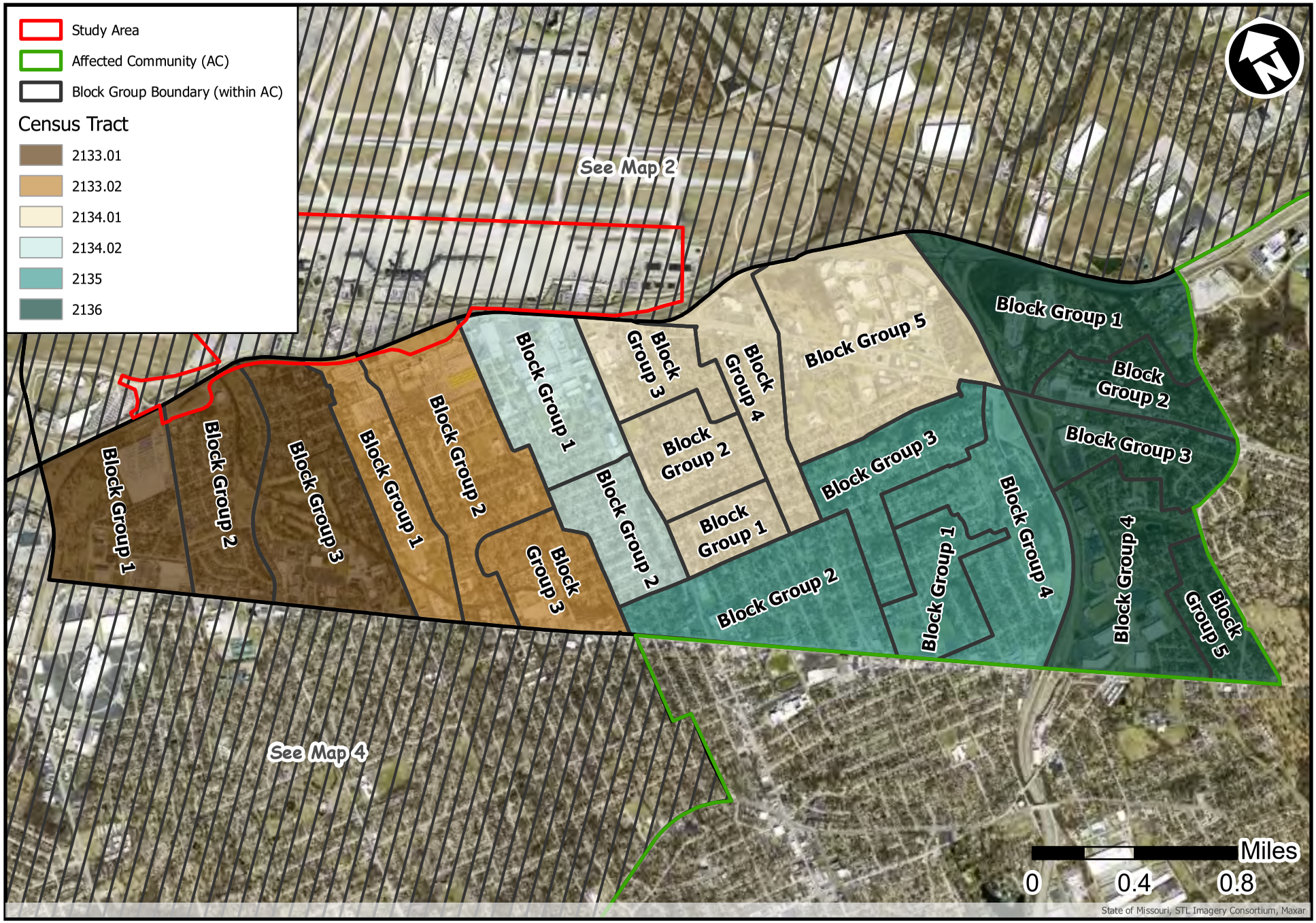
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program

Socioeconomic Analysis Map - Affected Communities (2 of 4)

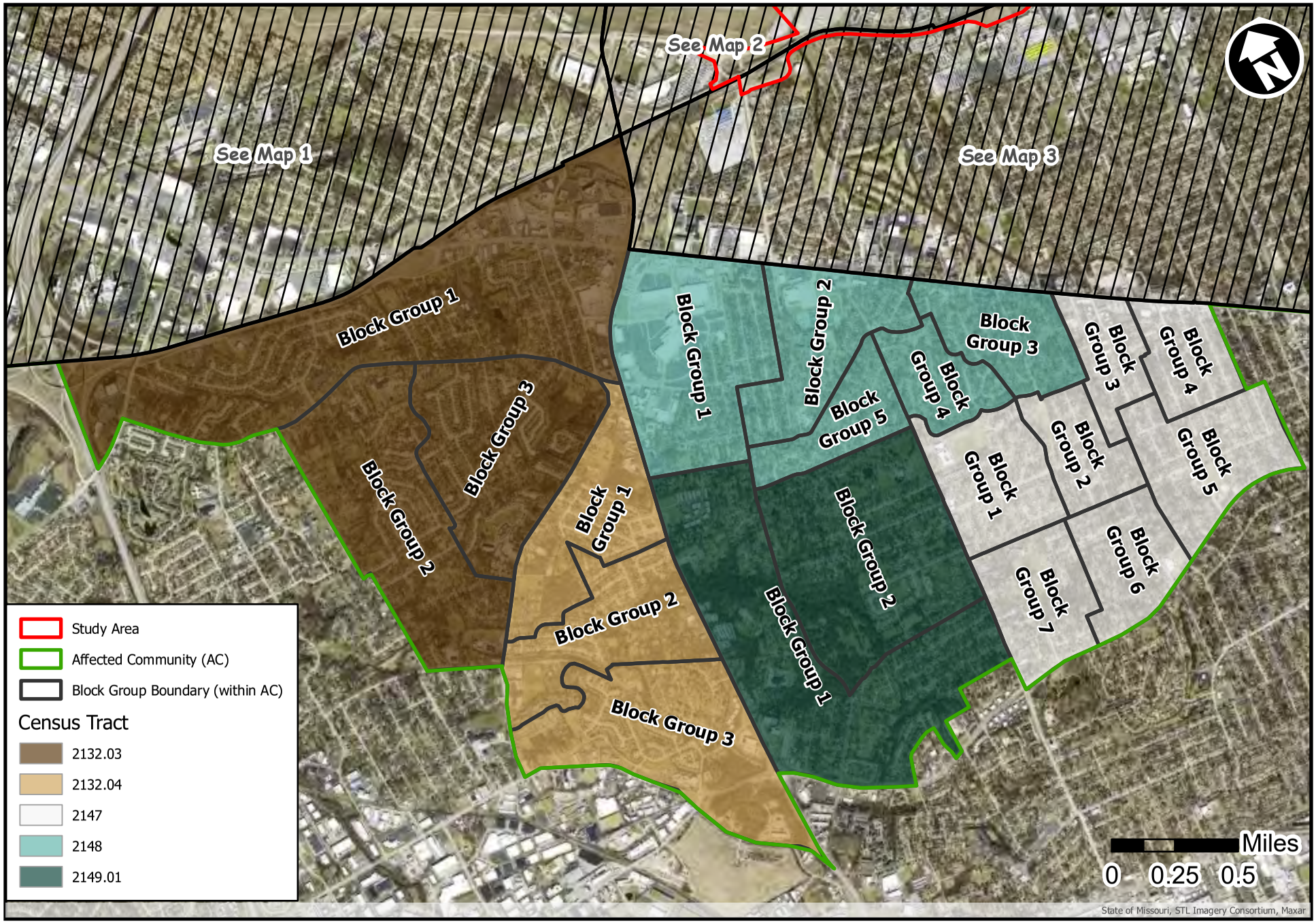
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program

Socioeconomic Analysis Map - Affected Communities (3 of 4)

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program

Socioeconomic Analysis Map - Affected Communities (4 of 4)

CMT
Crawford, Murphy & Tilly

Appendix K:
Surface Transportation Assessment

Noise Analysis Report

NOISE ANALYSIS REPORT

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
CONSOLIDATED TERMINAL PROGRAM I-70 MODIFICATIONS

ST. LOUIS, ST. LOUIS COUNTY, MISSOURI
MAY 2024

PREPARED FOR:

MISSOURI DEPARTMENT OF TRANSPORTATION

PREPARED BY:

CRAWFORD, MURPHY & TILLY, INC.

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APPENDICES

EXECUTIVE SUMMARY

St. Louis Lambert International Airport (STL) is proposing improvements to the airport terminal and associated facilities at STL, including improvements to on-airport parking and access drives. The Federal Aviation Authority (FAA) Consolidated Terminal Program (CTP) project NEPA study area is shown in the County Location, USGS Topographic, and Aerial maps in Appendix A.

As a result of the access changes, this project includes proposed changes to the portion of Interstate 70 (I-70) and associated interchanges and ramps that are adjacent to the terminal. The proposed highway changes are located in the section of I-70 from the split Cypress Road/Natural Bridge Road interchange on the west to the STL airport interchange at Airflight Drive on the east. The proposed highway changes include the following improvements:

- Removal of the westbound onramp from Lambert International Boulevard, west of the existing airport terminal
- Addition of an auxiliary lane adjacent to the north outside lane of I-70, beginning at the westbound onramp of the STL airport interchange and ending at the existing auxiliary lane that extends west from the Lambert International Boulevard onramp, which will be removed
- Reconfiguration of the lanes on Cypress Road, Natural Bridge Road, and the interchange ramps at the Natural Bridge Road/Cypress Road interchange

The project is a Type 1 project under 23 CFR 772.5 because it involves a new auxiliary lane that will extend approximately 2,800 feet. FHWA guidance does not exempt from noise analysis projects that include auxiliary lanes 2,500 feet or longer. The highway traffic noise study area, which includes the area within 500 feet from the portion of I-70 where the improvements are proposed, is shown in the Traffic Noise Study Area Map in Appendix A.

A total of 204 noise-sensitive receptors, represented by 205 TNM receivers, were evaluated for noise impacts as part of this study. The receptors include the following:

- 18 single-family residences (18 dwelling units) and a day care with outdoor playground in the neighborhood south of the westbound I-70 Cypress Road interchange ramps (the Cypress Road neighborhood)
- Receivers representing two team benches at the St. Ann Park ballfield
- 29 single-family residences (29 dwelling units) in the neighborhood along Ashby Road east of St. Ann Park (the Ashby Road neighborhood)
- 128 apartments (128 dwelling units) in the Pear Tree Apartments complex, as well as a receptor representing the pool for the apartment complex
- 23 single-family residences and duplexes (28 dwelling units) in the residential neighborhood south of the Pear Tree Apartments complex (the Pear Tree Lane neighborhood)
- Three hotels with outdoor pools

The evaluation was performed using Traffic Noise Model (TNM) 2.5. The TNM model was validated by field measurements, the locations of which may be seen in the NAC Activity Class Map with Proposed Field Measurements in Appendix A. Traffic noise impacts, which are determined by the 2037 Build scenario, are predicted for 67 receivers, including six in the Cypress Road neighborhood,

14 in the Ashby Road neighborhood, one of the two ballfield benches, 40 apartments and the pool in the Pear Tree Apartments, and five in the Pear Tree Lane neighborhood. Locations of the projected noise impacts are shown on the Projected Traffic Noise Impacts and Projected Traffic Noise Impacts at Pear Tree Apartments maps in Appendix A. Abatement measures were considered but were found not to be reasonable at the Cypress Road and Ashby Road neighborhoods and at St. Ann Park due to barriers not meeting the noise reduction design goal within a reasonable area per benefited receptor.

Based on consideration of abatement measures, one noise barrier has been recommended for consideration: the barrier at the line of the limited access right of way (ROW) in front of Pear Tree Apartments meets MoDOT's requirements for feasibility and reasonableness, with public involvement required to confirm public desire for the barrier. The recommended barrier and the insertion levels for each receptor in the apartment complex are showin in the Recommended Barrier Insertion Results map in Appendix A.

Based on the studies completed to date, MoDOT has identified 67 impacted receptors and has determined that noise abatement is likely, but not guaranteed, at one location.

Noise Barrier Name	Preliminary General Location	GIS Location Start/End (Lat./Long.)	Average Height (feet)	Length (feet)	Area (Square Ft.)	Material (Construction Material, Surface Texture, Foundation)
Pear Tree Apartments L/A ROW	I-70 Eastbound, at the edge of ROW at and west of the Pear Creek Apartments	Start 38.7416921°N, 90.3767954°W, End 38.7402450°N, 90.373835177°W	19.06	1,057	20,146	Precast Concrete, Absorptive, Ground Mounted

Noise abatement at this location is based upon preliminary design criteria. Noise abatement in these locations at this time has been estimated to reduce the noise level by a minimum of 7 dB(A) at all first-row, ground-floor benefited receptors. A re-evaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is not feasible and reasonable, the abatement measures might not be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement process. The viewpoints of the benefited residents and property owners will be sought and will be considered in determining the reasonableness of highway traffic noise abatement measures for proposed highway construction projects. MoDOT and FAA will incorporate highway traffic noise consideration in on-going activities for public involvement in the highway program.

PROJECT DESCRIPTION

The STL CTP project is the result of STL master planning efforts that considered multiple concepts for terminal layouts, including multiple options that retain the existing two terminals and multiple options for a consolidated terminal. Five rounds of alternatives analysis resulted in a preferred alternative. In February 2023, STL finalized its master plan around the proposed STL CTP. The NEPA study area for the STL CTP is shown in the County Location, USGS Topographic and Aerial maps in Appendix A.

During the conceptual design phase of the STL CTP, it was determined that some off-airport roadway capacity improvements would be needed to better accommodate vehicular traffic demand that currently accesses two terminals at STL but would access a single terminal under the Proposed Action. The traffic noise impacts of these proposed off-airport roadway improvements are addressed in this noise analysis. Because roadway plans remain at the conceptual stage, this description and the noise analysis performed on its basis should be considered preliminary.

The I-70 modification project is located adjacent to the south side of STL, in Edmundson, St. Ann, and Bridgeton, Missouri. The traffic noise study area includes approximately 1.1 miles from the split Cypress Road/Natural Bridge Road interchange on the west to the STL Airport interchange at Airflight Drive on the east. The traffic noise study area may be seen in the Traffic Noise Study Area map in Appendix A.

At present, this section of I-70 has three lanes traveling in each direction, with acceleration and deceleration lanes at the ramps to and from Airflight Drive, Cypress Road and Natural Bridge Road and an acceleration ramp on the westbound side from Lambert International Drive between Airflight Drive and Cypress Road. An auxiliary lane is provided between the Lambert International Drive acceleration ramp and the Cypress Road deceleration lane.

Cypress Road has two traveling lanes in each direction with a center two-way left-turn lane along most of its length. Dedicated right and left turn lanes are provided on all legs at the intersection with the eastbound I-70 ramp south of I-70. At the T-intersection with Natural Bridge Road, Cypress Road has one southbound lane and three northbound turn lanes (two heading west and one heading east).

Airflight Drive has two southbound lanes and three northbound lanes, two through lanes and one turn lane. Lambert International Boulevard consists of three lanes in each direction with two through lanes and one turn lane in each direction. Pear Tree Drive/Lane has primarily one lane in each direction with turn lanes.

The proposed off-airport roadway improvements (preferred alternative) include the following improvements:

- Removal of the westbound onramp from Lambert International Boulevard, west of the existing airport terminal
- Addition of an auxiliary lane adjacent to the north outside lane of I-70, beginning at the westbound onramp of the STL airport interchange and ending at the existing auxiliary lane that extends west from the Lambert International Boulevard onramp that will be removed

- Reconfiguration of the lanes on Cypress Road, Natural Bridge Road, and the interchange ramps at the Natural Bridge Road/Cypress Road interchange

The project is a Type 1 project under 23 CFR 772.5 because it involves a new auxiliary lane that will extend approximately 2,800 feet. FHWA guidance does not exempt from noise analysis projects that include auxiliary lanes 2,500 feet or longer.

CRITERIA FOR DETERMINING IMPACTS

TRAFFIC NOISE TERMINOLOGY

Noise is generally defined as unwanted sound. Its loudness is measured in terms of sound pressure levels expressed in decibels (dB) and is composed of a wide range of frequencies. The decibel scale is logarithmic and expresses the ratio of the sound pressure unit being measured to a standard reference level. Most sounds occurring in the environment do not consist of a single frequency, but rather a broad band of differing frequencies. Frequencies are measured in hertz (Hz), which is the number of cycles per second. The human ear is typically capable of hearing frequencies from approximately 20 to 20,000 Hz and is less sensitive to higher and lower frequencies than mid-range frequencies. To compensate for low-end and high-end frequency insensitivity and to render noise levels readings more relevant to human experience, an "A-weighting" scale is used to approximate the response of the human ear. The A-weighted decibel (dB(A)) unit emphasizes measurement of perceptible sound energy and factors out the frequencies not perceptible to humans.

The dB(A) unit may indicate the level of environmental noise at an instant in time, but community noise levels vary continuously. Most environmental noise includes a composite of noise from different sources, creating a relatively steady background noise in which no particular source is identifiable. To describe the time-varying character of traffic noise, the equivalent hourly sound level Leq(h), is commonly used. Leq(h) is defined as the equivalent steady-state sound level over a one-hour period which contains the same acoustic energy as the time-varying sound level during the same period. Noise levels referred to in this report are stated as hourly-equivalent sound pressure levels Leq(h) expressed in units of dB(A).

As decibels are logarithmic units, sound levels cannot be added by ordinary arithmetic means. The following general relationships provide a basic understanding of sound generation and propagation:

- The noise level from a line source, such as moving traffic on a road, will decrease approximately 3 dB(A) with every doubling of distance from the source.
- Research has indicated that a difference of 10 dB(A) is perceived as twice as loud (or half as loud) to the human ear.
- Typically, the human ear can barely perceive a 3 dB(A) change in loudness.

FEDERAL REGULATIONS

The Federal Aid Highway Act of 1970 required the Federal Highway Administration (FHWA) to develop noise standards and abatement requirements for highway traffic noise. These standards are contained in Title 23, Code of Federal Regulations (CFR), Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise. This regulation applies to highway construction projects where a state department of transportation has requested Federal funding for participation in the project. 23 CFR 772 provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for federal and federal-aid highway projects. The regulations do not mandate that the abatement criteria be met in all situations, but rather require that reasonable and feasible efforts be made to provide noise mitigation when the abatement criteria are approached or exceeded. Per 23 CFR 772.3, all highway projects that are developed in conformance with this regulation are deemed to be in conformance with FHWA noise standards.

FHWA has developed three “project types” to assess noise analysis applicability. Federal regulations only apply to Type I and Type II projects. Type III projects are ones that do not meet the definition of a Type I or Type II project and do not require a noise analysis. The project is a Type 1 project under 23 CFR 772.5 because it involves the construction of a roadway on new location. Therefore, a traffic noise analysis is required for the full project limits. The FHWA regulations establish Noise Abatement Criteria (NAC) activity categories based on land use to assess potential traffic noise impacts as defined in 23 CFR 772. The FHWA NAC and description of activity categories are shown in Table 1. Traffic noise impacts occur when predicted design year noise levels under the build scenario approach, meet or exceed the NAC, or if there are substantial increases in traffic noise over existing conditions, independent of the NAC.

The FHWA NAC are used to identify locations where traffic noise impacts occur. The NAC are not used as goals for noise attenuation design criteria or design targets. FHWA requires use of FHWA Traffic Noise Model (TNM) 2.5 or 3.0 to determine current and future traffic noise levels created by a proposed project; TNM 2.5 has been used to perform this noise analysis. FHWA has deferred to the State agencies to define the noise level that “approaches” the NAC and to define a substantial increase in traffic noise levels.

TABLE 1: FHWA NOISE ABATEMENT CRITERIA (NAC) ACTIVITY CATEGORIES

Activity Category	Leq (1 hour)	Description of Activity Category
A	57 dB(A) (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 dB(A) (exterior)	Residential.
C	67 dB(A) (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	52 dB(A) (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools and television studios.
E	72 dB(A) (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	-	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical) and warehousing.
G	-	Undeveloped lands that are not permitted.

Source: 23 CFR 772, Table 1

If one or both of these conditions (noise level approaching the NAC or substantial increase in noise level) are met as a result of the proposed project, 23 CFR 772 requires that noise abatement measures must be considered. Noise abatement measures may include the following:

- Noise barrier construction: Noise barriers reduce noise by blocking the path of sound between the source of the noise and the receiver. To be effective, a noise barrier should be located adjacent to either the noise source or the receiver. There must be a long, continuous break of the line-of-sight from the highway to the receiver.
- Traffic management measures: These may include restrictions on speed, restrictions on traffic volumes, restricted access for certain motor vehicle types, and restricted times of travel.
- Alteration of horizontal and vertical alignments: Alignment of the road refers to the physical layout and location of the highway. A highway's noise impacts may be altered by shifting it in the horizontal or vertical direction.
- Noise insulation of public use or non-profit institution structures: For buildings listed under Category D in Table 1, insulation may be considered as a noise mitigation strategy; this strategy is not available to other types of noise-sensitive development.
- Acquisition of real property: In this case, the DOT acquires, or acquires interest in, primarily undeveloped property near the roadway that is the noise source, to preempt its future development with noise-sensitive uses.

STATE POLICY

FHWA requires that all states have an approved policy to identify and address highway traffic noise impacts. The Missouri Department of Transportation (MoDOT) Engineering Policy Guide Section 127.13, Noise, was developed to implement the requirements of 23 CFR Part 772 and the noise-related requirements of the National Environmental Policy Act (NEPA) of 1969.

FHWA requires use of FHWA Traffic Noise Model (TNM) to determine current and future traffic noise levels created by a proposed project and has deferred to the State agencies to define the noise level that "approaches" the NAC and to define a substantial increase in traffic noise levels.

MoDOT defines noise impacts as modeled traffic-generated noise levels that are predicted to come within 1 dB(A) of, meet, or exceed the NAC for the appropriate activity category or that increase by 15 dB(A) or more over the existing traffic-generated noise levels. MoDOT defines a benefitted receptor as a receptor that receives at least a 7 dB(A) reduction in noise level after the addition of noise abatement measure(s).

MoDOT requires that noise barriers achieve a 5 dB(A) reduction for a minimum of two first row, impacted receivers. If a barrier cannot achieve this acoustic goal, abatement is considered not to be acoustically feasible. MoDOT also requires noise abatement measures to consider engineering feasibility. Engineering feasibility refers primarily to physical constraints and other constructability constraints, such as topography, access, drainage, safety, maintenance, and presence of other noise sources. In general, if these factors are too extreme or cannot be accommodated in providing the minimum noise reduction, noise abatement will be deemed infeasible. For reasons of safety (primarily wind load and clear space concerns), a noise wall's height is limited to 20 feet. The wall height criterion alone cannot be used to consider noise abatement infeasible.

MoDOT's goal for substantial noise reduction is to provide at least a 7.0 dB(A) reduction for all benefited first row receptors in the design year.

For a noise abatement measure to be reasonable the required barrier area (in square feet) per benefited receptor must be less than or equal to the allowable barrier area per benefited receptor of 1,300 square feet. Where noise walls are not options, other noise abatement techniques may be considered, but cannot exceed $46,000 per benefitted receptor.

The objectives of this noise study are to:

- Identify noise sensitive land uses within the traffic noise analysis area.
- Characterize the existing noise environment through field noise measurement at representative noise receptor sites.
- Validate the computer model using traffic data collected during the field measurement period.
- Use TNM to predict the existing year and design year traffic noise levels at noise receptor sites.
- Identify impacted receptor sites and use TNM to determine if noise abatement measures are reasonable and feasible.

IDENTIFICATION OF NOISE-SENSITIVE LAND USES AND NOISE STUDY AREAS

I-70 runs generally east to west through the traffic noise study area. The highway is elevated over local roads at the east and west ends of the traffic study area. In the middle of the traffic study area, I-70 descends and the surrounding land rises, resulting in sections of the highway level with or below the surrounding neighborhoods. A road ditch runs along the south side of I-70 through the central part of the traffic noise study area.

Lambert International Boulevard runs generally east to west along the north side of I-70 primarily on the western end of the study area. I-70 traffic is more than an order of magnitude greater than that of Lambert International Boulevard and other airport roads north of I-70; therefore, traffic noise generated by these roads is not expected to affect the overall noise levels at the noise-sensitive areas south of I-70, and the roads north of I-70 were not modeled.

Cypress Road runs generally north to south, under I-70, at the west end of the study area. Airflight Drive runs generally north to south, under I-70, at the east end of the study area. Between Cypress Road and Airflight Drive on the south side of I-70, the traffic noise study area also includes the following arteries and collector roads: Pear Tree Lane, which runs generally east to west on the south side of I-70 in the eastern half of the study area, Ashby Road, which runs generally north to south within the residential neighborhood adjacent to St. Ann Park in the west central part of the study area, and Country Lane, which connects Pear Tree Lane to the area to the south at the entrance to the Pear Tree Apartments complex.

The initial traffic noise study area was drawn to incorporate all areas within 500 feet perpendicular to the existing and proposed project alignment. Land uses in the noise study area include Noise Abatement Criterion Activity Category B (residential), Category C (recreational area), and Category E (office, restaurant or hotel). Although Activity Categories F (airport, parking or utility) and Category G (undeveloped) are present along the corridor, there are no noise abatement criteria associated with them, and therefore no receptors were modeled for these categories. Note that highway ROW is not assigned an activity category. The NAC Activity Categories Map with Proposed Field Measurements in Appendix A shows the classification of properties in the noise study area with respect to the FHWA NAC Activity Categories.

Because of the expectation that noise impacts will exist at worst-case locations throughout the traffic noise study area, common noise environments and representative receptors have not been assigned and all receptors will be modeled in TNM.

TNM MODELED OBJECTS

The Existing model includes sensitive receivers, applicable roadways and sufficient terrain to represent local conditions. The No Build model for design year 2037 retains the same features, while the 2037 Build model incorporates roadway changes proposed for the project. Specific features of models for each area are as follows:

Validation, 2024 Existing and 2037 No Build models

- Eastbound and westbound I-70 outside, middle and inside lanes and a no-traffic lane in each direction at the center to represent paved medians

- Westbound I-70 auxiliary lane between the Lambert International Boulevard onramp and the Cypress Road offramp
- All onramps and offramps at the Pear Tree Lane/Airflight Drive and Cypress Road interchanges and the Lambert International Boulevard onramp
- Cypress Road outside and inside lanes in both directions at the eastbound I-70 ramp intersection, with a no-traffic lane in the center to represent the two-way left-turn lane
- Ashby Road within the study area, one lane in each direction
- St. Nicholas Road, one lane to represent minimal traffic in both directions observed during the field noise measurements
- Country Lane within and just south of the study area, one lane in each direction south of the Pear Tree Apartments complex
- Country Lane within the Pear Tree Apartments complex, modeled with one lane to represent minimal traffic in both directions observed along this private road during the field noise measurements
- Pear Tree Lane within the study area, one lane in each direction, with turn lanes at the I-70 offramp and onramp (Airflight Drive) intersections
- Airflight Drive travel and turn lanes in both directions, north and south of the Pear Tree Lane intersection
- 204 receptors
- Terrain lines to establish the sloped areas and road ditches along the south side of I-70, as well as one major drainageway between the Cypress Road and Ashby Road neighborhoods
- Fixed-height barriers to represent multiple buildings in the eastern half of the traffic noise study area; each apartment building in the Pear Tree Apartments complex was modeled as a barrier to best reflect the noise impacts on upper balconies behind the front row of buildings
- Building rows at the first row of residences within the Cypress Road and Ashby Road neighborhoods
- Ground zones at large paved parking lots between the highway and receptors
- Fixed-height barriers to represent the hotel and restaurant buildings surrounding the hotel pools

2037 Build model

- Removes the westbound onramp from Lambert International Boulevard
- Extends the auxiliary lane previously located between the removed ramp and the Cypress Road interchange, east along mainline I-70 to meet the westbound onramp from Airflight Drive

TRAFFIC VOLUMES AND SPEED

WSP provided existing and projected traffic volumes for mainline I-70 and roadways near the interchanges. These volumes were calculated for the STL CTP study that observed Federal Aviation Administration (FAA) requirements for projections. This is the reason for projections to the year 2037 rather than the more extended period used by typical FHWA studies.

Mainline I-70's posted speed in the traffic noise study area is 60 miles per hour (mph), which matches the speeds observed by driving the corridor between field measurements. Similarly,

observed speeds on Cypress Road, Country Lane, Airflight Drive, and the smaller side streets tended to match the posted speeds, which were used in the models. Observed speeds were used in the TNM models for Ashby Road, Country Lane, and Pear Tree Lane, each of which tended to exceed the posted speeds. Traffic data tables may be found in Appendix D.

DETERMINATION OF EXISTING SOUND LEVELS

FIELD NOISE MEASUREMENTS

CMT collected field noise measurements on March 20, 2024. A total of five locations were selected. Four of the locations represent residential dwelling units and one location represents a ballfield at St. Ann Park. All locations are on the south side of I-70. The locations were chosen to represent each noise sensitive area with exterior areas of frequent human use. Two of the locations face I-70 at a relatively small distance, one faces the eastbound I-70 Cypress Road interchange ramps, one faces I-70 from a distance, and one is somewhat shielded from I-70 by residential development. Any noise sources other than the dominant roadway noise that could affect the sound level measurements have been recorded on the noise measurement sheets. These noise measurement locations are shown on the NAC Activity Categories Map with Proposed Field Measurements in Appendix A:

- NMP-1, collected in the staff parking lot of Dollar Rent-A-Car (4358 Cypress Road) to represent the adjacent residential rear yards, faces the Cypress Road interchange ramps.
- NMP-2, collected at the visitor's bench of the ballfield at St. Ann Park (4445 Ashby Road), faces I-70 from a distance of approximately 475 feet.
- NMP-3, collected in the public ROW near the residence at 11001 St. Nicholas Court, is located approximately 250 feet south of I-70 across a lawn and limited fence row of vegetation.
- NMP-4, collected from the lawn near the Pear Tree Apartments management office at 4616 Country Lane, faces I-70 across lawn at the I-70 limited access right of way (L/A ROW) fence.
- NMP-5, collected in the public ROW near the residence at 10832 Pear Tree Lane, is located approximately 200 feet south of I-70 across an EZ Park north parking lot and platted residential development.

Field data collection sheets are included in Appendix C and show measurement times, weather conditions and details of each measurement location. Traffic local to each noise measurement point was counted by the noise analyst at the measurement point. For example, traffic on Pear Tree Lane was counted at NMP-5 during that measurement. For all measurements, traffic on I-70 was counted at a point opposite the Pear Tree Apartments, using either MioVision traffic cameras or multiple personnel with manual count boards. During the measurements at NMP-1 and NMP-2, traffic was counted using a manual count board at the intersection of Cypress Road and the eastbound I-70 on- and offramps.

All noise measurements were collected with a Quest SoundPro DL2 sound level meter that had been calibrated with a Quest QC-10 acoustical calibrator. The meter was mounted on a tripod to establish a sampling height of five feet. The meter was set to Leq mode with slow response and 3 dB exchange rate, and the frequency response was set to the A-weighted scale as required by FHWA. All measurements were collected over 15-minute periods with simultaneous traffic counts on the applicable roadway(s). The sound level meter reports and calibration information for the meter and calibrator are also included in Appendix C.

Two noise measurement efforts each measured noise at all five noise measurement points. On March 20, 2024, the measurements were collected without incident and both Leq and Lmax results

for each measurement were recorded on the field data sheets. During data download from the meter, the data files became corrupted and could not be retrieved. Therefore, a second measurement effort was conducted on April 25, 2024. Data provided in Appendix C are from the April 2024 field effort.

TRAFFIC NOISE MODEL VALIDATION

A model is considered validated when the modeled and measured noise levels are within 3 dB(A). To create the validation model, the TNM model of the 2024 existing condition was adjusted to reflect atmospheric conditions observed during the noise measurements. The traffic data collected during noise measurements were used to validate the model by multiplying the traffic counts from the 15-minute measurement period by four to obtain hourly traffic counts that were then entered into the model. The model was validated for all five measurement locations. Model validation results are provided in Table 2.

TABLE 2: MODEL VALIDATION RESULTS

Model Measurement Location	Address	Field Measurement (dB(A))	TNM Model Result (dB(A))	Difference
NMP-1	4358 Cypress Road, St Ann, MO 63074	63.6	63.9	0.3
NMP-2	4445 Ashby Road, St Ann, MO 63074	62.8	64.4	1.6
NMP-3	St. Nicholas Court, St Ann, MO 63074	64.2	65.1	0.9
NMP-4	4616 Country Lane, St Ann, MO 63074	72.7	73	0.3
NMP-5	10832 Pear Tree Lane, St. Ann, MO 63074	63.9	65.5	1.6

MODELED EXISTING SOUND LEVELS

Once the model was determined valid, TNM was used to model existing traffic noise at noise sensitive land uses throughout the analysis area. Initially, only noise-sensitive receptors within 500 feet of mainline I-70 were modeled. Because this initial modeling identified impacted receptors near the edge of the study area, the study area was expanded to add receptors within approximately 600 feet of mainline I-70.

All but five of the receptors in the final study area, represented by six TNM receivers, are residential, consisting of a mix of single-family residences, duplexes and apartments with patios or balconies. The five remaining receptors included a ballfield at St. Ann Park (two receivers represent the two team benches), a day care center with a playground at the northeast corner of Cypress Road and St. Damian Drive, and the outdoor hotel pools for three hotels located along Pear Tree Lane. The receptor locations and traffic noise impact status are depicted in the Projected Traffic Noise Impacts

figure, with receptor locations at the Pear Tree Apartments complex appearing in the Projected Traffic Noise Impacts at Pear Tree Apartments figure. Both figures are provided in Appendix A. The modeled noise levels are provided in Table 3 in Appendix B.

DETERMINATION OF FUTURE SOUND LEVELS AND IMPACT DETERMINATION ANALYSIS

Using the validated model, TNM was used to predict future traffic noise impacts at the same noise sensitive land uses for which existing noise was modeled.

The 2037 No Build TNM model predicted traffic noise levels for the current roadway configuration in the design year, and the 2037 Build TNM model predicted traffic noise levels for the proposed roadway configuration in the design year. The Build TNM model results were evaluated to assess whether the proposed project results in noise levels that meet one or both of the traffic noise impact criteria described in the "Traffic Noise Analysis Overview" section on page 7.

Table 3 in Appendix B provides the TNM results for the project area receptors. Receptors that are predicted to experience traffic noise levels that approach, meet or exceed the Noise Abatement Criterion (NAC) are identified by shading in the Predicted Noise column. Receptors for which the design year "build" condition results in noise levels of at least 15 dB(A) over the existing condition, the substantial increase criterion, are identified by shading in the Increase/ Decrease column.

Based upon the identification of 67 traffic noise impacted receptors in the 2037 Build condition, modeling of abatement measures is required.

CONSIDERATION OF ABATEMENT

ABATEMENT MEASURES CONSIDERED

FHWA regulations (23 CFR 772.15C) list the types of traffic noise abatement to be considered if noise impacts from a highway project approach the NAC or exceed the substantial increase criterion. These include traffic management, horizontal and vertical alignment changes, noise insulation, undeveloped property acquisition and noise barrier construction.

I-70 is the primary traffic noise source in the traffic noise study area. Traffic management is not a feasible abatement measure for I-70 because of its assigned transportation purpose. Horizontal and vertical alignment changes to the travel lanes would cause extensive costs, environmental impacts and travel disruption and would likely have a negative impact on the purpose of the highway.

FHWA regulations allow consideration of noise insulation for noise-impacted buildings only for public use or nonprofit institutional structures. The noise-impacted property in this study area does not include any public use or nonprofit institutional structures, and therefore noise insulation is not an appropriate abatement measure.

The acquisition of undeveloped property was not considered because the only undeveloped property in the traffic noise study area is held by STL as mitigation areas for airport impacts and will not be developed in the future.

Noise barrier construction was considered by analyzing noise barrier design using FHWA's TNM 2.5. Abatement measures were considered for the three neighborhoods having noise impacts: the Cypress Road neighborhood, the Ashby Road neighborhood and St. Ann Park, and the Pear Tree Lane neighborhood and Pear Tree Apartments.

TRAFFIC NOISE BARRIER ANALYSIS

At Cypress Road, a barrier was modeled along the L/A ROW fence adjacent to the eastbound I-70 Cypress Road ramps. At a height of 20 feet, this barrier did not result in any benefited receptors, and additional height will not result in a barrier that both benefits the front-row receptors and remains under MoDOT's reasonable square footage limit of 1,300 square feet per benefitted receptor. Therefore, this barrier is not recommended. The TNM table showing barrier insertion losses with a 20-foot wall is included in Appendix E.

At Ashby Road, one barrier was modeled along the L/A ROW fence of eastbound I-70, and a second barrier was modeled partially along the L/A ROW fence and partially along the outside of the road ditch that parallels the eastbound I-70 lanes. At heights of 20 feet, each barrier benefited one receptor at 11001 St. Nicholas Road. As with the Cypress Road barrier, adding height to these walls will not result in a barrier that both benefits the front-row receptors and remains under MoDOT's reasonable square footage limit of 1,300 square feet per benefitted receptor. Therefore, these barriers are not recommended. The TNM tables showing barrier insertion losses with a 20-foot wall are included in Appendix E.

At the Pear Tree Apartments and Pear Tree Lane, one barrier was modeled along the L/A ROW fence of eastbound I-70, and a second barrier was modeled along the outside of the road ditch that

parallels the eastbound I-70 lanes. While the barrier located along the road ditch achieved benefits for two non-impacted and eight impacted receptors, the design did not satisfy MoDOT's noise reduction design goal and exceeded the allowable square footage per benefited receptor. The TNM tables showing barrier insertion losses with a 20-foot wall are included in Appendix E.

The barrier along the L/A ROW fence achieved benefits for 31 receptors, four non-impacted and 27 impacted, including all impacted first-row first-story receptors. Based on the results of modeling, this barrier appears feasible and reasonable. Tables 4 though 6 provide information concerning the barrier design, costs and benefits. Table 4 is located in Appendix B; Tables 5 and 6 appear below.

TABLE 5: BARRIER PHYSICAL FEATURES AND ESTIMATED COST

Barrier Identifier	ROW, Shoulder or Other?	Location Description	Barrier Length, ft	Average Barrier Height, ft	Square Footage
Pear Tree Apartments L/A ROW	ROW	I-70 Eastbound, at the edge of ROW at and west of the Pear Creek Apartments	1,057	19.06	20,146

TABLE 6: PREFERRED BARRIER EVALUATION

Barrier Identifier	Abatement Feasible?[1]	Noise Reduction Design Goal Reached?[2]	Area per Benefited Receptor	Allowed Area per Benefited Receptor	Recommendation
Pear Tree Apartments L/A ROW	Yes	Yes	650 sq. ft.	1,300 sq. ft.	Recommended

1 Insertion loss (noise level reduction due to barrier) is ≥5 dB(A) at least two first row receptors.
2 Insertion loss is ≥7 dB(A) at impacted first row, first story.

PREFERRED BARRIER

Preliminary indications are that a noise barrier is likely at the location listed in Table 6. The FAA process under which this barrier is being considered evaluates highway traffic noise at a point in the project development process when design has not advanced sufficiently to perform MoDOT's noise wall public involvement meeting. Owner and occupant balloting will be performed when design is advanced sufficiently to hold a public involvement meeting regarding the barrier.

The final decision on the implementation of noise barriers will be made by MoDOT during project design. When design is advanced sufficiently MoDOT will solicit the viewpoints of those affected as part of the evaluation of reasonableness. MoDOT may again solicit viewpoints during final design if conditions substantially change that impact the implementation of the likely barrier. Only barriers determined to be both reasonable and feasible will be constructed. Barriers that are no longer reasonable and feasible will be removed from the project.

CONSTRUCTION NOISE

Roadway plans are not sufficiently advanced to develop specific comments concerning construction noise. The following comments are general observations and recommendations that apply to typical highway projects.

Noise from construction activities will add to the average noise level during the construction phase of the project. However, construction activities will be temporary. All activities are expected to occur during normal daytime waking hours, avoiding the annoyance or disruption of sleep that may be caused by nighttime operations.

Noise may also be generated by increases in heavy truck traffic to and from the project area. This increase in noise is also expected to be confined to daytime hours.

MoDOT's noise policy specifies effectively addressing construction noise effects in proactive communication with the community. The following measures shall be incorporated:

- Inform the public in advance on construction activities that might generate particularly high noise level; and
- Noise barriers that are included in the design plans should be constructed as early in project construction as practical.

Increases in the average noise level due to construction are temporary, but measures should be taken to minimize the impact of additional noise. Recommended standard measures include:

- Limit operation of heavy equipment and other noisy procedures to daylight hours whenever possible.
- Install and maintain effective mufflers on equipment.
- Locate equipment and vehicle staging areas as far from noise sensitive areas as practicable.
- Limit unnecessary idling of equipment.

In all cases, construction operations will adhere to local construction noise ordinances.

INFORMATION FOR LOCAL OFFICIALS

FHWA and MoDOT policy requires communicating to local planning agencies the locations of undeveloped land projected to experience noise impacts in the future. Because there is no undeveloped land in the traffic noise study area except that which is maintained as undeveloped land for purposes of mitigating STL impacts, no modeling of undeveloped areas was performed.

Upon completion of the environmental document for this project, the MoDOT District Office will provide this noise study and the noise analysis information in the NEPA document to the St. Louis County planning authorities. MODOT encourages local governments with jurisdiction over undeveloped lands, as well as potential developers of these lands, to practice noise compatibility planning to avoid future noise impacts. Planners may also refer to FHWA guidance on noise compatible land use planning, including the following guidance documents:

- The Audible Landscape: A Manual for Highway Noise and Land Use (FHWA, November 1974)
- Entering the Quiet Zone: Noise Compatibility Land Use Planning (FHWA, May 2002)

REFERENCES

Federal Aid Highway Act of 1970. United States Congress. August 13, 1973.

Code of Federal Regulations, Title 23, Chapter I, Subchapter H, Part 772, Procedures For Abatement Of Highway Traffic Noise And Construction Noise. 2010.

Missouri Department of Transportation (MoDOT) Engineering Policy Guide 127.13 Noise. Amended and approved June 17, 2019.

National Environmental Policy Act (NEPA) of 1969. United States Congress. January 1, 1970.

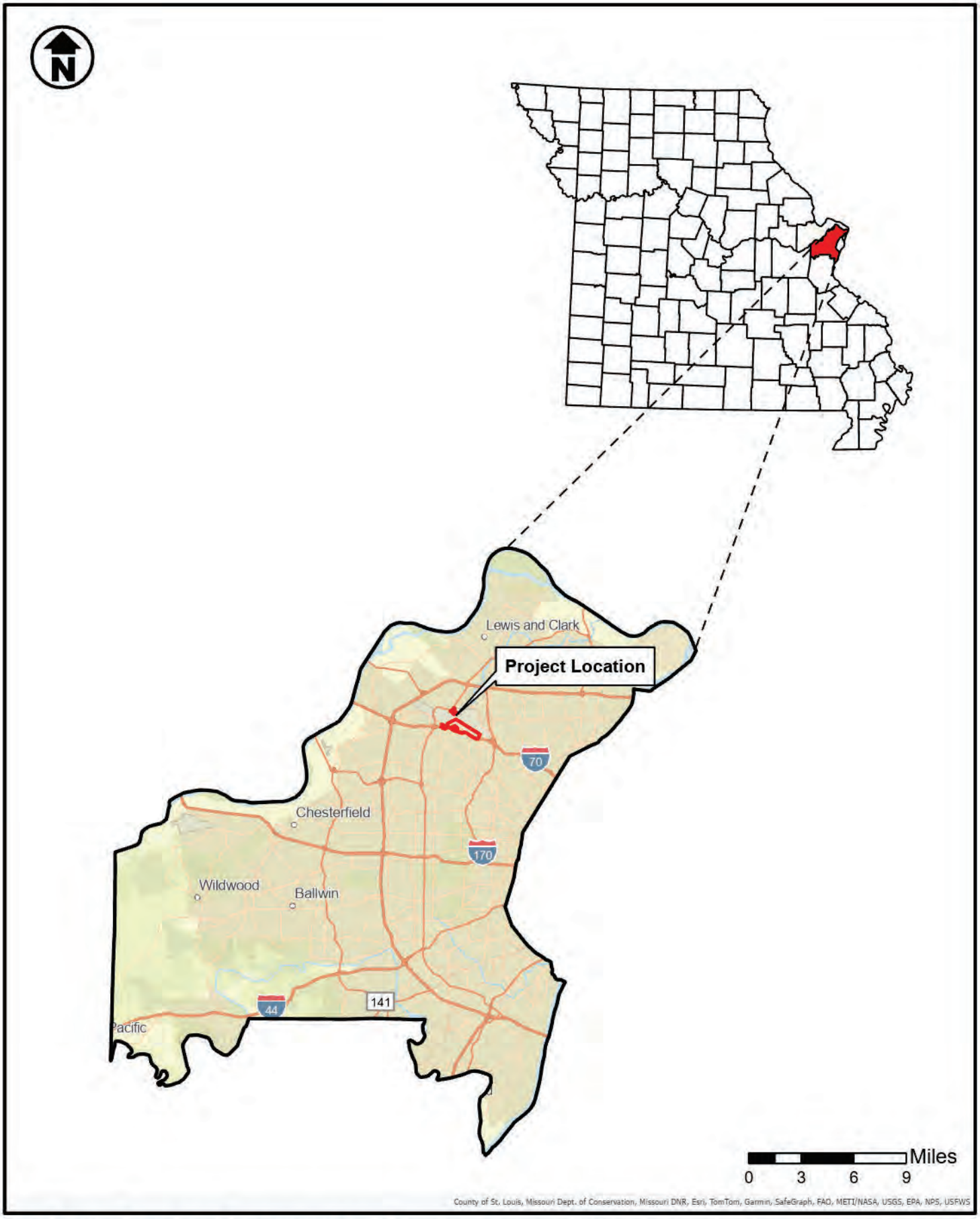
Traffic plates developed for STL CTP project and provided to CMT by WSP USA on March 5, 2024.

MoDOT TMS Data Zone. Available at https://datazoneapps.modot.mo.gov/bi/apps/publicmaps/Home/MapConfig/AADT. Accessed multiple times in March 2024.

STL CTP Traffic Noise

APPENDIX A: FIGURES

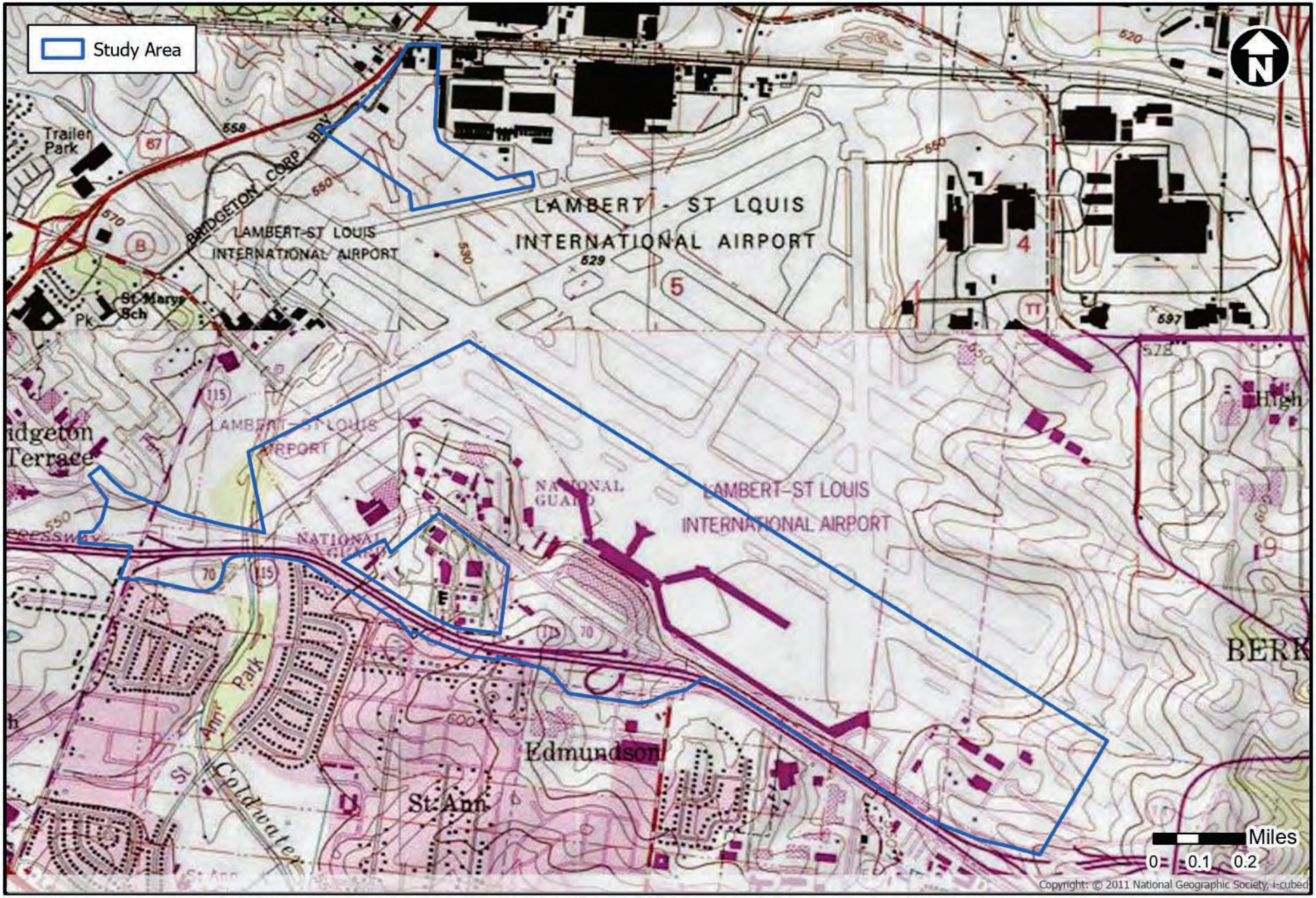
CMT



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

County Location Map

CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

USGS Topographic Map, St. Charles, Creve Coeur, Florissant, and Clayton, Mo., Quadrangles

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., Mo

Aerial Map

CMT
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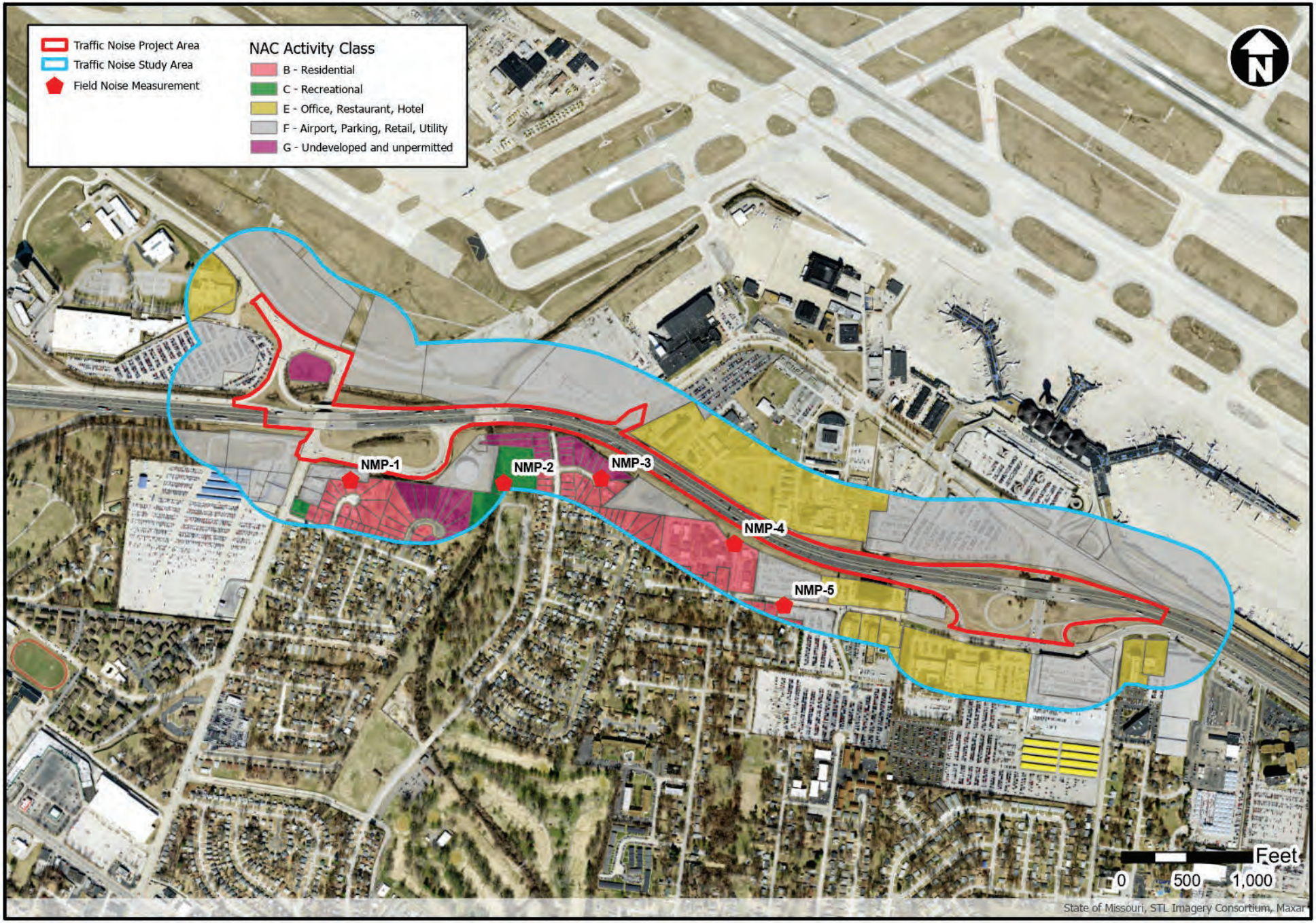
St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

TRAFFIC NOISE STUDY AREA MAP

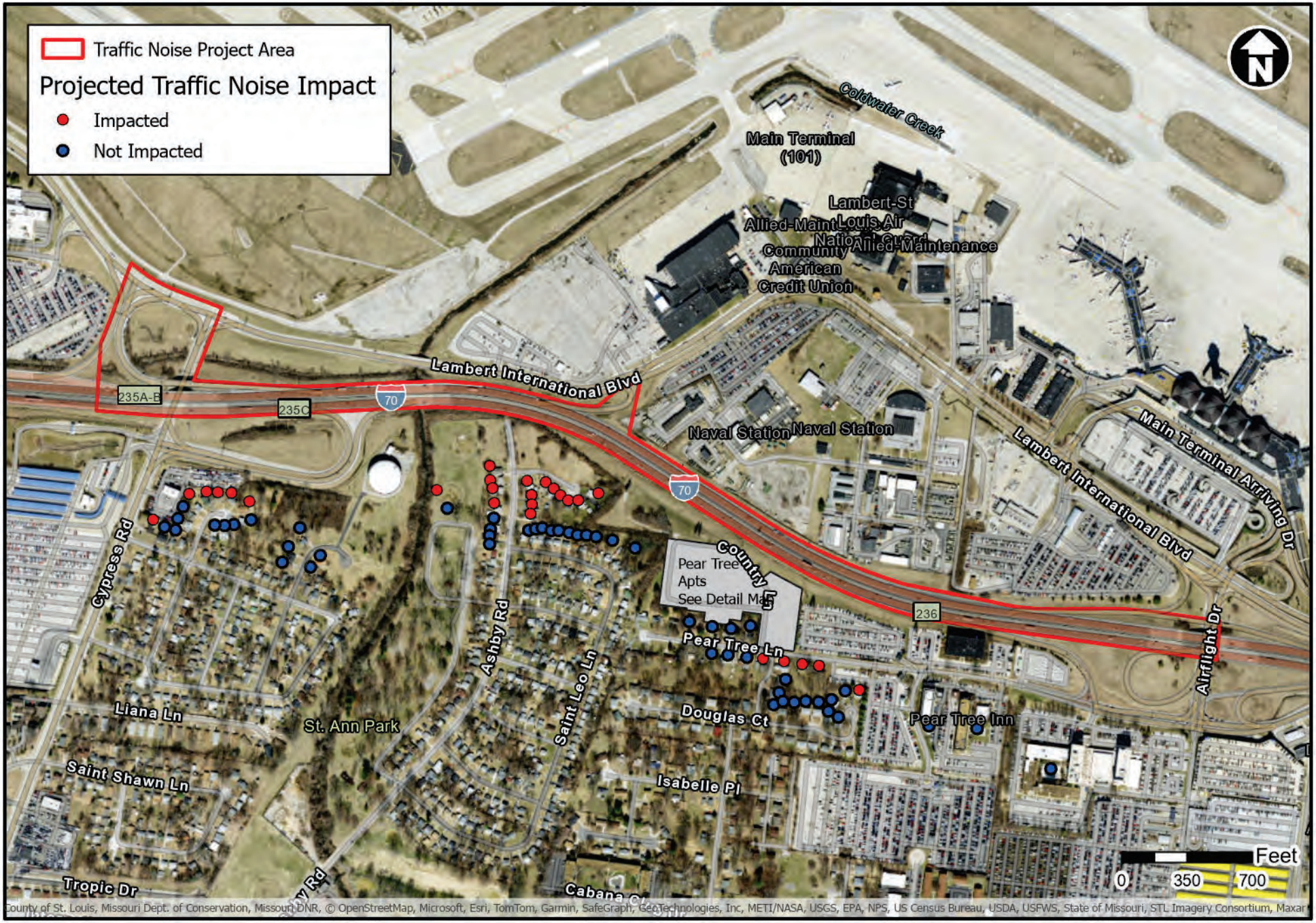
CMT
Crawford, Murphy & Tilly



St. Louis Lambert International Airport - Consolidated Terminal Program - St. Louis Co., MO

NAC ACTIVITY CLASS MAP WITH PROPOSED FIELD MEASUREMENTS

CMT
Crawford, Murphy & Tilly



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PROJECTED TRAFFIC NOISE IMPACTS

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PROJECTED TRAFFIC NOISE IMPACTS AT PEAR TREE APARTMENTS

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Ground Level Noise Receptors

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Impacts and Benefits
- Neither impacted nor benefited
- Benefited but not impacted
- Impacted but not benefited
- Both impacted and benefited
- Recommended barrier

N

Balcony Noise Receptors

St. Louis Lambert International Airport
Consolidated Terminal Program - St. Louis Co., MO

RECOMMENDED BARRIER INSERTION RESULTS

STL CTP Traffic Noise

APPENDIX B: SOUND LEVEL RESULTS TABLE

CMT

TABLE 3: NOISE MODEL RESULTS AND IMPACT ASSESSMENT

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
Cypress Road Neighborhood							
4373 St. Dominic Ln.	1	66	**66.1**	**66.2**	**66.4**	0.3	1
4369 St. Dominic Ln.	1	66	**67.4**	**67.5**	**67.8**	0.4	1
4365 St. Dominic Ln.	1	66	**67.2**	**67.4**	**67.6**	0.4	1
4361 St. Dominic Ln.	1	66	**66.9**	**67.1**	**67.3**	0.4	1
4357 St. Dominic Ln.	1	66	**67**	**67.2**	**67.3**	0.3	1
4353 St. Dominic Ln.	1	66	65	65.1	65.3	0.3	0
4349 St. Dominic Ln.	1	66	65	65.1	65.1	0.1	0
4374 St. Dominic Ln.	1	66	65.4	65.6	65.7	0.3	0
4372 St. Dominic Ln.	1	66	65.4	65.6	65.7	0.3	0
4370 St. Dominic Ln.	1	66	65.3	65.5	65.5	0.2	0
4362 St. Dominic Ln.	1	66	65.2	65.3	65.4	0.2	0
11267 St. Damian Dr.	1	66	64.5	64.6	64.8	0.3	0
11269 St. Damian Dr.	1	66	64.8	64.9	64.9	0.1	0
4344 Cypress Rd. – Little S.T.E.M.'s day care	1	66	**66.7**	**66.9**	**66.8**	0.1	1
4361 St. Regina Ln.	1	66	65.2	65.4	65.5	0.3	0
4353 St. Regina Ln.	1	66	64.2	64.4	64.4	0.2	0
4349 St. Regina Ln.	1	66	63.5	63.6	63.7	0.2	0
4362 St. Regina Ln.	1	66	64.2	64.3	64.4	0.2	0
4346 St. Regina Ln.	1	66	63.6	63.7	63.7	0.1	0
St. Ann Park							
St. Ann Park Ballfield Visitor Bench	1	66	**67.3**	**67.4**	**67.3**	0	1
St. Ann Park Ballfield Home Bench	1	66	65.7	65.8	65.7	0	0
Ashby Road Neighborhood							
11014 St. Nicholas Ct.	1	66	**69.1**	**69.2**	**69.5**	0.4	1
11010 St. Nicholas Ct.	1	66	**68.7**	**68.8**	**69**	0.3	1
11006 St. Nicholas Ct.	1	66	**67.9**	**68**	**68.2**	0.3	1

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
11002 St. Nicholas Ct.	1	66	**67.4**	**67.6**	**67.7**	0.3	1
11000 St. Nicholas Ct.	1	66	**67.5**	**67.6**	**67.8**	0.3	1
11001 St. Nicholas Ct.	1	66	**69.4**	**69.6**	**69.8**	0.4	1
4555 Ashby Rd.	1	66	**70.1**	**70.2**	**70.5**	0.4	1
4551 Ashby Rd.	1	66	**68.3**	**68.5**	**68.6**	0.3	1
4547 Ashby Rd.	1	66	**67.6**	**67.7**	**67.8**	0.2	1
4539 Ashby Rd.	1	66	**66.5**	**66.6**	**66.7**	0.2	1
4535 Ashby Rd.	1	66	65.6	65.7	65.6	0	0
4531 Ashby Rd.	1	66	64.9	65	64.9	0	0
4527 Ashby Rd.	1	66	64.9	65	65	0.1	0
4523 Ashby Rd.	1	66	64.4	64.5	64.5	0.1	0
4548 Ashby Rd.	1	66	**69.2**	**69.3**	**69.5**	0.3	1
4544 Ashby Rd.	1	66	**67.1**	**67.2**	**67.3**	0.2	1
4540 Ashby Rd.	1	66	**67.1**	**67.2**	**67.3**	0.2	1
4536 Ashby Rd.	1	66	**66.5**	**66.6**	**66.6**	0.1	1
4524 Ashby Rd.	1	66	65.4	65.5	65.5	0.1	0
11045 St. Pius Ln.	1	66	65.3	65.4	65.4	0.1	0
11041 St. Pius Ln.	1	66	65.2	65.3	65.3	0.1	0
11037 St. Pius Ln.	1	66	65	65.2	65.2	0.2	0
11033 St. Pius Ln.	1	66	65.2	65.3	65.4	0.2	0
11029 St. Pius Ln.	1	66	64.9	65	65.1	0.2	0
11025 St. Pius Ln.	1	66	64.7	64.8	64.9	0.2	0
11021 St. Pius Ln.	1	66	64.5	64.6	64.7	0.2	0
11017 St. Pius Ln.	1	66	64.7	64.8	64.9	0.2	0
11009 St. Pius Ln.	1	66	63	63.2	63.5	0.5	0
11005 St. Pius Ln.	1	66	59.9	60.1	60.3	0.4	0
Pear Tree Apartments							
4616 Country Ln. Clubhouse	1	66	**74**	**74.2**	**74.6**	0.6	1
10882 Pear Blossom NW patio apt.	1	66	**71.2**	**71.3**	**72.1**	0.9	1
10882 Pear Blossom NE patio apt.	1	66	**73.7**	**73.8**	**74.4**	0.7	1

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
10882 Pear Blossom SW patio apt.	1	66	62.1	62.2	62.7	0.6	0
10882 Pear Blossom SE patio apt.	1	66	**70.7**	**70.9**	**71.4**	0.7	1
10882 Pear Blossom NW balcony apt.	1	66	**70.9**	**71**	**74.6**	3.7	1
10882 Pear Blossom NE balcony apt.	1	66	**71.3**	**71.4**	**74.8**	3.5	1
10882 Pear Blossom SW balcony apt.	1	66	61.9	62	**66.8**	4.9	1
10882 Pear Blossom SE balcony apt.	1	66	60.3	60.4	65.9	5.6	0
10878 Pear Blossom NW patio apt.	1	66	61.9	62.1	62.5	0.6	0
10878 Pear Blossom NE patio apt.	1	66	59.2	59.4	59.8	0.6	0
10878 Pear Blossom SW patio apt.	1	66	61.5	61.7	62	0.5	0
10878 Pear Blossom SE patio apt.	1	66	61.3	61.4	61.7	0.4	0
10878 Pear Blossom NW balcony apt.	1	66	61.9	62	**66.6**	4.7	1
10878 Pear Blossom NE balcony apt.	1	66	59.3	59.4	64.9	5.6	0
10878 Pear Blossom SW balcony apt.	1	66	61.5	61.6	65	3.5	0
10878 Pear Blossom SE balcony apt.	1	66	61.3	61.4	64.6	3.3	0
4649 Country Ln. NW patio apt.	1	66	**72.8**	**73**	**73.6**	0.8	1
4649 Country Ln. NE patio apt.	1	66	**73.8**	**73.9**	**74.5**	0.7	1
4649 Country Ln. SE patio apt.	1	66	60.3	60.4	60.7	0.4	0
4649 Country Ln. NW balcony apt.	1	66	**72.9**	**73**	**75.4**	2.5	1
4649 Country Ln. NE balcony apt.	1	66	**73.9**	**74**	**76**	2.1	1

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
4649 Country Ln. SE balcony apt.	1	66	64.6	64.8	**67.8**	3.2	1
4641 Country Ln. W patio apt.	1	66	59.5	59.6	60	0.5	0
4641 Country Ln. E patio apt.	1	66	60.8	60.9	61.3	0.5	0
4641 Country Ln. W balcony apt.	1	66	59.6	59.7	64.2	4.6	0
4641 Country Ln. E balcony apt.	1	66	60.8	60.9	65.2	4.4	0
4645 Country Ln. NW patio apt.	1	66	**74.8**	**75**	**75.4**	0.6	1
4645 Country Ln. NE patio apt.	1	66	**75**	**75.1**	**75.6**	0.6	1
4645 Country Ln. SW patio apt.	1	66	63.6	63.8	64.7	1.1	0
4645 Country Ln. SE patio apt.	1	66	62.6	62.7	63.7	1.1	0
4645 Country Ln. NW balcony apt.	1	66	**74.9**	**75**	**76.9**	2	1
4645 Country Ln. NE balcony apt.	1	66	**75**	**75.2**	**77.1**	2.1	1
4645 Country Ln. SW balcony apt.	1	66	63.7	63.8	**67**	3.3	1
4645 Country Ln. SE balcony apt.	1	66	62.7	62.8	**66.4**	3.7	1
4633 Country Ln. NE patio apt.	1	66	**75.4**	**75.5**	**76**	0.6	1
4633 Country Ln. SW patio apt.	1	66	60.3	60.4	60.8	0.5	0
4633 Country Ln. SE patio apt.	1	66	**74.7**	**74.9**	**75.4**	0.7	1
4633 Country Ln. NE balcony apt.	1	66	**75.4**	**75.6**	**77.8**	2.4	1
4633 Country Ln. SW balcony apt.	1	66	60.2	60.4	62.7	2.5	0
4633 Country Ln. SE balcony apt.	1	66	**74.8**	**74.9**	**77.4**	2.6	1

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
4629 Country Ln. NW patio apt.	1	66	60.3	60.4	60.7	0.4	0
4629 Country Ln. NE patio apt.	1	66	**74.3**	**74.4**	**75**	0.7	1
4629 Country Ln. SW patio apt.	1	66	60	60.1	60.4	0.4	0
4629 Country Ln. SE patio apt.	1	66	**74**	**74.2**	**74.7**	0.7	1
4629 Country Ln. NW balcony apt.	1	66	60.3	60.4	62.9	2.6	0
4629 Country Ln. NE balcony apt.	1	66	**74.4**	**74.5**	**77.1**	2.7	1
4629 Country Ln. SW balcony apt.	1	66	60.1	60.2	62.4	2.3	0
4629 Country Ln. SE balcony apt.	1	66	**74.1**	**74.2**	**76.7**	2.6	1
4625 Country Ln. NW patio apt.	1	66	59.5	59.7	61.5	2	0
4625 Country Ln. NE patio apt.	1	66	**73.8**	**73.9**	**76.3**	2.5	1
4625 Country Ln. SE patio apt.	1	66	**72.4**	**72.5**	**75.2**	2.8	1
4625 Country Ln. NW balcony apt.	1	66	**67.1**	**67.5**	**67.7**	0.6	1
4625 Country Ln. NE balcony apt.	1	66	**67.9**	**68.2**	**68.5**	0.6	1
4625 Country Ln. SE balcony apt.	1	66	**68.5**	**68.8**	**69.2**	0.7	1
4637 Country Ln. NW patio apt.	1	66	62.7	62.9	63.8	1.1	0
4637 Country Ln. NE patio apt.	1	66	63	63.2	63.8	0.8	0
4637 Country Ln. SW patio apt.	1	66	60	60.2	60.5	0.5	0
4637 Country Ln. SE patio apt.	1	66	60	60.2	60.5	0.5	0
4637 Country Ln. NW balcony apt.	1	66	62.7	62.8	**66.3**	3.6	1

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
4637 Country Ln. NE balcony apt.	1	66	62.9	63	65.9	3	0
4637 Country Ln. SW balcony apt.	1	66	60	60.1	62.9	2.9	0
4637 Country Ln. SE balcony apt.	1	66	60	60.2	62.5	2.5	0
10844 Pear Blossom N patio apt.	1	66	**70.7**	**70.9**	**71.4**	0.7	1
10844 Pear Blossom SW patio apt.	1	66	57.6	57.7	58.1	0.5	0
10844 Pear Blossom SE patio apt.	1	66	55.3	55.5	55.8	0.5	0
10844 Pear Blossom N balcony apt.	1	66	**70.7**	**70.9**	**74**	3.3	1
10844 Pear Blossom SW balcony apt.	1	66	57.6	57.7	61.1	3.5	0
10844 Pear Blossom SE balcony apt.	1	66	55.4	55.6	61.3	5.9	0
10848 Pear Blossom NW patio apt.	1	66	62	62.1	62.5	0.5	0
10848 Pear Blossom SW patio apt.	1	66	56.8	57	57.3	0.5	0
10848 Pear Blossom SE patio apt.	1	66	56.9	57.1	57.4	0.5	0
10848 Pear Blossom NW balcony apt.	1	66	62	62.1	**66**	4	1
10848 Pear Blossom SW balcony apt.	1	66	56.8	57	60.2	3.4	0
10848 Pear Blossom SE balcony apt.	1	66	56.9	57.1	60.3	3.4	0
10852 Pear Blossom NW patio apt.	1	66	60.5	60.7	61	0.5	0
10852 Pear Blossom NE patio apt.	1	66	62.1	62.2	62.6	0.5	0
10852 Pear Blossom SW patio apt.	1	66	55.9	56.1	56.4	0.5	0
10852 Pear Blossom SE patio apt.	1	66	56.2	56.4	56.7	0.5	0

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
10852 Pear Blossom NW balcony apt.	1	66	60.5	60.7	64.3	3.8	0
10852 Pear Blossom NE balcony apt.	1	66	62.1	62.2	**66**	3.9	1
10852 Pear Blossom SW balcony apt.	1	66	55.9	56.1	59	3.1	0
10852 Pear Blossom SE balcony apt.	1	66	56.2	56.4	59.4	3.2	0
10858 Pear Blossom NW patio apt.	1	66	57	57.1	58.1	1.1	0
10858 Pear Blossom NE patio apt.	1	66	61	61.1	61.8	0.8	0
10858 Pear Blossom SW patio apt.	1	66	53.8	53.9	54.3	0.5	0
10858 Pear Blossom SE patio apt.	1	66	59.1	59.2	59.6	0.5	0
10858 Pear Blossom NW balcony apt.	1	66	55.6	55.7	60.1	4.5	0
10858 Pear Blossom NE balcony apt.	1	66	61	61.1	64.9	3.9	0
10858 Pear Blossom SW balcony apt.	1	66	53.5	53.7	58.5	5	0
10858 Pear Blossom SE balcony apt.	1	66	58.9	59.1	63.3	4.4	0
10862 Pear Blossom W patio apt.	1	66	52.3	52.5	52.9	0.6	0
10862 Pear Blossom E patio apt.	1	66	57.6	57.7	58.1	0.5	0
10862 Pear Blossom W balcony apt.	1	66	52.5	52.8	57.7	5.2	0
10862 Pear Blossom E balcony apt.	1	66	57.5	57.6	61.6	4.1	0
10866 Pear Blossom NW patio apt.	1	66	60.2	60.4	60.7	0.5	0
10866 Pear Blossom NE patio apt.	1	66	60.8	60.9	61.3	0.5	0
10866 Pear Blossom SE patio apt.	1	66	53.8	54	54.4	0.6	0

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
10866 Pear Blossom NW balcony apt.	1	66	60.5	60.6	64.3	3.8	0
10866 Pear Blossom NE balcony apt.	1	66	60.8	60.9	64.7	3.9	0
10866 Pear Blossom SE balcony apt.	1	66	53.6	53.7	58.3	4.7	0
10870 Pear Blossom NW patio apt.	1	66	58.7	58.8	59.4	0.7	0
10870 Pear Blossom NE patio apt.	1	66	52.1	52.3	52.6	0.5	0
10870 Pear Blossom SW patio apt.	1	66	53.1	53.3	53.7	0.6	0
10870 Pear Blossom SE patio apt.	1	66	54.1	54.3	54.7	0.6	0
10870 Pear Blossom NW balcony apt.	1	66	58.7	58.9	63.1	4.4	0
10870 Pear Blossom NE balcony apt.	1	66	51.9	52.1	56.9	5	0
10870 Pear Blossom SW balcony apt.	1	66	53.9	54.2	58	4.1	0
10870 Pear Blossom SE balcony apt.	1	66	54.1	54.2	58	3.9	0
10874 Pear Blossom NE patio apt.	1	66	59.3	59.4	59.9	0.6	0
10874 Pear Blossom SW patio apt.	1	66	61.1	61.2	61.6	0.5	0
10874 Pear Blossom SE patio apt.	1	66	52.7	53	53.3	0.6	0
10874 Pear Blossom NE balcony apt.	1	66	59.5	59.7	63.9	4.4	0
10874 Pear Blossom SW balcony apt.	1	66	61	61.2	64.1	3.1	0
10874 Pear Blossom SE balcony apt.	1	66	52.8	53.1	57.8	5	0
10885 Pear Blossom NW patio apt.	1	66	58	58.1	58.4	0.4	0
10885 Pear Blossom NE patio apt.	1	66	58.2	58.4	58.7	0.5	0

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
10885 Pear Blossom SW patio apt.	1	66	55.2	55.7	55.9	0.7	0
10885 Pear Blossom SE patio apt.	1	66	56.8	57.1	57.4	0.6	0
10885 Pear Blossom NW balcony apt.	1	66	58	58.1	62.5	4.5	0
10885 Pear Blossom NE balcony apt.	1	66	58.2	58.3	63	4.8	0
10885 Pear Blossom SW balcony apt.	1	66	54.6	55.1	58.6	4	0
10885 Pear Blossom SE balcony apt.	1	66	56.8	57.2	62.1	5.3	0
4610 Country Ln. patio apt.	1	66	**71**	**71.1**	**71.6**	0.6	1
4608 Country Ln. patio apt.	1	66	**70.4**	**70.5**	**71.1**	0.7	1
4606 Country Ln. patio apt.	1	66	**68.4**	**68.5**	**69**	0.6	1
4604 Country Ln. patio apt.	1	66	**68**	**68.1**	**68.6**	0.6	1
4602 Country Ln. patio apt.	1	66	**67.4**	**67.6**	**68**	0.6	1
4600 Country Ln. patio apt.	1	66	**67.4**	**67.5**	**68**	0.6	1
Pear Tree Lane Neighborhood							
10869 Pear Tree Ln.	1	66	62	62.2	62.9	0.9	0
10877 Pear Tree Ln.	1	66	59.9	60.2	60.6	0.7	0
10885 Pear Tree Ln.	1	66	59.1	59.4	59.6	0.5	0
10893 Pear Tree Ln.	1	66	59.7	59.9	60.2	0.5	0
10832 Pear Tree Ln.	1	66	**68.5**	**68.8**	**69.2**	0.7	1
10840 Pear Tree Ln.	1	66	**67.9**	**68.2**	**68.5**	0.6	1
10848 Pear Tree Ln.	1	66	**67.1**	**67.5**	**67.7**	0.6	1
10856 Pear Tree Ln.	1	66	65.5	**66**	**66.2**	0.7	1
10864 Pear Tree Ln.	1	66	62.5	63	63.2	0.7	0
10872 Pear Tree Ln.	1	66	61.1	61.7	61.8	0.7	0
10880 Pear Tree Ln.	1	66	60.7	61.3	61.5	0.8	0

Receptor	Number of Dwelling Units (DUs)	NAC with MoDOT Approach Criterion (dB(A))	2024 Existing Traffic Noise (dB(A))	2037 No Build Traffic Noise (dB(A))	2037 Predicted Traffic Noise (dB(A))	Increase/ Decrease (dB(A))	# DUs Impacted
4528 Country Ln.	1	66	63.9	64.1	64.4	0.5	0
4522/4524 Country Ln.	2	66	61.9	62.2	62.5	0.6	0
4520 Country Ln.	1	66	61.6	61.9	62.2	0.6	0
10057/10059 Douglas Ct.	2	66	61.3	61.5	61.9	0.6	0
10053/10055 Douglas Ct.	2	66	62.4	62.5	62.9	0.5	0
10049/10051 Douglas Ct.	2	66	63	63.2	63.6	0.6	0
10045/10047 Douglas Ct.	2	66	63.3	63.5	63.8	0.5	0
10043 Douglas Ct.	1	66	62.6	62.8	63.2	0.6	0
10037 Douglas Ct.	1	66	62.2	62.4	62.8	0.6	0
10033 Douglas Ct.	1	66	64.1	64.3	64.7	0.6	0
10029 Douglas Ct.	1	66	65.4	65.5	65.9	0.5	0
10025 Douglas Ct.	1	66	65.6	65.8	**66.2**	0.6	1
Hotel Pools							
Wingate hotel pool	1	71	54.4	54.6	54.9	0.5	0
Pear Tree Inn pool	1	71	61.5	61.6	62	0.5	0
Mariott hotel pool	1	71	51.1	51.2	51.6	0.5	0

TABLE 4: BARRIER INSERTION RESULTS, PEAR TREE APARTMENTS BARRIER AT L/A ROW

Shading indicates benefited receptor

Receptor	Build Noise Level, dB(A)[1]	First Row/ First Story?	Noise Impact?	Noise Level with Barrier, dB(A) [2]	Insertion Loss[2]
10882 Pear Blossom NW patio apt.	72.1	Y	Y	64.9	7
10882 Pear Blossom NE patio apt.	74.4	Y	Y	65	7.3
10882 Pear Blossom SW patio apt.	62.7	N	N	61.9	0.7
10882 Pear Blossom SE patio apt.	71.4	N	N	54	8.8
10882 Pear Blossom NW balcony apt.	74.6	N	Y	67.9	6.8
10882 Pear Blossom NE balcony apt.	74.8	N	Y	68.1	6.8
10882 Pear Blossom SW balcony apt.	66.8	N	Y	64.8	2.1
10882 Pear Blossom SE balcony apt.	65.9	N	N	58.9	7.1
10878 Pear Blossom NW patio apt.	62.5	N	N	61.9	0.7
10878 Pear Blossom NE patio apt.	59.8	N	N	54.2	7.5
10878 Pear Blossom SW patio apt.	62	N	N	61.4	0.5
10878 Pear Blossom SE patio apt.	61.7	N	N	61.1	0.6
10878 Pear Blossom NW balcony apt.	66.6	N	Y	64.7	2
10878 Pear Blossom NE balcony apt.	64.9	N	N	58.4	6.6
10878 Pear Blossom SW balcony apt.	65	N	N	63.9	1.2
10878 Pear Blossom SE balcony apt.	64.6	N	N	63.7	0.9
4649 Country Ln. NW patio apt.	73.6	Y	Y	65.2	8.7
4649 Country Ln. NE patio apt.	74.5	Y	Y	65.4	9.3
4649 Country Ln. SE patio apt.	60.7	N	N	56	10.3
4649 Country Ln. NW balcony apt.	75.4	N	Y	68.4	7.2
4649 Country Ln. NE balcony apt.	76	N	Y	68.7	7.4
4649 Country Ln. SE balcony apt.	67.8	N	Y	60.3	7.7
4641 Country Ln. W patio apt.	60	N	N	56.6	4.1
4641 Country Ln. E patio apt.	61.3	N	N	57.2	6.1
4641 Country Ln. W balcony apt.	64.2	N	N	59.7	4.6
4641 Country Ln. E balcony apt.	65.2	N	N	60.2	5.1
4645 Country Ln. NW patio apt.	75.4	Y	Y	65.4	10.2
4645 Country Ln. NE patio apt.	75.6	Y	Y	65.3	10.5
4645 Country Ln. SW patio apt.	64.7	N	N	56	9.5
4645 Country Ln. SE patio apt.	63.7	N	N	57.2	7.1
4645 Country Ln. NW balcony apt.	76.9	N	Y	68.8	8.2
4645 Country Ln. NE balcony apt.	77.1	N	Y	68.6	8.6

Receptor	Build Noise Level, dB(A)[1]	First Row/ First Story?	Noise Impact?	Noise Level with Barrier, dB(A) [2]	Insertion Loss[2]
4645 Country Ln. SW balcony apt.	67	N	Y	59.6	7.5
4645 Country Ln. SE balcony apt.	66.4	N	Y	60.2	6.5
4633 Country Ln. NE patio apt.	76	Y	Y	64.3	11.9
4633 Country Ln. SW patio apt.	60.8	N	N	56.4	4.4
4633 Country Ln. SE patio apt.	75.4	Y	Y	63.6	12
4633 Country Ln. NE balcony apt.	77.8	N	Y	67.1	10.8
4633 Country Ln. SW balcony apt.	62.7	N	N	58.9	3.9
4633 Country Ln. SE balcony apt.	77.4	N	Y	66.5	11
4629 Country Ln. NW patio apt.	60.7	N	N	56.4	4.3
4629 Country Ln. NE patio apt.	75	Y	Y	63.1	12
4629 Country Ln. SW patio apt.	60.4	N	N	56.3	4.1
4629 Country Ln. SE patio apt.	74.7	Y	Y	62.6	12.2
4629 Country Ln. NW balcony apt.	62.9	N	N	59.2	3.7
4629 Country Ln. NE balcony apt.	77.1	N	Y	65.8	11.3
4629 Country Ln. SW balcony apt.	62.4	N	N	58.6	3.7
4629 Country Ln. SE balcony apt.	76.7	N	Y	65.6	11.2
4625 Country Ln. NW patio apt.	61.5	N	N	56.1	3.9
4625 Country Ln. NE patio apt.	76.3	Y	Y	62.9	11.5
4625 Country Ln. SE patio apt.	75.2	Y	Y	62.3	10.8
4625 Country Ln. NW balcony apt.	67.7	N	N	58	3.6
4625 Country Ln. NE balcony apt.	68.5	N	Y	67.3	9
4625 Country Ln. SE balcony apt.	69.2	N	Y	67.8	7.4
4637 Country Ln. NW patio apt.	63.8	N	N	57.6	6.8
4637 Country Ln. NE patio apt.	63.8	N	N	57.6	6.5
4637 Country Ln. SW patio apt.	60.5	N	N	56.7	4.4
4637 Country Ln. SE patio apt.	60.5	N	N	56.5	4.3
4637 Country Ln. NW balcony apt.	66.3	N	Y	60.2	6.1
4637 Country Ln. NE balcony apt.	65.9	N	N	60.3	5.7
4637 Country Ln. SW balcony apt.	62.9	N	N	59	4
4637 Country Ln. SE balcony apt.	62.5	N	N	58.8	3.7
10844 Pear Blossom N patio apt.	71.4	Y	Y	64.6	7
10844 Pear Blossom SW patio apt.	58.1	N	N	56.1	2
10844 Pear Blossom SE patio apt.	55.8	N	N	52.3	3.7
10844 Pear Blossom N balcony apt.	74	N	Y	68.6	5.5
10844 Pear Blossom SW balcony apt.	61.1	N	N	59.7	1.4

Receptor	Build Noise Level, dB(A)[1]	First Row/ First Story?	Noise Impact?	Noise Level with Barrier, dB(A) [2]	Insertion Loss[2]
10844 Pear Blossom SE balcony apt.	61.3	N	N	58	3.4
10848 Pear Blossom NW patio apt.	62.5	N	N	60.7	2
10848 Pear Blossom SW patio apt.	57.3	N	N	56.5	0.9
10848 Pear Blossom SE patio apt.	57.4	N	N	56.5	1
10848 Pear Blossom NW balcony apt.	66	N	Y	64.7	1.4
10848 Pear Blossom SW balcony apt.	60.2	N	N	59.9	0.3
10848 Pear Blossom SE balcony apt.	60.3	N	N	59.8	0.5
10852 Pear Blossom NW patio apt.	61	N	N	56.9	5
10852 Pear Blossom NE patio apt.	62.6	N	N	60.8	2.1
10852 Pear Blossom SW patio apt.	56.4	N	N	55.8	0.7
10852 Pear Blossom SE patio apt.	56.7	N	N	56.1	0.6
10852 Pear Blossom NW balcony apt.	64.3	N	N	60.1	4.3
10852 Pear Blossom NE balcony apt.	66	N	Y	64.5	1.6
10852 Pear Blossom SW balcony apt.	59	N	N	59	0
10852 Pear Blossom SE balcony apt.	59.4	N	N	59.3	0.1
10858 Pear Blossom NW patio apt.	58.1	N	N	52.6	6.3
10858 Pear Blossom NE patio apt.	61.8	N	N	57.3	5
10858 Pear Blossom SW patio apt.	54.3	N	N	51.4	4.4
10858 Pear Blossom SE patio apt.	59.6	N	N	54.8	5.8
10858 Pear Blossom NW balcony apt.	60.1	N	N	56.5	3.7
10858 Pear Blossom NE balcony apt.	64.9	N	N	60.4	4.6
10858 Pear Blossom SW balcony apt.	58.5	N	N	55.9	2.8
10858 Pear Blossom SE balcony apt.	63.3	N	N	58.8	4.6
10862 Pear Blossom W patio apt.	52.9	N	N	50.8	3.2
10862 Pear Blossom E patio apt.	58.1	N	N	55	3.5
10862 Pear Blossom W balcony apt.	57.7	N	N	55	3
10862 Pear Blossom E balcony apt.	61.6	N	N	58.5	3.3
10866 Pear Blossom NW patio apt.	60.7	N	N	57.3	4.6
10866 Pear Blossom NE patio apt.	61.3	N	N	57.5	5.3
10866 Pear Blossom SE patio apt.	54.4	N	N	50.9	3.5
10866 Pear Blossom NW balcony apt.	64.3	N	N	60.1	4.4
10866 Pear Blossom NE balcony apt.	64.7	N	N	60.3	4.6
10866 Pear Blossom SE balcony apt.	58.3	N	N	55.8	2.5
10870 Pear Blossom NW patio apt.	59.4	N	N	58.6	0.7
10870 Pear Blossom NE patio apt.	52.6	N	N	50.3	2.3

Receptor	Build Noise Level, dB(A)[1]	First Row/ First Story?	Noise Impact?	Noise Level with Barrier, dB(A) [2]	Insertion Loss[2]
10870 Pear Blossom SW patio apt.	53.7	N	N	51.5	2.6
10870 Pear Blossom SE patio apt.	54.7	N	N	54.3	0.4
10870 Pear Blossom NW balcony apt.	63.1	N	N	62	1.1
10870 Pear Blossom NE balcony apt.	56.9	N	N	55.8	1.1
10870 Pear Blossom SW balcony apt.	58	N	N	55.3	2.9
10870 Pear Blossom SE balcony apt.	58	N	N	58.1	0
10874 Pear Blossom NE patio apt.	59.9	N	N	59	1.2
10874 Pear Blossom SW patio apt.	61.6	N	N	61.4	0.2
10874 Pear Blossom SE patio apt.	53.3	N	N	51.4	2.7
10874 Pear Blossom NE balcony apt.	63.9	N	N	62.5	1.5
10874 Pear Blossom SW balcony apt.	64.1	N	N	63.6	0.6
10874 Pear Blossom SE balcony apt.	57.8	N	N	55.8	2.6
10885 Pear Blossom NW patio apt.	58.4	N	N	57.5	1.1
10885 Pear Blossom NE patio apt.	58.7	N	N	58.1	0.7
10885 Pear Blossom SW patio apt.	55.9	N	N	56	-0.1
10885 Pear Blossom SE patio apt.	57.4	N	N	57.5	-0.1
10885 Pear Blossom NW balcony apt.	62.5	N	N	61.4	1.2
10885 Pear Blossom NE balcony apt.	63	N	N	62.4	0.6
10885 Pear Blossom SW balcony apt.	58.6	N	N	58.5	0.1
10885 Pear Blossom SE balcony apt.	62.1	N	N	62.1	0
4610 Country Ln. patio apt.	71.6	N	Y	70.3	1.7
4608 Country Ln. patio apt.	71.1	N	Y	70	1.5
4606 Country Ln. patio apt.	69	N	Y	68.5	0.7
4604 Country Ln. patio apt.	68.6	N	Y	68.1	0.6
4602 Country Ln. patio apt.	68	N	Y	67.7	0.4
4600 Country Ln. patio apt.	68	N	Y	67.7	0.4

[1] As calculated by the Existing 2024 model

[2] As calculated by the barrier evaluation model

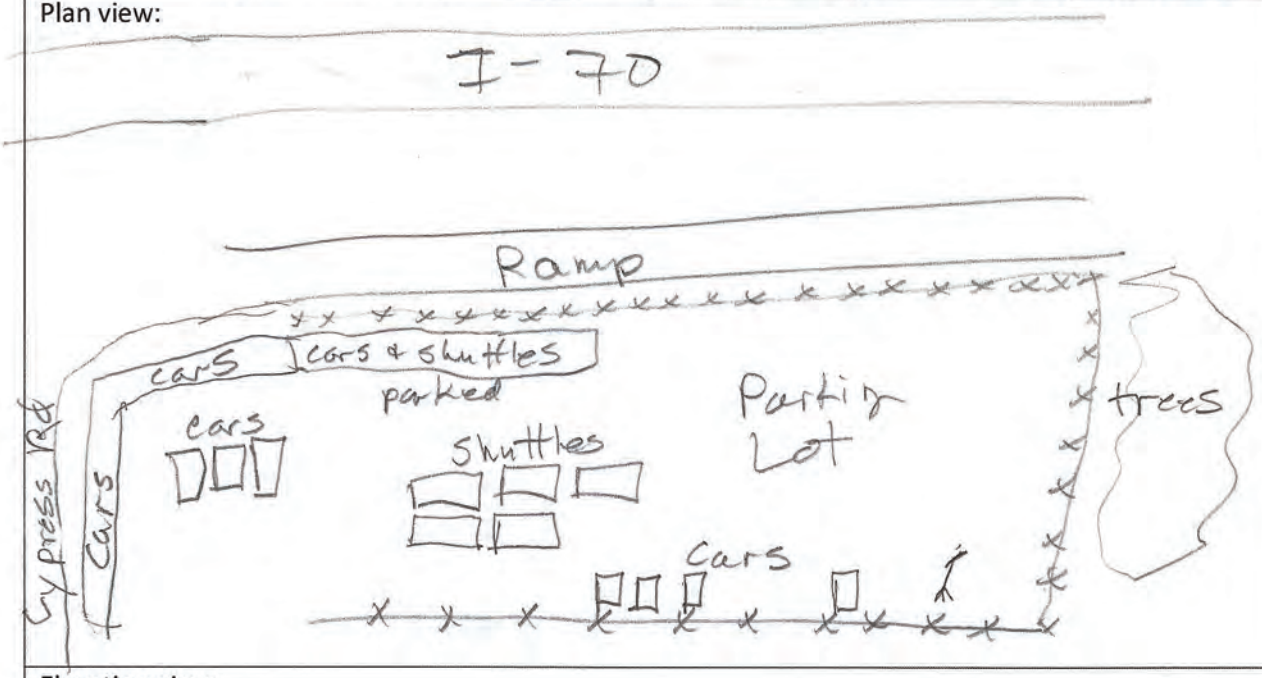
STL CTP Traffic Noise

APPENDIX C: FIELD DATA

CMT

Site ID:	STL CTP		Location	Dollar Rent-A-Car	
Observer	LJS	Date	4/25/24	Count location	NMP 1
Temperature	64°F	Cloud cover	0%	Humidity	41%
Wind direction	NE	Wind speed, avg	1-2 mph	Wind speed, max	3.2 mph
Start time	3:01pm	Stop time	3:16pm	Leq/avg and Lmax	63.7 dB 73.9 dB

Plan view:



Elevation view:

traffic slowing to stop-far WB lane

5:44pm shuttle bus turns around in PL in front of meter
7:35-8:19 dog barking
8:38-9:31 " "
14:00-14:39 " "
maybe other times as well.

Site ID:	STL CTP		Location	St. Ann Park Ballfield – visitors bench	
Observer	LJS	Date	4/25/24	Count location	NMP2
Temperature	64°F	Cloud cover	0%	Humidity	43%
Wind direction	NE	Wind speed, avg	2-4 mph	Wind speed, max	7 mph
Start time	3:33pm	Stop time	3:48pm	Leq/avg and Lmax	62.9 dB 78.2 dB

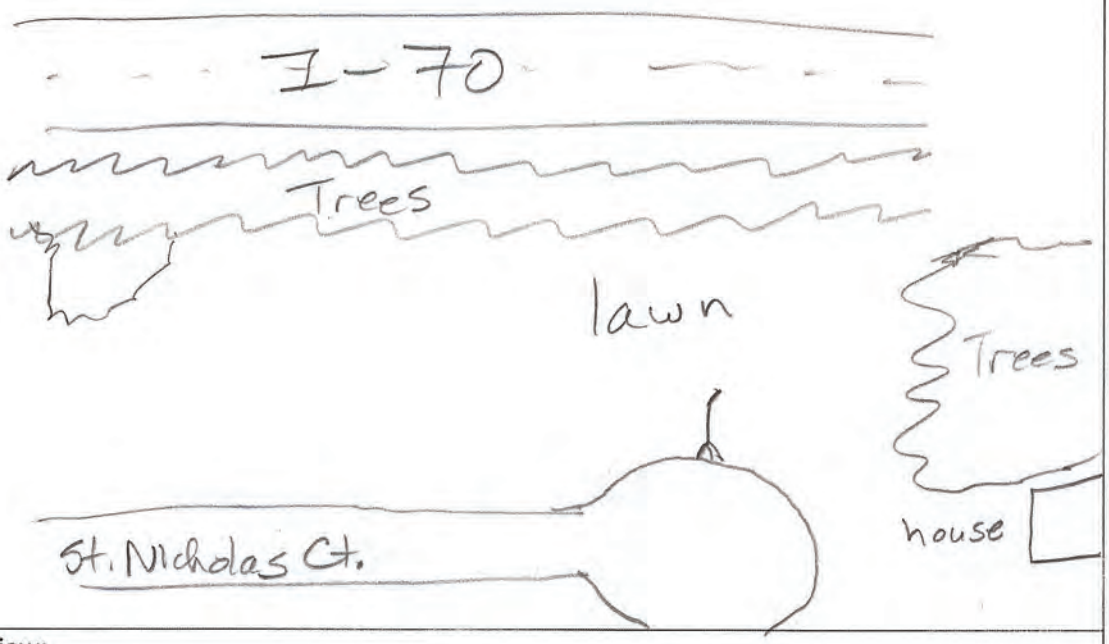
Plan view:

Elevation view:

1:20-2ish sirens

Site ID:	STL CTP		Location	St. Nicholas Court N. side of cul-de-sac	
Observer	LJS	Date	9/25/24	Count location	NMP 3
Temperature	69°F	Cloud cover	0%	Humidity	45%
Wind direction	NE	Wind speed, avg	calm	Wind speed, max	6.2 mph
Start time	3:57 pm	Stop time	4:12 pm	Leq/avg and Lmax	64.3 dB 80.8 dB

Plan view:



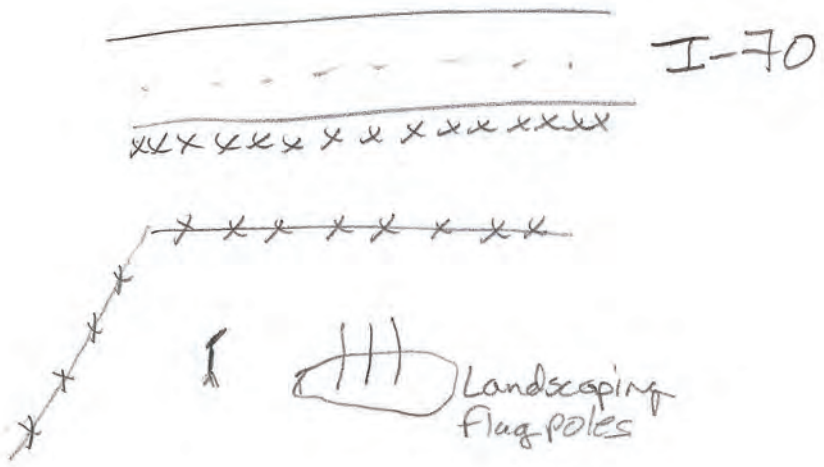
Elevation view:

traffic slow down/stop in for WB lane
birds chirping thru measurement

2:15 loud truck
8:00 " "
9:24 " "
10:22 recycling dumping in can at nearby house

Site ID:	STL CTP		Location	Pear Tree Apts. W. of Office	
Observer	LJS	Date	4/25/24	Count location	NMP4
Temperature	61°F	Cloud cover	0%	Humidity	48%
Wind direction	NE	Wind speed, avg	1-2 mph	Wind speed, max	7.6 mph
Start time	4:24 pm	Stop time	4:39 pm	Leq/avg and Lmax	72.8 dB 82.0 dB

Plan view:

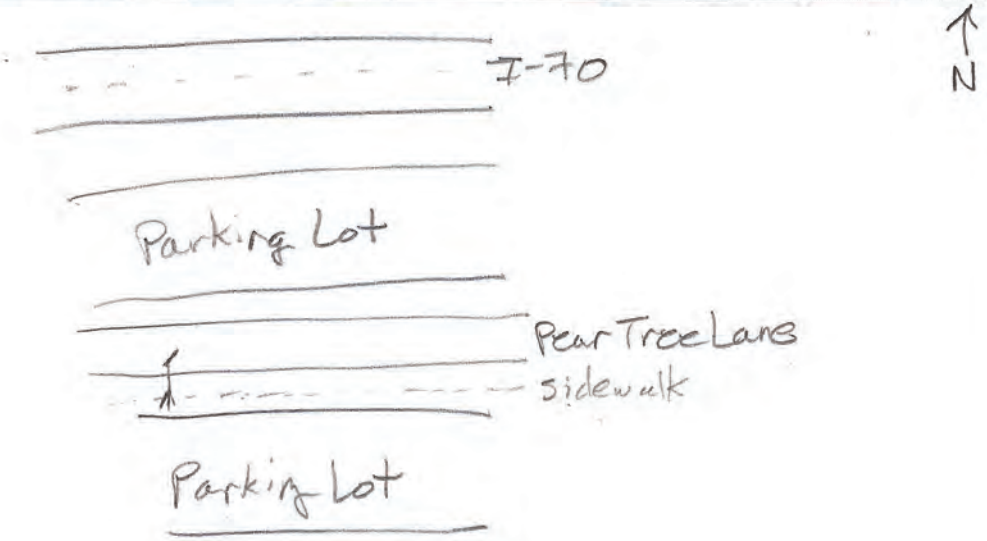


Elevation view:

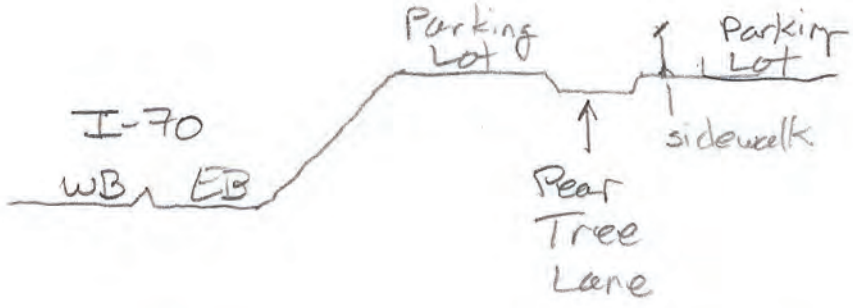
near start - WB far lane traffic stand still - short period of time

Site ID:	STL CTP		Location	Pear Tree Lane offset from 10832 Pear Tree Ln.	
Observer	LJS	Date	3/25/24	Count location	NMP5
Temperature	62°F	Cloud cover	0%	Humidity	47%
Wind direction	NE	Wind speed, avg	1-3 mph	Wind speed, max	3.2 mph
Start time	4:53pm	Stop time	5:08pm	Leq/avg and Lmax	64.0 78.4

Plan view:



Elevation view:



start - WB far lane, maybe middle lane, stand still/slow moving for a short while

Session Report

4/26/2024

Calibration History

Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
4/24/2024 1:19:08 PM	Calibration	114.0			

Session Report

4/26/2024

Information Panel - NMP 1

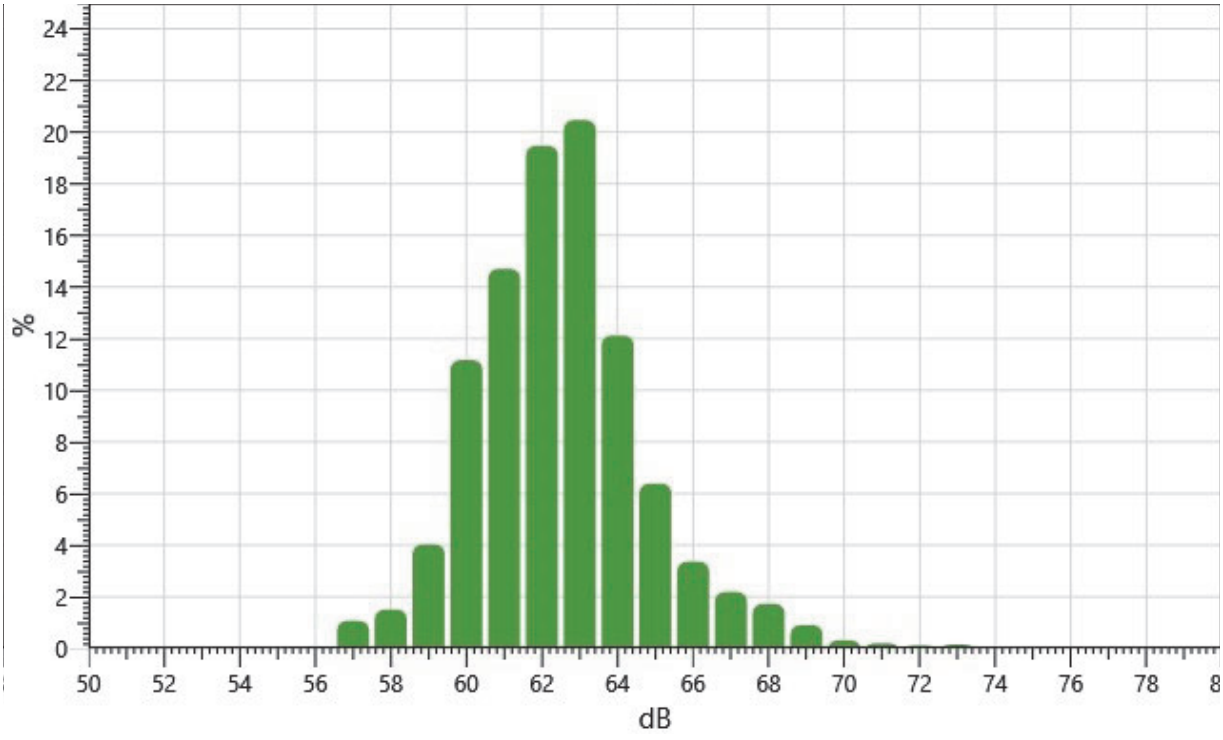
Name	S030_BLI020010_26042024_100949
Start Time	4/25/2024 3:00:58 PM
Stop Time	4/25/2024 3:15:58 PM
Device Name	BLI020010
Model Type	SoundPro DL
Device Firmware Rev	R.13J
Comments	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.6 dB	Lmax	1	73.9 dB
Lmin	1	56.8 dB	Lpk	1	89.7 dB
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW			
Weighting	2	A	Response	2	SLOW

Statistics Chart

S030_BLI020010_26042024_100949: Statistics Chart

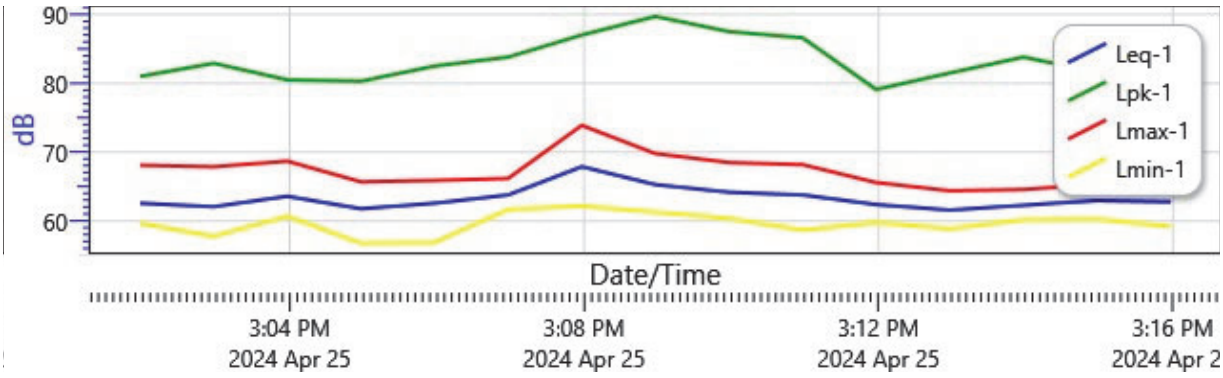


Logged Data Table

Date/Time	Leq-1
4/25/2024 3:01:58 PM	62.6
3:02:58 PM	62.1
3:03:58 PM	63.6
3:04:58 PM	61.8
3:05:58 PM	62.6
3:06:58 PM	63.8
3:07:58 PM	67.9
3:08:58 PM	65.3
3:09:58 PM	64.2
3:10:58 PM	63.8
3:11:58 PM	62.4
3:12:58 PM	61.6
3:13:58 PM	62.3
3:14:58 PM	63
3:15:58 PM	62.8

Logged Data Chart

S030_BLI020010_26042024_100949: Logged Data Chart



Session Report

4/26/2024

Information Panel - NMP 2

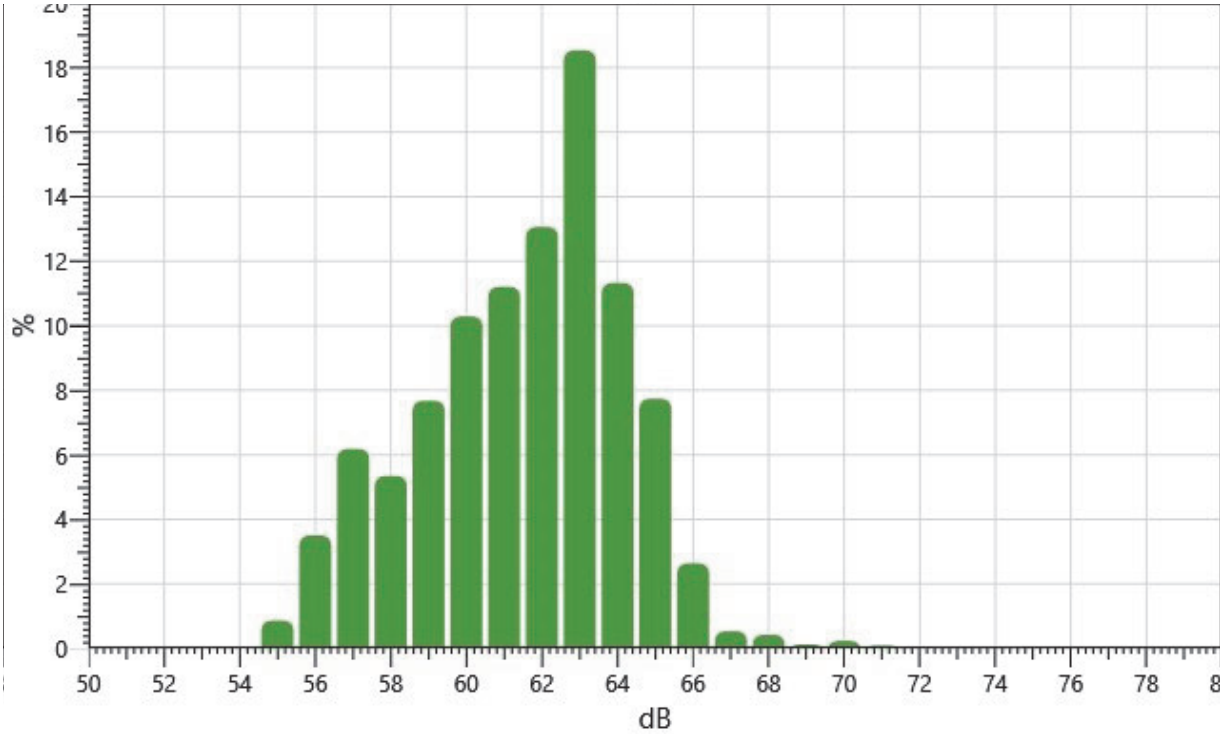
Name	S031_BLI020010_26042024_100950
Start Time	4/25/2024 3:32:49 PM
Stop Time	4/25/2024 3:47:49 PM
Device Name	BLI020010
Model Type	SoundPro DL
Device Firmware Rev	R.13J
Comments	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	62.8 dB	Lmax	1	78.2 dB
Lmin	1	55.3 dB	Lpk	1	107.8 dB
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW			
Weighting	2	A	Response	2	SLOW

Statistics Chart

S031_BLI020010_26042024_100950: Statistics Chart

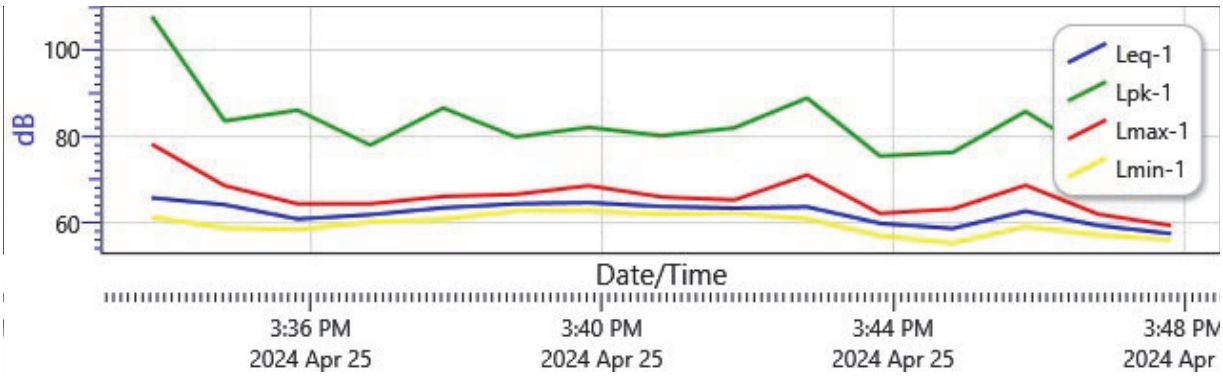


Logged Data Table

Date/Time	Leq-1
4/25/2024 3:33:49 PM	65.8
3:34:49 PM	64.2
3:35:49 PM	60.9
3:36:49 PM	61.9
3:37:49 PM	63.5
3:38:49 PM	64.4
3:39:49 PM	64.7
3:40:49 PM	63.8
3:41:49 PM	63.4
3:42:49 PM	63.7
3:43:49 PM	59.9
3:44:49 PM	58.7
3:45:49 PM	62.7
3:46:49 PM	59.4
3:47:49 PM	57.5

Logged Data Chart

S031_BLI020010_26042024_100950: Logged Data Chart



Session Report

4/26/2024

Information Panel - NMP 3

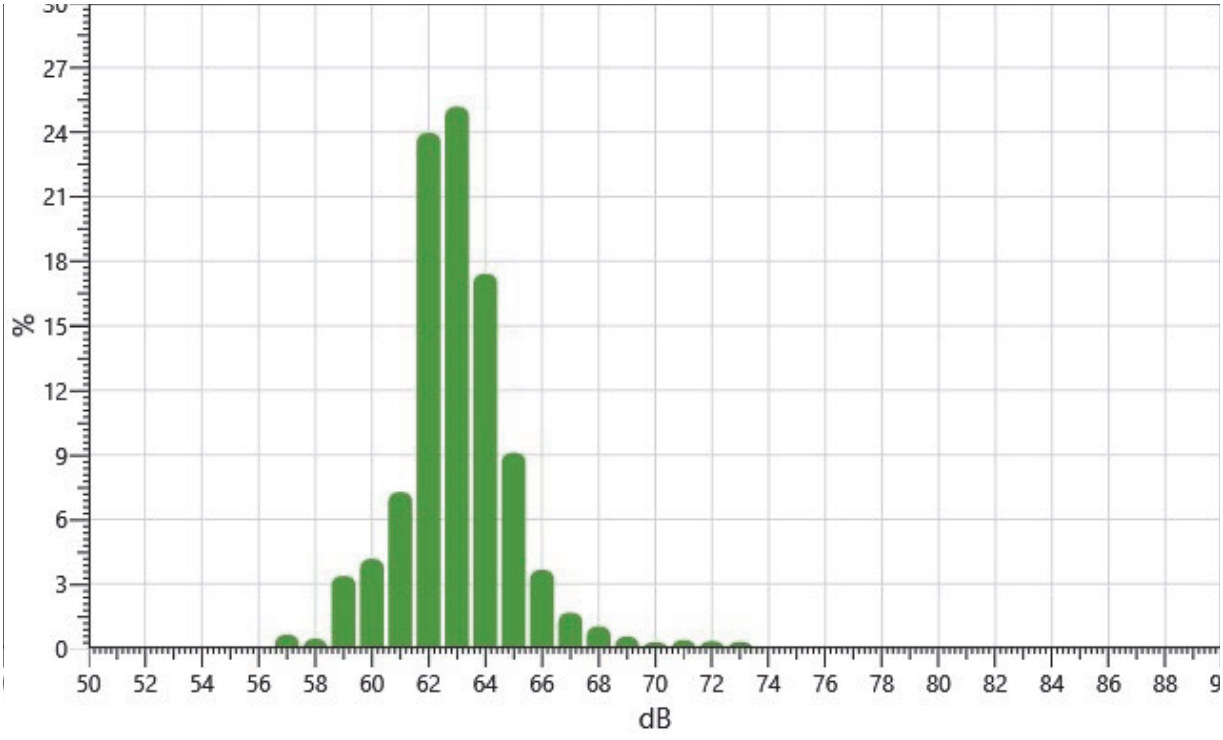
Name	S032_BLI020010_26042024_100950
Start Time	4/25/2024 3:57:09 PM
Stop Time	4/25/2024 4:12:09 PM
Device Name	BLI020010
Model Type	SoundPro DL
Device Firmware Rev	R.13J
Comments	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	64.2 dB	Lmax	1	80.8 dB
Lmin	1	57.4 dB	Lpk	1	110.7 dB
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW			
Weighting	2	A	Response	2	SLOW

Statistics Chart

S032_BLI020010_26042024_100950: Statistics Chart

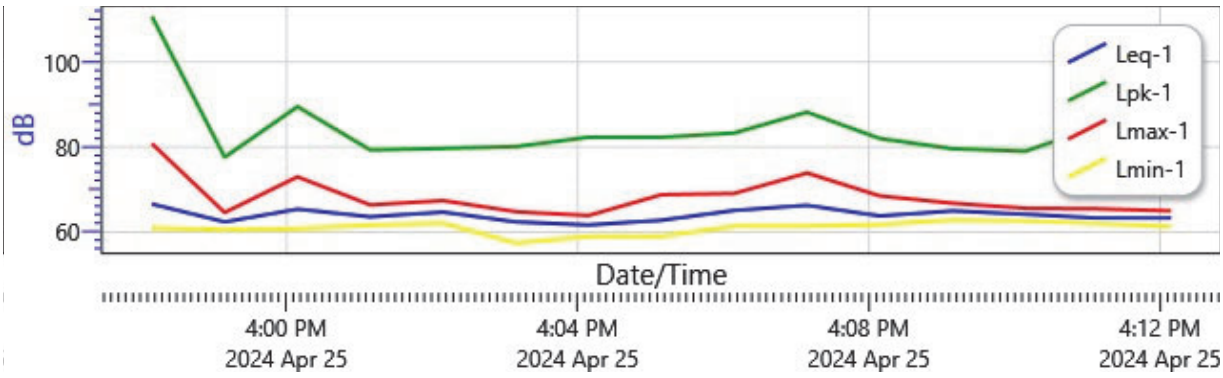


Logged Data Table

Date/Time	Leq-1
4/25/2024 3:58:09 PM	66.6
3:59:09 PM	62.4
4:00:09 PM	65.4
4:01:09 PM	63.6
4:02:09 PM	64.7
4:03:09 PM	62.4
4:04:09 PM	61.7
4:05:09 PM	62.8
4:06:09 PM	65.1
4:07:09 PM	66.3
4:08:09 PM	63.8
4:09:09 PM	65
4:10:09 PM	64.2
4:11:09 PM	63.3
4:12:09 PM	63.3

Logged Data Chart

S032_BLI020010_26042024_100950: Logged Data Chart



Session Report

4/26/2024

Information Panel - NMP 4

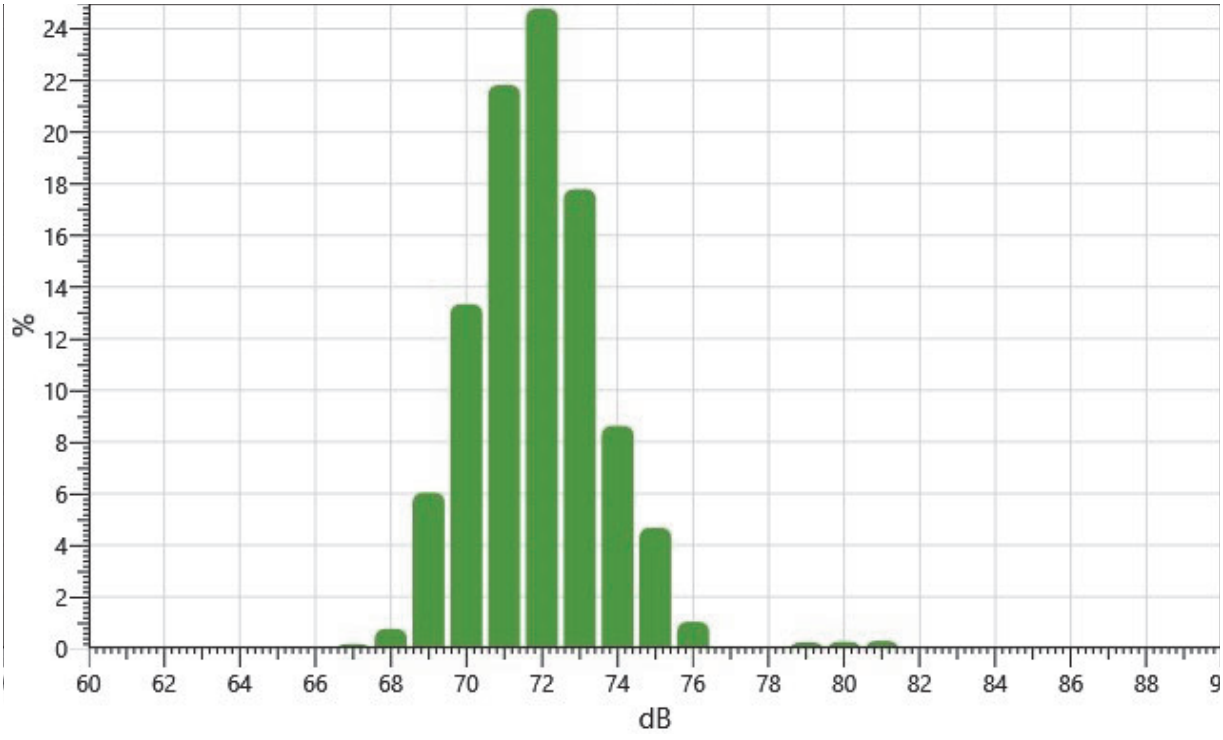
Name	S033_BLI020010_26042024_100951
Start Time	4/25/2024 4:24:20 PM
Stop Time	4/25/2024 4:39:20 PM
Device Name	BLI020010
Model Type	SoundPro DL
Device Firmware Rev	R.13J
Comments	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	72.7 dB	Lmax	1	82 dB
Lmin	1	67.3 dB	Lpk	1	94.2 dB
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW			
Weighting	2	A	Response	2	SLOW

Statistics Chart

S033_BLI020010_26042024_100951: Statistics Chart

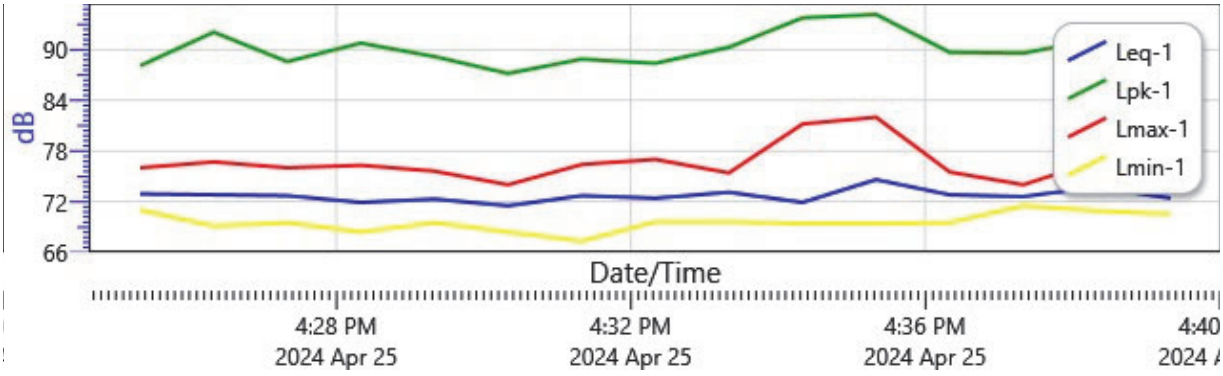


Logged Data Table

Date/Time	Leq-1
4/25/2024 4:25:20 PM	72.9
4:26:20 PM	72.8
4:27:20 PM	72.7
4:28:20 PM	71.9
4:29:20 PM	72.3
4:30:20 PM	71.5
4:31:20 PM	72.7
4:32:20 PM	72.4
4:33:20 PM	73.1
4:34:20 PM	71.9
4:35:20 PM	74.6
4:36:20 PM	72.8
4:37:20 PM	72.6
4:38:20 PM	73.7
4:39:20 PM	72.4

Logged Data Chart

S033_BLI020010_26042024_100951: Logged Data Chart



Session Report

4/26/2024

Information Panel - NMP 5

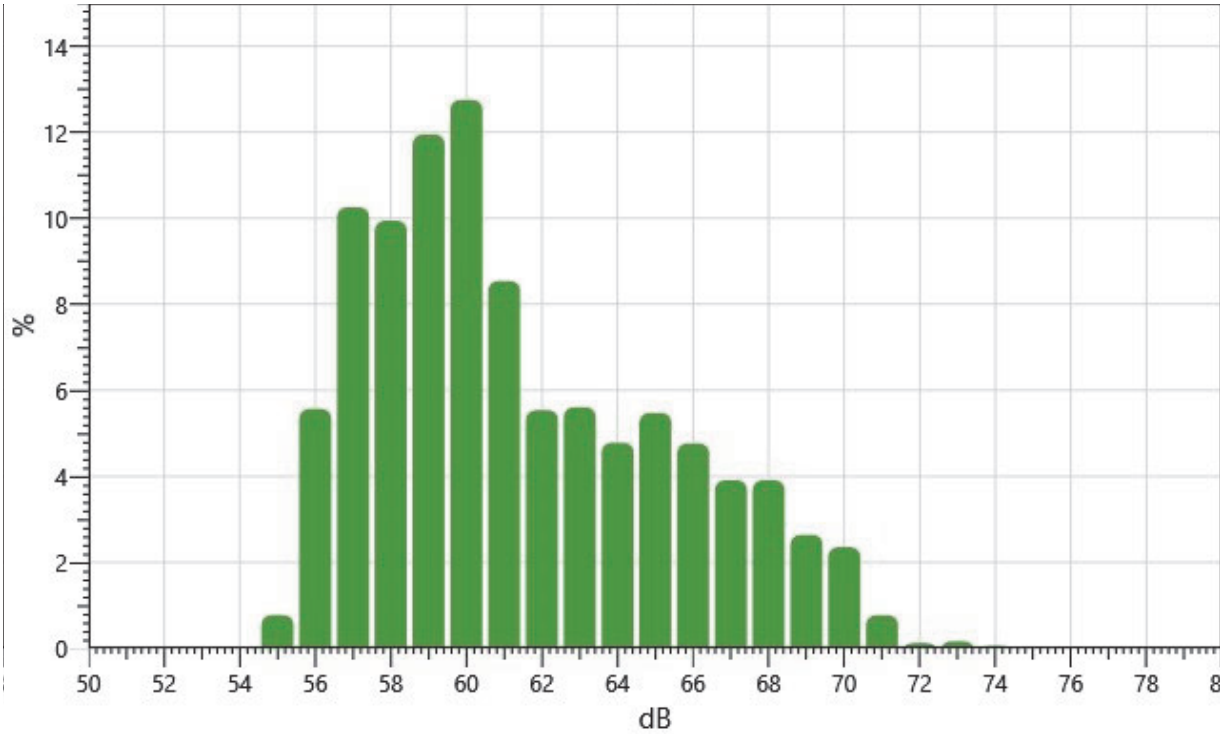
Name	S034_BLI020010_26042024_100951
Start Time	4/25/2024 4:53:21 PM
Stop Time	4/25/2024 5:08:21 PM
Device Name	BLI020010
Model Type	SoundPro DL
Device Firmware Rev	R.13J
Comments	

Summary Data Panel

Description	Meter	Value	Description	Meter	Value
Leq	1	63.9 dB	Lmax	1	78.4 dB
Lmin	1	55.2 dB	Lpk	1	113.1 dB
Exchange Rate	1	3 dB	Weighting	1	A
Response	1	SLOW			
Weighting	2	A	Response	2	SLOW

Statistics Chart

S034_BLI020010_26042024_100951: Statistics Chart

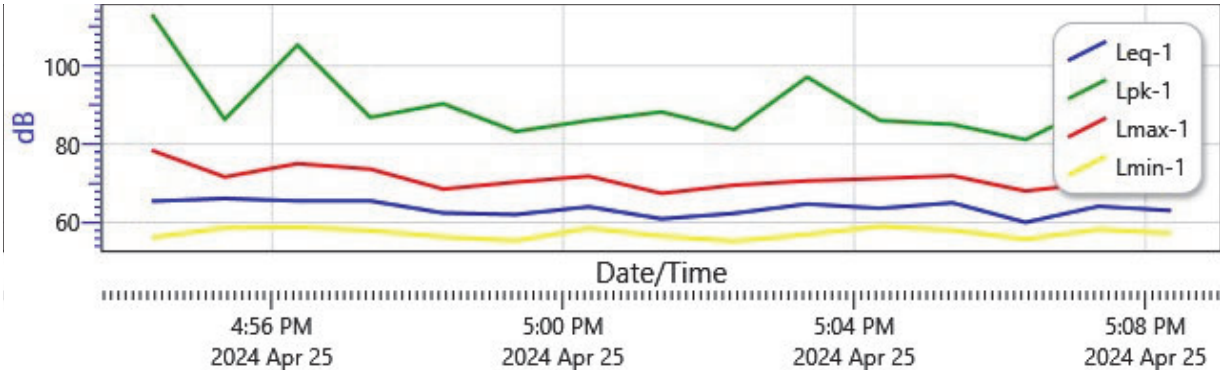


Logged Data Table

Date/Time	Leq-1
4/25/2024 4:54:21 PM	65.4
4:55:21 PM	66.1
4:56:21 PM	65.5
4:57:21 PM	65.5
4:58:21 PM	62.4
4:59:21 PM	62
5:00:21 PM	64
5:01:21 PM	60.9
5:02:21 PM	62.3
5:03:21 PM	64.7
5:04:21 PM	63.6
5:05:21 PM	65
5:06:21 PM	60
5:07:21 PM	64.1
5:08:21 PM	63

Logged Data Chart

S034_BLI020010_26042024_100951: Logged Data Chart



Session Report

4/26/2024

Calibration History

Date	Calibration Action	Level	Cal. Model Type	Serial Number	Cert. Due Date
4/25/2024 5:12:19 PM	Calibration	114.0			

I-70 WB	<-- 1 <-- 2 <-- 3
I-70 EB	--> 4<br--> 5<br--> 6

	Cars				
	NMP 1	NMP 2	NMP 3	NMP 4	NMP 5
	15:00	15:32	15:57	16:24	16:53
1	107	179	206	280	290
2	132	504	563	612	690
3	202	318	284	328	373
4	355	389	448	431	423
5	312	234	285	290	298
6	376	399	400	359	383

	BANK 1 (Medium Trucks)				
	NMP 1	NMP 2	NMP 3	NMP 4	NMP 5
	15:00	15:32	15:57	16:24	16:53
1	11	14	7	9	12
2	12	13	16	12	15
3	7	1	5	0	1
4	1	0	4	0	2
5	6	16	10	10	7
6	10	14	7	5	7

	BANK 2 (Heavy Trucks)				
	NMP 1	NMP 2	NMP 3	NMP 4	NMP 5
	15:00	15:32	15:57	16:24	16:53
1	16	21	21	17	22
2	13	25	18	21	13
3	0	1	1	1	0
4	2	1	0	2	0
5	30	51	56	33	39
6	22	23	13	12	17

		Cars	
		NMP 1	NMP 2
		14:59	15:31
From North (southbound)	Right (put into outside thru lane)	8	2
	Thru (outside lane)	84	81
	Left (inside lane of 2 thru lanes)	32	39
From East (Ramp) (Westbound)	Right (turn lanes)	10	15
	Thru	3	3
	Left	31	31
From South (Northbound)	Right	49	46
	Thru	43	50
	Left (add to thru traffic)	3	3
From West from parking lot, combine into 1 lane (Eastbound)	Right	0	0
	Thru	13	12
	Left	13	19

		BANK 1 (Medium Trucks)	
		NMP 1	NMP 2
		14:59	15:31
From North (southbound)	Right	5	4
	Thru	4	3
	Left	0	0
From East (Ramp) (Westbound)	Right	0	0
	Thru	0	0
	Left	0	0
From South (Northbound)	Right	2	1
	Thru	5	3
	Left	0	0
From West from parking lot, combine into 1 lane (Eastbound)	Right	0	0
	Thru	0	0
	Left	3	4

		BANK 2 (Heavy Trucks)	
		NMP 1	NMP 2
		14:59	15:31
From North (southbound)	Right	0	0
	Thru	0	0
	Left	0	1
From East (Ramp) (Westbound)	Right	0	0
	Thru	0	0
	Left	1	0
From South (Northbound)	Right	0	2
	Thru	0	2
	Left	0	0
From West from parking lot, combine into 1 lane (Eastbound)	Right	0	0
	Thru	0	0
	Left	0	0

STL CTP Traffic Noise

APPENDIX D: TRAFFIC DATA

CMT

Traffic for validation model

		NMP-1 15:00-15:15						NMP-2 15:32-15:47						NMP-3 15:57-16:12					
		Field count			Model count			Field count			Model count			Field count			Model count		
Route/Segment	Lane	P&A (cars)	B (medium trucks)	C (heavy trucks)	P&A	B	C	P&A	B	C	P&A	B	C	P&A	B	C	P&A	B	C
I-70 WB	Outside (1)	107	11	16	428	44	64	179	14	21	716	56	84	206	7	21	824	28	84
	Middle (2)	132	12	13	528	48	52	504	13	25	2016	52	100	563	16	18	2252	64	72
	Inside (3)	202	7	0	808	28	0	318	1	1	1272	4	4	284	5	1	1136	20	4
I-70 EB	Outside (6)	376	10	22	1504	40	88	399	14	23	1596	56	92	400	7	13	1600	28	52
	Middle (5)	312	6	30	1248	24	120	234	16	51	936	64	204	285	10	56	1140	40	224
	Inside (4)	355	1	2	1420	4	8	389	0	1	1556	0	4	448	4	0	1792	16	0
I-70 EB offramp (from Brian's sprea	LTL	31	0	1	124	0	4	31	0	0	124	0	0						
at Cypress	Thru	3	0	0	12	0	0	3	0	0	12	0	0						
	RTL	10	0	0	40	0	0	15	0	0	60	0	0						
I-70 EB onramp (calculated)	Only lane	94	2	0	376	8	0	97	1	3	388	4	12						
Cypress Rd NB (calculated)	LTL S of ramps	3	0	0	12	0	0	3	0	0	12	0	0						
	Thru S of ramps	43	5	0	172	20	0	50	3	2	200	12	8						
	Combined Inside	46	5	0	184	20	0	53	3	2	212	12	8						
	Thru/RTL S of ramps	49	2	0	196	8	0	46	1	2	184	4	8						
	Outside N of ramps	66	8	0	132	16	0	84	7	2	168	14	4						
	Inside N of ramps				132	16	0				168	14	4						
Cypress Rd SB (comes from spreads	LTL N of ramps	32	0	0	128	0	0	39	0	1	156	0	4						
	Combined Outside	92	9	0	368	36	0	83	7	0	332	28	0						
	Thru N of ramps	84	4	0	336	16	0	81	3	0	324	12	0						
	Thru/RTL N of ramps	8	5	0	32	20	0	2	4	0	8	16	0						
	Outside S of ramps	123	9	1	246	18	2	114	7	0	228	14	0						
	Inside S of ramps				246	18	2			0	228	14	0						
St Nicholas WB	Only lane													1	0	0	4	0	0
St Nicholas EB	Only lane													0	0	0	0	0	0
Pear Blossom Ln	WB and EB																		
Pear Tree Ln EB	Only lane																		
Pear Tree Ln WB	Only lane																		

Traffic for validation model

		NMP-4 16:24:00 - 16:39PM						NMP-5 16:53-17:08					
		Field count			Model count			Field count			Model count		
Route/Segment	Lane	P&A	B	C	P&A	B	C	P&A	B	C	P&A	B	C
I-70 WB	Outside (1)	280	9	17	1120	36	68	290	12	22	1160	48	88
	Middle (2)	612	12	21	2448	48	84	690	15	13	2760	60	52
	Inside (3)	328	0	1	1312	0	4	373	1	0	1492	4	0
I-70 EB	Outside (6)	359	5	12	1436	20	48	383	7	17	1532	28	68
	Middle (5)	290	10	33	1160	40	132	298	7	39	1192	28	156
	Inside (4)	431	0	2	1724	0	8	423	2	0	1692	8	0
I-70 EB offramp (from Brian's sprea	LTL												
at Cypress	Thru												
	RTL												
I-70 EB onramp (calculated)	Only lane												
Cypress Rd NB (calculated)	LTL S of ramps												
	Thru S of ramps												
	Combined Inside												
	Thru/RTL S of ramps												
	Outside N of ramps												
	Inside N of ramps												
Cypress Rd SB (comes from spreads	LTL N of ramps												
	Combined Outside												
	Thru N of ramps												
	Thru/RTL N of ramps												
	Outside S of ramps												
	Inside S of ramps												
St Nicholas WB	Only lane												
St Nicholas EB	Only lane												
Pear Blossom Ln	WB and EB	2	0	0	8	0	0						
Pear Tree Ln EB	Only lane							24	1	0	96	4	0
Pear Tree Ln WB	Only lane							34	2	0	136	8	0

Traffic for existing and future models							2023 Existing			2037 No Build			2037 Build		
							Model counts			Model counts			Model counts		
Route	Segment	Lane	Classification	Posted speed	Measured speed		P&A	B	C	P&A	B	C	P&A	B	C
I-70 WB	E of Airflight	Outside Lane	Interstate (Urban)	60	60		965	504	310	984	514	316	1037	541	333
		Middle Lane					858	300	204	875	306	208	922	322	219
		Inside Lane					778	105	106	792	106	107	835	112	113
	Airflight offramp to onramp	Outside Lane	Interstate (Urban)	60	60		881	460	283	884	462	284	967	505	310
		Middle Lane					784	274	187	787	275	187	860	300	205
		Inside Lane					710	95	96	713	95	96	779	105	106
	Airflight onramp to LIB onramp	Aux Lane	Interstate (Urban)	60	60								977	516	274
	(to Cypress offramp for Build)	Outside Lane					984	514	316	1006	525	323	799	340	378
		Middle Lane					875	306	208	895	312	213	826	157	65
		Inside Lane					793	106	108	810	110	109	413	40	1
	LIB onramp to Cypress offramp	Aux Lane	Interstate (Urban)	60	60		290	55	0	301	57	0			
		Outside Lane					984	514	316	1006	525	323			
		Middle Lane					875	306	208	895	312	213			
		Inside Lane					793	106	108	810	110	109			
	Cypress offramp to Lindbergh offramp	Outside Lane	Interstate (Urban)	60	60		1001	523	321	1024	535	329	930	486	299
		Middle Lane					891	311	212	911	318	217	828	289	197
		Inside Lane					807	109	110	825	111	111	750	101	101
	W of Lindbergh offramp	Outside Lane	Interstate (Urban)	60	60		887	463	285	907	474	291	824	431	264
		Middle Lane					789	276	188	807	282	192	733	256	175
		Inside Lane					715	96	96	730	98	99	664	89	90
WB I-70 Ramps	WB off to Airflight	Combined	Interstate ramp	30			317	43	0	374	51	0	261	36	0
		LTL					255	35	0	301	41	0	237	32	0
		R/LTL					62	8	0	73	10	0	25	3	0
	WB on from Airflight/LIB	Airflight track	Interstate ramp	NP			271	44	0	320	52	0			
		LIB track	Interstate ramp	NP			103	17	0	127	21	0	558	91	0
	WB on from LIB	WB LIB only	Interstate ramp	NP			286	54	0	297	56	0			
		EB LIB only		NP			4	1	0	4	1	0			
		Combined WB/EB LIB					290	55	0	301	57	0			
	WB off to Cypress/Natural Bridge	Combined	Interstate ramp		30		170	59	41	176	62	42	507	177	121
		Far RTL to Cypress					76	26	18	78	27	19	265	92	63
		RTL to Nat'l Bridge					25	9	6	27	9	6	170	60	41
		LTL to Nat'l Bridge					69	24	17	72	25	17	72	25	17
	WB off to Lindbergh CD Road	All	Interstate ramp	NP			308	108	74	316	110	75	287	100	68
	Natural Bridge to Lindbergh CD Road	EB Nat'l Bridge	Interstate ramp	NP			32	13	10	34	13	10	34	13	10
		WB Nat'l Bridge		NP			56	22	17	58	23	18	335	130	102
		Combined Nat'l Bridge					88	35	27	92	36	28	368	144	112
	Lindbergh CD Road E of NB ramp	Combined	Interstate ramp	NP			378	147	115	388	151	118	637	248	194
	Lindbergh CD Road W of NB ramp	Combined	Interstate ramp	NP			304	118	93	311	121	95	560	218	171
I-70 EB	W of Lindbergh onramp	Outside Lane	Interstate (Urban)	60	60		688	360	221	714	373	229	714	373	229
		Middle Lane					612	214	146	635	222	151	635	222	151
		Inside Lane					555	74	75	576	77	78	576	77	78
	Lindbergh onramp to Cypress offramp	Aux Lane	Interstate (Urban)	60	60		380	135	5	395	140	5	395	140	5
		Outside Lane					688	360	221	714	373	229	714	373	229
		Middle Lane					612	214	146	635	222	151	635	222	151
		Inside Lane					555	74	75	576	77	78	576	77	78

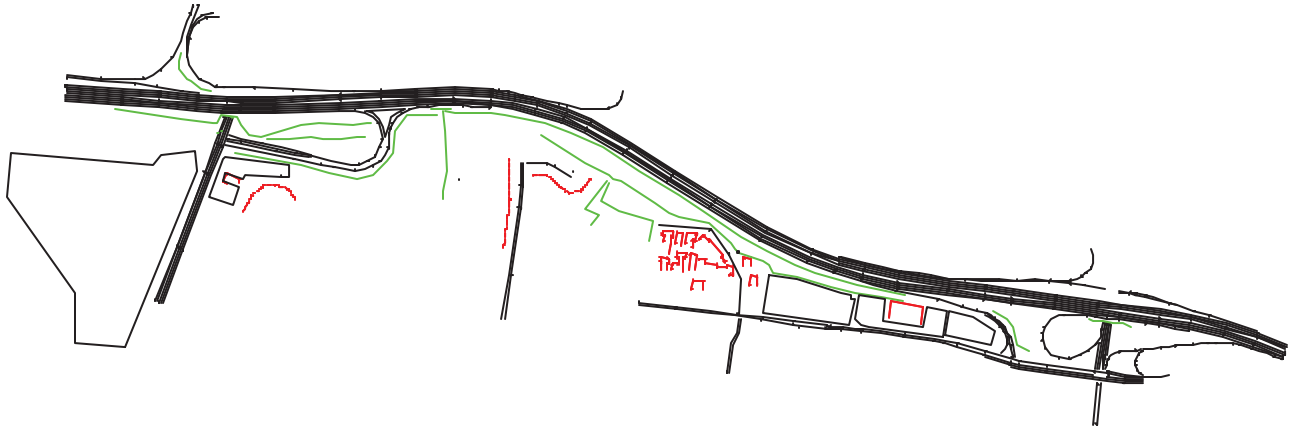
Traffic for existing and future models							2023 Existing			2037 No Build			2037 Build		
							Model counts			Model counts			Model counts		
Route	Segment	Lane	Classification	Posted speed	Measured speed		P&A	B	C	P&A	B	C	P&A	B	C
	Cypress offramp to Cypress onramp	Outside Lane	Interstate (Urban)	60	60		771	403	248	800	418	257	762	398	245
		Middle Lane					686	240	163	712	249	169	678	237	161
		Inside Lane					622	83	84	645	86	87	614	82	83
	Cypress onramp to Pear Tree offramp	Outside Lane	Interstate (Urban)	60	60		869	454	279	903	472	290	962	502	309
		Middle Lane					773	270	184	804	281	191	855	299	204
		Inside Lane					699	93	94	728	98	99	775	104	104
	Pear Tree offramp to SB Airflight onramp	Outside Lane	Interstate (Urban)	60	60		753	393	242	767	401	246	863	451	277
		Middle Lane					670	234	159	682	238	162	768	268	183
		Inside Lane					606	81	82	618	83	84	695	93	94
	SB Airflight onramp to NB Airflight onramp	Outside Lane	Interstate (Urban)	60	60		782	408	251	801	419	257	897	469	288
		Middle Lane					695	243	166	713	249	170	798	279	190
		Inside Lane					630	85	85	646	86	87	723	97	98
	E of NB Airflight onramp	Outside Lane	Interstate (Urban)	60	60		820	429	263	847	442	272	943	493	303
		Middle Lane					730	255	174	753	263	179	839	293	200
		Inside Lane					661	88	90	683	92	92	760	101	102
EB I-70 Ramps	EB on from Lindbergh	Combined	Interstate ramp	NP		Ramp	380	135	5	395	140	5	395	140	5
	EB off to Cypress	Combined	Interstate ramp	25			104	36	25	108	38	26	211	74	50
		RTL to NB Cypress					56	20	14	59	20	14	162	56	38
		Thru to car lot					6	2	2	7	3	2	7	3	2
		LTL to SB Cypress					41	14	10	42	15	10	42	15	10
	EB on from Cypress	Combined	Interstate ramp	NP		Ramp	357	54	4	381	58	4	734	111	9
	EB off to Pear Tree	Combined	Interstate ramp	30			431	59	5	509	70	6	367	51	4
		RTL to WB Pear Tree					52	7	1	61	9	1	61	9	1
		Thr/LTL to hotel etc					22	3	0	26	4	0	26	4	0
		LTL to EB Pear Tree					357	49	4	421	58	5	279	39	3
	EB on from SB Airflight	Combined	Interstate ramp	NP		Ramp	110	14	1	130	16	1	130	16	1
	EB on from NB Airflight/WB Nat'l Bridge	From NB Airflight	Interstate ramp	NP			14	1	0	17	1	0	17	1	0
		From WB Nat'l Bridge		NP			139	9	2	164	11	2	164	11	2
		Combined				Ramp	153	10	2	181	12	2	181	12	2
Cypress Rd NB	S of ramp intersection	Outside Lane	Urban principal arterial	35	35	N/A	143	78	2	152	83	2	152	83	2
		Inside Lane					142	78	2	151	83	3	151	83	3
		(dummy TWLTL)					0	0	0	0	0	0	0	0	0
	N of ramp intersection	Outside Lane	Urban principal arterial	35	35	Signal	105	58	2	112	61	2	164	90	3
		Inside Lane					106	58	1	111	62	2	164	90	2
		(dummy TWLTL)					0	0	0	0	0	0	0	0	0
Cypress Rd SB	N of ramp intersection	Outside Lane	Urban principal arterial	35	35	N/A	175	95	3	184	100	3	316	172	5
		Inside Lane					174	96	2	183	101	3	314	173	5
	S of ramp intersection	Outside Lane	Urban principal arterial	35	35	Signal	131	72	2	137	75	2	137	75	2
		Inside Lane					131	72	2	137	74	2	137	74	2
Ashby Rd NB	Within study area	One lane	Urban collector	20	30	N/A	273	56	3	273	56	3	273	56	3
Ashby Rd SB	Within study area	One lane	Urban collector	20	30	N/A	289	78	4	289	78	4	289	78	4
St Nicholas Rd	Within study area	Both directions	Local street	20	20	N/A	8	0	0	8	0	0	8	0	0
Country Ln NB	Within study area	One lane	Local street	20	20	N/A	102	56	2	121	66	2	121	66	2
Country Ln SB	Within study area	One lane	Local street	20	20	Stop	78	42	1	92	50	1	92	50	1
Pear Blossom Ct	Within study area	Both directions	Urban minor arterial	20	20	N/A	8	0	0	8	0	0	8	0	0

Traffic for existing and future models							2023 Existing			2037 No Build			2037 Build		
							Model counts			Model counts			Model counts		
Route	Segment	Lane	Classification	Posted speed	Measured speed		P&A	B	C	P&A	B	C	P&A	B	C
Pear Tree Ln EB	W of Country Ln	One lane	Urban minor arterial	20	20	N/A	118	15	1	140	17	2	140	17	2
	Country Ln to Skypark Parking entrance	One lane	Urban minor arterial	20	25	Stop	207	26	2	244	31	3	244	31	3
	Skypark Parking entrance to Edmundson line	One lane	Urban minor arterial	20	30	Stop	207	26	2	244	31	3	244	31	3
	Edmundson line to I-70 offramps	Combined	Urban minor arterial	35	35	Continuous	207	26	2	244	31	3	244	31	3
		Outside Lane					104	13	1	123	15	1	123	15	1
		Inside (LT) Lane					103	13	1	121	16	2	121	16	2
	I-70 offramps to Airflight Dr	Outside Lane		35	35	Signal	251	31	3	297	37	3	236	30	3
		Left LTL					180	23	2	213	27	2	172	21	2
		Right LTL					180	23	2	213	27	2	171	21	2
	E of Airflight Dr (becomes Natural Bridge Rd)	Through lane (left)	Urban minor arterial	35	35	Signal	368	176	6	435	208	7	350	167	5
		Parking Spot entry (right)	Local street				0	0	0	0	0	0	0	0	0
Pear Tree Ln WB	E of Airflight Dr (Natural Bridge Rd)	One lane	Urban minor arterial	35	35	N/A	175	87	3	207	103	3	207	103	3
		RTL					135	68	2	160	80	2	160	80	2
		Thru lane					32	17	1	39	19	1	39	19	1
		LTL					7	3	0	8	4	0	8	4	0
	Airflight Dr to I-70 offramps	One lane	Urban minor arterial	35	35	Signal	170	33	2	201	39	2	201	39	2
	I-70 offramps to Edmundson line	One lane	Urban minor arterial	35	35	Signal	179	34	2	210	41	3	210	41	3
	Edmundson line to Skypark Parking entrance	One lane	Urban minor arterial	20	30	Continuous	179	34	2	210	41	3	210	41	3
	Skypark Parking entrance to Country Ln	One lane	Urban minor arterial	20	25	Stop	179	34	2	210	41	3	210	41	3
	W of Country Ln	One lane	Urban minor arterial	20	20	Stop	112	21	1	131	25	2	131	25	2
Airflight Dr NB	S of Pear Tree Ln/Natural Bridge Rd	One lane	Driveway	NP	20	N/A	47	22	1	55	27	1	55	27	1
	Pear Tree Ln to EB onramp	LTL	Urban principal arterial	NP	25	Signal	202	110	3	238	130	4	348	190	5
		Thru lane					221	121	3	261	142	4	91	49	1
		RTL					10	5	0	12	6	0	12	6	0
	EB onramp to WB ramps	LTL	Urban principal arterial	NP	25	Continuous	202	110	3	238	130	4	348	190	5
		Departures lane					221	121	3	261	142	4	91	49	1
		Arrivals/T2 lane (dummy)					0	0	0	0	0	0	0	0	0
Airflight Dr SB	WB ramps to EB onramp	RTL ramp access	Urban principal arterial	NP	25	Continuous	80	44	1	95	51	1	95	51	1
		Thru lane					297	163	5	352	192	5	304	167	5
	EB onramp to Pear Tree Ln	RTL	Urban principal arterial	NP	25	Signal	99	54	2	117	64	2	117	64	2
		Thru/LTL					198	109	3	234	128	4	187	103	3
	S of Pear Tree Ln/Natural Bridge Rd	One lane	Driveway	NP	20	Signal	41	23	1	49	27	1	41	22	1

STL CTP Traffic Noise

APPENDIX E: TNM OUTPUT

CMT



Validation NMP-1 April 2024	Sheet 1 of 1 | 1 May 2024
	CMT, Inc.
Plan View	Project/Contract No. Lambert CTP
Run name: Val_NMP1_Rev3	TNM Version 2.5, Feb 2004
Scale: 1000 feet	Analysis By: JKMiller

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

850000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc.
JKMiller

1 May 2024
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Validation NMP-1 April 2024
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 64 deg F, 41% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
NMP-2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT, Inc. 1 May 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Validation NMP-2 April 2024
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 64 deg F, 43% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
NMP-3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT, Inc.
JKMiller

1 May 2024
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Validation NMP-3 April 2024
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 64 deg F, 43% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	65.1	66	65.1	10	----	65.1	0.0	8	-8.0
NMP-4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT, Inc.
JKMiller
1 May 2024
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Validation NMP-4 April 2024
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 61 deg F, 48% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	73.0	66	73.0	10	Snd Lvl	73.0	0.0	8	-8.0
NMP-5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CMT, Inc.
JKMiller

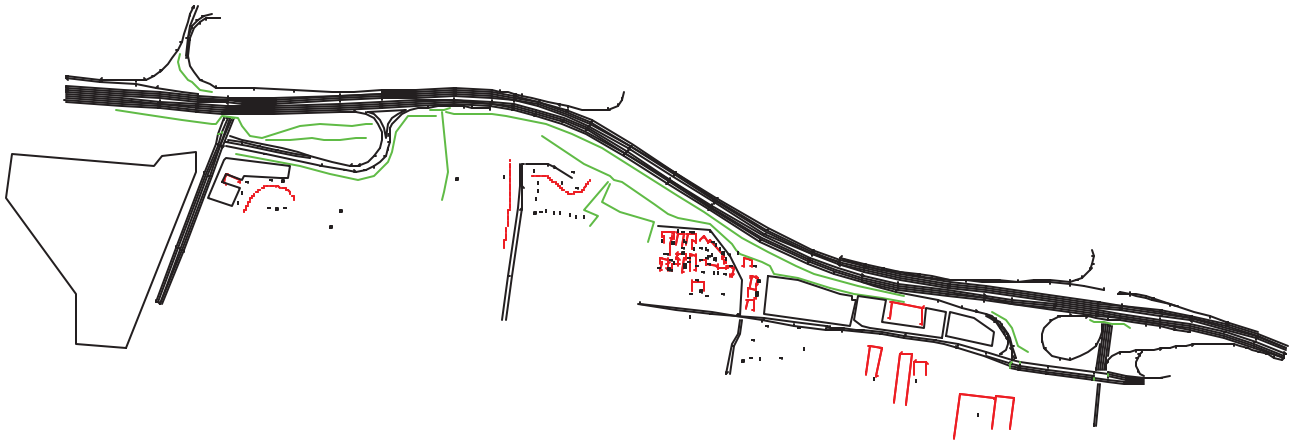
1 May 2024
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Validation NMP-5 April 2024
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 62 deg F, 47% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0



2024 Existing		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: Existing2024_AddlRecp		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

50000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 30 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: 2024 Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
4373 St Dominic Ln	7	1	0.0	66.1	66	66.1	10	Snd Lvl	66.1	0.0	8	-8.0
4369 St Dominic Ln	8	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
4365 St Dominic Ln	9	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
4361 St Dominic Ln	10	1	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
4357 St Dominic Ln	11	1	0.0	67.0	66	67.0	10	Snd Lvl	67.0	0.0	8	-8.0
4353 St Dominic Ln	12	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
4349 St Dominic Ln	13	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
11267 St Damian Dr	14	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
11269 St Damian Dr	15	1	0.0	64.8	66	64.8	10	----	64.8	0.0	8	-8.0
4344 Cypress Rd - day care	16	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
4362 St Dominic Ln	17	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
4370 St Dominic Ln	18	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
4372 St Dominic Ln	19	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
4374 St Dominic Ln	20	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	67.3	66	67.3	10	Snd Lvl	67.3	0.0	8	-8.0
St Ann Park Ballfield Home Bench	22	1	0.0	65.7	66	65.7	10	----	65.7	0.0	8	-8.0
4555 Ashby Rd	23	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
4551 Ashby Rd	24	1	0.0	68.3	66	68.3	10	Snd Lvl	68.3	0.0	8	-8.0
4547 Ashby Rd	25	1	0.0	67.6	66	67.6	10	Snd Lvl	67.6	0.0	8	-8.0

4539 Ashby Rd	26	1	0.0	66.5	66	66.5	10	Snd Lvl	66.5	0.0	8	-8.0
4535 Ashby Rd	28	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
4548 Ashby Rd	29	1	0.0	69.2	66	69.2	10	Snd Lvl	69.2	0.0	8	-8.0
11014 St Nicholas Ct	30	1	0.0	69.1	66	69.1	10	Snd Lvl	69.1	0.0	8	-8.0
11010 St Nicholas Ct	31	1	0.0	68.7	66	68.7	10	Snd Lvl	68.7	0.0	8	-8.0
11006 St Nicholas Ct	32	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
11002 St Nicholas Ct	33	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
11000 St Nicholas Ct	34	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
11001 St Nicholas Ct	35	1	0.0	69.4	66	69.4	10	Snd Lvl	69.4	0.0	8	-8.0
4544 Ashby Rd	36	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
4540 Ashby Rd	37	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
4536 Ashby Rd	38	1	0.0	66.5	66	66.5	10	Snd Lvl	66.5	0.0	8	-8.0
4524 Ashby Rd	39	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
11045 St Pius Ln	40	1	0.0	65.3	66	65.3	10	----	65.3	0.0	8	-8.0
11041 St Pius Ln	41	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
11037 St Pius Ln	42	1	0.0	65.0	66	65.0	10	----	65.0	0.0	8	-8.0
11033 St Pius Ln	43	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
11029 St Pius Ln	44	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
11025 St Pius Ln	45	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
11021 St Pius Ln	46	1	0.0	64.5	66	64.5	10	----	64.5	0.0	8	-8.0
11017 St Pius Ln	47	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
11009 St Pius Ln	49	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
11005 St Pius Ln	50	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
10882 Pear Blossom NW patio apt	51	1	0.0	70.8	66	70.8	10	Snd Lvl	70.8	0.0	8	-8.0
10882 Pear Blossom NE patio apt	52	1	0.0	71.2	66	71.2	10	Snd Lvl	71.2	0.0	8	-8.0
4649 Country Ln NW patio apt	53	1	0.0	72.8	66	72.8	10	Snd Lvl	72.8	0.0	8	-8.0
4649 Country Ln NE patio apt	54	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
4645 Country Ln NW patio apt	55	1	0.0	74.8	66	74.8	10	Snd Lvl	74.8	0.0	8	-8.0
4645 Country Ln NE patio apt	56	1	0.0	75.0	66	75.0	10	Snd Lvl	75.0	0.0	8	-8.0
4633 Country Ln NE patio apt	57	1	0.0	75.4	66	75.4	10	Snd Lvl	75.4	0.0	8	-8.0
4633 Country Ln SE patio apt	58	1	0.0	74.7	66	74.7	10	Snd Lvl	74.7	0.0	8	-8.0
4629 Country Ln NE patio apt	59	1	0.0	74.3	66	74.3	10	Snd Lvl	74.3	0.0	8	-8.0
4629 Country Ln SE patio apt	60	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
4625 Country Ln NE patio apt	61	1	0.0	73.7	66	73.7	10	Snd Lvl	73.7	0.0	8	-8.0
4625 Country Ln SE patio apt	62	1	0.0	72.3	66	72.3	10	Snd Lvl	72.3	0.0	8	-8.0
10844 Pear Blossom N patio apt	63	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0
10844 Pear Blossom SE patio apt	64	1	0.0	55.3	66	55.3	10	----	55.3	0.0	8	-8.0
Pear Tree Apts Clubhouse	65	1	0.0	74.0	66	74.0	10	Snd Lvl	74.0	0.0	8	-8.0
10882 Pear Blossom SW patio apt	66	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
10878 Pear Blossom NW patio apt	67	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
10882 Pear Blossom SE patio apt	68	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0

10878 Pear Blossom NE patio apt	69	1	0.0	59.2	66	59.2	10	----	59.2	0.0	8	-8.0
4649 Country Ln SE patio apt	70	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
4641 Country Ln E patio apt	71	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
4641 Country Ln W patio apt	72	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
10878 Pear Blossom SE patio apt	73	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
10878 Pear Blossom SW patio apt	74	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
4645 Country Ln SW patio apt	75	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0
4625 Country Ln NW patio apt	76	1	0.0	59.6	66	59.6	10	----	59.6	0.0	8	-8.0
4629 Country Ln SW patio apt	77	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
4629 Country Ln NW patio apt	78	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
4633 Country Ln SW patio apt	79	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
4637 Country Ln NE patio apt	80	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
4637 Country Ln NW patio apt	81	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
4637 Country Ln SE patio apt	82	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
4637 Country Ln SW patio apt	83	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
10874 Pear Blossom SW patio apt	84	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
10866 Pear Blossom NW patio apt	85	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
10866 Pear Blossom NE patio apt	86	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
10866 Pear Blossom SE patio apt	87	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
10870 Pear Blossom NE patio apt	88	1	0.0	52.1	66	52.1	10	----	52.1	0.0	8	-8.0
10874 Pear Blossom NE patio apt	89	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
10874 Pear Blossom SE patio apt	90	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
10858 Pear Blossom NW patio apt	91	1	0.0	57.0	66	57.0	10	----	57.0	0.0	8	-8.0
10858 Pear Blossom SW patio apt	92	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
10862 Pear Blossom W patio apt	93	1	0.0	52.3	66	52.3	10	----	52.3	0.0	8	-8.0
10862 Pear Blossom E patio apt	94	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
10858 Pear Blossom SE patio apt	95	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0
10858 Pear Blossom NE patio apt	96	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
10852 Pear Blossom NE patio apt	97	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
10848 Pear Blossom NW patio apt	98	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
10844 Pear Blossom SW patio apt	99	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
10848 Pear Blossom SE patio apt	100	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
10848 Pear Blossom SW patio apt	101	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
10852 Pear Blossom SE patio apt	102	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
10852 Pear Blossom SW patio apt	103	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
10885 Pear Blossom NE patio apt	104	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
10885 Pear Blossom NW patio apt	105	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
10885 Pear Blossom SE patio apt	106	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
10885 Pear Blossom SW patio apt	107	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
10877 Pear Tree Ln	108	1	0.0	59.9	66	59.9	10	----	59.9	0.0	8	-8.0
10885 Pear Tree Ln	109	1	0.0	59.1	66	59.1	10	----	59.1	0.0	8	-8.0

10893 Pear Tree Ln	110	1	0.0	59.7	66	59.7	10	----	59.7	0.0	8	-8.0
10848 Pear Tree Ln	111	1	0.0	67.1	66	67.1	10	Snd Lvl	67.1	0.0	8	-8.0
10840 Pear Tree Ln	112	1	0.0	67.9	66	67.9	10	Snd Lvl	67.9	0.0	8	-8.0
10832 Pear Tree Ln	113	1	0.0	68.5	66	68.5	10	Snd Lvl	68.5	0.0	8	-8.0
10869 Pear Tree Ln	114	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
10870 Pear Blossom NW patio apt	115	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
10870 Pear Blossom SW patio apt	116	1	0.0	53.1	66	53.1	10	----	53.1	0.0	8	-8.0
10870 Pear Blossom SE patio apt	117	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
4610 Country Ln patio apt	118	1	0.0	71.0	66	71.0	10	Snd Lvl	71.0	0.0	8	-8.0
4608 Country Ln patio apt	119	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0
4606 Country Ln patio apt	120	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
4604 Country Ln patio apt	121	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
4602 Country Ln patio apt	122	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
4600 Country Ln patio apt	123	1	0.0	67.4	66	67.4	10	Snd Lvl	67.4	0.0	8	-8.0
10885 Pear Blossom NE balc apt	124	1	0.0	58.2	66	58.2	10	----	58.2	0.0	8	-8.0
10885 Pear Blossom NW balc apt	125	1	0.0	58.0	66	58.0	10	----	58.0	0.0	8	-8.0
10885 Pear Blossom SE balc apt	126	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
10885 Pear Blossom SW balc apt	127	1	0.0	54.6	66	54.6	10	----	54.6	0.0	8	-8.0
10844 Pear Blossom N balc apt	128	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0
10844 Pear Blossom SE balc apt	129	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
10844 Pear Blossom SW balc apt	130	1	0.0	57.6	66	57.6	10	----	57.6	0.0	8	-8.0
10848 Pear Blossom SE balc apt	131	1	0.0	56.9	66	56.9	10	----	56.9	0.0	8	-8.0
10848 Pear Blossom NW balc apt	132	1	0.0	62.0	66	62.0	10	----	62.0	0.0	8	-8.0
10848 Pear Blossom SW balc apt	133	1	0.0	56.8	66	56.8	10	----	56.8	0.0	8	-8.0
10852 Pear Blossom NE balc apt	134	1	0.0	62.1	66	62.1	10	----	62.1	0.0	8	-8.0
10852 Pear Blossom SE balc apt	135	1	0.0	56.2	66	56.2	10	----	56.2	0.0	8	-8.0
10852 Pear Blossom SW balc apt	136	1	0.0	55.9	66	55.9	10	----	55.9	0.0	8	-8.0
10852 Pear Blossom NW patio apt	137	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
10852 Pear Blossom NW balc apt	138	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
10858 Pear Blossom NW balc apt	139	1	0.0	55.6	66	55.6	10	----	55.6	0.0	8	-8.0
10858 Pear Blossom SW balc apt	140	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
10862 Pear Blossom W balc apt	141	1	0.0	52.5	66	52.5	10	----	52.5	0.0	8	-8.0
10862 Pear Blossom E balc apt	142	1	0.0	57.5	66	57.5	10	----	57.5	0.0	8	-8.0
10858 Pear Blossom SE balc apt	143	1	0.0	58.9	66	58.9	10	----	58.9	0.0	8	-8.0
10858 Pear Blossom NE balc apt	144	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
10866 Pear Blossom NW balc apt	145	1	0.0	60.5	66	60.5	10	----	60.5	0.0	8	-8.0
10866 Pear Blossom NE balc apt	146	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
10866 Pear Blossom SE balc apt	147	1	0.0	53.6	66	53.6	10	----	53.6	0.0	8	-8.0
10870 Pear Blossom NE balc apt	148	1	0.0	51.9	66	51.9	10	----	51.9	0.0	8	-8.0
10870 Pear Blossom NW balc apt	149	1	0.0	58.7	66	58.7	10	----	58.7	0.0	8	-8.0
10870 Pear Blossom SW balc apt	150	1	0.0	53.9	66	53.9	10	----	53.9	0.0	8	-8.0

10870 Pear Blossom SE balc apt	151	1	0.0	54.1	66	54.1	10	----	54.1	0.0	8	-8.0
10874 Pear Blossom SW balc apt	152	1	0.0	61.0	66	61.0	10	----	61.0	0.0	8	-8.0
10874 Pear Blossom NE balc apt	153	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
10874 Pear Blossom SE balc apt	154	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
4637 Country Ln NE balc apt	155	1	0.0	62.9	66	62.9	10	----	62.9	0.0	8	-8.0
4637 Country Ln NW balc apt	156	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
4637 Country Ln SE balc apt	157	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
4637 Country Ln SW balc apt	158	1	0.0	60.0	66	60.0	10	----	60.0	0.0	8	-8.0
10878 Pear Blossom NW balc apt	159	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
10878 Pear Blossom NE balc apt	160	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
10878 Pear Blossom SE balc apt	161	1	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
10878 Pear Blossom SW balc apt	162	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
10882 Pear Blossom NW balc apt	163	1	0.0	70.9	66	70.9	10	Snd Lvl	70.9	0.0	8	-8.0
10882 Pear Blossom NE balc apt	164	1	0.0	71.3	66	71.3	10	Snd Lvl	71.3	0.0	8	-8.0
10882 Pear Blossom SW balc apt	165	1	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
10882 Pear Blossom SE balc apt	166	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
4649 Country Ln NW balc apt	167	1	0.0	72.9	66	72.9	10	Snd Lvl	72.9	0.0	8	-8.0
4649 Country Ln NE balc apt	168	1	0.0	73.9	66	73.9	10	Snd Lvl	73.9	0.0	8	-8.0
4649 Country Ln SE balc apt	169	1	0.0	64.6	66	64.6	10	----	64.6	0.0	8	-8.0
4641 Country Ln E balc apt	170	1	0.0	60.8	66	60.8	10	----	60.8	0.0	8	-8.0
4641 Country Ln W balc apt	171	1	0.0	59.6	66	59.6	10	----	59.6	0.0	8	-8.0
4645 Country Ln SE patio apt	172	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
4645 Country Ln SE balc apt	173	1	0.0	62.7	66	62.7	10	----	62.7	0.0	8	-8.0
4645 Country Ln NW balc apt	174	1	0.0	74.9	66	74.9	10	Snd Lvl	74.9	0.0	8	-8.0
4645 Country Ln NE balc apt	175	1	0.0	75.0	66	75.0	10	Snd Lvl	75.0	0.0	8	-8.0
4645 Country Ln SW balc apt	176	1	0.0	63.7	66	63.7	10	----	63.7	0.0	8	-8.0
4633 Country Ln NE balc apt	177	1	0.0	75.4	66	75.4	10	Snd Lvl	75.4	0.0	8	-8.0
4633 Country Ln SE balc apt	178	1	0.0	74.8	66	74.8	10	Snd Lvl	74.8	0.0	8	-8.0
4633 Country Ln SW balc apt	179	1	0.0	60.2	66	60.2	10	----	60.2	0.0	8	-8.0
4629 Country Ln NE balc apt	180	1	0.0	74.4	66	74.4	10	Snd Lvl	74.4	0.0	8	-8.0
4629 Country Ln SE balc apt	181	1	0.0	74.1	66	74.1	10	Snd Lvl	74.1	0.0	8	-8.0
4629 Country Ln SW balc apt	182	1	0.0	60.1	66	60.1	10	----	60.1	0.0	8	-8.0
4629 Country Ln NW balc apt	183	1	0.0	60.3	66	60.3	10	----	60.3	0.0	8	-8.0
4625 Country Ln NE balc apt	184	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
4625 Country Ln SE balc apt	185	1	0.0	72.4	66	72.4	10	Snd Lvl	72.4	0.0	8	-8.0
4625 Country Ln NW balc apt	186	1	0.0	59.5	66	59.5	10	----	59.5	0.0	8	-8.0
4361 St Regina Ln	188	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
4353 St Regina Ln	189	1	0.0	64.2	66	64.2	10	----	64.2	0.0	8	-8.0
4349 St Regina Ln	190	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
4362 St Regina Ln	191	1	0.0	64.2	66	64.2	10	----	64.2	0.0	8	-8.0
4346 St Regina Ln	192	1	0.0	63.6	66	63.6	10	----	63.6	0.0	8	-8.0

4531 Ashby Rd	193	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
10856 Pear Tree Ln	194	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
10864 Pear Tree Ln	195	1	0.0	62.5	66	62.5	10	----	62.5	0.0	8	-8.0
10872 Pear Tree Ln	196	1	0.0	61.1	66	61.1	10	----	61.1	0.0	8	-8.0
10880 Pear Tree Ln	197	1	0.0	60.7	66	60.7	10	----	60.7	0.0	8	-8.0
4527 Ashby Rd	198	1	0.0	64.9	66	64.9	10	----	64.9	0.0	8	-8.0
4523 Ashby Rd	199	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
4528 Country Ln	200	1	0.0	63.9	66	63.9	10	----	63.9	0.0	8	-8.0
4522/4524 Country Ln	201	2	0.0	61.9	66	61.9	10	----	61.9	0.0	8	-8.0
4520 Country Ln	202	1	0.0	61.6	66	61.6	10	----	61.6	0.0	8	-8.0
10057/10059 Douglas Ct	203	2	0.0	61.3	66	61.3	10	----	61.3	0.0	8	-8.0
10053/10055 Douglas Ct	204	2	0.0	62.4	66	62.4	10	----	62.4	0.0	8	-8.0
10049/10051 Douglas Ct	205	2	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
10045/10047 Douglas Ct	206	2	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0
10043 Douglas Ct	207	1	0.0	62.6	66	62.6	10	----	62.6	0.0	8	-8.0
10037 Douglas Ct	208	1	0.0	62.2	66	62.2	10	----	62.2	0.0	8	-8.0
10033 Douglas Ct	209	1	0.0	64.1	66	64.1	10	----	64.1	0.0	8	-8.0
10029 Douglas Ct	210	1	0.0	65.4	66	65.4	10	----	65.4	0.0	8	-8.0
10027 Douglas Ct	211	1	0.0	65.6	66	65.6	10	----	65.6	0.0	8	-8.0
Wingate hotel pool	212	1	0.0	54.4	66	54.4	10	----	54.4	0.0	8	-8.0
Pear Tree Inn pool	213	1	0.0	61.5	66	61.5	10	----	61.5	0.0	8	-8.0
Mariott hotel pool	214	1	0.0	51.1	66	51.1	10	----	51.1	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	215	0.0	0.0	0.0
All Impacted	57	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

2037 No Build		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: NoBuild2037_AddlRecp		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

0000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 30 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: 2037 No Build
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4373 St Dominic Ln	7	1	0.0	66.2	66	66.2	15	Snd Lvl	66.2	0.0	8	-8.0
4369 St Dominic Ln	8	1	0.0	67.5	66	67.5	15	Snd Lvl	67.5	0.0	8	-8.0
4365 St Dominic Ln	9	1	0.0	67.4	66	67.4	15	Snd Lvl	67.4	0.0	8	-8.0
4361 St Dominic Ln	10	1	0.0	67.1	66	67.1	15	Snd Lvl	67.1	0.0	8	-8.0
4357 St Dominic Ln	11	1	0.0	67.2	66	67.2	15	Snd Lvl	67.2	0.0	8	-8.0
4353 St Dominic Ln	12	1	0.0	65.1	66	65.1	15	----	65.1	0.0	8	-8.0
4349 St Dominic Ln	13	1	0.0	65.1	66	65.1	15	----	65.1	0.0	8	-8.0
11267 St Damian Dr	14	1	0.0	64.6	66	64.6	15	----	64.6	0.0	8	-8.0
11269 St Damian Dr	15	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
4344 Cypress Rd - day care	16	1	0.0	66.9	66	66.9	15	Snd Lvl	66.9	0.0	8	-8.0
4362 St Dominic Ln	17	1	0.0	65.3	66	65.3	15	----	65.3	0.0	8	-8.0
4370 St Dominic Ln	18	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
4372 St Dominic Ln	19	1	0.0	65.6	66	65.6	15	----	65.6	0.0	8	-8.0
4374 St Dominic Ln	20	1	0.0	65.6	66	65.6	15	----	65.6	0.0	8	-8.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	67.4	66	67.4	15	Snd Lvl	67.4	0.0	8	-8.0
St Ann Park Ballfield Home Bench	22	1	0.0	65.8	66	65.8	15	----	65.8	0.0	8	-8.0
4555 Ashby Rd	23	1	0.0	70.2	66	70.2	15	Snd Lvl	70.2	0.0	8	-8.0
4551 Ashby Rd	24	1	0.0	68.5	66	68.5	15	Snd Lvl	68.5	0.0	8	-8.0
4547 Ashby Rd	25	1	0.0	67.7	66	67.7	15	Snd Lvl	67.7	0.0	8	-8.0

4539 Ashby Rd	26	1	0.0	66.6	66	66.6	15	Snd Lvl	66.6	0.0	8	-8.0
4535 Ashby Rd	27	1	0.0	65.7	66	65.7	15	----	65.7	0.0	8	-8.0
4548 Ashby Rd	28	1	0.0	69.3	66	69.3	15	Snd Lvl	69.3	0.0	8	-8.0
11014 St Nicholas Ct	29	1	0.0	69.2	66	69.2	15	Snd Lvl	69.2	0.0	8	-8.0
11010 St Nicholas Ct	30	1	0.0	68.8	66	68.8	15	Snd Lvl	68.8	0.0	8	-8.0
11006 St Nicholas Ct	31	1	0.0	68.0	66	68.0	15	Snd Lvl	68.0	0.0	8	-8.0
11002 St Nicholas Ct	32	1	0.0	67.6	66	67.6	15	Snd Lvl	67.6	0.0	8	-8.0
11000 St Nicholas Ct	33	1	0.0	67.6	66	67.6	15	Snd Lvl	67.6	0.0	8	-8.0
11001 St Nicholas Ct	34	1	0.0	69.6	66	69.6	15	Snd Lvl	69.6	0.0	8	-8.0
4544 Ashby Rd	35	1	0.0	67.2	66	67.2	15	Snd Lvl	67.2	0.0	8	-8.0
4540 Ashby Rd	36	1	0.0	67.2	66	67.2	15	Snd Lvl	67.2	0.0	8	-8.0
4536 Ashby Rd	37	1	0.0	66.6	66	66.6	15	Snd Lvl	66.6	0.0	8	-8.0
4524 Ashby Rd	38	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
11045 St Pius Ln	39	1	0.0	65.4	66	65.4	15	----	65.4	0.0	8	-8.0
11041 St Pius Ln	40	1	0.0	65.3	66	65.3	15	----	65.3	0.0	8	-8.0
11037 St Pius Ln	41	1	0.0	65.2	66	65.2	15	----	65.2	0.0	8	-8.0
11033 St Pius Ln	42	1	0.0	65.3	66	65.3	15	----	65.3	0.0	8	-8.0
11029 St Pius Ln	43	1	0.0	65.0	66	65.0	15	----	65.0	0.0	8	-8.0
11025 St Pius Ln	44	1	0.0	64.8	66	64.8	15	----	64.8	0.0	8	-8.0
11021 St Pius Ln	45	1	0.0	64.6	66	64.6	15	----	64.6	0.0	8	-8.0
11017 St Pius Ln	46	1	0.0	64.8	66	64.8	15	----	64.8	0.0	8	-8.0
11009 St Pius Ln	47	1	0.0	63.2	66	63.2	15	----	63.2	0.0	8	-8.0
11005 St Pius Ln	48	1	0.0	60.1	66	60.1	15	----	60.1	0.0	8	-8.0
10882 Pear Blossom NW patio apt	49	1	0.0	70.9	66	70.9	15	Snd Lvl	70.9	0.0	8	-8.0
10882 Pear Blossom NE patio apt	50	1	0.0	71.3	66	71.3	15	Snd Lvl	71.3	0.0	8	-8.0
4649 Country Ln NW patio apt	51	1	0.0	73.0	66	73.0	15	Snd Lvl	73.0	0.0	8	-8.0
4649 Country Ln NE patio apt	52	1	0.0	73.9	66	73.9	15	Snd Lvl	73.9	0.0	8	-8.0
4645 Country Ln NW patio apt	53	1	0.0	75.0	66	75.0	15	Snd Lvl	75.0	0.0	8	-8.0
4645 Country Ln NE patio apt	54	1	0.0	75.1	66	75.1	15	Snd Lvl	75.1	0.0	8	-8.0
4633 Country Ln NE patio apt	55	1	0.0	75.5	66	75.5	15	Snd Lvl	75.5	0.0	8	-8.0
4633 Country Ln SE patio apt	56	1	0.0	74.9	66	74.9	15	Snd Lvl	74.9	0.0	8	-8.0
4629 Country Ln NE patio apt	57	1	0.0	74.4	66	74.4	15	Snd Lvl	74.4	0.0	8	-8.0
4629 Country Ln SE patio apt	58	1	0.0	74.2	66	74.2	15	Snd Lvl	74.2	0.0	8	-8.0
4625 Country Ln NE patio apt	59	1	0.0	73.8	66	73.8	15	Snd Lvl	73.8	0.0	8	-8.0
4625 Country Ln SE patio apt	60	1	0.0	72.4	66	72.4	15	Snd Lvl	72.4	0.0	8	-8.0
10844 Pear Blossom N patio apt	61	1	0.0	70.9	66	70.9	15	Snd Lvl	70.9	0.0	8	-8.0
10844 Pear Blossom SE patio apt	62	1	0.0	55.5	66	55.5	15	----	55.5	0.0	8	-8.0
Pear Tree Apts Clubhouse	63	1	0.0	74.2	66	74.2	15	Snd Lvl	74.2	0.0	8	-8.0
10882 Pear Blossom SW patio apt	64	1	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
10878 Pear Blossom NW patio apt	65	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10882 Pear Blossom SE patio apt	66	1	0.0	60.1	66	60.1	15	----	60.1	0.0	8	-8.0

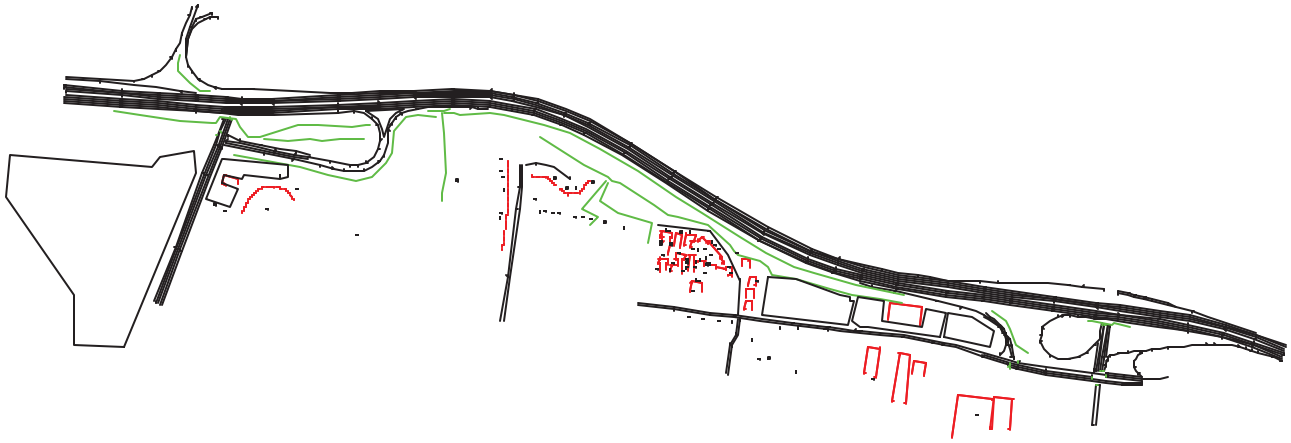
10878 Pear Blossom NE patio apt	67	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
4649 Country Ln SE patio apt	68	1	0.0	64.7	66	64.7	15	----	64.7	0.0	8	-8.0
4641 Country Ln E patio apt	69	1	0.0	60.9	66	60.9	15	----	60.9	0.0	8	-8.0
4641 Country Ln W patio apt	70	1	0.0	59.6	66	59.6	15	----	59.6	0.0	8	-8.0
10878 Pear Blossom SE patio apt	71	1	0.0	61.4	66	61.4	15	----	61.4	0.0	8	-8.0
10878 Pear Blossom SW patio apt	72	1	0.0	61.7	66	61.7	15	----	61.7	0.0	8	-8.0
4645 Country Ln SW patio apt	73	1	0.0	63.8	66	63.8	15	----	63.8	0.0	8	-8.0
4625 Country Ln NW patio apt	74	1	0.0	59.7	66	59.7	15	----	59.7	0.0	8	-8.0
4629 Country Ln SW patio apt	75	1	0.0	60.1	66	60.1	15	----	60.1	0.0	8	-8.0
4629 Country Ln NW patio apt	76	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4633 Country Ln SW patio apt	77	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4637 Country Ln NE patio apt	78	1	0.0	63.2	66	63.2	15	----	63.2	0.0	8	-8.0
4637 Country Ln NW patio apt	79	1	0.0	62.9	66	62.9	15	----	62.9	0.0	8	-8.0
4637 Country Ln SE patio apt	80	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
4637 Country Ln SW patio apt	81	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
10874 Pear Blossom SW patio apt	82	1	0.0	61.2	66	61.2	15	----	61.2	0.0	8	-8.0
10866 Pear Blossom NW patio apt	83	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
10866 Pear Blossom NE patio apt	84	1	0.0	60.9	66	60.9	15	----	60.9	0.0	8	-8.0
10866 Pear Blossom SE patio apt	85	1	0.0	54.0	66	54.0	15	----	54.0	0.0	8	-8.0
10870 Pear Blossom NE patio apt	86	1	0.0	52.3	66	52.3	15	----	52.3	0.0	8	-8.0
10874 Pear Blossom NE patio apt	87	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
10874 Pear Blossom SE patio apt	88	1	0.0	53.0	66	53.0	15	----	53.0	0.0	8	-8.0
10858 Pear Blossom NW patio apt	89	1	0.0	57.1	66	57.1	15	----	57.1	0.0	8	-8.0
10858 Pear Blossom SW patio apt	90	1	0.0	53.9	66	53.9	15	----	53.9	0.0	8	-8.0
10862 Pear Blossom W patio apt	91	1	0.0	52.5	66	52.5	15	----	52.5	0.0	8	-8.0
10862 Pear Blossom E patio apt	92	1	0.0	57.7	66	57.7	15	----	57.7	0.0	8	-8.0
10858 Pear Blossom SE patio apt	93	1	0.0	59.2	66	59.2	15	----	59.2	0.0	8	-8.0
10858 Pear Blossom NE patio apt	94	1	0.0	61.1	66	61.1	15	----	61.1	0.0	8	-8.0
10852 Pear Blossom NE patio apt	95	1	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
10848 Pear Blossom NW patio apt	96	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10844 Pear Blossom SW patio apt	97	1	0.0	57.7	66	57.7	15	----	57.7	0.0	8	-8.0
10848 Pear Blossom SE patio apt	98	1	0.0	57.1	66	57.1	15	----	57.1	0.0	8	-8.0
10848 Pear Blossom SW patio apt	99	1	0.0	57.0	66	57.0	15	----	57.0	0.0	8	-8.0
10852 Pear Blossom SE patio apt	100	1	0.0	56.4	66	56.4	15	----	56.4	0.0	8	-8.0
10852 Pear Blossom SW patio apt	101	1	0.0	56.1	66	56.1	15	----	56.1	0.0	8	-8.0
10885 Pear Blossom NE patio apt	102	1	0.0	58.4	66	58.4	15	----	58.4	0.0	8	-8.0
10885 Pear Blossom NW patio apt	103	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10885 Pear Blossom SE patio apt	104	1	0.0	57.1	66	57.1	15	----	57.1	0.0	8	-8.0
10885 Pear Blossom SW patio apt	105	1	0.0	55.7	66	55.7	15	----	55.7	0.0	8	-8.0
10877 Pear Tree Ln	106	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
10885 Pear Tree Ln	107	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0

10893 Pear Tree Ln	108	1	0.0	59.9	66	59.9	15	----	59.9	0.0	8	-8.0
10848 Pear Tree Ln	109	1	0.0	67.5	66	67.5	15	Snd Lvl	67.5	0.0	8	-8.0
10840 Pear Tree Ln	110	1	0.0	68.2	66	68.2	15	Snd Lvl	68.2	0.0	8	-8.0
10832 Pear Tree Ln	111	1	0.0	68.8	66	68.8	15	Snd Lvl	68.8	0.0	8	-8.0
10869 Pear Tree Ln	112	1	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
10870 Pear Blossom NW patio apt	113	1	0.0	58.8	66	58.8	15	----	58.8	0.0	8	-8.0
10870 Pear Blossom SW patio apt	114	1	0.0	53.3	66	53.3	15	----	53.3	0.0	8	-8.0
10870 Pear Blossom SE patio apt	115	1	0.0	54.3	66	54.3	15	----	54.3	0.0	8	-8.0
4610 Country Ln patio apt	116	1	0.0	71.1	66	71.1	15	Snd Lvl	71.1	0.0	8	-8.0
4608 Country Ln patio apt	117	1	0.0	70.5	66	70.5	15	Snd Lvl	70.5	0.0	8	-8.0
4606 Country Ln patio apt	118	1	0.0	68.5	66	68.5	15	Snd Lvl	68.5	0.0	8	-8.0
4604 Country Ln patio apt	119	1	0.0	68.1	66	68.1	15	Snd Lvl	68.1	0.0	8	-8.0
4602 Country Ln patio apt	120	1	0.0	67.6	66	67.6	15	Snd Lvl	67.6	0.0	8	-8.0
4600 Country Ln patio apt	121	1	0.0	67.5	66	67.5	15	Snd Lvl	67.5	0.0	8	-8.0
10885 Pear Blossom NE balc apt	122	1	0.0	58.3	66	58.3	15	----	58.3	0.0	8	-8.0
10885 Pear Blossom NW balc apt	123	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10885 Pear Blossom SE balc apt	124	1	0.0	57.2	66	57.2	15	----	57.2	0.0	8	-8.0
10885 Pear Blossom SW balc apt	125	1	0.0	55.1	66	55.1	15	----	55.1	0.0	8	-8.0
10844 Pear Blossom N balc apt	126	1	0.0	70.9	66	70.9	15	Snd Lvl	70.9	0.0	8	-8.0
10844 Pear Blossom SE balc apt	127	1	0.0	55.6	66	55.6	15	----	55.6	0.0	8	-8.0
10844 Pear Blossom SW balc apt	128	1	0.0	57.7	66	57.7	15	----	57.7	0.0	8	-8.0
10848 Pear Blossom SE balc apt	129	1	0.0	57.1	66	57.1	15	----	57.1	0.0	8	-8.0
10848 Pear Blossom NW balc apt	130	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10848 Pear Blossom SW balc apt	131	1	0.0	57.0	66	57.0	15	----	57.0	0.0	8	-8.0
10852 Pear Blossom NE balc apt	132	1	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
10852 Pear Blossom SE balc apt	133	1	0.0	56.4	66	56.4	15	----	56.4	0.0	8	-8.0
10852 Pear Blossom SW balc apt	134	1	0.0	56.1	66	56.1	15	----	56.1	0.0	8	-8.0
10852 Pear Blossom NW patio apt	135	1	0.0	60.7	66	60.7	15	----	60.7	0.0	8	-8.0
10852 Pear Blossom NW balc apt	136	1	0.0	60.7	66	60.7	15	----	60.7	0.0	8	-8.0
10858 Pear Blossom NW balc apt	137	1	0.0	55.7	66	55.7	15	----	55.7	0.0	8	-8.0
10858 Pear Blossom SW balc apt	138	1	0.0	53.7	66	53.7	15	----	53.7	0.0	8	-8.0
10862 Pear Blossom W balc apt	139	1	0.0	52.8	66	52.8	15	----	52.8	0.0	8	-8.0
10862 Pear Blossom E balc apt	140	1	0.0	57.6	66	57.6	15	----	57.6	0.0	8	-8.0
10858 Pear Blossom SE balc apt	141	1	0.0	59.1	66	59.1	15	----	59.1	0.0	8	-8.0
10858 Pear Blossom NE balc apt	142	1	0.0	61.1	66	61.1	15	----	61.1	0.0	8	-8.0
10866 Pear Blossom NW balc apt	143	1	0.0	60.6	66	60.6	15	----	60.6	0.0	8	-8.0
10866 Pear Blossom NE balc apt	144	1	0.0	60.9	66	60.9	15	----	60.9	0.0	8	-8.0
10866 Pear Blossom SE balc apt	145	1	0.0	53.7	66	53.7	15	----	53.7	0.0	8	-8.0
10870 Pear Blossom NE balc apt	146	1	0.0	52.1	66	52.1	15	----	52.1	0.0	8	-8.0
10870 Pear Blossom NW balc apt	147	1	0.0	58.9	66	58.9	15	----	58.9	0.0	8	-8.0
10870 Pear Blossom SW balc apt	148	1	0.0	54.2	66	54.2	15	----	54.2	0.0	8	-8.0

10870 Pear Blossom SE balc apt	149	1	0.0	54.2	66	54.2	15	----	54.2	0.0	8	-8.0
10874 Pear Blossom SW balc apt	150	1	0.0	61.2	66	61.2	15	----	61.2	0.0	8	-8.0
10874 Pear Blossom NE balc apt	151	1	0.0	59.7	66	59.7	15	----	59.7	0.0	8	-8.0
10874 Pear Blossom SE balc apt	152	1	0.0	53.1	66	53.1	15	----	53.1	0.0	8	-8.0
4637 Country Ln NE balc apt	5	1	0.0	63.0	66	63.0	15	----	63.0	0.0	8	-8.0
4637 Country Ln NW balc apt	153	1	0.0	62.8	66	62.8	15	----	62.8	0.0	8	-8.0
4637 Country Ln SE balc apt	154	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
4637 Country Ln SW balc apt	155	1	0.0	60.1	66	60.1	15	----	60.1	0.0	8	-8.0
10878 Pear Blossom NW balc apt	156	1	0.0	62.0	66	62.0	15	----	62.0	0.0	8	-8.0
10878 Pear Blossom NE balc apt	157	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
10878 Pear Blossom SE balc apt	158	1	0.0	61.4	66	61.4	15	----	61.4	0.0	8	-8.0
10878 Pear Blossom SW balc apt	159	1	0.0	61.6	66	61.6	15	----	61.6	0.0	8	-8.0
10882 Pear Blossom NW balc apt	160	1	0.0	71.0	66	71.0	15	Snd Lvl	71.0	0.0	8	-8.0
10882 Pear Blossom NE balc apt	161	1	0.0	71.4	66	71.4	15	Snd Lvl	71.4	0.0	8	-8.0
10882 Pear Blossom SW balc apt	162	1	0.0	62.0	66	62.0	15	----	62.0	0.0	8	-8.0
10882 Pear Blossom SE balc apt	163	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4649 Country Ln NW balc apt	164	1	0.0	73.0	66	73.0	15	Snd Lvl	73.0	0.0	8	-8.0
4649 Country Ln NE balc apt	165	1	0.0	74.0	66	74.0	15	Snd Lvl	74.0	0.0	8	-8.0
4649 Country Ln SE balc apt	166	1	0.0	64.8	66	64.8	15	----	64.8	0.0	8	-8.0
4641 Country Ln E balc apt	167	1	0.0	60.9	66	60.9	15	----	60.9	0.0	8	-8.0
4641 Country Ln W balc apt	168	1	0.0	59.7	66	59.7	15	----	59.7	0.0	8	-8.0
4645 Country Ln SE patio apt	169	1	0.0	62.7	66	62.7	15	----	62.7	0.0	8	-8.0
4645 Country Ln SE balc apt	170	1	0.0	62.8	66	62.8	15	----	62.8	0.0	8	-8.0
4645 Country Ln NW balc apt	171	1	0.0	75.0	66	75.0	15	Snd Lvl	75.0	0.0	8	-8.0
4645 Country Ln NE balc apt	172	1	0.0	75.2	66	75.2	15	Snd Lvl	75.2	0.0	8	-8.0
4645 Country Ln SW balc apt	173	1	0.0	63.8	66	63.8	15	----	63.8	0.0	8	-8.0
4633 Country Ln NE balc apt	174	1	0.0	75.6	66	75.6	15	Snd Lvl	75.6	0.0	8	-8.0
4633 Country Ln SE balc apt	175	1	0.0	74.9	66	74.9	15	Snd Lvl	74.9	0.0	8	-8.0
4633 Country Ln SW balc apt	176	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4629 Country Ln NE balc apt	177	1	0.0	74.5	66	74.5	15	Snd Lvl	74.5	0.0	8	-8.0
4629 Country Ln SE balc apt	178	1	0.0	74.2	66	74.2	15	Snd Lvl	74.2	0.0	8	-8.0
4629 Country Ln SW balc apt	179	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
4629 Country Ln NW balc apt	180	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4625 Country Ln NE balc apt	181	1	0.0	73.9	66	73.9	15	Snd Lvl	73.9	0.0	8	-8.0
4625 Country Ln SE balc apt	182	1	0.0	72.5	66	72.5	15	Snd Lvl	72.5	0.0	8	-8.0
4625 Country Ln NW balc apt	184	1	0.0	59.7	66	59.7	15	----	59.7	0.0	8	-8.0
4361 St Regina Ln	186	1	0.0	65.4	66	65.4	15	----	65.4	0.0	8	-8.0
4353 St Regina Ln	187	1	0.0	64.4	66	64.4	15	----	64.4	0.0	8	-8.0
4349 St Regina Ln	188	1	0.0	63.6	66	63.6	15	----	63.6	0.0	8	-8.0
4362 St Regina Ln	189	1	0.0	64.3	66	64.3	15	----	64.3	0.0	8	-8.0
4346 St Regina Ln	190	1	0.0	63.7	66	63.7	15	----	63.7	0.0	8	-8.0

4531 Ashby Rd	191	1	0.0	65.0	66	65.0	15	----	65.0	0.0	8	-8.0
10856 Pear Tree Ln	192	1	0.0	66.0	66	66.0	15	Snd Lvl	66.0	0.0	8	-8.0
10864 Pear Tree Ln	193	1	0.0	63.0	66	63.0	15	----	63.0	0.0	8	-8.0
10872 Pear Tree Ln	194	1	0.0	61.7	66	61.7	15	----	61.7	0.0	8	-8.0
10880 Pear Tree Ln	195	1	0.0	61.3	66	61.3	15	----	61.3	0.0	8	-8.0
4527 Ashby Rd	196	1	0.0	65.0	66	65.0	15	----	65.0	0.0	8	-8.0
4523 Ashby Rd	197	1	0.0	64.5	66	64.5	15	----	64.5	0.0	8	-8.0
4528 Country Ln	198	1	0.0	64.1	66	64.1	15	----	64.1	0.0	8	-8.0
4522/4524 Country Ln	199	2	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
4520 Country Ln	200	1	0.0	61.9	66	61.9	15	----	61.9	0.0	8	-8.0
10057/10059 Douglas Ct	201	2	0.0	61.5	66	61.5	15	----	61.5	0.0	8	-8.0
10053/10055 Douglas Ct	202	2	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
10049/10051 Douglas Ct	203	2	0.0	63.2	66	63.2	15	----	63.2	0.0	8	-8.0
10045/10047 Douglas Ct	204	2	0.0	63.5	66	63.5	15	----	63.5	0.0	8	-8.0
10043 Douglas Ct	205	1	0.0	62.8	66	62.8	15	----	62.8	0.0	8	-8.0
10037 Douglas Ct	206	1	0.0	62.4	66	62.4	15	----	62.4	0.0	8	-8.0
10033 Douglas Ct	207	1	0.0	64.3	66	64.3	15	----	64.3	0.0	8	-8.0
10029 Douglas Ct	208	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
10027 Douglas Ct	209	1	0.0	65.8	66	65.8	15	----	65.8	0.0	8	-8.0
Wingate hotel pool	210	1	0.0	54.6	71	54.6	15	----	54.6	0.0	8	-8.0
Pear Tree Inn pool	211	1	0.0	61.6	71	61.6	15	----	61.6	0.0	8	-8.0
Mariott hotel pool	212	1	0.0	51.2	71	51.2	15	----	51.2	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	215	0.0	0.0	0.0
All Impacted	58	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0



2037 Build		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: Build2037_AddlRecp		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

50000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 30 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: 2037 Build
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4373 St Dominic Ln	7	1	0.0	66.4	66	66.4	15	Snd Lvl	66.4	0.0	8	-8.0
4369 St Dominic Ln	8	1	0.0	67.8	66	67.8	15	Snd Lvl	67.8	0.0	8	-8.0
4365 St Dominic Ln	9	1	0.0	67.6	66	67.6	15	Snd Lvl	67.6	0.0	8	-8.0
4361 St Dominic Ln	10	1	0.0	67.3	66	67.3	15	Snd Lvl	67.3	0.0	8	-8.0
4357 St Dominic Ln	11	1	0.0	67.3	66	67.3	15	Snd Lvl	67.3	0.0	8	-8.0
4353 St Dominic Ln	12	1	0.0	65.3	66	65.3	15	----	65.3	0.0	8	-8.0
4349 St Dominic Ln	13	1	0.0	65.1	66	65.1	15	----	65.1	0.0	8	-8.0
11267 St Damian Dr	14	1	0.0	64.8	66	64.8	15	----	64.8	0.0	8	-8.0
11269 St Damian Dr	15	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
4344 Cypress Rd - day care	16	1	0.0	66.8	66	66.8	15	Snd Lvl	66.8	0.0	8	-8.0
4362 St Dominic Ln	17	1	0.0	65.4	66	65.4	15	----	65.4	0.0	8	-8.0
4370 St Dominic Ln	18	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
4372 St Dominic Ln	19	1	0.0	65.7	66	65.7	15	----	65.7	0.0	8	-8.0
4374 St Dominic Ln	20	1	0.0	65.7	66	65.7	15	----	65.7	0.0	8	-8.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	67.3	66	67.3	15	Snd Lvl	67.3	0.0	8	-8.0
St Ann Park Ballfield Home Bench	22	1	0.0	65.7	66	65.7	15	----	65.7	0.0	8	-8.0
4555 Ashby Rd	23	1	0.0	70.5	66	70.5	15	Snd Lvl	70.5	0.0	8	-8.0
4551 Ashby Rd	24	1	0.0	68.6	66	68.6	15	Snd Lvl	68.6	0.0	8	-8.0
4547 Ashby Rd	25	1	0.0	67.8	66	67.8	15	Snd Lvl	67.8	0.0	8	-8.0

4539 Ashby Rd	26	1	0.0	66.7	66	66.7	15	Snd Lvl	66.7	0.0	8	-8.0
4535 Ashby Rd	27	1	0.0	65.6	66	65.6	15	----	65.6	0.0	8	-8.0
4548 Ashby Rd	28	1	0.0	69.5	66	69.5	15	Snd Lvl	69.5	0.0	8	-8.0
11014 St Nicholas Ct	29	1	0.0	69.5	66	69.5	15	Snd Lvl	69.5	0.0	8	-8.0
11010 St Nicholas Ct	30	1	0.0	69.0	66	69.0	15	Snd Lvl	69.0	0.0	8	-8.0
11006 St Nicholas Ct	31	1	0.0	68.2	66	68.2	15	Snd Lvl	68.2	0.0	8	-8.0
11002 St Nicholas Ct	32	1	0.0	67.7	66	67.7	15	Snd Lvl	67.7	0.0	8	-8.0
11000 St Nicholas Ct	33	1	0.0	67.8	66	67.8	15	Snd Lvl	67.8	0.0	8	-8.0
11001 St Nicholas Ct	34	1	0.0	69.8	66	69.8	15	Snd Lvl	69.8	0.0	8	-8.0
4544 Ashby Rd	35	1	0.0	67.3	66	67.3	15	Snd Lvl	67.3	0.0	8	-8.0
4540 Ashby Rd	36	1	0.0	67.3	66	67.3	15	Snd Lvl	67.3	0.0	8	-8.0
4536 Ashby Rd	37	1	0.0	66.6	66	66.6	15	Snd Lvl	66.6	0.0	8	-8.0
4524 Ashby Rd	38	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
11045 St Pius Ln	39	1	0.0	65.4	66	65.4	15	----	65.4	0.0	8	-8.0
11041 St Pius Ln	40	1	0.0	65.3	66	65.3	15	----	65.3	0.0	8	-8.0
11037 St Pius Ln	41	1	0.0	65.2	66	65.2	15	----	65.2	0.0	8	-8.0
11033 St Pius Ln	42	1	0.0	65.4	66	65.4	15	----	65.4	0.0	8	-8.0
11029 St Pius Ln	43	1	0.0	65.1	66	65.1	15	----	65.1	0.0	8	-8.0
11025 St Pius Ln	44	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
11021 St Pius Ln	45	1	0.0	64.7	66	64.7	15	----	64.7	0.0	8	-8.0
11017 St Pius Ln	46	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
11009 St Pius Ln	47	1	0.0	63.5	66	63.5	15	----	63.5	0.0	8	-8.0
11005 St Pius Ln	48	1	0.0	60.3	66	60.3	15	----	60.3	0.0	8	-8.0
10882 Pear Blossom NW patio apt	49	1	0.0	71.6	66	71.6	15	Snd Lvl	71.6	0.0	8	-8.0
10882 Pear Blossom NE patio apt	50	1	0.0	72.1	66	72.1	15	Snd Lvl	72.1	0.0	8	-8.0
4649 Country Ln NW patio apt	51	1	0.0	73.6	66	73.6	15	Snd Lvl	73.6	0.0	8	-8.0
4649 Country Ln NE patio apt	52	1	0.0	74.5	66	74.5	15	Snd Lvl	74.5	0.0	8	-8.0
4645 Country Ln NW patio apt	53	1	0.0	75.4	66	75.4	15	Snd Lvl	75.4	0.0	8	-8.0
4645 Country Ln NE patio apt	54	1	0.0	75.6	66	75.6	15	Snd Lvl	75.6	0.0	8	-8.0
4633 Country Ln NE patio apt	55	1	0.0	76.0	66	76.0	15	Snd Lvl	76.0	0.0	8	-8.0
4633 Country Ln SE patio apt	56	1	0.0	75.4	66	75.4	15	Snd Lvl	75.4	0.0	8	-8.0
4629 Country Ln NE patio apt	57	1	0.0	75.0	66	75.0	15	Snd Lvl	75.0	0.0	8	-8.0
4629 Country Ln SE patio apt	58	1	0.0	74.7	66	74.7	15	Snd Lvl	74.7	0.0	8	-8.0
4625 Country Ln NE patio apt	59	1	0.0	74.4	66	74.4	15	Snd Lvl	74.4	0.0	8	-8.0
4625 Country Ln SE patio apt	60	1	0.0	73.0	66	73.0	15	Snd Lvl	73.0	0.0	8	-8.0
10844 Pear Blossom N patio apt	61	1	0.0	71.4	66	71.4	15	Snd Lvl	71.4	0.0	8	-8.0
10844 Pear Blossom SE patio apt	63	1	0.0	55.8	66	55.8	15	----	55.8	0.0	8	-8.0
Pear Tree Apts Clubhouse	64	1	0.0	74.6	66	74.6	15	Snd Lvl	74.6	0.0	8	-8.0
10882 Pear Blossom SW patio apt	65	1	0.0	62.7	66	62.7	15	----	62.7	0.0	8	-8.0
10878 Pear Blossom NW patio apt	66	1	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
10882 Pear Blossom SE patio apt	67	1	0.0	60.6	66	60.6	15	----	60.6	0.0	8	-8.0

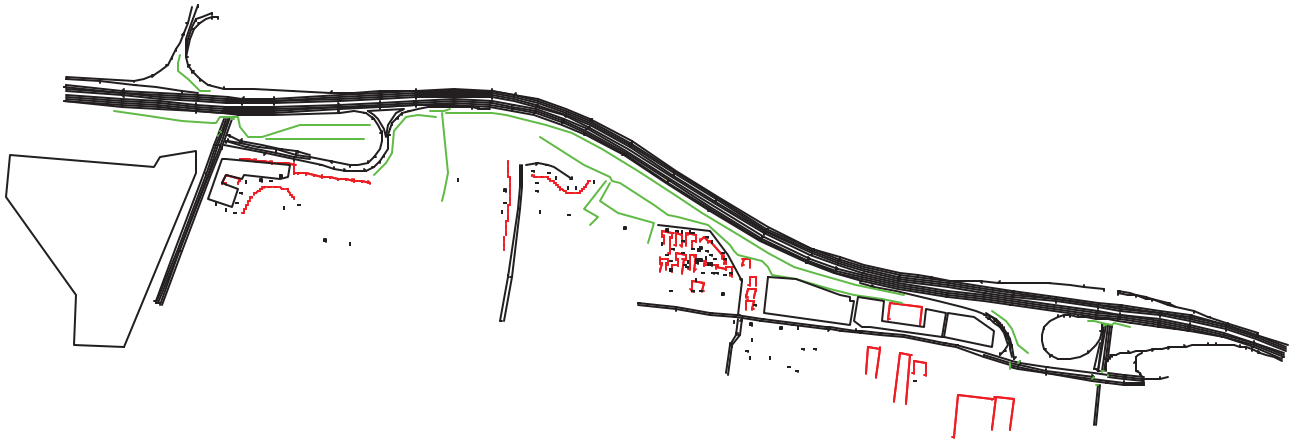
10878 Pear Blossom NE patio apt	68	1	0.0	59.8	66	59.8	15	----	59.8	0.0	8	-8.0
4649 Country Ln SE patio apt	69	1	0.0	65.6	66	65.6	15	----	65.6	0.0	8	-8.0
4641 Country Ln E patio apt	70	1	0.0	61.3	66	61.3	15	----	61.3	0.0	8	-8.0
4641 Country Ln W patio apt	71	1	0.0	60.0	66	60.0	15	----	60.0	0.0	8	-8.0
10878 Pear Blossom SE patio apt	72	1	0.0	61.7	66	61.7	15	----	61.7	0.0	8	-8.0
10878 Pear Blossom SW patio apt	73	1	0.0	62.0	66	62.0	15	----	62.0	0.0	8	-8.0
4645 Country Ln SW patio apt	74	1	0.0	64.7	66	64.7	15	----	64.7	0.0	8	-8.0
4625 Country Ln NW patio apt	75	1	0.0	60.0	66	60.0	15	----	60.0	0.0	8	-8.0
4629 Country Ln SW patio apt	76	1	0.0	60.4	66	60.4	15	----	60.4	0.0	8	-8.0
4629 Country Ln NW patio apt	77	1	0.0	60.7	66	60.7	15	----	60.7	0.0	8	-8.0
4633 Country Ln SW patio apt	78	1	0.0	60.8	66	60.8	15	----	60.8	0.0	8	-8.0
4637 Country Ln NE patio apt	79	1	0.0	63.8	66	63.8	15	----	63.8	0.0	8	-8.0
4637 Country Ln NW patio apt	80	1	0.0	63.8	66	63.8	15	----	63.8	0.0	8	-8.0
4637 Country Ln SE patio apt	81	1	0.0	60.5	66	60.5	15	----	60.5	0.0	8	-8.0
4637 Country Ln SW patio apt	82	1	0.0	60.5	66	60.5	15	----	60.5	0.0	8	-8.0
10874 Pear Blossom SW patio apt	85	1	0.0	61.6	66	61.6	15	----	61.6	0.0	8	-8.0
10866 Pear Blossom NW patio apt	86	1	0.0	60.7	66	60.7	15	----	60.7	0.0	8	-8.0
10866 Pear Blossom NE patio apt	87	1	0.0	61.3	66	61.3	15	----	61.3	0.0	8	-8.0
10866 Pear Blossom SE patio apt	88	1	0.0	54.4	66	54.4	15	----	54.4	0.0	8	-8.0
10870 Pear Blossom NE patio apt	89	1	0.0	52.6	66	52.6	15	----	52.6	0.0	8	-8.0
10874 Pear Blossom NE patio apt	90	1	0.0	59.9	66	59.9	15	----	59.9	0.0	8	-8.0
10874 Pear Blossom SE patio apt	91	1	0.0	53.3	66	53.3	15	----	53.3	0.0	8	-8.0
10858 Pear Blossom NW patio apt	92	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10858 Pear Blossom SW patio apt	93	1	0.0	54.3	66	54.3	15	----	54.3	0.0	8	-8.0
10862 Pear Blossom W patio apt	94	1	0.0	52.9	66	52.9	15	----	52.9	0.0	8	-8.0
10862 Pear Blossom E patio apt	95	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10858 Pear Blossom SE patio apt	96	1	0.0	59.6	66	59.6	15	----	59.6	0.0	8	-8.0
10858 Pear Blossom NE patio apt	97	1	0.0	61.8	66	61.8	15	----	61.8	0.0	8	-8.0
10852 Pear Blossom NE patio apt	98	1	0.0	62.6	66	62.6	15	----	62.6	0.0	8	-8.0
10848 Pear Blossom NW patio apt	99	1	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
10844 Pear Blossom SW patio apt	100	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10848 Pear Blossom SE patio apt	101	1	0.0	57.4	66	57.4	15	----	57.4	0.0	8	-8.0
10848 Pear Blossom SW patio apt	102	1	0.0	57.3	66	57.3	15	----	57.3	0.0	8	-8.0
10852 Pear Blossom SE patio apt	103	1	0.0	56.7	66	56.7	15	----	56.7	0.0	8	-8.0
10852 Pear Blossom SW patio apt	104	1	0.0	56.4	66	56.4	15	----	56.4	0.0	8	-8.0
10885 Pear Blossom NE patio apt	105	1	0.0	58.7	66	58.7	15	----	58.7	0.0	8	-8.0
10885 Pear Blossom NW patio apt	106	1	0.0	58.4	66	58.4	15	----	58.4	0.0	8	-8.0
10885 Pear Blossom SE patio apt	107	1	0.0	57.4	66	57.4	15	----	57.4	0.0	8	-8.0
10885 Pear Blossom SW patio apt	108	1	0.0	55.9	66	55.9	15	----	55.9	0.0	8	-8.0
10877 Pear Tree Ln	109	1	0.0	60.6	66	60.6	15	----	60.6	0.0	8	-8.0
10885 Pear Tree Ln	110	1	0.0	59.6	66	59.6	15	----	59.6	0.0	8	-8.0

10893 Pear Tree Ln	111	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
10848 Pear Tree Ln	112	1	0.0	67.7	66	67.7	15	Snd Lvl	67.7	0.0	8	-8.0
10840 Pear Tree Ln	113	1	0.0	68.5	66	68.5	15	Snd Lvl	68.5	0.0	8	-8.0
10832 Pear Tree Ln	114	1	0.0	69.2	66	69.2	15	Snd Lvl	69.2	0.0	8	-8.0
10869 Pear Tree Ln	116	1	0.0	62.9	66	62.9	15	----	62.9	0.0	8	-8.0
10870 Pear Blossom NW patio apt	118	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
10870 Pear Blossom SW patio apt	119	1	0.0	53.7	66	53.7	15	----	53.7	0.0	8	-8.0
10870 Pear Blossom SE patio apt	120	1	0.0	54.7	66	54.7	15	----	54.7	0.0	8	-8.0
4610 Country Ln patio apt	121	1	0.0	71.6	66	71.6	15	Snd Lvl	71.6	0.0	8	-8.0
4608 Country Ln patio apt	122	1	0.0	71.1	66	71.1	15	Snd Lvl	71.1	0.0	8	-8.0
4606 Country Ln patio apt	123	1	0.0	69.0	66	69.0	15	Snd Lvl	69.0	0.0	8	-8.0
4604 Country Ln patio apt	124	1	0.0	68.6	66	68.6	15	Snd Lvl	68.6	0.0	8	-8.0
4602 Country Ln patio apt	125	1	0.0	68.0	66	68.0	15	Snd Lvl	68.0	0.0	8	-8.0
4600 Country Ln patio apt	126	1	0.0	68.0	66	68.0	15	Snd Lvl	68.0	0.0	8	-8.0
10885 Pear Blossom NE balc apt	128	1	0.0	63.0	66	63.0	15	----	63.0	0.0	8	-8.0
10885 Pear Blossom NW balc apt	129	1	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
10885 Pear Blossom SE balc apt	130	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10885 Pear Blossom SW balc apt	131	1	0.0	58.6	66	58.6	15	----	58.6	0.0	8	-8.0
10844 Pear Blossom N balc apt	133	1	0.0	74.0	66	74.0	15	Snd Lvl	74.0	0.0	8	-8.0
10844 Pear Blossom SE balc apt	134	1	0.0	61.3	66	61.3	15	----	61.3	0.0	8	-8.0
10844 Pear Blossom SW balc apt	136	1	0.0	61.1	66	61.1	15	----	61.1	0.0	8	-8.0
10848 Pear Blossom SE balc apt	137	1	0.0	60.3	66	60.3	15	----	60.3	0.0	8	-8.0
10848 Pear Blossom NW balc apt	139	1	0.0	66.0	66	66.0	15	Snd Lvl	66.0	0.0	8	-8.0
10848 Pear Blossom SW balc apt	140	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
10852 Pear Blossom NE balc apt	142	1	0.0	66.0	66	66.0	15	Snd Lvl	66.0	0.0	8	-8.0
10852 Pear Blossom SE balc apt	143	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
10852 Pear Blossom SW balc apt	144	1	0.0	59.0	66	59.0	15	----	59.0	0.0	8	-8.0
10852 Pear Blossom NW patio apt	146	1	0.0	61.0	66	61.0	15	----	61.0	0.0	8	-8.0
10852 Pear Blossom NW balc apt	148	1	0.0	64.3	66	64.3	15	----	64.3	0.0	8	-8.0
10858 Pear Blossom NW balc apt	149	1	0.0	60.1	66	60.1	15	----	60.1	0.0	8	-8.0
10858 Pear Blossom SW balc apt	150	1	0.0	58.5	66	58.5	15	----	58.5	0.0	8	-8.0
10862 Pear Blossom W balc apt	151	1	0.0	57.7	66	57.7	15	----	57.7	0.0	8	-8.0
10862 Pear Blossom E balc apt	152	1	0.0	61.6	66	61.6	15	----	61.6	0.0	8	-8.0
10858 Pear Blossom SE balc apt	153	1	0.0	63.3	66	63.3	15	----	63.3	0.0	8	-8.0
10858 Pear Blossom NE balc apt	154	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
10866 Pear Blossom NW balc apt	155	1	0.0	64.3	66	64.3	15	----	64.3	0.0	8	-8.0
10866 Pear Blossom NE balc apt	156	1	0.0	64.7	66	64.7	15	----	64.7	0.0	8	-8.0
10866 Pear Blossom SE balc apt	157	1	0.0	58.3	66	58.3	15	----	58.3	0.0	8	-8.0
10870 Pear Blossom NE balc apt	158	1	0.0	56.9	66	56.9	15	----	56.9	0.0	8	-8.0
10870 Pear Blossom NW balc apt	159	1	0.0	63.1	66	63.1	15	----	63.1	0.0	8	-8.0
10870 Pear Blossom SW balc apt	160	1	0.0	58.0	66	58.0	15	----	58.0	0.0	8	-8.0

10870 Pear Blossom SE balc apt	161	1	0.0	58.0	66	58.0	15	----	58.0	0.0	8	-8.0
10874 Pear Blossom SW balc apt	163	1	0.0	64.1	66	64.1	15	----	64.1	0.0	8	-8.0
10874 Pear Blossom NE balc apt	164	1	0.0	63.9	66	63.9	15	----	63.9	0.0	8	-8.0
10874 Pear Blossom SE balc apt	165	1	0.0	57.8	66	57.8	15	----	57.8	0.0	8	-8.0
4637 Country Ln NE balc apt	167	1	0.0	65.9	66	65.9	15	----	65.9	0.0	8	-8.0
4637 Country Ln NW balc apt	168	1	0.0	66.3	66	66.3	15	Snd Lvl	66.3	0.0	8	-8.0
4637 Country Ln SE balc apt	169	1	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
4637 Country Ln SW balc apt	170	1	0.0	62.9	66	62.9	15	----	62.9	0.0	8	-8.0
10878 Pear Blossom NW balc apt	172	1	0.0	66.6	66	66.6	15	Snd Lvl	66.6	0.0	8	-8.0
10878 Pear Blossom NE balc apt	173	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
10878 Pear Blossom SE balc apt	174	1	0.0	64.6	66	64.6	15	----	64.6	0.0	8	-8.0
10878 Pear Blossom SW balc apt	175	1	0.0	65.0	66	65.0	15	----	65.0	0.0	8	-8.0
10882 Pear Blossom NW balc apt	177	1	0.0	74.6	66	74.6	15	Snd Lvl	74.6	0.0	8	-8.0
10882 Pear Blossom NE balc apt	178	1	0.0	74.8	66	74.8	15	Snd Lvl	74.8	0.0	8	-8.0
10882 Pear Blossom SW balc apt	179	1	0.0	66.8	66	66.8	15	Snd Lvl	66.8	0.0	8	-8.0
10882 Pear Blossom SE balc apt	180	1	0.0	65.9	66	65.9	15	----	65.9	0.0	8	-8.0
4649 Country Ln NW balc apt	182	1	0.0	75.4	66	75.4	15	Snd Lvl	75.4	0.0	8	-8.0
4649 Country Ln NE balc apt	183	1	0.0	76.0	66	76.0	15	Snd Lvl	76.0	0.0	8	-8.0
4649 Country Ln SE balc apt	184	1	0.0	67.8	66	67.8	15	Snd Lvl	67.8	0.0	8	-8.0
4641 Country Ln E balc apt	185	1	0.0	65.2	66	65.2	15	----	65.2	0.0	8	-8.0
4641 Country Ln W balc apt	186	1	0.0	64.2	66	64.2	15	----	64.2	0.0	8	-8.0
4645 Country Ln SE patio apt	188	1	0.0	63.7	66	63.7	15	----	63.7	0.0	8	-8.0
4645 Country Ln SE balc apt	189	1	0.0	66.4	66	66.4	15	Snd Lvl	66.4	0.0	8	-8.0
4645 Country Ln NW balc apt	190	1	0.0	76.9	66	76.9	15	Snd Lvl	76.9	0.0	8	-8.0
4645 Country Ln NE balc apt	191	1	0.0	77.1	66	77.1	15	Snd Lvl	77.1	0.0	8	-8.0
4645 Country Ln SW balc apt	192	1	0.0	67.0	66	67.0	15	Snd Lvl	67.0	0.0	8	-8.0
4633 Country Ln NE balc apt	194	1	0.0	77.8	66	77.8	15	Snd Lvl	77.8	0.0	8	-8.0
4633 Country Ln SE balc apt	195	1	0.0	77.4	66	77.4	15	Snd Lvl	77.4	0.0	8	-8.0
4633 Country Ln SW balc apt	196	1	0.0	62.7	66	62.7	15	----	62.7	0.0	8	-8.0
4629 Country Ln NE balc apt	198	1	0.0	77.1	66	77.1	15	Snd Lvl	77.1	0.0	8	-8.0
4629 Country Ln SE balc apt	199	1	0.0	76.7	66	76.7	15	Snd Lvl	76.7	0.0	8	-8.0
4629 Country Ln SW balc apt	200	1	0.0	62.4	66	62.4	15	----	62.4	0.0	8	-8.0
4629 Country Ln NW balc apt	201	1	0.0	62.9	66	62.9	15	----	62.9	0.0	8	-8.0
4625 Country Ln NE balc apt	203	1	0.0	76.3	66	76.3	15	Snd Lvl	76.3	0.0	8	-8.0
4625 Country Ln SE balc apt	204	1	0.0	75.2	66	75.2	15	Snd Lvl	75.2	0.0	8	-8.0
4625 Country Ln NW balc apt	205	1	0.0	61.5	66	61.5	15	----	61.5	0.0	8	-8.0
4361 St Regina Ln	207	1	0.0	65.5	66	65.5	15	----	65.5	0.0	8	-8.0
4353 St Regina Ln	208	1	0.0	64.4	66	64.4	15	----	64.4	0.0	8	-8.0
4349 St Regina Ln	209	1	0.0	63.7	66	63.7	15	----	63.7	0.0	8	-8.0
4362 St Regina Ln	210	1	0.0	64.4	66	64.4	15	----	64.4	0.0	8	-8.0
4346 St Regina Ln	211	1	0.0	63.7	66	63.7	15	----	63.7	0.0	8	-8.0

4531 Ashby Rd	213	1	0.0	64.9	66	64.9	15	----	64.9	0.0	8	-8.0
10856 Pear Tree Ln	214	1	0.0	66.2	66	66.2	15	Snd Lvl	66.2	0.0	8	-8.0
10864 Pear Tree Ln	215	1	0.0	63.2	66	63.2	15	----	63.2	0.0	8	-8.0
10872 Pear Tree Ln	216	1	0.0	61.8	66	61.8	15	----	61.8	0.0	8	-8.0
10880 Pear Tree Ln	217	1	0.0	61.5	66	61.5	15	----	61.5	0.0	8	-8.0
4527 Ashby Rd	219	1	0.0	65.0	66	65.0	15	----	65.0	0.0	8	-8.0
4523 Ashby Rd	220	1	0.0	64.5	66	64.5	15	----	64.5	0.0	8	-8.0
4528 Country Ln	221	1	0.0	64.4	66	64.4	15	----	64.4	0.0	8	-8.0
4522/4524 Country Ln	222	2	0.0	62.5	66	62.5	15	----	62.5	0.0	8	-8.0
4520 Country Ln	223	1	0.0	62.2	66	62.2	15	----	62.2	0.0	8	-8.0
10057/10059 Douglas Ct	224	2	0.0	61.9	66	61.9	15	----	61.9	0.0	8	-8.0
10053/10055 Douglas Ct	225	2	0.0	62.9	66	62.9	15	----	62.9	0.0	8	-8.0
10049/10051 Douglas Ct	226	2	0.0	63.6	66	63.6	15	----	63.6	0.0	8	-8.0
10045/10047 Douglas Ct	227	2	0.0	63.8	66	63.8	15	----	63.8	0.0	8	-8.0
10043 Douglas Ct	228	1	0.0	63.2	66	63.2	15	----	63.2	0.0	8	-8.0
10037 Douglas Ct	229	1	0.0	62.8	66	62.8	15	----	62.8	0.0	8	-8.0
10033 Douglas Ct	230	1	0.0	64.7	66	64.7	15	----	64.7	0.0	8	-8.0
10029 Douglas Ct	231	1	0.0	65.9	66	65.9	15	----	65.9	0.0	8	-8.0
10027 Douglas Ct	232	1	0.0	66.2	66	66.2	15	Snd Lvl	66.2	0.0	8	-8.0
Wingate hotel pool	234	1	0.0	54.9	71	54.9	15	----	54.9	0.0	8	-8.0
Pear Tree Inn pool	235	1	0.0	62.0	71	62.0	15	----	62.0	0.0	8	-8.0
Mariott hotel pool	236	1	0.0	51.6	71	51.6	15	----	51.6	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	215	0.0	0.0	0.0
All Impacted	67	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0



Cypress Road Area Barrier		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: BarrierCypress		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

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CMT, Inc. 28 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Cypress Road Area Barrier
BARRIER DESIGN: 20ft All
ATMOSPHERICS: 68 deg F, 50% RH

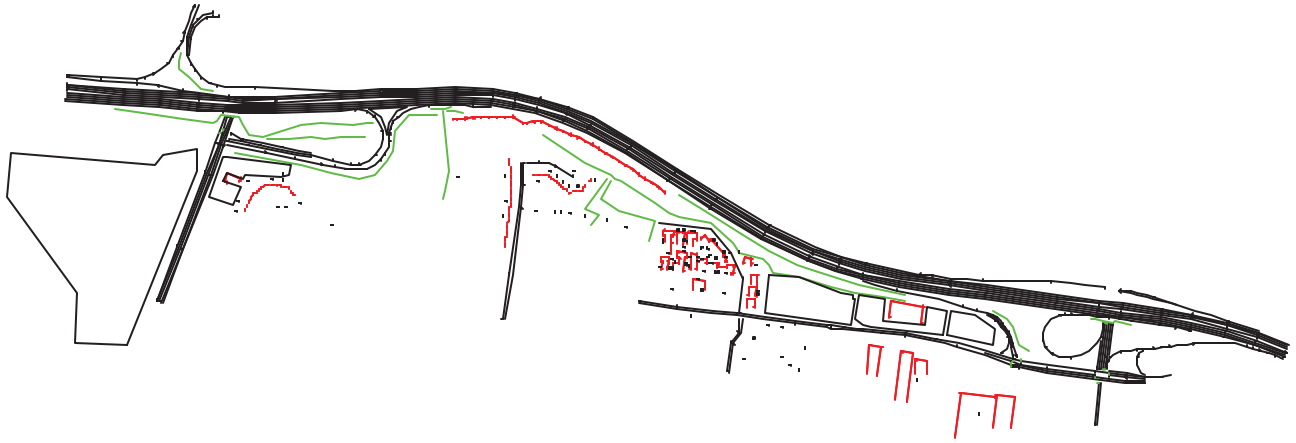
Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
4373 St Dominic Ln	7	1	0.0	66.4	66	66.4	15	Snd Lvl	60.9	5.5	8	-2.5
4369 St Dominic Ln	8	1	0.0	67.9	66	67.9	15	Snd Lvl	62.3	5.6	8	-2.4
4365 St Dominic Ln	9	1	0.0	67.6	66	67.6	15	Snd Lvl	63.2	4.4	8	-3.6
4361 St Dominic Ln	10	1	0.0	67.3	66	67.3	15	Snd Lvl	63.5	3.8	8	-4.2
4357 St Dominic Ln	11	1	0.0	67.3	66	67.3	15	Snd Lvl	64.9	2.4	8	-5.6
4353 St Dominic Ln	12	1	0.0	65.3	66	65.3	15	----	62.5	2.8	8	-5.2
4349 St Dominic Ln	13	1	0.0	65.1	66	65.1	15	----	63.1	2.0	8	-6.0
11267 St Damian Dr	14	1	0.0	64.8	66	64.8	15	----	63.1	1.7	8	-6.3
11269 St Damian Dr	15	1	0.0	64.9	66	64.9	15	----	64.1	0.8	8	-7.2
4344 Cypress Rd - day care	16	1	0.0	66.9	66	66.9	15	Snd Lvl	66.7	0.2	8	-7.8
4362 St Dominic Ln	17	1	0.0	65.4	66	65.4	15	----	61.7	3.7	8	-4.3
4370 St Dominic Ln	18	1	0.0	65.6	66	65.6	15	----	62.5	3.1	8	-4.9
4372 St Dominic Ln	19	1	0.0	65.7	66	65.7	15	----	61.9	3.8	8	-4.2
4374 St Dominic Ln	20	1	0.0	65.7	66	65.7	15	----	61.0	4.7	8	-3.3
4361 St Regina Ln	207	1	0.0	65.5	66	65.5	15	----	61.1	4.4	8	-3.6
4353 St Regina Ln	208	1	0.0	64.4	66	64.4	15	----	61.0	3.4	8	-4.6
4349 St Regina Ln	209	1	0.0	63.7	66	63.7	15	----	60.9	2.8	8	-5.2
4362 St Regina Ln	210	1	0.0	64.4	66	64.4	15	----	62.6	1.8	8	-6.2
4346 St Regina Ln	211	1	0.0	63.8	66	63.8	15	----	61.9	1.9	8	-6.1

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	19	0.2	3.1	5.6

All Impacted		6	0.2	3.7	5.6							
All that meet NR Goal		0	0.0	0.0	0.0							

CMT, Inc.				**30 April 2024**						
JKMiller				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**Lambert CTP**									
RUN:	**Cypress Road Area Barrier**									
BARRIER DESIGN:	**20ft All**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top Width**	**Run:Rise**	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
CypressBarrier	W	20.00	20.00	20.00	882	17638				0
									Total Cost:	0



Ashby Barrier at L/A ROW & Ditch		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: BarrierAshby_Ditch		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

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CMT, Inc. 28 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Ashby Barrier at L/A ROW & Ditch
BARRIER DESIGN: 20ft All
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-3	3	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	67.5	66	67.5	15	Snd Lvl	65.8	1.7	8	-6.3
St Ann Park Ballfield Home Bench	22	1	0.0	65.8	66	65.8	15	----	64.2	1.6	8	-6.4
4555 Ashby Rd	23	1	0.0	70.7	66	70.7	15	Snd Lvl	65.6	5.1	8	-2.9
4551 Ashby Rd	24	1	0.0	68.8	66	68.8	15	Snd Lvl	65.0	3.8	8	-4.2
4547 Ashby Rd	25	1	0.0	68.0	66	68.0	15	Snd Lvl	64.6	3.4	8	-4.6
4539 Ashby Rd	26	1	0.0	66.8	66	66.8	15	Snd Lvl	64.1	2.7	8	-5.3
4535 Ashby Rd	27	1	0.0	65.7	66	65.7	15	----	63.5	2.2	8	-5.8
4548 Ashby Rd	28	1	0.0	69.6	66	69.6	15	Snd Lvl	64.5	5.1	8	-2.9
11014 St Nicholas Ct	29	1	0.0	69.5	66	69.5	15	Snd Lvl	63.3	6.2	8	-1.8
11010 St Nicholas Ct	30	1	0.0	69.1	66	69.1	15	Snd Lvl	62.9	6.2	8	-1.8
11006 St Nicholas Ct	31	1	0.0	68.3	66	68.3	15	Snd Lvl	61.9	6.4	8	-1.6
11002 St Nicholas Ct	32	1	0.0	67.8	66	67.8	15	Snd Lvl	61.7	6.1	8	-1.9
11000 St Nicholas Ct	33	1	0.0	68.0	66	68.0	15	Snd Lvl	61.6	6.4	8	-1.6
11001 St Nicholas Ct	34	1	0.0	70.1	66	70.1	15	Snd Lvl	62.0	8.1	8	0.1
4544 Ashby Rd	35	1	0.0	67.4	66	67.4	15	Snd Lvl	63.4	4.0	8	-4.0
4540 Ashby Rd	36	1	0.0	67.3	66	67.3	15	Snd Lvl	63.3	4.0	8	-4.0
4536 Ashby Rd	37	1	0.0	66.7	66	66.7	15	Snd Lvl	63.1	3.6	8	-4.4
4524 Ashby Rd	38	1	0.0	65.6	66	65.6	15	----	62.6	3.0	8	-5.0
11045 St Pius Ln	39	1	0.0	65.5	66	65.5	15	----	62.1	3.4	8	-4.6
11041 St Pius Ln	40	1	0.0	65.4	66	65.4	15	----	61.7	3.7	8	-4.3
11037 St Pius Ln	41	1	0.0	65.3	66	65.3	15	----	61.2	4.1	8	-3.9
11033 St Pius Ln	42	1	0.0	65.4	66	65.4	15	----	61.1	4.3	8	-3.7
11029 St Pius Ln	43	1	0.0	65.2	66	65.2	15	----	60.8	4.4	8	-3.6

11025 St Pius Ln	44	1	0.0	65.1	66	65.1	15	----	60.6	4.5	8	-3.5
11021 St Pius Ln	45	1	0.0	64.8	66	64.8	15	----	60.5	4.3	8	-3.7
11017 St Pius Ln	46	1	0.0	65.0	66	65.0	15	----	60.6	4.4	8	-3.6
11009 St Pius Ln	47	1	0.0	63.8	66	63.8	15	----	60.1	3.7	8	-4.3
11005 St Pius Ln	48	1	0.0	60.3	66	60.3	15	----	58.3	2.0	8	-6.0
4531 Ashby Rd	213	1	0.0	65.0	66	65.0	15	----	63.0	2.0	8	-6.0
4527 Ashby Rd	219	1	0.0	65.1	66	65.1	15	----	63.1	2.0	8	-6.0
4523 Ashby Rd	220	1	0.0	64.6	66	64.6	15	----	62.8	1.8	8	-6.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	32	0.0	3.9	8.1
All Impacted	15	1.7	4.9	8.1
All that meet NR Goal	1	8.1	8.1	8.1

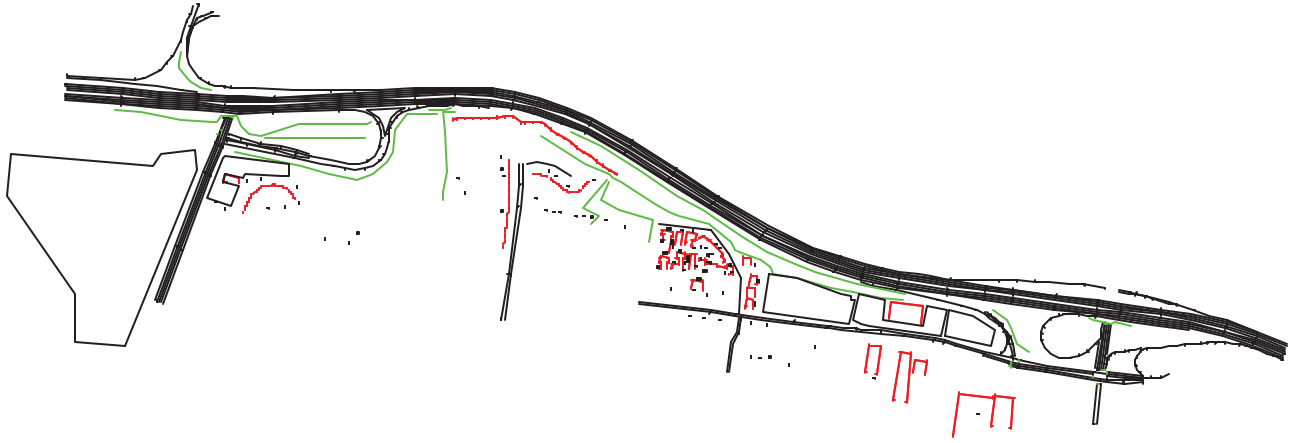
CMT, Inc.	30 April 2024
JKMiller	TNM 2.5

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	Lambert CTP
RUN:	Ashby Barrier at L/A ROW & Ditch
BARRIER DESIGN:	20ft All

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
East Ashby barrier at ditch	W	20.00	20.00	20.00	900	17991				0
West Ashby barrier at L/A ROW	W	20.00	20.00	20.00	572	11449				0
									Total Cost:	0



Ashby Barrier all at L/A ROW		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: BarrierAshby_LAROW		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 28 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Ashby Barrier all at L/A ROW
BARRIER DESIGN: 20ft All
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-3	3	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	67.5	66	67.5	15	Snd Lvl	65.8	1.7	8	-6.3
St Ann Park Ballfield Home Bench	22	1	0.0	65.8	66	65.8	15	----	64.2	1.6	8	-6.4
4555 Ashby Rd	23	1	0.0	70.7	66	70.7	15	Snd Lvl	65.6	5.1	8	-2.9
4551 Ashby Rd	24	1	0.0	68.8	66	68.8	15	Snd Lvl	65.0	3.8	8	-4.2
4547 Ashby Rd	25	1	0.0	68.0	66	68.0	15	Snd Lvl	64.7	3.3	8	-4.7
4539 Ashby Rd	26	1	0.0	66.8	66	66.8	15	Snd Lvl	64.1	2.7	8	-5.3
4535 Ashby Rd	27	1	0.0	65.7	66	65.7	15	----	63.5	2.2	8	-5.8
4548 Ashby Rd	28	1	0.0	69.6	66	69.6	15	Snd Lvl	64.6	5.0	8	-3.0
11014 St Nicholas Ct	29	1	0.0	69.5	66	69.5	15	Snd Lvl	63.5	6.0	8	-2.0
11010 St Nicholas Ct	30	1	0.0	69.1	66	69.1	15	Snd Lvl	63.1	6.0	8	-2.0
11006 St Nicholas Ct	31	1	0.0	68.2	66	68.2	15	Snd Lvl	62.2	6.0	8	-2.0
11002 St Nicholas Ct	32	1	0.0	67.7	66	67.7	15	Snd Lvl	62.0	5.7	8	-2.3
11000 St Nicholas Ct	33	1	0.0	67.8	66	67.8	15	Snd Lvl	61.9	5.9	8	-2.1
11001 St Nicholas Ct	34	1	0.0	69.7	66	69.7	15	Snd Lvl	62.5	7.2	8	-0.8
4544 Ashby Rd	35	1	0.0	67.3	66	67.3	15	Snd Lvl	63.6	3.7	8	-4.3
4540 Ashby Rd	36	1	0.0	67.3	66	67.3	15	Snd Lvl	63.4	3.9	8	-4.1
4536 Ashby Rd	37	1	0.0	66.6	66	66.6	15	Snd Lvl	63.2	3.4	8	-4.6
4524 Ashby Rd	38	1	0.0	65.6	66	65.6	15	----	62.8	2.8	8	-5.2
11045 St Pius Ln	39	1	0.0	65.5	66	65.5	15	----	62.2	3.3	8	-4.7
11041 St Pius Ln	40	1	0.0	65.4	66	65.4	15	----	61.9	3.5	8	-4.5
11037 St Pius Ln	41	1	0.0	65.2	66	65.2	15	----	61.4	3.8	8	-4.2
11033 St Pius Ln	42	1	0.0	65.4	66	65.4	15	----	61.4	4.0	8	-4.0
11029 St Pius Ln	43	1	0.0	65.2	66	65.2	15	----	61.1	4.1	8	-3.9

11025 St Pius Ln	44	1	0.0	64.9	66	64.9	15	----	60.9	4.0	8	-4.0
11021 St Pius Ln	45	1	0.0	64.8	66	64.8	15	----	60.6	4.2	8	-3.8
11017 St Pius Ln	46	1	0.0	64.9	66	64.9	15	----	60.7	4.2	8	-3.8
11009 St Pius Ln	47	1	0.0	63.8	66	63.8	15	----	60.3	3.5	8	-4.5
11005 St Pius Ln	48	1	0.0	60.4	66	60.4	15	----	58.5	1.9	8	-6.1
4531 Ashby Rd	213	1	0.0	65.0	66	65.0	15	----	63.0	2.0	8	-6.0
4527 Ashby Rd	219	1	0.0	65.1	66	65.1	15	----	63.1	2.0	8	-6.0
4523 Ashby Rd	220	1	0.0	64.6	66	64.6	15	----	62.9	1.7	8	-6.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	32	0.0	3.7	7.2
All Impacted	15	1.7	4.6	7.2
All that meet NR Goal	0	0.0	0.0	0.0

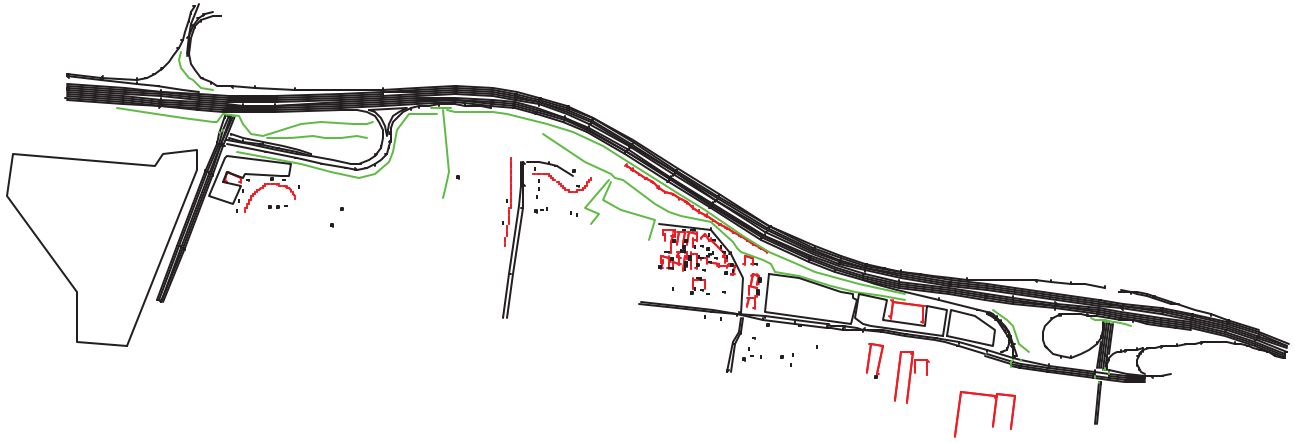
CMT, Inc.	30 April 2024
JKMiller	TNM 2.5

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	Lambert CTP
RUN:	Ashby Barrier all at L/A ROW
BARRIER DESIGN:	20ft All

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
East Ashby barrier at L/A ROW	W	20.00	20.00	20.00	582	11645				0
West Ashby barrier at L/A ROW	W	20.00	20.00	20.00	572	11449				0
									Total Cost:	0



Pear Tree Apts Barrier - at ditch		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: BarrierApts_Ditch		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

850000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 1 May 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Pear Tree Apts Barrier - at ditch
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-1	1	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-2	2	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-3	3	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-4	4	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
NMP-5	5	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4373 St Dominic Ln	7	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4369 St Dominic Ln	8	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4365 St Dominic Ln	9	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4361 St Dominic Ln	10	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4357 St Dominic Ln	11	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4353 St Dominic Ln	12	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4349 St Dominic Ln	13	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11267 St Damian Dr	14	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11269 St Damian Dr	15	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4344 Cypress Rd - day care	16	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4362 St Dominic Ln	17	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4370 St Dominic Ln	18	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4372 St Dominic Ln	19	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4374 St Dominic Ln	20	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
St Ann Park Ballfield Visitor Bench	21	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
St Ann Park Ballfield Home Bench	22	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4555 Ashby Rd	23	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4551 Ashby Rd	24	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4547 Ashby Rd	25	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0

4539 Ashby Rd	26	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4535 Ashby Rd	27	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4548 Ashby Rd	28	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11014 St Nicholas Ct	29	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11010 St Nicholas Ct	30	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11006 St Nicholas Ct	31	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11002 St Nicholas Ct	32	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11000 St Nicholas Ct	33	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11001 St Nicholas Ct	34	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4544 Ashby Rd	35	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4540 Ashby Rd	36	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4536 Ashby Rd	37	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4524 Ashby Rd	38	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11045 St Pius Ln	39	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11041 St Pius Ln	40	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11037 St Pius Ln	41	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11033 St Pius Ln	42	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11029 St Pius Ln	43	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11025 St Pius Ln	44	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11021 St Pius Ln	45	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11017 St Pius Ln	46	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11009 St Pius Ln	47	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
11005 St Pius Ln	48	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
10882 Pear Blossom NW patio apt	49	1	0.0	71.8	66	71.8	15	Snd Lvl	68.3	3.5	8	-4.5
10882 Pear Blossom NE patio apt	50	1	0.0	72.2	66	72.2	15	Snd Lvl	68.5	3.7	8	-4.3
4649 Country Ln NW patio apt	51	1	0.0	73.8	66	73.8	15	Snd Lvl	69.6	4.2	8	-3.8
4649 Country Ln NE patio apt	52	1	0.0	74.6	66	74.6	15	Snd Lvl	70.4	4.2	8	-3.8
4645 Country Ln NW patio apt	53	1	0.0	75.6	66	75.6	15	Snd Lvl	71.3	4.3	8	-3.7
4645 Country Ln NE patio apt	54	1	0.0	75.7	66	75.7	15	Snd Lvl	71.3	4.4	8	-3.6
4633 Country Ln NE patio apt	55	1	0.0	76.2	66	76.2	15	Snd Lvl	70.8	5.4	8	-2.6
4633 Country Ln SE patio apt	56	1	0.0	75.6	66	75.6	15	Snd Lvl	70.2	5.4	8	-2.6
4629 Country Ln NE patio apt	57	1	0.0	75.1	66	75.1	15	Snd Lvl	70.1	5.0	8	-3.0
4629 Country Ln SE patio apt	58	1	0.0	74.9	66	74.9	15	Snd Lvl	70.3	4.6	8	-3.4
4625 Country Ln NE patio apt	59	1	0.0	74.5	66	74.5	15	Snd Lvl	70.6	3.9	8	-4.1
4625 Country Ln SE patio apt	60	1	0.0	73.1	66	73.1	15	Snd Lvl	69.5	3.6	8	-4.4
10844 Pear Blossom N patio apt	61	1	0.0	71.6	66	71.6	15	Snd Lvl	68.6	3.0	8	-5.0
10844 Pear Blossom SE patio apt	63	1	0.0	55.9	66	55.9	15	----	55.0	0.9	8	-7.1
Pear Tree Apts Clubhouse	64	1	0.0	74.9	66	74.9	15	Snd Lvl	73.5	1.4	8	-6.6
10882 Pear Blossom SW patio apt	65	1	0.0	62.7	66	62.7	15	----	62.3	0.4	8	-7.6
10878 Pear Blossom NW patio apt	66	1	0.0	62.6	66	62.6	15	----	62.3	0.3	8	-7.7
10882 Pear Blossom SE patio apt	67	1	0.0	60.6	66	60.6	15	----	57.5	3.1	8	-4.9

10878 Pear Blossom NE patio apt	68	1	0.0	59.9	66	59.9	15	----	57.0	2.9	8	-5.1
4649 Country Ln SE patio apt	69	1	0.0	65.7	66	65.7	15	----	61.1	4.6	8	-3.4
4641 Country Ln E patio apt	70	1	0.0	61.5	66	61.5	15	----	59.5	2.0	8	-6.0
4641 Country Ln W patio apt	71	1	0.0	60.0	66	60.0	15	----	58.2	1.8	8	-6.2
10878 Pear Blossom SE patio apt	72	1	0.0	61.8	66	61.8	15	----	61.5	0.3	8	-7.7
10878 Pear Blossom SW patio apt	73	1	0.0	62.1	66	62.1	15	----	61.8	0.3	8	-7.7
4645 Country Ln SW patio apt	74	1	0.0	64.8	66	64.8	15	----	59.8	5.0	8	-3.0
4625 Country Ln NW patio apt	75	1	0.0	60.0	66	60.0	15	----	59.1	0.9	8	-7.1
4629 Country Ln SW patio apt	76	1	0.0	60.4	66	60.4	15	----	59.5	0.9	8	-7.1
4629 Country Ln NW patio apt	77	1	0.0	60.7	66	60.7	15	----	59.8	0.9	8	-7.1
4633 Country Ln SW patio apt	78	1	0.0	60.8	66	60.8	15	----	59.8	1.0	8	-7.0
4637 Country Ln NE patio apt	79	1	0.0	63.9	66	63.9	15	----	61.2	2.7	8	-5.3
4637 Country Ln NW patio apt	80	1	0.0	64.1	66	64.1	15	----	61.9	2.2	8	-5.8
4637 Country Ln SE patio apt	81	1	0.0	60.5	66	60.5	15	----	59.6	0.9	8	-7.1
4637 Country Ln SW patio apt	82	1	0.0	60.5	66	60.5	15	----	59.5	1.0	8	-7.0
10874 Pear Blossom SW patio apt	85	1	0.0	61.6	66	61.6	15	----	61.5	0.1	8	-7.9
10866 Pear Blossom NW patio apt	86	1	0.0	60.8	66	60.8	15	----	59.6	1.2	8	-6.8
10866 Pear Blossom NE patio apt	87	1	0.0	61.3	66	61.3	15	----	59.7	1.6	8	-6.4
10866 Pear Blossom SE patio apt	88	1	0.0	54.5	66	54.5	15	----	53.3	1.2	8	-6.8
10870 Pear Blossom NE patio apt	89	1	0.0	52.7	66	52.7	15	----	52.4	0.3	8	-7.7
10874 Pear Blossom NE patio apt	90	1	0.0	60.0	66	60.0	15	----	59.5	0.5	8	-7.5
10874 Pear Blossom SE patio apt	91	1	0.0	53.3	66	53.3	15	----	52.1	1.2	8	-6.8
10858 Pear Blossom NW patio apt	92	1	0.0	58.2	66	58.2	15	----	56.0	2.2	8	-5.8
10858 Pear Blossom SW patio apt	93	1	0.0	54.3	66	54.3	15	----	53.1	1.2	8	-6.8
10862 Pear Blossom W patio apt	94	1	0.0	52.9	66	52.9	15	----	52.1	0.8	8	-7.2
10862 Pear Blossom E patio apt	95	1	0.0	58.2	66	58.2	15	----	57.6	0.6	8	-7.4
10858 Pear Blossom SE patio apt	96	1	0.0	59.8	66	59.8	15	----	58.8	1.0	8	-7.0
10858 Pear Blossom NE patio apt	97	1	0.0	61.8	66	61.8	15	----	60.8	1.0	8	-7.0
10852 Pear Blossom NE patio apt	98	1	0.0	62.6	66	62.6	15	----	62.0	0.6	8	-7.4
10848 Pear Blossom NW patio apt	99	1	0.0	62.5	66	62.5	15	----	62.0	0.5	8	-7.5
10844 Pear Blossom SW patio apt	100	1	0.0	58.1	66	58.1	15	----	57.8	0.3	8	-7.7
10848 Pear Blossom SE patio apt	101	1	0.0	57.4	66	57.4	15	----	57.4	0.0	8	-8.0
10848 Pear Blossom SW patio apt	102	1	0.0	57.4	66	57.4	15	----	57.4	0.0	8	-8.0
10852 Pear Blossom SE patio apt	103	1	0.0	56.7	66	56.7	15	----	56.8	-0.1	8	-8.1
10852 Pear Blossom SW patio apt	104	1	0.0	56.5	66	56.5	15	----	56.5	0.0	8	-8.0
10885 Pear Blossom NE patio apt	105	1	0.0	58.7	66	58.7	15	----	58.6	0.1	8	-7.9
10885 Pear Blossom NW patio apt	106	1	0.0	58.5	66	58.5	15	----	58.4	0.1	8	-7.9
10885 Pear Blossom SE patio apt	107	1	0.0	57.4	66	57.4	15	----	57.5	-0.1	8	-8.1
10885 Pear Blossom SW patio apt	108	1	0.0	55.9	66	55.9	15	----	56.0	-0.1	8	-8.1
10877 Pear Tree Ln	109	1	0.0	60.6	66	60.6	15	----	60.5	0.1	8	-7.9
10885 Pear Tree Ln	110	1	0.0	59.6	66	59.6	15	----	59.6	0.0	8	-8.0

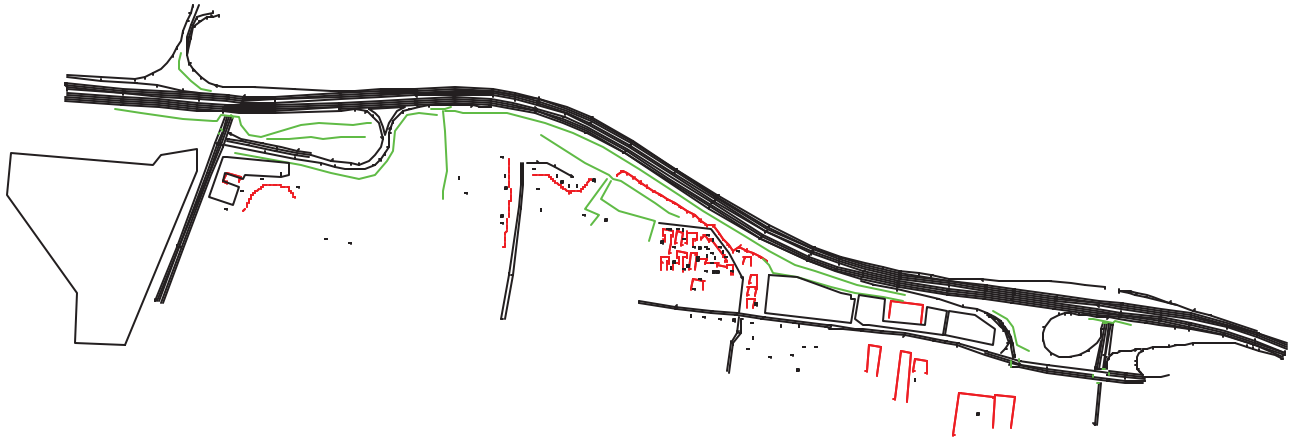
10893 Pear Tree Ln	111	1	0.0	60.2	66	60.2	15	----	60.1	0.1	8	-7.9
10848 Pear Tree Ln	112	1	0.0	67.8	66	67.8	15	Snd Lvl	67.7	0.1	8	-7.9
10840 Pear Tree Ln	113	1	0.0	68.5	66	68.5	15	Snd Lvl	68.5	0.0	8	-8.0
10832 Pear Tree Ln	114	1	0.0	69.2	66	69.2	15	Snd Lvl	69.2	0.0	8	-8.0
10869 Pear Tree Ln	116	1	0.0	62.9	66	62.9	15	----	62.6	0.3	8	-7.7
10870 Pear Blossom NW patio apt	118	1	0.0	59.4	66	59.4	15	----	59.0	0.4	8	-7.6
10870 Pear Blossom SW patio apt	119	1	0.0	53.7	66	53.7	15	----	52.1	1.6	8	-6.4
10870 Pear Blossom SE patio apt	120	1	0.0	54.6	66	54.6	15	----	54.7	-0.1	8	-8.1
4610 Country Ln patio apt	121	1	0.0	72.0	66	72.0	15	Snd Lvl	71.4	0.6	8	-7.4
4608 Country Ln patio apt	122	1	0.0	71.4	66	71.4	15	Snd Lvl	71.0	0.4	8	-7.6
4606 Country Ln patio apt	123	1	0.0	69.1	66	69.1	15	Snd Lvl	69.0	0.1	8	-7.9
4604 Country Ln patio apt	124	1	0.0	68.7	66	68.7	15	Snd Lvl	68.6	0.1	8	-7.9
4602 Country Ln patio apt	125	1	0.0	68.1	66	68.1	15	Snd Lvl	68.0	0.1	8	-7.9
4600 Country Ln patio apt	126	1	0.0	68.0	66	68.0	15	Snd Lvl	68.0	0.0	8	-8.0
10885 Pear Blossom NE balc apt	128	1	0.0	63.0	66	63.0	15	----	62.8	0.2	8	-7.8
10885 Pear Blossom NW balc apt	129	1	0.0	62.6	66	62.6	15	----	62.1	0.5	8	-7.5
10885 Pear Blossom SE balc apt	130	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10885 Pear Blossom SW balc apt	131	1	0.0	58.6	66	58.6	15	----	58.5	0.1	8	-7.9
10844 Pear Blossom N balc apt	133	1	0.0	74.1	66	74.1	15	Snd Lvl	72.3	1.8	8	-6.2
10844 Pear Blossom SE balc apt	134	1	0.0	61.4	66	61.4	15	----	60.5	0.9	8	-7.1
10844 Pear Blossom SW balc apt	136	1	0.0	61.2	66	61.2	15	----	60.9	0.3	8	-7.7
10848 Pear Blossom SE balc apt	137	1	0.0	60.3	66	60.3	15	----	60.2	0.1	8	-7.9
10848 Pear Blossom NW balc apt	139	1	0.0	66.0	66	66.0	15	Snd Lvl	65.6	0.4	8	-7.6
10848 Pear Blossom SW balc apt	140	1	0.0	60.2	66	60.2	15	----	60.2	0.0	8	-8.0
10852 Pear Blossom NE balc apt	142	1	0.0	66.1	66	66.1	15	Snd Lvl	65.5	0.6	8	-7.4
10852 Pear Blossom SE balc apt	143	1	0.0	59.4	66	59.4	15	----	59.4	0.0	8	-8.0
10852 Pear Blossom SW balc apt	144	1	0.0	59.0	66	59.0	15	----	59.0	0.0	8	-8.0
10852 Pear Blossom NW patio apt	146	1	0.0	61.1	66	61.1	15	----	60.2	0.9	8	-7.1
10852 Pear Blossom NW balc apt	148	1	0.0	64.3	66	64.3	15	----	63.0	1.3	8	-6.7
10858 Pear Blossom NW balc apt	149	1	0.0	60.1	66	60.1	15	----	58.6	1.5	8	-6.5
10858 Pear Blossom SW balc apt	150	1	0.0	58.5	66	58.5	15	----	57.1	1.4	8	-6.6
10862 Pear Blossom W balc apt	151	1	0.0	57.7	66	57.7	15	----	56.3	1.4	8	-6.6
10862 Pear Blossom E balc apt	152	1	0.0	61.7	66	61.7	15	----	60.5	1.2	8	-6.8
10858 Pear Blossom SE balc apt	153	1	0.0	63.3	66	63.3	15	----	61.8	1.5	8	-6.5
10858 Pear Blossom NE balc apt	154	1	0.0	65.0	66	65.0	15	----	63.6	1.4	8	-6.6
10866 Pear Blossom NW balc apt	155	1	0.0	64.4	66	64.4	15	----	62.4	2.0	8	-6.0
10866 Pear Blossom NE balc apt	156	1	0.0	64.7	66	64.7	15	----	62.5	2.2	8	-5.8
10866 Pear Blossom SE balc apt	157	1	0.0	58.4	66	58.4	15	----	57.0	1.4	8	-6.6
10870 Pear Blossom NE balc apt	158	1	0.0	56.9	66	56.9	15	----	56.4	0.5	8	-7.5
10870 Pear Blossom NW balc apt	159	1	0.0	63.1	66	63.1	15	----	62.3	0.8	8	-7.2
10870 Pear Blossom SW balc apt	160	1	0.0	58.1	66	58.1	15	----	56.4	1.7	8	-6.3

10870 Pear Blossom SE balc apt	161	1	0.0	58.0	66	58.0	15	----	58.0	0.0	8	-8.0
10874 Pear Blossom SW balc apt	163	1	0.0	64.2	66	64.2	15	----	63.9	0.3	8	-7.7
10874 Pear Blossom NE balc apt	164	1	0.0	64.0	66	64.0	15	----	63.1	0.9	8	-7.1
10874 Pear Blossom SE balc apt	165	1	0.0	57.8	66	57.8	15	----	56.9	0.9	8	-7.1
4637 Country Ln NE balc apt	167	1	0.0	66.0	66	66.0	15	Snd Lvl	63.9	2.1	8	-5.9
4637 Country Ln NW balc apt	168	1	0.0	66.4	66	66.4	15	Snd Lvl	64.4	2.0	8	-6.0
4637 Country Ln SE balc apt	169	1	0.0	62.5	66	62.5	15	----	61.5	1.0	8	-7.0
4637 Country Ln SW balc apt	170	1	0.0	62.9	66	62.9	15	----	61.6	1.3	8	-6.7
10878 Pear Blossom NW balc apt	172	1	0.0	66.7	66	66.7	15	Snd Lvl	65.6	1.1	8	-6.9
10878 Pear Blossom NE balc apt	173	1	0.0	65.0	66	65.0	15	----	60.8	4.2	8	-3.8
10878 Pear Blossom SE balc apt	174	1	0.0	64.7	66	64.7	15	----	64.3	0.4	8	-7.6
10878 Pear Blossom SW balc apt	175	1	0.0	65.1	66	65.1	15	----	64.5	0.6	8	-7.4
10882 Pear Blossom NW balc apt	177	1	0.0	74.7	66	74.7	15	Snd Lvl	71.6	3.1	8	-4.9
10882 Pear Blossom NE balc apt	178	1	0.0	74.8	66	74.8	15	Snd Lvl	71.8	3.0	8	-5.0
10882 Pear Blossom SW balc apt	179	1	0.0	66.9	66	66.9	15	Snd Lvl	65.8	1.1	8	-6.9
10882 Pear Blossom SE balc apt	180	1	0.0	65.9	66	65.9	15	----	61.7	4.2	8	-3.8
4649 Country Ln NW balc apt	182	1	0.0	75.5	66	75.5	15	Snd Lvl	72.8	2.7	8	-5.3
4649 Country Ln NE balc apt	183	1	0.0	76.1	66	76.1	15	Snd Lvl	73.8	2.3	8	-5.7
4649 Country Ln SE balc apt	184	1	0.0	67.9	66	67.9	15	Snd Lvl	64.4	3.5	8	-4.5
4641 Country Ln E balc apt	185	1	0.0	65.3	66	65.3	15	----	62.5	2.8	8	-5.2
4641 Country Ln W balc apt	186	1	0.0	64.2	66	64.2	15	----	61.4	2.8	8	-5.2
4645 Country Ln SE patio apt	188	1	0.0	63.8	66	63.8	15	----	61.3	2.5	8	-5.5
4645 Country Ln SE balc apt	189	1	0.0	66.5	66	66.5	15	Snd Lvl	64.3	2.2	8	-5.8
4645 Country Ln NW balc apt	190	1	0.0	77.1	66	77.1	15	Snd Lvl	74.9	2.2	8	-5.8
4645 Country Ln NE balc apt	191	1	0.0	77.3	66	77.3	15	Snd Lvl	75.1	2.2	8	-5.8
4645 Country Ln SW balc apt	192	1	0.0	67.0	66	67.0	15	Snd Lvl	63.1	3.9	8	-4.1
4633 Country Ln NE balc apt	194	1	0.0	78.0	66	78.0	15	Snd Lvl	75.4	2.6	8	-5.4
4633 Country Ln SE balc apt	195	1	0.0	77.5	66	77.5	15	Snd Lvl	74.8	2.7	8	-5.3
4633 Country Ln SW balc apt	196	1	0.0	62.8	66	62.8	15	----	61.9	0.9	8	-7.1
4629 Country Ln NE balc apt	198	1	0.0	77.1	66	77.1	15	Snd Lvl	74.3	2.8	8	-5.2
4629 Country Ln SE balc apt	199	1	0.0	76.8	66	76.8	15	Snd Lvl	74.2	2.6	8	-5.4
4629 Country Ln SW balc apt	200	1	0.0	62.4	66	62.4	15	----	61.6	0.8	8	-7.2
4629 Country Ln NW balc apt	201	1	0.0	62.9	66	62.9	15	----	62.1	0.8	8	-7.2
4625 Country Ln NE balc apt	203	1	0.0	76.4	66	76.4	15	Snd Lvl	74.1	2.3	8	-5.7
4625 Country Ln SE balc apt	204	1	0.0	75.3	66	75.3	15	Snd Lvl	73.2	2.1	8	-5.9
4625 Country Ln NW balc apt	205	1	0.0	61.6	66	61.6	15	----	60.7	0.9	8	-7.1
4361 St Regina Ln	207	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4353 St Regina Ln	208	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4349 St Regina Ln	209	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4362 St Regina Ln	210	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4346 St Regina Ln	211	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0

4531 Ashby Rd	213	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
10856 Pear Tree Ln	214	1	0.0	66.2	66	66.2	15	Snd Lvl	66.1	0.1	8	-7.9
10864 Pear Tree Ln	215	1	0.0	63.2	66	63.2	15	----	63.1	0.1	8	-7.9
10872 Pear Tree Ln	216	1	0.0	61.8	66	61.8	15	----	61.7	0.1	8	-7.9
10880 Pear Tree Ln	217	1	0.0	61.5	66	61.5	15	----	61.4	0.1	8	-7.9
4527 Ashby Rd	219	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4523 Ashby Rd	220	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
4528 Country Ln	221	1	0.0	64.4	66	64.4	15	----	64.3	0.1	8	-7.9
4522/4524 Country Ln	222	2	0.0	62.5	66	62.5	15	----	62.4	0.1	8	-7.9
4520 Country Ln	223	1	0.0	62.2	66	62.2	15	----	62.1	0.1	8	-7.9
10057/10059 Douglas Ct	224	2	0.0	61.9	66	61.9	15	----	61.8	0.1	8	-7.9
10053/10055 Douglas Ct	225	2	0.0	62.9	66	62.9	15	----	62.8	0.1	8	-7.9
10049/10051 Douglas Ct	226	2	0.0	63.6	66	63.6	15	----	63.5	0.1	8	-7.9
10045/10047 Douglas Ct	227	2	0.0	63.9	66	63.9	15	----	63.7	0.2	8	-7.8
10043 Douglas Ct	228	1	0.0	63.2	66	63.2	15	----	63.0	0.2	8	-7.8
10037 Douglas Ct	229	1	0.0	62.8	66	62.8	15	----	62.6	0.2	8	-7.8
10033 Douglas Ct	230	1	0.0	64.7	66	64.7	15	----	64.6	0.1	8	-7.9
10029 Douglas Ct	231	1	0.0	66.0	66	66.0	15	Snd Lvl	65.9	0.1	8	-7.9
10027 Douglas Ct	232	1	0.0	66.2	66	66.2	15	Snd Lvl	66.1	0.1	8	-7.9
Wingate hotel pool	234	1	0.0	0.0	71	0.0	15	inactive	0.0	0.0	8	0.0
Pear Tree Inn pool	235	1	0.0	0.0	71	0.0	15	inactive	0.0	0.0	8	0.0
Mariott hotel pool	236	1	0.0	0.0	71	0.0	15	inactive	0.0	0.0	8	0.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	215	-0.1	1.0	5.4
All Impacted	48	0.0	2.2	5.4
All that meet NR Goal	0	0.0	0.0	0.0

CMT, Inc.				**30 April 2024**						
JKMiller				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**Lambert CTP**									
RUN:	**Pear Tree Apts Barrier - at ditch**									
BARRIER DESIGN:	**20ft All**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top Width**	**Run:Rise**	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Apartments Barrier outside ditch	W	20.00	20.00	20.00	1050	21000				0
									Total Cost:	0



Apts Barrier - at L/A ROW		Sheet 1 of 1	30 Apr 2024
		CMT, Inc.	
Plan View		Project/Contract No. Lambert CTP	
Run name: BarrierApts_LAROW		TNM Version 2.5, Feb 2004	
Scale:	1000 feet	Analysis By: JKMiller	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

850000 851000 852000 853000 854000 855000 856000 857000 858000 859000 860000 861000 862000

CMT, Inc. 30 April 2024
JKMiller TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Lambert CTP
RUN: Apts Barrier - at L/A ROW
BARRIER DESIGN: Apts LA/ROW Final
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
NMP-5	5	1	0.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
10882 Pear Blossom NW patio apt	49	1	0.0	71.9	66	71.9	15	Snd Lvl	64.9	7.0	8	-1.0
10882 Pear Blossom NE patio apt	50	1	0.0	72.3	66	72.3	15	Snd Lvl	65.0	7.3	8	-0.7
4649 Country Ln NW patio apt	51	1	0.0	73.9	66	73.9	15	Snd Lvl	65.2	8.7	8	0.7
4649 Country Ln NE patio apt	52	1	0.0	74.7	66	74.7	15	Snd Lvl	65.4	9.3	8	1.3
4645 Country Ln NW patio apt	53	1	0.0	75.6	66	75.6	15	Snd Lvl	65.4	10.2	8	2.2
4645 Country Ln NE patio apt	54	1	0.0	75.8	66	75.8	15	Snd Lvl	65.3	10.5	8	2.5
4633 Country Ln NE patio apt	55	1	0.0	76.2	66	76.2	15	Snd Lvl	64.3	11.9	8	3.9
4633 Country Ln SE patio apt	56	1	0.0	75.6	66	75.6	15	Snd Lvl	63.6	12.0	8	4.0
4629 Country Ln NE patio apt	57	1	0.0	75.1	66	75.1	15	Snd Lvl	63.1	12.0	8	4.0
4629 Country Ln SE patio apt	58	1	0.0	74.8	66	74.8	15	Snd Lvl	62.6	12.2	8	4.2
4625 Country Ln NE patio apt	59	1	0.0	74.4	66	74.4	15	Snd Lvl	62.9	11.5	8	3.5
4625 Country Ln SE patio apt	60	1	0.0	73.1	66	73.1	15	Snd Lvl	62.3	10.8	8	2.8
10844 Pear Blossom N patio apt	61	1	0.0	71.6	66	71.6	15	Snd Lvl	64.6	7.0	8	-1.0
10844 Pear Blossom SE patio apt	63	1	0.0	56.0	66	56.0	15	----	52.3	3.7	8	-4.3
10882 Pear Blossom SW patio apt	65	1	0.0	62.6	66	62.6	15	----	61.9	0.7	8	-7.3
10878 Pear Blossom NW patio apt	66	1	0.0	62.6	66	62.6	15	----	61.9	0.7	8	-7.3
10882 Pear Blossom SE patio apt	67	1	0.0	62.8	66	62.8	15	----	54.0	8.8	8	0.8
10878 Pear Blossom NE patio apt	68	1	0.0	61.7	66	61.7	15	----	54.2	7.5	8	-0.5
4649 Country Ln SE patio apt	69	1	0.0	66.3	66	66.3	15	Snd Lvl	56.0	10.3	8	2.3
4641 Country Ln E patio apt	70	1	0.0	63.3	66	63.3	15	----	57.2	6.1	8	-1.9
4641 Country Ln W patio apt	71	1	0.0	60.7	66	60.7	15	----	56.6	4.1	8	-3.9
10878 Pear Blossom SE patio apt	72	1	0.0	61.7	66	61.7	15	----	61.1	0.6	8	-7.4
10878 Pear Blossom SW patio apt	73	1	0.0	61.9	66	61.9	15	----	61.4	0.5	8	-7.5

4645 Country Ln SW patio apt	74	1	0.0	65.5	66	65.5	15	----	56.0	9.5	8	1.5
4625 Country Ln NW patio apt	75	1	0.0	60.0	66	60.0	15	----	56.1	3.9	8	-4.1
4629 Country Ln SW patio apt	76	1	0.0	60.4	66	60.4	15	----	56.3	4.1	8	-3.9
4629 Country Ln NW patio apt	77	1	0.0	60.7	66	60.7	15	----	56.4	4.3	8	-3.7
4633 Country Ln SW patio apt	78	1	0.0	60.8	66	60.8	15	----	56.4	4.4	8	-3.6
4637 Country Ln NE patio apt	79	1	0.0	64.1	66	64.1	15	----	57.6	6.5	8	-1.5
4637 Country Ln NW patio apt	80	1	0.0	64.4	66	64.4	15	----	57.6	6.8	8	-1.2
4637 Country Ln SE patio apt	81	1	0.0	60.8	66	60.8	15	----	56.5	4.3	8	-3.7
4637 Country Ln SW patio apt	82	1	0.0	61.1	66	61.1	15	----	56.7	4.4	8	-3.6
10874 Pear Blossom SW patio apt	85	1	0.0	61.6	66	61.6	15	----	61.4	0.2	8	-7.8
10866 Pear Blossom NW patio apt	86	1	0.0	61.9	66	61.9	15	----	57.3	4.6	8	-3.4
10866 Pear Blossom NE patio apt	87	1	0.0	62.8	66	62.8	15	----	57.5	5.3	8	-2.7
10866 Pear Blossom SE patio apt	88	1	0.0	54.4	66	54.4	15	----	50.9	3.5	8	-4.5
10870 Pear Blossom NE patio apt	89	1	0.0	52.6	66	52.6	15	----	50.3	2.3	8	-5.7
10874 Pear Blossom NE patio apt	90	1	0.0	60.2	66	60.2	15	----	59.0	1.2	8	-6.8
10874 Pear Blossom SE patio apt	91	1	0.0	54.1	66	54.1	15	----	51.4	2.7	8	-5.3
10858 Pear Blossom NW patio apt	92	1	0.0	58.9	66	58.9	15	----	52.6	6.3	8	-1.7
10858 Pear Blossom SW patio apt	93	1	0.0	55.8	66	55.8	15	----	51.4	4.4	8	-3.6
10862 Pear Blossom W patio apt	94	1	0.0	54.0	66	54.0	15	----	50.8	3.2	8	-4.8
10862 Pear Blossom E patio apt	95	1	0.0	58.5	66	58.5	15	----	55.0	3.5	8	-4.5
10858 Pear Blossom SE patio apt	96	1	0.0	60.6	66	60.6	15	----	54.8	5.8	8	-2.2
10858 Pear Blossom NE patio apt	97	1	0.0	62.3	66	62.3	15	----	57.3	5.0	8	-3.0
10852 Pear Blossom NE patio apt	98	1	0.0	62.9	66	62.9	15	----	60.8	2.1	8	-5.9
10848 Pear Blossom NW patio apt	99	1	0.0	62.7	66	62.7	15	----	60.7	2.0	8	-6.0
10844 Pear Blossom SW patio apt	100	1	0.0	58.1	66	58.1	15	----	56.1	2.0	8	-6.0
10848 Pear Blossom SE patio apt	101	1	0.0	57.5	66	57.5	15	----	56.5	1.0	8	-7.0
10848 Pear Blossom SW patio apt	102	1	0.0	57.4	66	57.4	15	----	56.5	0.9	8	-7.1
10852 Pear Blossom SE patio apt	103	1	0.0	56.7	66	56.7	15	----	56.1	0.6	8	-7.4
10852 Pear Blossom SW patio apt	104	1	0.0	56.5	66	56.5	15	----	55.8	0.7	8	-7.3
10885 Pear Blossom NE patio apt	105	1	0.0	58.8	66	58.8	15	----	58.1	0.7	8	-7.3
10885 Pear Blossom NW patio apt	106	1	0.0	58.6	66	58.6	15	----	57.5	1.1	8	-6.9
10885 Pear Blossom SE patio apt	107	1	0.0	57.4	66	57.4	15	----	57.5	-0.1	8	-8.1
10885 Pear Blossom SW patio apt	108	1	0.0	55.9	66	55.9	15	----	56.0	-0.1	8	-8.1
10877 Pear Tree Ln	109	1	0.0	60.8	66	60.8	15	----	59.7	1.1	8	-6.9
10885 Pear Tree Ln	110	1	0.0	59.6	66	59.6	15	----	59.5	0.1	8	-7.9
10893 Pear Tree Ln	111	1	0.0	60.2	66	60.2	15	----	60.0	0.2	8	-7.8
10848 Pear Tree Ln	112	1	0.0	67.8	66	67.8	15	Snd Lvl	67.6	0.2	8	-7.8
10840 Pear Tree Ln	113	1	0.0	68.5	66	68.5	15	Snd Lvl	68.3	0.2	8	-7.8
10832 Pear Tree Ln	114	1	0.0	69.2	66	69.2	15	Snd Lvl	68.9	0.3	8	-7.7
10869 Pear Tree Ln	116	1	0.0	63.0	66	63.0	15	----	60.7	2.3	8	-5.7
10870 Pear Blossom NW patio apt	118	1	0.0	59.3	66	59.3	15	----	58.6	0.7	8	-7.3

10870 Pear Blossom SW patio apt	119	1	0.0	54.1	66	54.1	15	----	51.5	2.6	8	-5.4
10870 Pear Blossom SE patio apt	120	1	0.0	54.7	66	54.7	15	----	54.3	0.4	8	-7.6
4610 Country Ln patio apt	121	1	0.0	72.0	66	72.0	15	Snd Lvl	70.3	1.7	8	-6.3
4608 Country Ln patio apt	122	1	0.0	71.5	66	71.5	15	Snd Lvl	70.0	1.5	8	-6.5
4606 Country Ln patio apt	123	1	0.0	69.2	66	69.2	15	Snd Lvl	68.5	0.7	8	-7.3
4604 Country Ln patio apt	124	1	0.0	68.7	66	68.7	15	Snd Lvl	68.1	0.6	8	-7.4
4602 Country Ln patio apt	125	1	0.0	68.1	66	68.1	15	Snd Lvl	67.7	0.4	8	-7.6
4600 Country Ln patio apt	126	1	0.0	68.1	66	68.1	15	Snd Lvl	67.7	0.4	8	-7.6
10885 Pear Blossom NE balc apt	128	1	0.0	63.0	66	63.0	15	----	62.4	0.6	8	-7.4
10885 Pear Blossom NW balc apt	129	1	0.0	62.6	66	62.6	15	----	61.4	1.2	8	-6.8
10885 Pear Blossom SE balc apt	130	1	0.0	62.1	66	62.1	15	----	62.1	0.0	8	-8.0
10885 Pear Blossom SW balc apt	131	1	0.0	58.6	66	58.6	15	----	58.5	0.1	8	-7.9
10844 Pear Blossom N balc apt	133	1	0.0	74.1	66	74.1	15	Snd Lvl	68.6	5.5	8	-2.5
10844 Pear Blossom SE balc apt	134	1	0.0	61.4	66	61.4	15	----	58.0	3.4	8	-4.6
10844 Pear Blossom SW balc apt	136	1	0.0	61.1	66	61.1	15	----	59.7	1.4	8	-6.6
10848 Pear Blossom SE balc apt	137	1	0.0	60.3	66	60.3	15	----	59.8	0.5	8	-7.5
10848 Pear Blossom NW balc apt	139	1	0.0	66.1	66	66.1	15	Snd Lvl	64.7	1.4	8	-6.6
10848 Pear Blossom SW balc apt	140	1	0.0	60.2	66	60.2	15	----	59.9	0.3	8	-7.7
10852 Pear Blossom NE balc apt	142	1	0.0	66.1	66	66.1	15	Snd Lvl	64.5	1.6	8	-6.4
10852 Pear Blossom SE balc apt	143	1	0.0	59.4	66	59.4	15	----	59.3	0.1	8	-7.9
10852 Pear Blossom SW balc apt	144	1	0.0	59.0	66	59.0	15	----	59.0	0.0	8	-8.0
10852 Pear Blossom NW patio apt	146	1	0.0	61.9	66	61.9	15	----	56.9	5.0	8	-3.0
10852 Pear Blossom NW balc apt	148	1	0.0	64.4	66	64.4	15	----	60.1	4.3	8	-3.7
10858 Pear Blossom NW balc apt	149	1	0.0	60.2	66	60.2	15	----	56.5	3.7	8	-4.3
10858 Pear Blossom SW balc apt	150	1	0.0	58.7	66	58.7	15	----	55.9	2.8	8	-5.2
10862 Pear Blossom W balc apt	151	1	0.0	58.0	66	58.0	15	----	55.0	3.0	8	-5.0
10862 Pear Blossom E balc apt	152	1	0.0	61.8	66	61.8	15	----	58.5	3.3	8	-4.7
10858 Pear Blossom SE balc apt	153	1	0.0	63.4	66	63.4	15	----	58.8	4.6	8	-3.4
10858 Pear Blossom NE balc apt	154	1	0.0	65.0	66	65.0	15	----	60.4	4.6	8	-3.4
10866 Pear Blossom NW balc apt	155	1	0.0	64.5	66	64.5	15	----	60.1	4.4	8	-3.6
10866 Pear Blossom NE balc apt	156	1	0.0	64.9	66	64.9	15	----	60.3	4.6	8	-3.4
10866 Pear Blossom SE balc apt	157	1	0.0	58.3	66	58.3	15	----	55.8	2.5	8	-5.5
10870 Pear Blossom NE balc apt	158	1	0.0	56.9	66	56.9	15	----	55.8	1.1	8	-6.9
10870 Pear Blossom NW balc apt	159	1	0.0	63.1	66	63.1	15	----	62.0	1.1	8	-6.9
10870 Pear Blossom SW balc apt	160	1	0.0	58.2	66	58.2	15	----	55.3	2.9	8	-5.1
10870 Pear Blossom SE balc apt	161	1	0.0	58.1	66	58.1	15	----	58.1	0.0	8	-8.0
10874 Pear Blossom SW balc apt	163	1	0.0	64.2	66	64.2	15	----	63.6	0.6	8	-7.4
10874 Pear Blossom NE balc apt	164	1	0.0	64.0	66	64.0	15	----	62.5	1.5	8	-6.5
10874 Pear Blossom SE balc apt	165	1	0.0	58.4	66	58.4	15	----	55.8	2.6	8	-5.4
4637 Country Ln NE balc apt	167	1	0.0	66.0	66	66.0	15	Snd Lvl	60.3	5.7	8	-2.3
4637 Country Ln NW balc apt	168	1	0.0	66.3	66	66.3	15	Snd Lvl	60.2	6.1	8	-1.9

4637 Country Ln SE balc apt	169	1	0.0	62.5	66	62.5	15	----	58.8	3.7	8	-4.3
4637 Country Ln SW balc apt	170	1	0.0	63.0	66	63.0	15	----	59.0	4.0	8	-4.0
10878 Pear Blossom NW balc apt	172	1	0.0	66.7	66	66.7	15	Snd Lvl	64.7	2.0	8	-6.0
10878 Pear Blossom NE balc apt	173	1	0.0	65.0	66	65.0	15	----	58.4	6.6	8	-1.4
10878 Pear Blossom SE balc apt	174	1	0.0	64.6	66	64.6	15	----	63.7	0.9	8	-7.1
10878 Pear Blossom SW balc apt	175	1	0.0	65.1	66	65.1	15	----	63.9	1.2	8	-6.8
10882 Pear Blossom NW balc apt	177	1	0.0	74.7	66	74.7	15	Snd Lvl	67.9	6.8	8	-1.2
10882 Pear Blossom NE balc apt	178	1	0.0	74.9	66	74.9	15	Snd Lvl	68.1	6.8	8	-1.2
10882 Pear Blossom SW balc apt	179	1	0.0	66.9	66	66.9	15	Snd Lvl	64.8	2.1	8	-5.9
10882 Pear Blossom SE balc apt	180	1	0.0	66.0	66	66.0	15	Snd Lvl	58.9	7.1	8	-0.9
4649 Country Ln NW balc apt	182	1	0.0	75.6	66	75.6	15	Snd Lvl	68.4	7.2	8	-0.8
4649 Country Ln NE balc apt	183	1	0.0	76.1	66	76.1	15	Snd Lvl	68.7	7.4	8	-0.6
4649 Country Ln SE balc apt	184	1	0.0	68.0	66	68.0	15	Snd Lvl	60.3	7.7	8	-0.3
4641 Country Ln E balc apt	185	1	0.0	65.3	66	65.3	15	----	60.2	5.1	8	-2.9
4641 Country Ln W balc apt	186	1	0.0	64.3	66	64.3	15	----	59.7	4.6	8	-3.4
4645 Country Ln SE patio apt	188	1	0.0	64.3	66	64.3	15	----	57.2	7.1	8	-0.9
4645 Country Ln SE balc apt	189	1	0.0	66.7	66	66.7	15	Snd Lvl	60.2	6.5	8	-1.5
4645 Country Ln NW balc apt	190	1	0.0	77.0	66	77.0	15	Snd Lvl	68.8	8.2	8	0.2
4645 Country Ln NE balc apt	191	1	0.0	77.2	66	77.2	15	Snd Lvl	68.6	8.6	8	0.6
4645 Country Ln SW balc apt	192	1	0.0	67.1	66	67.1	15	Snd Lvl	59.6	7.5	8	-0.5
4633 Country Ln NE balc apt	194	1	0.0	77.9	66	77.9	15	Snd Lvl	67.1	10.8	8	2.8
4633 Country Ln SE balc apt	195	1	0.0	77.5	66	77.5	15	Snd Lvl	66.5	11.0	8	3.0
4633 Country Ln SW balc apt	196	1	0.0	62.8	66	62.8	15	----	58.9	3.9	8	-4.1
4629 Country Ln NE balc apt	198	1	0.0	77.1	66	77.1	15	Snd Lvl	65.8	11.3	8	3.3
4629 Country Ln SE balc apt	199	1	0.0	76.8	66	76.8	15	Snd Lvl	65.6	11.2	8	3.2
4629 Country Ln SW balc apt	200	1	0.0	62.3	66	62.3	15	----	58.6	3.7	8	-4.3
4629 Country Ln NW balc apt	201	1	0.0	62.9	66	62.9	15	----	59.2	3.7	8	-4.3
4625 Country Ln NE balc apt	203	1	0.0	76.3	66	76.3	15	Snd Lvl	67.3	9.0	8	1.0
4625 Country Ln SE balc apt	204	1	0.0	75.2	66	75.2	15	Snd Lvl	67.8	7.4	8	-0.6
4625 Country Ln NW balc apt	205	1	0.0	61.6	66	61.6	15	----	58.0	3.6	8	-4.4
10856 Pear Tree Ln	214	1	0.0	66.2	66	66.2	15	Snd Lvl	65.9	0.3	8	-7.7
10864 Pear Tree Ln	215	1	0.0	63.2	66	63.2	15	----	62.8	0.4	8	-7.6
10872 Pear Tree Ln	216	1	0.0	61.8	66	61.8	15	----	61.5	0.3	8	-7.7
10880 Pear Tree Ln	217	1	0.0	61.5	66	61.5	15	----	61.2	0.3	8	-7.7
4528 Country Ln	221	1	0.0	64.4	66	64.4	15	----	64.2	0.2	8	-7.8
4522/4524 Country Ln	222	2	0.0	62.5	66	62.5	15	----	62.3	0.2	8	-7.8
4520 Country Ln	223	1	0.0	62.2	66	62.2	15	----	62.0	0.2	8	-7.8
10057/10059 Douglas Ct	224	2	0.0	61.9	66	61.9	15	----	61.7	0.2	8	-7.8
10053/10055 Douglas Ct	225	2	0.0	62.9	66	62.9	15	----	62.7	0.2	8	-7.8
10049/10051 Douglas Ct	226	2	0.0	63.6	66	63.6	15	----	63.3	0.3	8	-7.7
10045/10047 Douglas Ct	227	2	0.0	63.9	66	63.9	15	----	63.6	0.3	8	-7.7

10043 Douglas Ct	228	1	0.0	63.2	66	63.2	15	----	62.9	0.3	8	-7.7
10037 Douglas Ct	229	1	0.0	62.8	66	62.8	15	----	62.5	0.3	8	-7.7
10033 Douglas Ct	230	1	0.0	64.7	66	64.7	15	----	64.4	0.3	8	-7.7
10029 Douglas Ct	231	1	0.0	66.0	66	66.0	15	Snd Lvl	65.7	0.3	8	-7.7
10027 Douglas Ct	232	1	0.0	66.3	66	66.3	15	Snd Lvl	66.0	0.3	8	-7.7

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	157	-0.1	3.7	12.2
All Impacted	49	0.2	6.3	12.2
All that meet NR Goal	20	8.2	10.4	12.2

CMT, Inc.	30 April 2024
JKMiller	TNM 2.5

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT:	Lambert CTP
RUN:	Apts Barrier - at L/A ROW
BARRIER DESIGN:	Apts LA/ROW Final

Barriers

Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Apts Barrier at L/A ROW	W	18.00	19.06	20.00	1057	20146				0
									Total Cost:	0

CMT, Inc. 30 April 2024
JKMiller TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: Lambert CTP
RUN: Apts Barrier - at L/A ROW
BARRIER DESIGN: Apts LA/ROW Final

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First	Average	Second		Area	On	Important	Volume	
				Point		Point			Struc?	Reflections?		
				ft	ft	ft	ft	sq ft			cu yd	$
Apts Barrier at L/A ROW	W	point143	143	0.00	0.00	0.00	0	0				0
		point144	144	0.00	0.00	0.00	0	0				0
		point145	145	0.00	0.00	0.00	0	0				0
		point146	146	18.00	18.00	18.00	50	900				0
		point147	147	18.00	18.00	18.00	50	901				0
		point148	148	18.00	18.00	18.00	50	899				0
		point149	149	18.00	18.00	18.00	50	900				0
		point150	150	18.00	18.00	18.00	50	900				0
		point151	151	18.00	18.00	18.00	50	900				0
		point152	152	19.00	19.00	19.00	50	950				0
		point153	153	19.00	19.00	19.00	50	950				0
		point154	154	19.00	19.00	19.00	50	949				0
		point155	155	19.00	19.00	19.00	50	951				0
		point156	156	19.00	19.00	19.00	50	950				0
		point157	157	19.00	19.00	19.00	45	860				0
		point158	158	20.00	20.00	20.00	58	1158				0
		point159	159	20.00	20.00	20.00	50	999				0
		point160	160	20.00	20.00	20.00	50	1001				0
		point161	161	20.00	20.00	20.00	50	999				0
		point162	162	20.00	20.00	20.00	54	1080				0
		point163	163	20.00	20.00	20.00	50	1000				0
		point164	164	20.00	20.00	20.00	50	1001				0
		point165	165	19.00	19.00	19.00	50	950				0
		point166	166	19.00	19.00	19.00	50	950				0

Traffic Safety and Operations Report

Consolidated Terminal Program

DRAFT

Traffic Safety & Operations Report

2/23/2024

Prepared for:

Missouri Department of Transportation

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Jefferson City, MO 65102

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1 Introduction

1.1 Project Background

VISSIM modeling was started in 2020 as part of the St. Louis Lambert International (STL) Airport Layout Plan Update (ALPU), which later became the STL Master Plan. During the STL Master Plan, the intent of the modeling was to determine and analyze existing and future conditions of the airport's roadways that serve the airport, including Terminal 1 and Terminal 2. During the initial effort, only the airport roadways were modeled, and I-70 was excluded, as the analysis focused on the curbside and areas immediately surrounding the airport terminals. More recently, new airport roadway alternatives were studied that would serve a consolidated terminal at the site of the current Terminal 1, known as the Consolidated Terminal Program (CTP). These new roadway alternatives studied how terminal loop roads could connect to I-70 to improve and lengthen the distance from the interstate to the curbside. To better understand how these alternatives work in conjunction with the existing interchanges on I-70, Existing models were created and calibrated to use as a basis in comparison to future construction year (2032) and design year (2037) models based on Build and No Build scenarios. During the master plan process, it was determined that the airport peak hour and roadways peak hour aligned for the AM and PM peak periods. Airport peak hours are controlled by airline flight schedules and can change over time. Typically, airport peak hours do not align with roadway peak hours. In order to provide a conservative representation of conditions, the peak hours are assumed to be aligned for purposes of this study. Therefore, for the conceptual phase of the project, there are two modeled periods: AM Peak conditions (8:00am-9:00am) and PM peak conditions (4:30pm-5:30pm). The intent of this report is to study the safety and operational impacts of alternatives for connecting I-70 to the CTP for airport traffic.

1.2 Study Area

As shown in **Figure 1** and **Figure 2**, the study area includes I-70 from MO 180 to the west side of the I-170 interchange. The conceptual roadway conditions are expected to impact the existing interchanges at Cypress Road and Airflight Drive. It is common in traffic modeling to include adjacent interchanges to control traffic volumes entering the network. This study area was further expanded to the east to include the westside of the I-170 interchange per MoDOT's request to study the interaction of traffic to and from Lambert International Boulevard (LIB). All intersections studied for this analysis can be seen below in **Figure 3** and **Figure 4**. All the intersections were either stop-controlled or signalized for this study. Similar to the operational summary results presented in later sections, intersections that are stop-controlled can be seen with an asterisk at the end of their names in **Figure 3** and **Figure 4**. All other intersections are signalized.

Figure 1 – West Side of Study Area (aerial image source: Google Earth)

Figure 2 – East Side of Study Area (aerial image source: Google Earth)

Figure 3 – Intersections on West Side of Study Area (aerial image source: Microsoft Corporation)

Figure 4 – Intersections on East Side of Study Area (aerial image source: Microsoft Corporation)

1.3 Problem Definition

A consolidated terminal provides an opportunity for improvement at the airport and its connecting roadways. The existing service roadway configurations create less than desirable operational and safety conditions around the existing terminals. Currently, with two terminals drivers are required to make a number of decisions from where they exit I-70 to where they reach the terminal areas. Furthermore, each terminal requires decisions for either departures, arrivals or parking. The close proximity to I-70 requires short entrance roadways to the terminals that provide little time for this decision making for drivers entering the terminal parking and curbside areas. Currently, the terminals are as close as 400 feet from I-70 with roadways leading directly into the terminal curbsides and parking garages. These short roadway segments require drivers, many that are new or unfamiliar with the area, to navigate through many directional signs in a short time resulting in many last second and unsafe lane change maneuvers. The CTP provides an opportunity to improve safety and mobility around the airport by providing one main path into and out of the terminal curbside and parking that is rerouted to provide approximately one mile from I-70 to the terminal.

1.4 Design Alternatives

The CTP proposes a new consolidated terminal to be constructed in the location of the existing Terminal 1 location. The CTP also proposes a new parking garage and ground transportation center in the location of the existing Terminal 1 garage. During the conceptual phase, numerous alternatives were studied to accommodate the demand for airport traffic to and from a single terminal utilizing existing interchanges and reconfigured interchanges. For this analysis, two variations were considered for an alternative that re-routes traffic to the existing Cypress Road interchange, creating a new, signed airport exit on I-70. By using the Cypress Road interchange as the entryway into the CTP it allows for an optimal one mile spacing between interstate and terminal. This was one of the primary objectives of the consolidated terminal as it maximizes operations going to and from the new consolidated terminal with less driver confusion.

As mentioned, the two studied alternatives are variations of the same alternative with Alternative 1 utilizing the existing lane configurations within the study area while Alternative 2 provides improvements on I-70 and at the Cypress Road interchange where impacts are anticipated. Both alternatives include the permanent closure of the I-70 WB entrance ramp from LIB between Cypress Road and Airflight Drive. Both alternatives also assume the same CTP curbside and parking garage. Although, it should be noted that the curbside and parking garage details have not been finalized at this time but were considered inconsequential for purposes of this analysis. The primary impact of the proposed alternatives is the redistribution of traffic from the Airflight Drive interchange to the Cypress Road interchange due to the relocation of the terminal access road and disconnection of Airflight Drive into the terminal area. Alternative 1 is studied in order to measure the impacts of the redistribution of traffic without improvements to the roadway network.

Alternative 2 includes a new continuous auxiliary lane in the westbound direction of I-70 from the Airflight Drive entrance ramp to the Cypress Road exit ramp with removal of the existing westbound I-70 on ramp from LIB. Additional changes are proposed at the MO 115 & I-70 WB

intersection to the west of Cypress Road with the addition of a second westbound left turn lane for traffic returning to the interstate. Alternative 2 is studied in order to measure the impacts of the redistribution of traffic with improvements at key locations where impacts are expected. A comparison of Alternative 1 versus Alternative 2 provides an understanding of warranted improvements that mitigate the impacts of the redistribution of traffic for the CTP. Alternative 2 roadway improvements can be seen in the Alternative 2 models and detailed drawings included in **Appendix F**.

2 Existing and Future Year No Build Traffic Operations and Safety Analysis

2.1 Background (Future No Build) Forecasting

There were two separate forecasts done for the future construction (2032) and design year (2037) mentioned in Section 1.1. The first forecast was provided from the STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments Technical Memo (dated September 30, 2022) and is attached in **Appendix D**. This forecast concerns origin and destination trips which only include airline passenger traffic that is from or destined for St. Louis and does not include passenger traffic that connects to other flights. As seen in **Table 1** below, a growth rate of 1.2% was determined from the STL Master Plan and this rate is applied to all movements in and out of the airport as well as movements in and out of airport facilities. The movements in and out of the airport terminal area consists of passenger pickup/dropoff, parking, passenger shuttles, employees and other terminal related traffic. The second forecast was derived from the Missouri Department of Transportation's Traffic Volume Maps and concerns all movements which do not directly serve airport facilities. Historical volumes on I-70 in and near the study area were reviewed and showed no growth over the previous 10 years as seen in **Figure 5**. Regional traffic model data was also obtained from East-West Gateway which forecasts a 0.25% annual growth rate for I-70 within the study area for 2023-2030 and a 1.5% annual growth rate after 2030 until 2045. It is our understanding that MoDOT is beginning a more detailed forecasting analysis that will be completed in early 2024. In order to balance the historic growth and regional future forecasts, it was decided to use the agreed upon 0.25% annual growth rate to forecast future volumes for non-airport movements and 1.2% for all airport related movements. **Table 1** below indicates the 10-year and 15-year compounded growth factors used for future volume projections.

Table 1: FYNB Forecast Volume Projections

Roadway	***Future Year Growth Rate***	***Future Year Growth Factors***	
		10-Year Compounded Growth	***15-Year Compounded Growth***
All Airflight Drive & Pear Tree Lane Movements, All Movements In And Out of Airport Facilities	1.2%	1.12	1.18
All Other Movements in the Study Area	0.25%	1.025	1.0375

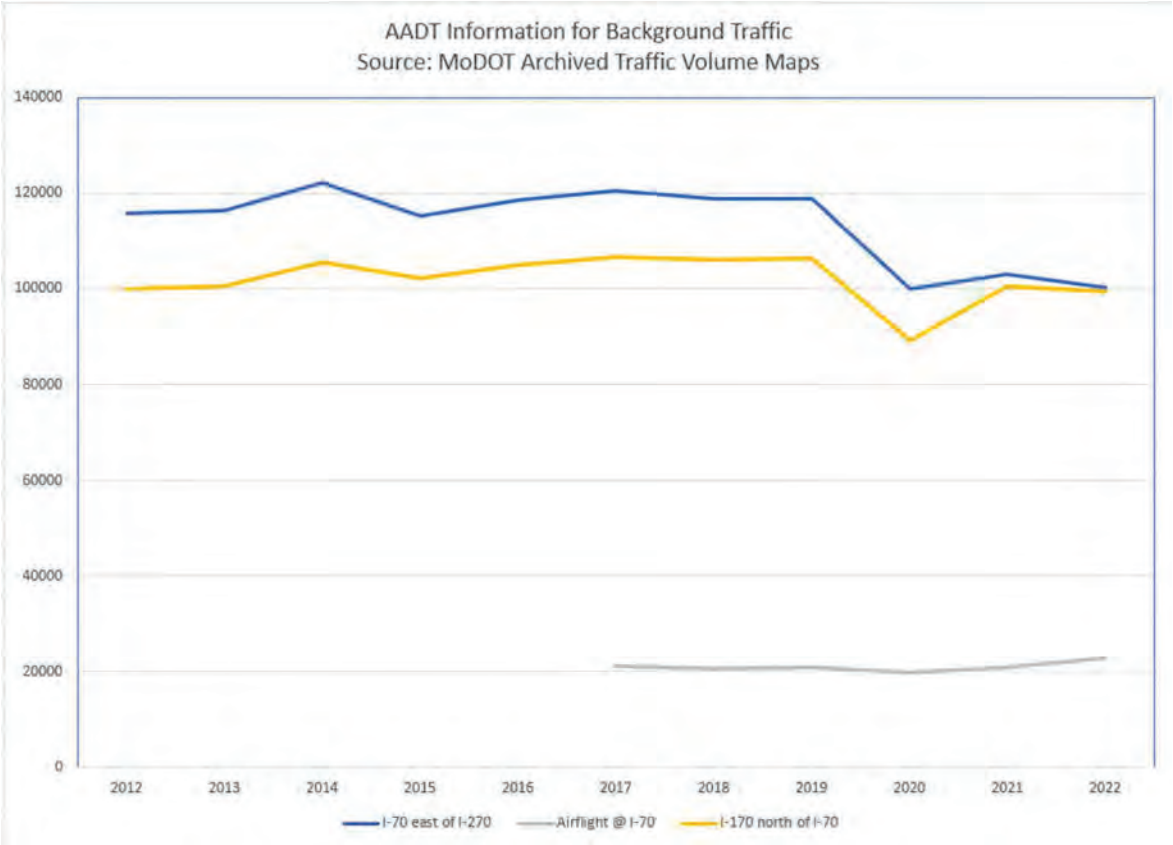

Figure 5 – I-70 Historic Growth (source: Missouri Department of Transportation's Traffic Volume Map)

2.2 Traffic Operations

Existing and future No Build conditions were modeled using VISSIM microsimulation models. Both the Existing and No Build models were developed using the existing roadway configurations with airport traffic traveling to the existing two airport terminals. Additional details regarding development and calibration of the Existing and No Build models can be seen in the Calibration Report. Mainline speeds are typically above the 60-mph speed limit and are free flow throughout the study area in the Existing and No Build models. For a comparison of the RITIS speeds to the calibrated Existing model and the methodology for applying speed distributions, refer to the Calibration Report in **Appendix B**. Comparison of the travel times from No Build and Existing models can be seen in **Table 2**, **Table 3, Table 4,** and **Table 5**. The vehicle speeds on mainline for the No Build models can be seen compared to the Existing in **Table 6** through **Table 13**. Minor fluctuations amongst the 5 minute intervals are seen due to the randomness of events which can occur resulting from vehicle decisions during free flow conditions. As seen in **Appendix E**, all mainline segments maintain a level of service C or better in the Existing and No Build models. A comparison for each of the models for all the recorded measures of effectiveness can be seen in **Appendix E**.

There were minimal changes observed when comparing the Existing (2022) and No Build construction year (2032) and design year (2037) models. All signalized intersections operate as a level of service C or better in both the AM and PM peak periods for the Existing and No Build scenarios. Although a few individual movements show an increase in delay and some changes in level of service, total intersection level of service does not change from model to model. In Existing and No Build conditions, intersections which serve the terminals tend to have at least one approach with a level of service D. Similarly, intersections around Airflight Drive have at least one approach which is a level of service D in the Existing and No Build scenarios. Existing and No Build intersection operation level of service and delay can be seen in **Table 14**. More detailed analysis of intersection operations are provided in **Appendix E**.

Table 2: 2032 AM No Build Vehicle Travel Times

AM Travel Time (I-70) - All Vehicles							
Segment ID	**Corridor**	**Section**	**EXISTING VISSIM Travel Time (min)**	**Travel Time Percent Difference***	**Travel Time Difference (min)**	**2032 No Build VISSIM Travel Time (min)**	**VISSIM Distance**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.0%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	-0.2%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	-0.2%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	-0.1%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	-0.1%	0.0	0.8	0.8
119+04300		US 67 - MO 180	0.6	-0.1%	0.0	0.6	0.6
Total			**4.0**	**-0.1%**	**0.0**	**4.0**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.1	-0.2%	0.0	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	0.0%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	-0.2%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.1	-0.2%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	-0.1%	0.0	0.9	0.9
Total			**5.7**	**-0.2%**	**0.0**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases
[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 3: 2032 PM No Build Vehicle Travel Times

PM Travel Time (I-70) - All Vehicles							
Segment ID	**Corridor**	**Section**	**EXISTING VISSIM Travel Time (min)**	**Travel Time Percent Difference***	**Travel Time Difference (min)**	**2032 No Build VISSIM Travel Time (min)**	**VISSIM Distance**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	-0.2%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	-0.2%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	-0.1%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.2%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	-0.2%	0.0	0.8	0.8
119+04300		US 67 - MO 180	0.6	-0.1%	0.0	0.6	0.6
Total			**4.1**	**-0.1%**	**0.0**	**4.1**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.1	-0.1%	0.0	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	0.1%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	-0.2%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.1	0.0%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	-0.4%	0.0	0.9	0.9
Total			**5.7**	**-0.2%**	**0.0**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases
[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 4: 2037 AM No Build Vehicle Travel Times

AM Travel Time (I-70) - All Vehicles							
Segment ID	**Corridor**	**Section**	**EXISTING VISSIM Travel Time (min)**	**Travel Time Percent Difference***	**Travel Time Difference (min)**	**2037 No Build VISSIM Travel Time (min)**	**VISSIM Distance**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	-0.1%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	-0.2%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	-0.3%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.0%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	-0.1%	0.0	0.8	0.8
119+04300		US 67 - MO 180	0.6	-0.1%	0.0	0.6	0.6
Total			**4.0**	**-0.1%**	**0.0**	**4.0**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.1	-0.1%	0.0	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	-0.1%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	-0.3%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.1	-0.3%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	-0.3%	0.0	0.9	0.9
Total			**5.7**	**-0.2%**	**0.0**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases
[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 5: 2037 PM No Build Vehicle Travel Times

PM Travel Time (I-70) - All Vehicles							
Segment ID	**Corridor**	**Section**	**EXISTING VISSIM Travel Time (min)**	**Travel Time Percent Difference***	**Travel Time Difference (min)**	**2037 No Build VISSIM Travel Time (min)**	**VISSIM Distance**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	-0.6%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	-0.6%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	-0.4%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	-1.1%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	-0.3%	0.0	0.8	0.8
119+04300		US 67 - MO 180	0.6	-0.1%	0.0	0.6	0.6
Total			**4.1**	**-0.5%**	**0.0**	**4.1**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.1	-0.1%	0.0	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	0.0%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	-0.4%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.1	-0.3%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	-0.2%	0.0	0.9	0.9
Total			**5.7**	**-0.3%**	**0.0**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases
[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 6: 2032 AM Westbound No Build Mainline Speeds

Existing VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.4	63.3	63.2	63.1	63.4	63.4	63.4	63.3	63.5	63.5	63.4	63.3	63.3
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.8	62.9	62.9	62.9	62.8	62.9	62.7	63.0	62.9	62.7	62.7	62.8
119+04297		Airflight Dr - LIB	0.5	62.3	62.5	62.5	62.6	62.6	62.5	62.5	62.5	62.3	62.9	62.7	62.3	62.5
119+04298		LIB - Cyprus Rd	0.4	61.6	61.9	62.4	62.2	62.4	62.2	61.9	61.8	60.2	62.5	62.3	61.5	61.9
119+04299		Cyprus Rd - US 67	0.8	63.0	62.9	63.0	63.0	63.0	62.9	62.9	63.0	62.7	63.2	63.2	62.8	63.0
119+04300		US 67 - MO 180	0.6	63.0	62.9	63.2	63.0	63.2	63.0	63.0	63.1	62.9	63.3	63.2	63.0	63.1
2032 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.4	63.4	63.3	63.3	63.3	63.3	63.4	63.3	63.4	63.4	63.3	63.2	63.3
119+04296		STL Airport - Airflight Dr	1.1	62.5	62.7	62.7	62.6	62.8	62.7	62.8	62.5	62.8	62.7	62.6	62.6	62.7
119+04297		Airflight Dr - LIB	0.5	62.3	62.5	62.4	62.6	62.4	62.5	62.4	62.4	62.6	62.4	62.3	62.3	62.4
119+04298		LIB - Cyprus Rd	0.4	61.9	61.4	61.5	61.7	61.9	62.1	62.4	62.0	61.4	61.6	61.9	62.0	61.8
119+04299		Cyprus Rd - US 67	0.8	62.9	62.6	63.0	62.8	62.9	62.9	62.9	62.9	62.9	62.8	63.0	62.9	62.9
119+04300		US 67 - MO 180	0.6	63.1	63.0	63.1	62.7	63.0	63.1	63.0	63.0	63.0	63.2	63.1	63.1	63.0

Table 7: 2032 AM Eastbound No Build Mainline Speeds

Existing VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.3	62.5	62.4	62.5	62.4	62.4	62.1	62.4	62.5	62.6	62.0	62.4
119-04298		US 67 - Cypress Rd	0.5	61.9	61.5	61.9	61.8	61.9	61.8	61.7	61.9	61.9	62.1	62.2	61.5	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.3	61.9	61.8	62.3	62.4	62.1	61.8	61.9	61.6	62.5	62.4	62.2	62.1
119-04295		Airflight Dr - MO 115	1.2	61.9	61.8	61.9	61.9	61.7	61.9	61.7	61.6	61.8	61.9	61.8	62.0	61.8
119-04294		MO 115 - I170	0.9	62.9	63.0	63.2	63.0	62.9	62.8	62.9	63.0	62.8	62.8	63.0	63.2	63.0
2032 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.1	62.2	62.0	62.4	62.5	62.2	62.3	61.9	62.2	62.3	62.6	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.9	62.0	61.8	61.2	61.9	61.8	61.9	61.6	61.9	62.1	62.1	61.8	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.1	61.4	61.7	61.9	62.2	62.2	62.0	61.8	62.1	62.1	62.2	61.8	62.0
119-04295		Airflight Dr - MO 115	1.2	61.9	61.6	61.8	61.5	61.8	61.8	61.4	61.7	61.3	61.8	61.9	61.8	61.7
119-04294		MO 115 - I170	0.9	63.1	62.9	62.5	63.0	63.0	62.7	62.7	62.9	62.7	63.1	63.0	63.0	62.9

Table 8: 2032 PM Westbound No Build Mainline Speeds

Existing VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.2	63.3	63.4	62.7	62.5	62.8	63.3	63.3	63.5	63.0	62.7	62.6	63.0
119+04296		STL Airport - Airflight Dr	1.1	62.2	62.6	62.9	62.2	61.5	61.3	62.0	62.5	62.6	61.9	61.6	61.0	62.0
119+04297		Airflight Dr - LIB	0.5	61.9	62.4	62.4	62.1	61.4	60.8	61.3	61.9	62.5	61.9	61.0	60.8	61.7
119+04298		LIB - Cyprus Rd	0.4	61.3	61.9	61.8	61.1	60.4	58.0	59.3	61.2	61.9	61.5	59.9	56.3	60.4
119+04299		Cyprus Rd - US 67	0.8	62.0	62.7	62.6	62.4	61.7	61.4	62.0	62.5	62.7	62.6	61.7	61.5	62.2
119+04300		US 67 - MO 180	0.6	62.3	62.9	62.6	62.6	62.2	62.0	61.5	62.6	62.9	62.9	62.1	62.1	62.4
2032 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.3	63.4	62.9	61.8	62.7	62.8	63.3	63.3	62.9	62.2	62.8	62.9
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.6	62.7	61.9	61.1	61.2	61.7	62.4	62.5	62.1	61.3	61.4	61.9
119+04297		Airflight Dr - LIB	0.5	62.0	62.0	62.3	61.9	60.9	60.8	61.0	62.2	62.4	61.8	61.2	60.6	61.6
119+04298		LIB - Cyprus Rd	0.4	61.1	61.2	61.9	61.2	60.0	60.2	59.5	61.8	61.6	60.1	58.7	58.5	60.5
119+04299		Cyprus Rd - US 67	0.8	62.1	62.4	62.7	62.5	61.7	61.8	62.0	62.5	62.7	62.0	61.4	60.5	62.0
119+04300		US 67 - MO 180	0.6	62.5	62.6	62.8	62.6	62.2	62.0	62.1	62.7	62.7	62.7	62.0	61.5	62.4

Table 9: 2032 PM Eastbound No Build Mainline Speeds

Existing VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.6	62.7	62.5	61.9	62.0	62.2	62.4	62.7	62.7	62.1	61.4	62.0	62.3
119-04298		US 67 - Cypress Rd	0.5	62.0	62.0	62.0	61.6	61.6	61.6	61.9	62.2	62.2	60.3	61.1	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.5	62.5	62.5	62.2	61.7	61.6	62.0	62.5	62.6	62.4	61.5	61.2	62.1
119-04295		Airflight Dr - MO 115	1.2	62.0	62.0	61.4	61.4	61.1	61.2	61.6	62.1	62.2	61.8	61.5	61.4	61.6
119-04294		MO 115 - I170	0.9	63.0	62.9	62.9	62.7	62.5	62.5	62.5	63.2	63.1	63.0	62.7	62.6	62.8
2032 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.2	62.0	62.0	61.7	62.3	62.6	62.5	61.9	61.9	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	62.0	61.6	61.3	61.3	61.8	62.2	62.2	61.5	61.6	61.3	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.1	62.4	62.5	61.8	61.9	60.8	61.8	62.4	62.5	62.0	61.6	61.5	61.9
119-04295		Airflight Dr - MO 115	1.2	61.7	62.2	62.2	61.7	61.2	61.0	61.4	61.9	62.1	61.8	61.2	61.1	61.6
119-04294		MO 115 - I170	0.9	62.5	62.9	63.0	63.0	62.0	61.9	61.9	62.7	63.1	63.1	62.4	61.9	62.6

Table 10: 2037 AM Westbound No Build Mainline Speeds

Existing VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.4	63.3	63.2	63.1	63.4	63.4	63.4	63.3	63.5	63.5	63.4	63.3	63.3
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.8	62.9	62.9	62.9	62.8	62.9	62.7	63.0	62.9	62.7	62.7	62.8
119+04297		Airflight Dr - LIB	0.5	62.3	62.5	62.5	62.6	62.6	62.5	62.5	62.5	62.3	62.9	62.7	62.3	62.5
119+04298		LIB - Cyprus Rd	0.4	61.6	61.9	62.4	62.2	62.4	62.2	61.9	61.8	60.2	62.5	62.3	61.5	61.9
119+04299		Cyprus Rd - US 67	0.8	63.0	62.9	63.0	63.0	63.0	62.9	62.9	63.0	62.7	63.2	63.2	62.8	63.0
119+04300		US 67 - MO 180	0.6	63.0	62.9	63.2	63.0	63.2	63.0	63.0	63.1	62.9	63.3	63.2	63.0	63.1
2037 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.2	63.4	63.2	63.1	63.2	63.3	63.3	63.4	63.5	63.2	63.3	63.4	63.3
119+04296		STL Airport - Airflight Dr	1.1	62.6	62.7	62.7	62.8	62.6	62.7	62.5	62.7	62.9	62.7	62.8	62.6	62.7
119+04297		Airflight Dr - LIB	0.5	62.3	62.5	62.4	62.4	62.2	62.3	62.1	62.4	62.4	62.3	62.3	62.2	62.3
119+04298		LIB - Cyprus Rd	0.4	61.9	62.1	62.1	61.9	62.0	61.9	62.0	61.9	62.1	61.5	62.0	61.5	61.9
119+04299		Cyprus Rd - US 67	0.8	62.9	62.8	63.0	62.9	62.9	63.0	62.8	62.9	63.1	62.9	63.0	62.6	62.9
119+04300		US 67 - MO 180	0.6	63.0	63.0	63.1	63.1	63.0	63.2	62.9	63.1	63.1	62.9	63.1	63.0	63.0

Table 11: 2037 AM Eastbound No Build Mainline Speeds

Existing VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.3	62.5	62.4	62.5	62.4	62.4	62.1	62.4	62.5	62.6	62.0	62.4
119-04298		US 67 - Cypress Rd	0.5	61.9	61.5	61.9	61.8	61.9	61.8	61.7	61.9	61.9	62.1	62.2	61.5	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.3	61.9	61.8	62.3	62.4	62.1	61.8	61.9	61.6	62.5	62.4	62.2	62.1
119-04295		Airflight Dr - MO 115	1.2	61.9	61.8	61.9	61.9	61.7	61.9	61.7	61.6	61.8	61.9	61.8	62.0	61.8
119-04294		MO 115 - I170	0.9	62.9	63.0	63.2	63.0	62.9	62.8	62.9	63.0	62.8	62.8	63.0	63.2	63.0
2037 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.2	62.3	62.4	62.2	62.5	62.0	62.5	62.2	62.4	62.3	62.5	62.2	62.3
119-04298		US 67 - Cypress Rd	0.5	61.8	61.9	62.0	61.5	61.8	61.8	60.9	61.9	62.0	62.0	62.0	61.7	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.2	62.4	62.6	62.7	62.3	62.0	61.7	62.3	62.2	62.5	62.6	62.3	62.3
119-04295		Airflight Dr - MO 115	1.2	61.9	61.6	61.5	61.7	61.4	61.8	61.5	61.6	61.7	61.8	61.8	61.7	61.7
119-04294		MO 115 - I170	0.9	63.0	62.9	62.8	62.8	62.5	62.7	62.8	62.7	62.8	62.9	63.0	62.7	62.8

Table 12: 2037 PM Westbound No Build Mainline Speeds

Existing VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.2	63.3	63.4	62.7	62.5	62.8	63.3	63.3	63.5	63.0	62.7	62.6	63.0
119+04296		STL Airport - Airflight Dr	1.1	62.2	62.6	62.9	62.2	61.5	61.3	62.0	62.5	62.6	61.9	61.6	61.0	62.0
119+04297		Airflight Dr - LIB	0.5	61.9	62.4	62.4	62.1	61.4	60.8	61.3	61.9	62.5	61.9	61.0	60.8	61.7
119+04298		LIB - Cyprus Rd	0.4	61.3	61.9	61.8	61.1	60.4	58.0	59.3	61.2	61.9	61.5	59.9	56.3	60.4
119+04299		Cyprus Rd - US 67	0.8	62.0	62.7	62.6	62.4	61.7	61.4	62.0	62.5	62.7	62.6	61.7	61.5	62.2
119+04300		US 67 - MO 180	0.6	62.3	62.9	62.6	62.6	62.2	62.0	61.5	62.6	62.9	62.9	62.1	62.1	62.4
2037 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.4	63.3	61.4	62.4	62.2	62.8	63.2	63.3	62.2	62.7	61.9	62.7
119+04296		STL Airport - Airflight Dr	1.1	62.0	62.6	62.6	61.9	60.6	61.3	61.5	62.5	62.5	61.2	59.9	61.4	61.7
119+04297		Airflight Dr - LIB	0.5	61.7	62.0	62.3	61.8	60.9	61.0	60.9	62.2	62.4	61.8	59.9	60.9	61.5
119+04298		LIB - Cyprus Rd	0.4	61.2	61.4	61.1	58.8	57.9	58.2	56.2	61.1	62.1	60.6	59.5	58.7	59.7
119+04299		Cyprus Rd - US 67	0.8	62.1	62.6	62.8	62.1	61.6	61.4	60.4	62.5	63.0	62.4	61.5	61.4	62.0
119+04300		US 67 - MO 180	0.6	62.4	62.7	62.9	62.7	62.1	61.4	62.0	62.6	63.0	62.6	61.9	61.7	62.3

Table 13: 2037 PM Eastbound No Build Mainline Speeds

Existing VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.6	62.7	62.5	61.9	62.0	62.2	62.4	62.7	62.7	62.1	61.4	62.0	62.3
119-04298		US 67 - Cypress Rd	0.5	62.0	62.0	62.0	61.6	61.6	61.6	61.9	62.2	62.2	60.3	61.1	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.5	62.5	62.5	62.2	61.7	61.6	62.0	62.5	62.6	62.4	61.5	61.2	62.1
119-04295		Airflight Dr - MO 115	1.2	62.0	62.0	61.4	61.4	61.1	61.2	61.6	62.1	62.2	61.8	61.5	61.4	61.6
119-04294		MO 115 - I170	0.9	63.0	62.9	62.9	62.7	62.5	62.5	62.5	63.2	63.1	63.0	62.7	62.6	62.8
2037 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	62.0	62.0	62.0	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.5	61.6	61.2	61.8	62.1	62.2	61.5	61.4	61.2	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.4	62.9	63.0	62.3	61.7	61.8	62.3	62.7	62.8	62.3	61.3	61.2	62.2
119-04295		Airflight Dr - MO 115	1.2	61.8	62.1	62.0	61.5	60.5	60.8	61.6	61.9	62.1	61.6	61.1	60.9	61.5
119-04294		MO 115 - I170	0.9	62.8	63.2	63.2	62.9	62.7	61.9	62.6	63.0	62.8	62.8	62.1	62.2	62.7

Table 14: Existing and No Build Intersection Operation Results AM(PM)

Intersection	Existing				2032 No Build				2037 No Build			
	LOS		Delay		LOS		Delay		LOS		Delay	
Natural Bridge Rd @ Lot D*	A	(A)	5.5	(6.1)	A	(A)	5.4	(6.3)	A	(A)	5.5	(6.3)
I-70 WB @ Natural Bridge Rd	A	(A)	7.8	(8.9)	A	(A)	7.9	(9.4)	A	(A)	8.0	(9.4)
Cypress Rd & Natural Bridge Rd	A	(A)	4.8	(5.5)	A	(A)	4.6	(5.9)	A	(A)	4.7	(6.1)
I-70 EB @ Cypress Rd	A	(A)	6.2	(9.4)	A	(A)	6.5	(9.8)	A	(A)	6.9	(9.8)
LIB @ T1 Cell Phone Lot*	A	(A)	0.8	(0.9)	A	(A)	0.8	(0.9)	A	(A)	0.7	(0.8)
I-70 WB @ LIB (E of Cypress)	A	(A)	1.6	(3.1)	A	(A)	1.8	(3.1)	A	(A)	1.5	(3.1)
LIB @ Lot B*	A	(A)	1.1	(1.1)	A	(A)	1.1	(1.1)	A	(A)	1.2	(1.1)
LIB @ Lambert Field Dr	A	(A)	3.5	(4.6)	A	(A)	3.8	(5.4)	A	(A)	4.0	(5.4)
Air Cargo Rd @ Terminal 2 Entrance	A	(A)	6.4	(8.6)	A	(A)	6.7	(8.8)	A	(A)	6.9	(8.6)
LIB @ Terminal 1 Exit	C	(C)	29.5	(29.4)	C	(C)	29.8	(29.7)	C	(C)	30.1	(30.1)
I-70 WB @ Airlfight Dr	B	(B)	13.4	(17.4)	B	(B)	13.9	(17.9)	B	(B)	14.2	(18.2)
I-70 EB @ Pear Tree Ln	B	(B)	16.5	(19.2)	B	(B)	16.8	(19.3)	B	(B)	16.9	(19.8)
Airflight Dr @ Pear Tree Ln	B	(C)	16.8	(20.8)	B	(C)	17.8	(22.2)	B	(C)	18.2	(22.6)
Pear Tree Ln @ Edmunson Rd	A	(A)	9.8	(9.6)	B	(B)	10.2	(10.1)	B	(B)	10.3	(10.1)
LIB @ Terminal 2 Exit	B	(B)	18.0	(15.6)	B	(B)	18.2	(15.6)	B	(B)	18.5	(15.7)
LIB @ Terminal 2 Parking *	E	(E)	44.5	(37.5)	E	(E)	41.1	(36.3)	E	(E)	40.3	(36.6)
LIB @ Terminal 2 Entrance	C	(B)	20.8	(16.1)	C	(B)	23.9	(17.4)	C	(B)	23.9	(17.9)
Air Cargo Rd @ Lot E*	A	(A)	1.4	(1.7)	A	(A)	1.4	(1.6)	A	(A)	1.4	(1.8)
Air Cargo Rd @ James S McDonnell*	A	(A)	6.5	(6.4)	A	(A)	5.9	(5.9)	A	(A)	6.0	(6.2)
I-70 SOR @ Natural Bridge Rd	B	(B)	13.1	(15.4)	B	(B)	13.4	(15.7)	B	(B)	13.4	(15.8)

*Stop controlled intersection level of service follows methodlogies described in Chapter 20 & Chapter 21 of the 6th Edition HCM

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2.3 Safety

The Highway Safety Manual (HSM) was used to analyze road safety of Existing and No Build conditions along I-70. The HSM introduces a science-based technical approach to incorporating safety into traditional roadway planning and safety analyses. The first edition of the HSM (2010) provides information and tools to facilitate roadway planning, design, operations, and maintenance decisions based on precise consideration of their safety consequences. The primary focus of the HSM is the introduction and development of analytical tools for predicting the impact of transportation projects and program decisions on road safety.

There are spreadsheets available for the rural roadways and urban arterial segments and intersections, and for freeway segments and interchange elements. The Enhanced Interchange Safety Analysis Tool (ISATe) is for freeway segments and speed-change lanes (HSM Chapter 18), ramps, and ramp terminals (HSM Chapter 19). For this analysis, it was agreed upon that ramp terminals would not be included. ISATe was utilized to analyze the safety of the Existing, No Build, and Alternative conditions along Interstate 70 freeway segments and ramps. The empirical-bayes method was used to predict the number of annual crashes in each of the modeled conditions. The empirical-bayes method combines the estimate from a predictive model with observed crash data to obtain a more reliable estimate of the predicted crash frequency.

This section compares the existing safety conditions to the estimated safety conditions at the construction year (2032) and design year (2037) No Build models, which assume no changes to the existing roadway. A summary of the ISATe results are provided in **Table 15**. Overall, I-70 is estimated to experience an increase of 4.90 annual crashes in the next 15 years if no roadway changes are implemented. The complete output from the ISATe spreadsheets can be seen in **Appendix G**.

Table 15: No-Build ISATe Results Summary

Estimated Annual Crashes		***2022 Existing***	***2032 No Build***	***2037 No Build***	***15 year change***
Freeway	*PDO*	75.08	77.07	78.09	+3.01
	Fatal/Injury	25.73	26.54	26.61	+0.88
Ramps	*PDO*	9.42	9.86	10.09	+0.67
	Fatal/Injury	6.01	6.24	6.35	+0.34
	Fatal/Injury Total	**31.74**	**32.78**	**32.96**	**+1.22**
	Total	**116.24**	**119.70**	**121.13**	**+4.90**

3 Design Alternatives Traffic Operations and Safety Analysis

3.1 Future Build Forecasting

Growth seen in the future Build forecasting was done in the same manner as the future construction year (2032) and design year (2035) No Build models as described in section 2.1. The same number of vehicles entering into and exiting the model can be observed in the similarly modeled scenarios for Build and No Build (i.e.,2032 AM No Build and 2032 AM Build). The difference in volumes observed within the model for mainline and arterial segments are a result of the redistribution of traffic which a new consolidated terminal would generate and can be seen in **Appendix H**. MoDOT owned and operated ramp terminal intersections were studied and the results for these intersections can be seen in section 3.2.

Currently the Airflight Drive interchange is signed as the STL Airport exit (Exit 236) for traffic traveling on eastbound I-70. For traffic traveling on westbound I-70, there are two exits signed for the STL Airport. The first exit (Exit 238A) brings traffic onto LIB near Terminal 2 and the second exit (Exit 236) at Airflight Drive provides access to LIB near Terminal 1. With the proposed alternatives, the Cypress Rd Interchange (Exit 235C) would be signed for the STL Airport for eastbound and westbound I-70. Exit 236 would remain open however Airflight Drive would no longer have northbound access to the CTP. The redistribution of traffic follows these changes and shifts airport related traffic from Airflight Drive to Cypress Road. Exit 238A and the corresponding I-70 entrance ramp would also remain open but would not be signed for STL Airport traffic. However, it is assumed that local and experienced traffic would continue to utilize these ramps to access the CTP. For the redistribution it was conservatively assumed that 50% of AM peak hour traffic and 60% of PM peak hour traffic would remain on this route while the remainder would be shifted to Cypress Road.

In addition to the redistribution of existing travel patterns, the new CTP garage is expected to increase the amount of on-airport parking. Details of the new garage have not been finalized at this time of planning, but it is expected to provide more spaces than the current on-airport parking lots provide to meet current and future demand. On-airport occupancy of parking spaces is 94% during peak times and passenger surveys conducted during the Master Plan established that parking directly in front of the terminal is a high priority. To recognize meeting this demand for close-in parking, it is anticipated that the new CTP garage will result in a shift of parking from off-airport to on airport parking. For purposes of this report and a conservative approach to the traffic model, it is assumed that there will be a 20% shift in traffic related to parking. The exact amount will be dependent on other variables besides the number of available spaces which include the competition of pricing and its convenience as well as the degree to which future passengers use public transportation or ride share apps. Parking and its impacts to traffic are dynamic and will fluctuate over time.

Changes in traffic from the No-Build and Build models due to the terminal consolidation can be seen below in **Figure 5** and **Figure 6**. These two figures depict the change in ramp volume from the No Build to the Build future models for both peak periods. Any volume taken from a ramp is seen added to mainline and any volume added to a ramp is removed from mainline. Detailed analysis of the volumes as well as the difference in volumes found in the Build models can be seen in the exhibits provided in **Appendix C** and **Appendix H**.

3.2 Traffic Operations

The minimum levels of service and mobility targets as defined in the Traffic Methods and Assumptions Report (attached as **Appendix A**) states that all signalized intersections must maintain a level of service of D or better. In cases where existing level of service is already worse than D, that level of service must be maintained through future conditions.

Intersection level of service and delay results for the 2032 and 2037 Build conditions can be seen compared to the No Build conditions in **Table 16** and **Table 17** below. As seen in these tables, intersection LOS for both alternatives meet the required criteria set in the Traffic Methods and Assumptions Report. Detailed results of the node evaluations collected from all models can be seen in **Appendix E**.

At the I-70 Westbound and Natural Bridge Road exit the westbound left turn serves 333 vph during the AM peak hour and 570 vph during the PM peak hour. Alternative 2 provides a second turn lane for this movement operating as a protected only left turn while Alternative 1 utilizes the existing configuration with a protected-permissive left turn. According to MoDOT's EPG section 233.4.2, when the peak hour left-turning traffic exceeds 300 vph, dual left-turn lanes are to be considered. Due to the projected high peak hour left turn volumes, an additional westbound left turn lane is warranted to accommodate the new influx of vehicles coming from the consolidated terminal as provided in Alternative 2.

Table 16: 2032 Build & No Build Intersection Operation Results

Intersection	2032 No Build				2032 Alt 1				2032 Alt 2			
	LOS		Delay		LOS		Delay		LOS		Delay	
Natural Bridge Rd @ Lot D*	A	(A)	5.4	(6.3)	A	(A)	5.4	(6.9)	A	(A)	5.4	(6.9)
I-70 WB @ Natural Bridge Rd	A	(A)	7.9	(9.4)	B	(C)	11.4	(24.4)	B	(C)	18.6	(24.1)
Cypress Rd & Natural Bridge Rd	A	(A)	4.6	(5.9)	B	(B)	12.6	(14.5)	B	(B)	12.0	(12.8)
I-70 EB @ Cypress Rd	A	(A)	6.5	(9.8)	B	(B)	11.5	(14.1)	B	(B)	11.7	(14)
LIB @ T1 Cell Phone Lot*	A	(A)	0.8	(0.9)	A	(A)	3.5	(3.9)	A	(A)	3.0	(4.2)
I-70 WB @ LIB (E of Cypress)	A	(A)	1.8	(3.1)	A	(A)	0.7	(1.6)	A	(A)	0.8	(1.6)
LIB @ Lot B*	A	(A)	1.1	(1.1)	A	(A)	0.8	(2.8)	A	(A)	0.8	(2.8)
LIB @ Lambert Field Dr	A	(A)	3.8	(5.4)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
Air Cargo Rd @ Terminal 2 Entrance	A	(A)	6.7	(8.8)	C	(C)	22.6	(21.8)	C	(C)	22.2	(21.8)
LIB @ Terminal 1 Exit	C	(C)	29.8	(29.7)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
I-70 WB @ Airlfight Dr	B	(B)	13.9	(17.9)	B	(C)	17.4	(20.7)	B	(C)	17.1	(21.2)
I-70 EB @ Pear Tree Ln	B	(B)	16.8	(19.3)	B	(C)	17.9	(21.8)	B	(C)	18.0	(21.7)
Airflight Dr @ Pear Tree Ln	B	(C)	17.8	(22.2)	B	(C)	15.1	(22.1)	B	(C)	15.2	(22.6)
Pear Tree Ln @ Edmunson Rd	B	(B)	10.2	(10.1)	B	(B)	11.5	(11.8)	B	(B)	11.4	(11.8)
LIB @ Terminal 2 Exit	B	(B)	18.2	(15.6)	A	(A)	1.8	(3.1)	A	(A)	1.7	(3.2)
LIB @ Terminal 2 Parking *	E	(E)	41.1	(36.3)	D	(D)	41.7	(36.2)	D	(D)	41.7	(36.7)
LIB @ Terminal 2 Entrance	C	(B)	23.9	(17.4)	B	(B)	12.4	(14.7)	B	(B)	12.9	(14.6)
Air Cargo Rd @ Lot E*	A	(A)	1.4	(1.6)	A	(A)	0.4	(0.6)	A	(A)	0.4	(0.6)
Air Cargo Rd @ James S McDonnell*	A	(A)	5.9	(5.9)	A	(A)	0.3	(0.4)	A	(A)	7.7	(0.4)
I-70 SOR @ Natural Bridge Rd	B	(B)	13.4	(15.7)	B	(B)	13.5	(15.9)	B	(B)	13.2	(15.9)

*Stop controlled intersection level of service follows methodlogies described in Chapter 20 & Chapter 21 of the 6th Edition HCM

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Table 17: 2037 Build & No Build Intersection Operation Results

Intersection	2037 No Build				2037 Alt 1				2037 Alt 2			
	LOS		Delay		LOS		Delay		LOS		Delay	
Natural Bridge Rd @ Lot D*	A	(A)	5.5	(6.3)	A	(A)	5.5	(6.9)	A	(A)	5.5	(6.8)
I-70 WB @ Natural Bridge Rd	A	(A)	8.0	(9.4)	B	(C)	14.0	(25.2)	B	(C)	14.0	(25.2)
Cypress Rd & Natural Bridge Rd	A	(A)	4.7	(6.1)	B	(B)	12.7	(16.6)	B	(B)	10.8	(14)
I-70 EB @ Cypress Rd	A	(A)	6.9	(9.8)	B	(B)	11.2	(14.4)	A	(B)	8.6	(14.4)
LIB @ T1 Cell Phone Lot*	A	(A)	0.7	(0.8)	A	(A)	2.8	(3.3)	A	(A)	2.7	(3.6)
I-70 WB @ LIB (E of Cypress)	A	(A)	1.5	(3.1)	A	(A)	1.0	(1.9)	A	(A)	1.3	(2)
LIB @ Lot B*	A	(A)	1.2	(1.1)	A	(A)	0.8	(3)	A	(A)	0.7	(3.4)
LIB @ Lambert Field Dr	A	(A)	4.0	(5.4)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
Air Cargo Rd @ Terminal 2 Entrance	A	(A)	6.9	(8.6)	C	(C)	22.7	(20.9)	C	(C)	22.8	(20.7)
LIB @ Terminal 1 Exit	C	(C)	30.1	(30.1)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
I-70 WB @ Airlfight Dr	B	(B)	14.2	(18.2)	B	(C)	18.6	(23.5)	B	(C)	18.9	(24.3)
I-70 EB @ Pear Tree Ln	B	(B)	16.9	(19.8)	B	(C)	17.9	(21.4)	B	(C)	17.8	(21.4)
Airflight Dr @ Pear Tree Ln	B	(C)	18.2	(22.6)	B	(C)	16.0	(21.8)	B	(C)	15.8	(21.9)
Pear Tree Ln @ Edmunson Rd	B	(B)	10.3	(10.1)	B	(B)	11.5	(12.1)	B	(B)	11.4	(12.2)
LIB @ Terminal 2 Exit	B	(B)	18.5	(15.7)	A	(A)	1.9	(3.3)	A	(A)	1.9	(3.2)
LIB @ Terminal 2 Parking *	E	(E)	40.3	(36.6)	D	(D)	40.3	(37.5)	D	(D)	41.5	(38.5)
LIB @ Terminal 2 Entrance	C	(B)	23.9	(17.9)	B	(B)	12.7	(14.8)	B	(B)	12.6	(14.9)
Air Cargo Rd @ Lot E*	A	(A)	1.4	(1.8)	A	(A)	0.5	(0.6)	A	(A)	0.5	(0.6)
Air Cargo Rd @ James S McDonnell*	A	(A)	6.0	(6.2)	A	(A)	0.3	(0.4)	A	(B)	9.5	(10.2)
I-70 SOR @ Natural Bridge Rd	B	(B)	13.4	(15.8)	B	(B)	13.5	(15.9)	B	(B)	13.6	(16)

*Stop controlled intersection level of service follows methodlogies described in Chapter 20 & Chapter 21 of the 6th Edition HCM

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The minimum levels of service and mobility targets as defined in the Traffic Methods and Assumptions Report state that all existing interstate segments must maintain a level of service of D or better. In cases where existing level of service is already worse than D, that level of service must be maintained through future conditions.

2037 No Build and Alternative freeway level of service determined by density thresholds as described in the highway Capacity Manual for basic, merge, diverge, and weave segments can be seen below in **Table 18** and **Table 19**. Only segments which had a change in volume from the No Build to the Alternative conditions were considered. With the additional traffic on westbound I-70, the segment between Airflight Drive and Natural Bridge Road operates at a LOS D during the PM peak hour in the 2037 Alternative 1 model. While this meets the desired LOS threshold, the speeds do fall below free flow conditions. Alternative 2 provides an auxiliary lane in this segment resulting in a LOS B operating condition with free flow speeds. In isolated locations along mainline, such as at the merge following the entrance ramp onto I-70 Westbound from Airflight Drive, the level of service slightly worsens due to the redistributed traffic however, LOS still remains at acceptable levels. Across all models, the interstate level of service maintains at least a C or better.

Table 18: 2037 AM Densities – No Build and Alternative Models

2037 AM I-70 EB Densities						
	2032 No Build		2037 Alt 1		2037 Alt 2	
Segments	Density	LOS	Density	LOS	Density	LOS
Cypress Gore to Gore	20.57	C	19.16	C	19.06	C
Cypress Merge	16.48	B	16.96	B	17.01	B
Basic Segment Following Cypress	21.81	C	22.15	C	22.20	C
Airflight Diverge	17.45	B	16.93	B	17.22	B
Airflight Gore to Gore	17.98	B	19.35	B	19.52	C
Airflight Loop Merge	13.81	B	14.83	B	14.89	B
Airflight Merge	14.26	B	15.33	B	15.37	B
Basic Segment Following Airflight	18.72	C	20.10	C	20.14	C
MO 115 Diverge	19.10	B	20.51	C	20.66	C
MO 115 Gore to Gore	17.69	B	19.16	C	19.24	C
2037 AM I-70 WB Densities						
	2032 No Build		2037 Alt 1		2037 Alt 2	
Segments	Density	LOS	Density	LOS	Density	LOS
MO 115 Gore to Gore	17.07	B	18.51	C	18.51	C
MO 115 Merge	13.96	B	16.02	B	15.08	B
Basic Segment Following MO 115	18.40	C	19.87	C	19.87	C
Airflight Diverge	15.20	B	16.02	B	15.37	B
Airflight Gore to Gore	16.73	B	18.91	C	18.92	C
Airflight Merge	14.51	B	17.36	B	16.68	B
Basic Segment following Airflight	18.85	C	22.63	C		
LIB to Cypress Weave/Diverge*	15.40	B	16.82	B		
Diverge to CD	19.15	B	17.68	B	17.78	B

*For Alt 1 this segments LOS criteria was based on merge/diverge thresholds as opposed to the existing weave

Table 19: 2037 AM Densities – No Build and Alternative Models

2037 PM I-70 EB Densities						
	2032 No Build		2037 Alt 1		2037 Alt 2	
Segments	**Density**	**LOS**	**Density**	**LOS**	**Density**	**LOS**
Cypress Gore to Gore	18.12	C	17.27	B	17.16	B
Cypress Merge	15.83	B	17.22	B	17.17	B
Basic Segment Following Cypress	20.59	C	22.43	C	22.14	C
Airflight Diverge	16.23	B	17.05	B	17.04	B
Airflight Gore to Gore	17.38	B	19.52	C	19.44	C
Airflight Loop Merge	13.77	B	15.4	B	15.35	B
Airflight Merge	14.62	B	16.33	B	16.3	B
Basic Segment Following Airflight	19.07	C	21.29	C	21.12	C
MO 115 Diverge	19.52	B	22.15	C	21.54	C
MO 115 Gore to Gore	17.5	B	19.87	C	19.66	C
2037 PM I-70 WB Densities						
	2032 No Build		2037 Alt 1		2037 Alt 2	
Segments	**Density**	**LOS**	**Density**	**LOS**	**Density**	**LOS**
MO 115 Gore to Gore	19.88	C	21.1	C	21.1	C
MO 115 Merge	16.86	B	17.83	B	17.83	B
Basic Segment Following MO 115	22.15	C	23.48	C	23.49	C
Airflight Diverge	19.37	B	19.81	B	19.53	B
Airflight Gore to Gore	20.16	C	22.74	C	21.99	C
Airflight Merge	17.61	B	21.77	C	19.5	B
Basic Segment following Airflight	22.77	C	26.69	D		
LIB to Cypress Weave	19.38	B	19.12	B		
Diverge to CD	24.62	C	21.15	C	21.42	C

*For Alt 1 this segments LOS criteria was based on merge/diverge thresholds as opposed to the existing weave

Mainline speeds and travel times changed very little between No Build and Build conditions. AM and PM peak period mainline average travel speeds for the alternatives can be seen in **Table 20** through **Table 27**. AM and PM peak period vehicle travel times from all the modeled scenarios can be seen in **Table 28** and **Table 29**. The vehicle speed compared across all models can be seen in **Appendix D**. Additionally, the level of service along mainline I-70 can be seen for all models in **Appendix E**.

Table 20: 2032 AM Westbound Alternative Mainline Speed

2032 Alternative 1 VISSIM Westbound I-70														
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.0	62.9	62.9	63.0	63.0	63.0	63.0	63.1	63.0	62.9	62.9	63.0
119+04296		STL Airport - Airflight Dr	1.1	62.6	62.7	62.9	62.9	62.8	62.7	62.7	62.7	62.7	62.7	62.8	62.6	62.7
119+04297		Airflight Dr - LIB	0.5	61.3	61.3	61.0	61.3	61.5	61.5	61.5	61.4	61.5	61.4	61.4	61.2	61.4
119+04298		LIB - Cyprus Rd	0.4	62.6	62.7	62.3	62.7	62.7	62.2	61.7	62.3	62.4	62.6	62.6	62.0	62.4
119+04299		Cyprus Rd - US 67	0.8	62.5	62.8	62.7	62.7	62.7	62.7	62.7	62.7	62.6	62.8	62.7	62.4	62.7
119+04300		US 67 - MO 180	0.6	62.7	62.7	62.7	62.9	63.0	62.7	62.8	62.9	62.8	63.2	63.0	62.8	62.8
2032 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.0	62.9	62.9	63.0	63.0	63.0	63.0	63.1	63.0	62.9	62.9	63.0
119+04296		STL Airport - Airflight Dr	1.1	62.6	62.7	62.9	62.8	62.7	62.7	62.7	62.7	62.7	62.7	62.8	62.7	62.7
119+04297		Airflight Dr - LIB	0.5	62.5	62.5	62.4	62.7	62.6	62.5	62.6	62.5	62.6	62.5	62.5	62.5	62.5
119+04298		LIB - Cyprus Rd	0.4	62.1	61.2	61.4	62.5	62.7	62.5	62.3	61.8	62.7	62.7	62.4	62.4	62.2
119+04299		Cyprus Rd - US 67	0.8	62.3	62.6	62.8	62.8	62.7	62.7	62.6	62.5	62.8	62.7	62.8	62.7	62.7
119+04300		US 67 - MO 180	0.6	62.7	62.7	62.9	62.7	62.9	62.8	62.7	62.9	62.8	63.0	62.9	62.7	62.8

Table 21: 2032 AM Eastbound Alternative Mainline Speed

2032 Alternative 1 VISSIM - Eastbound I-70														
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.1	62.2	62.0	62.4	62.5	62.2	62.3	61.5	62.2	62.2	62.6	62.2	62.2
119-04298		US 67 - Cypress Rd	0.5	62.0	62.0	61.9	61.8	61.9	61.9	61.7	61.9	62.0	62.1	62.1	61.9	61.9
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.8	62.0	61.6	61.9	61.9	61.4	61.6	61.8	61.3	62.1	62.1	61.6	61.8
119-04295		Airflight Dr - MO 115	1.2	61.7	61.7	61.5	61.5	61.0	61.5	61.5	61.5	61.4	61.7	61.7	61.3	61.5
119-04294		MO 115 - I170	0.9	62.9	63.1	63.0	62.5	62.8	63.0	63.0	63.0	62.9	63.0	63.1	62.7	62.9
2032 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.1	62.2	62.0	62.4	62.5	62.2	62.3	61.5	62.2	62.2	62.6	62.2	62.2
119-04298		US 67 - Cypress Rd	0.5	62.0	62.0	61.9	61.8	61.9	61.9	61.7	61.9	62.0	62.1	62.1	61.9	61.9
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.9	61.9	61.4	61.8	62.0	61.7	62.0	61.7	62.1	61.8	61.6	62.0	61.8
119-04295		Airflight Dr - MO 115	1.2	61.8	61.7	61.3	61.1	61.7	61.6	61.5	61.7	61.7	61.5	61.8	61.6	61.6
119-04294		MO 115 - I170	0.9	63.0	62.9	62.8	63.1	63.0	63.0	62.9	63.2	62.9	62.5	63.2	63.0	63.0

Table 22: 2032 PM Westbound Alternative Mainline Speed

2032 Alternative 1 VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.8	63.0	63.0	62.6	62.1	62.2	62.8	63.0	63.0	62.0	61.8	62.3	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.6	62.6	61.7	61.6	61.2	60.2	62.2	62.6	61.9	61.2	61.4	61.8
119+04297		Airflight Dr - LIB	0.5	61.5	61.9	61.6	60.1	59.6	58.2	57.7	59.7	61.8	60.9	57.8	57.6	59.9
119+04298		LIB - Cyprus Rd	0.4	61.9	62.3	61.6	61.9	61.4	58.6	61.6	62.2	62.5	62.1	60.8	61.2	61.5
119+04299		Cyprus Rd - US 67	0.8	61.3	62.5	62.5	62.3	60.6	60.5	60.4	62.4	62.5	61.6	60.7	59.9	61.4
119+04300		US 67 - MO 180	0.6	61.7	62.8	62.9	62.6	61.6	61.4	61.5	62.1	62.8	62.1	61.6	60.9	62.0
2032 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.8	63.0	63.0	62.6	62.1	62.2	62.8	63.0	63.0	62.0	61.8	62.3	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.4	62.6	62.6	61.8	61.4	60.2	60.3	62.7	62.7	61.8	61.0	61.2	61.7
119+04297		Airflight Dr - LIB	0.5	62.5	62.5	62.4	62.3	61.8	61.7	62.0	62.6	62.7	62.2	61.9	61.9	62.2
119+04298		LIB - Cyprus Rd	0.4	62.4	62.4	62.6	61.9	61.7	59.1	60.5	62.5	62.6	61.6	60.1	57.6	61.2
119+04299		Cyprus Rd - US 67	0.8	61.9	62.4	62.6	61.7	61.0	59.8	59.0	62.5	62.3	61.7	60.9	59.6	61.3
119+04300		US 67 - MO 180	0.6	62.1	62.5	62.6	62.4	61.4	61.5	60.0	62.5	62.6	62.3	61.5	60.8	61.8

Table 23: 2032 PM Eastbound Alternative Mainline Speed

2032 Alternative 1 VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.3	62.0	62.0	61.7	62.2	62.6	62.5	61.9	61.8	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	61.8	61.6	61.6	61.4	61.9	62.2	62.1	61.5	61.3	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.7	61.5	61.3	61.1	60.7	59.6	60.8	61.1	61.4	60.9	60.8	59.1	60.8
119-04295		Airflight Dr - MO 115	1.2	61.5	61.8	61.7	61.2	61.2	60.5	60.8	61.6	61.8	61.6	60.9	60.9	61.3
119-04294		MO 115 - I170	0.9	63.0	63.0	63.3	63.1	62.4	62.5	62.6	62.9	62.9	62.9	62.7	62.7	62.8
2032 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.3	62.0	62.0	61.7	62.2	62.6	62.5	61.9	61.8	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	61.8	61.6	61.6	61.4	61.9	62.2	62.1	61.5	61.3	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.6	61.2	61.2	61.0	60.4	59.7	61.0	61.2	61.4	60.9	60.7	60.4	60.9
119-04295		Airflight Dr - MO 115	1.2	61.3	61.4	61.9	61.4	60.9	60.7	61.2	61.7	61.8	61.5	60.8	60.7	61.3
119-04294		MO 115 - I170	0.9	62.8	63.0	63.4	63.2	62.7	62.1	62.5	63.2	63.2	63.2	62.5	62.8	62.9

Table 24: 2037 AM Westbound Alternative Mainline Speed

2037 Alternative 1 VISSIM Westbound I-70														
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.9	63.0	63.0	62.8	62.9	63.0	62.9	63.0	63.1	62.8	63.0	63.0	62.9
119+04296		STL Airport - Airflight Dr	1.1	62.7	62.9	62.7	62.2	62.6	62.8	62.7	62.7	62.7	62.8	62.6	62.6	62.7
119+04297		Airflight Dr - LIB	0.5	60.9	61.2	61.0	61.3	61.1	61.2	61.1	61.0	61.5	61.1	61.1	61.4	61.2
119+04298		LIB - Cyprus Rd	0.4	62.4	62.7	62.6	62.3	61.4	62.3	62.4	62.3	62.4	62.5	62.6	62.8	62.4
119+04299		Cyprus Rd - US 67	0.8	62.7	62.9	62.8	62.7	62.5	62.6	62.6	62.7	62.8	62.5	62.6	62.8	62.7
119+04300		US 67 - MO 180	0.6	62.7	63.0	63.0	62.7	62.8	62.9	62.9	62.8	63.0	62.8	62.5	62.8	62.8
2037 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.9	63.0	63.0	62.8	62.9	63.0	62.9	63.0	63.1	62.8	63.0	63.0	62.9
119+04296		STL Airport - Airflight Dr	1.1	62.7	62.8	62.7	62.0	62.6	62.8	62.7	62.5	62.7	62.8	62.6	62.6	62.6
119+04297		Airflight Dr - LIB	0.5	62.4	62.5	62.4	62.6	62.5	62.4	62.5	62.4	62.5	62.6	62.5	62.5	62.5
119+04298		LIB - Cyprus Rd	0.4	61.5	62.1	62.5	61.9	61.6	61.4	62.4	62.4	62.3	62.7	61.7	62.5	62.1
119+04299		Cyprus Rd - US 67	0.8	62.7	62.7	62.5	62.7	62.6	62.4	62.5	62.7	62.7	62.6	62.6	62.8	62.6
119+04300		US 67 - MO 180	0.6	62.8	62.9	62.9	62.9	62.8	62.8	62.8	62.7	63.0	62.9	62.7	62.8	62.8

Table 25: 2037 AM Eastbound Alternative Mainline Speed

2037 Alternative 1 VISSIM - Eastbound I-70														
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.1	62.3	62.4	62.3	62.6	62.0	62.5	62.3	62.5	62.3	62.5	62.1	62.3
119-04298		US 67 - Cypress Rd	0.5	61.4	62.0	61.5	61.6	61.9	62.0	61.9	62.1	61.3	62.0	62.0	61.8	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.5	62.1	61.5	61.9	62.0	61.9	61.8	62.0	61.9	62.1	61.9	61.5	61.8
119-04295		Airflight Dr - MO 115	1.2	61.1	61.3	61.4	61.6	61.7	61.7	61.5	61.6	61.6	61.8	61.6	61.5	61.5
119-04294		MO 115 - I170	0.9	62.9	62.9	63.0	62.9	63.0	63.2	62.9	62.8	62.9	63.3	63.0	62.9	63.0
2037 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.2	62.3	62.4	62.2	62.5	62.0	62.5	62.2	62.4	62.3	62.5	62.2	62.3
119-04298		US 67 - Cypress Rd	0.5	61.8	61.9	62.0	61.5	61.8	61.8	60.9	61.9	62.0	62.0	62.0	61.7	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.2	62.4	62.6	62.7	62.3	62.0	61.7	62.3	62.2	62.5	62.6	62.3	62.3
119-04295		Airflight Dr - MO 115	1.2	61.9	61.6	61.5	61.7	61.4	61.8	61.5	61.6	61.7	61.8	61.8	61.7	61.7
119-04294		MO 115 - I170	0.9	63.0	62.9	62.8	62.8	62.5	62.7	62.8	62.7	62.8	62.9	63.0	62.7	62.8

Table 26: 2037 PM Westbound Alternative Mainline Speed

2037 Alternative 1 VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.7	63.1	63.0	61.5	62.1	62.4	62.6	62.9	62.9	62.2	62.4	62.1	62.5
119+04296		STL Airport - Airflight Dr	1.1	61.6	62.7	62.6	61.6	60.4	60.5	60.1	62.1	62.5	61.8	60.7	59.8	61.4
119+04297		Airflight Dr - LIB	0.5	60.9	61.3	61.4	60.7	59.0	55.9	55.7	59.5	61.8	60.4	56.7	54.7	59.0
119+04298		LIB - Cyprus Rd	0.4	62.7	62.4	62.8	62.2	61.1	60.3	61.1	62.3	62.7	62.2	61.2	60.0	61.7
119+04299		Cyprus Rd - US 67	0.8	61.6	62.1	62.2	61.9	60.6	60.9	60.5	62.2	62.3	61.8	61.1	59.2	61.4
119+04300		US 67 - MO 180	0.6	62.1	62.2	62.4	62.6	61.2	61.4	61.2	62.2	62.5	62.2	62.0	61.2	61.9
2037 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.7	63.1	63.0	61.5	62.1	62.4	62.6	62.9	62.9	62.2	62.4	62.1	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.2	62.6	62.6	61.4	60.7	61.4	61.9	62.6	62.6	61.8	61.7	60.0	61.8
119+04297		Airflight Dr - LIB	0.5	62.1	62.5	62.4	62.3	61.6	61.5	61.7	62.5	62.6	62.3	61.8	61.5	62.1
119+04298		LIB - Cyprus Rd	0.4	61.4	62.1	62.6	62.2	60.5	61.2	57.0	62.2	62.3	61.8	59.8	61.0	61.2
119+04299		Cyprus Rd - US 67	0.8	61.3	62.2	62.5	61.8	61.0	60.2	60.9	62.1	62.3	61.6	60.2	60.3	61.4
119+04300		US 67 - MO 180	0.6	62.0	62.5	62.6	62.2	61.7	61.2	61.0	62.4	62.7	62.4	61.1	59.3	61.8

Table 27: 2037 PM Eastbound Alternative Mainline Speed

2037 Alternative 1 VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	61.9	62.0	62.1	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.6	61.4	61.3	61.9	62.1	62.2	61.5	61.3	61.3	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.6	61.0	61.3	60.5	60.2	59.7	60.4	61.1	61.1	60.2	60.1	60.2	60.6
119-04295		Airflight Dr - MO 115	1.2	61.2	61.1	61.6	60.9	60.2	59.6	60.3	61.6	61.9	61.3	60.6	60.9	60.9
119-04294		MO 115 - I170	0.9	62.9	63.0	62.9	63.0	62.2	62.2	62.3	63.0	63.2	63.0	62.3	62.6	62.7
2037 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	62.0	62.0	62.0	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.5	61.6	61.2	61.8	62.1	62.2	61.5	61.4	61.2	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.4	62.9	63.0	62.3	61.7	61.8	62.3	62.7	62.8	62.3	61.3	61.2	62.2
119-04295		Airflight Dr - MO 115	1.2	61.8	62.1	62.0	61.5	60.5	60.8	61.6	61.9	62.1	61.6	61.1	60.9	61.5
119-04294		MO 115 - I170	0.9	62.8	63.2	63.2	62.9	62.7	61.9	62.6	63.0	62.8	62.8	62.1	62.2	62.7

Table 28: AM Vehicle Travel Time (All Models)

AM Travel Time (I-70) - All Vehicles										
Segment ID	**Corridor**	**Section**	**VISSIM Distance**	**EXISTING VISSIM Travel Time (min)**	**2032 No Build VISSIM Travel Time (min)**	**2032 Alt 1 VISSIM Travel Time (min)**	**2032 Alt 2 VISSIM Travel Time (min)**	**2037 No Build VISSIM Travel Time (min)**	**2037 Alt 1 VISSIM Travel Time (min)**	**2037 Alt 2 VISSIM Travel Time (min)**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5
Total			**4.2**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04298		US 67 - Cypress Rd	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04294		MO 115 - I170	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total			**5.9**	**5.7**	**5.7**	**5.8**	**5.8**	**5.7**	**5.8**	**5.8**

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 29: PM Vehicle Travel Time (All Models)

AM Travel Time (I-70) - All Vehicles										
Segment ID	**Corridor**	**Section**	**VISSIM Distance**	**EXISTING VISSIM Travel Time (min)**	**2032 No Build VISSIM Travel Time (min)**	**2032 Alt 1 VISSIM Travel Time (min)**	**2032 Alt 2 VISSIM Travel Time (min)**	**2037 No Build VISSIM Travel Time (min)**	**2037 Alt 1 VISSIM Travel Time (min)**	**2037 Alt 2 VISSIM Travel Time (min)**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5
Total			**4.2**	**4.1**	**4.1**	**4.0**	**4.0**	**4.1**	**4.1**	**4.0**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04298		US 67 - Cypress Rd	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.1	1.1	1.2	1.2	1.1	1.2	1.2
119-04294		MO 115 - I170	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total			**5.9**	**5.7**	**5.7**	**5.8**	**5.8**	**5.7**	**5.8**	**5.8**

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

As a result of the consolidated terminal and additional lanes in key locations, a large reduction in total stopped delay, number of stops, total delay, average number of stops, and average stopped delay can be seen across the entire model in each of the peak period Alternative models. These network performance results which measure performance over the entirety of the modeled network can be seen below in **Table 30** comparing the results between all models.

Table 30: Network Performance Evaluation (All Models)

Metric	Average Vehicular Delay	Average Number of Stops	Average Speed	Average Stopped Delay	Total Distance Traveled (VMT)	Total Travel Time (VHT)	Total Delay	Total Number of Stops	Total Stopped Delay	Vehicles Arrived	Latent Total Delay	Latent Demand
Unit	**seconds/ vehicle**	**stops/ vehicle**	**miles/ hour**	**seconds/ vehicle**	**miles**	**Seconds**	**Seconds**	**stops**	**Seconds**	**vehicles**	**Seconds**	**vehicles**
AM Existing VISSIM	24	0.84	48.34	12	37,838	2,817,735	266,880	9,118	128,142	10,102	464	0.2
AM 2032 No Build VISSIM	27	0.97	47.22	13	38,804	2,958,163	308,105	10,928	148,172	10,465	514	0.3
AM 2032 Alt 1 VISSIM	21	0.45	50.00	8	41,055	2,955,881	234,297	5,083	93,327	10,450	513	0.3
AM 2032 Alt 2 VISSIM	22	0.49	49.84	9	41,061	2,965,721	243,830	5,473	101,688	10,450	514	0.3
AM 2037 No Build VISSIM	29	1.02	46.75	14	39,307	3,026,768	328,393	11,699	158,839	10,656	541	0.2
AM 2037 Alt 1 VISSIM	22	0.49	49.51	9	41,602	3,025,119	252,232	5,608	102,038	10,596	537	0.2
AM 2037 Alt 2 VISSIM	22	0.53	49.48	8	41,736	3,036,568	248,908	6,100	94,597	10,659	539	0.2
	Averaged Performance MOE Statistics				Aggregated Performance MOE Statistics					Throughput MOE Statistics		
Metric	**Average Vehicular Delay**	**Average Number of Stops**	**Average Speed**	**Average Stopped Delay**	**Total Distance Traveled (VMT)**	**Total Travel Time (VHT)**	**Total Delay**	**Total Number of Stops**	**Total Stopped Delay**	**Vehicles Arrived**	**Latent Total Delay**	**Latent Demand**
Unit	**seconds/ vehicle**	**stops/ vehicle**	**miles/ hour**	**seconds/ vehicle**	**miles**	**Seconds**	**Seconds**	**stops**	**Seconds**	**vehicles**	**Seconds**	**vehicles**
PM Existing VISSIM	29	1.05	46.52	14	41,400	3,203,686	374,283	13,459	176,416	11,789	883	0.4
PM 2032 No Build VISSIM	32	1.22	45.43	15	42,572	3,373,847	433,222	16,306	204,691	12,262	964	0.2
PM 2032 Alt 1 VISSIM	28	0.64	47.22	12	44,903	3,423,614	375,834	8,527	160,576	12,190	966	0.2
PM 2032 Alt 2 VISSIM	28	0.59	47.33	12	44,915	3,416,122	367,439	7,894	160,134	12,200	965	0.2
PM 2037 No Build VISSIM	34	1.31	44.92	16	43,195	3,462,020	463,813	17,742	215,615	12,506	1,002	0.3
PM 2037 Alt 1 VISSIM	31	0.73	46.48	13	45,718	3,541,401	419,733	9,938	176,785	12,428	1,009	0.3
PM 2037 Build VISSIM	30	0.69	46.63	13	45,731	3,530,747	404,403	9,380	175,523	12,437	1,006	0.3
	Averaged Performance MOE Statistics				Aggregated Performance MOE Statistics					Throughput MOE Statistics		

3.2.1 Collector-Distributor Analysis

Qualitative and quantitative analysis was conducted to analyze the collector-distributor (C-D) for each of the modeled conditions to verify that operations along the C-D were sufficient given the increase in demand between models. Qualitative analysis of the C-D included observations of vehicle operations and performance amongst each of the runs for each of the modeled conditions. Through this analysis it was observed that the C-D operated well throughout the simulations.

Quantative analysis in the form of average speeds was also studied. Average speeds were recorded during the peak hour for each of the modeled conditions and can be seen in **Appendix**

E. The posted speed for this section was not found on the roadside, therefore an assumed speed distribution based on a speed of 50 miles per hour was coded for vehicles traversing this segment. The average speeds were roughly the same in each of the modeled scenarios as seen in **Appendix E**. As expected, the lowest average speed along the C-D was found in the weave portion between the two ramps connecting to N Lindbergh Blvd. Diggin deeper into the link results, we found that the lowest average speed on the weave segment of the C-D was 41 miles per hour, in the 2037 PM Alternative models. The highest average speed on this section during the PM peak hour is only 1 mile per hour faster and occurs for the existing conditions.

After analyzing the results from the peak hour simulation observations and the peak hour average speed it was concluded that no operational issues arise in the model as the result of the increased demand along this section resulting from a consolidated terminal.

3.2.2 I-70 & I-170 Weave Analysis

As requested by MoDOT, the weave section along I-70 Eastbound was analyzed to determine if the area was impacted by the CTP alternatives. For this analysis, the density of the weave segment and vehicle speeds were considered. The number of total vehicles using this weave segment did not differ from each respective model year's No Build and Build scenario. This is due to having the same number of vehicles entering and exiting the modeled study area extents. Although the No Build and Build scenarios have the same number of vehicles traversing the weave, the origin of these vehicles differs in each of the models. Because of the limited access to Lambert International Boulevard east from the new consolidated terminal, there is much less traffic entering the weave on I-70 eastbound before I-170 in the Build Scenario than in the No Build scenario. **Figure 6** and **Figure 7** depict the level of service based on density for the weave segment for the 2037 No Build and Build AM scenarios. **Figure 8** and **Figure 9** depict the level of service based on density for the weave segment for the 2037 No Build and Build PM scenarios. Because the total volumes remain the same across the weave section, so do the densities, and therefore, the level of service does not change from the Build to No Build scenarios. As seen in **Table 28** and **Table 29** above, the travel times for the weave segment (RITIS segment 119-04294) remain the same and do not change in any of the models even with the minimal growth applied to this section across the future models.

Figure 6 – I-70 & I-170 Weave Level of Service, AM 2037 No Build

Figure 7 – I-70 & I-170 Weave Level of Service, AM 2037 Build

Figure 8 – I-70 & I-170 Weave Level of Service, PM 2037 No Build

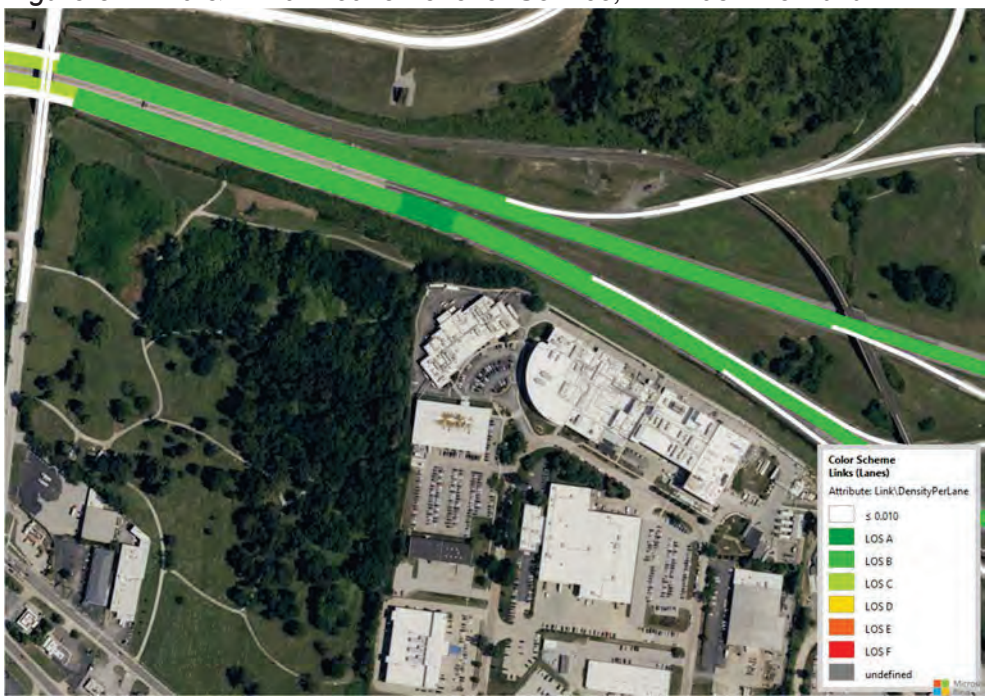

Figure 9 – I-70 & I-170 Weave Level of Service, PM 2037 Build

3.2.3 Travel Paths

Distances for common travel paths for shuttle buses were evaluated while studying the proposed Alternatives. A majority of the airport passenger traffic enters the airport via I-70 and will experience similar travel distances to the terminal as compared to existing conditions. However, there is currently a significant amount of shuttle buses that transport passengers between the terminals and off airport properties. A majority of these shuttle buses serve both terminals and travel along a consistent path as seen in **Figure 6** and **Figure 7**. These figures depict the total travel distance and number of intersections encountered for existing and No Build conditions.

Currently, inbound shuttles going from the southern communities travel approximately 1.6 miles and traverse through seven signalized intersections. The proposed alternatives provide two routes for accessing the CTP using either the Cypress Road interchange or by using LIB to turnaround at Terminal 2 and accessing the CTP loop from the east. It is assumed that shuttle buses will prefer to remain off of I-70 and will use the second path. **Figure 8** represents the inbound shuttle path for the CTP and has a total distance of 2.3 miles while encountering seven signalized intersections. While this path is longer than the current inbound condition it is expected to encounter less congestion due to the redistribution of traffic from Terminal 2.

Currently, outbound shuttles leave from Terminal 2 and travel to Terminal 1 before traveling to south of I-70 traveling approximately 1.3 miles and encountering three signalized intersections, as seen in **Figure 7**. **Figure 9** represents the outbound bound shuttle path for the CTP and has a total distance of 0.6 miles and only encounters one signalized intersection. The total distance of inbound and outbound traffic equals 2.9 miles for both existing conditions and for the CTP. With the CTP, shuttles will encounter two less signalized intersections than the existing conditions and will experience less delay along the route due to the redistribution of terminal traffic.

Figure 6 – Existing Inbound Shuttle Travel Distance (aerial image source: Google Earth)

Figure 7 – Existing Outbound Southern Travel Distance (aerial image source: Google Earth)

Figure 8 – CTP Inbound Southern Travel Distance (aerial image source: Google Earth)

Figure 9 – CTP Outbound Southern Travel Distance (aerial image source: Google Earth)

3.3 Safety

This section compares the safety conditions on Interstate 70 for the construction year (2032) and design year (3027) Alternative scenarios compared to the 2032 and 2037 No Build scenarios. Alternative 1 and Alternative 2 both have the same volumes for their respective construction (2032) and design (2037) years which are based on redistributed volumes resulting from a consolidated terminal. Alternative 1 matches the No Build geometries aside from the closure of the LIB entrance ramp onto Interstate 70 westbound. Alternative 2 accounts for the proposed improvements to add a westbound auxiliary lane between the on-ramp at Airflight Drive and the on-ramp at LIB, and the closure of the on-ramp at LIB. Modeling the two alternatives provides a way to compare the safety conditions with and without an auxiliary lane between Airflight Drive and Cypress Road.

A summary of the ISATe results are provided in **Table 31**. The empirical-bayes derived results between the construction year (2032) and design year (2037) No Build, Alternative 1, and Alternative 2 conditions are similar as seen in **Table 31**. For the construction year (2032) and the design year (2037) Alternative 1 and Alternative 2 estimated annual crashes are within 0.5 crashes. Similar to the freeway segments, the Alternative ramp conditions are estimated to experience a small increase in crashes versus the No Build ramp conditions due to increases in volumes for specific ramps. Decreases and increases in total ramps crashes can be seen below in **Figure 10**, **Figure 11**, and **Figure 12**. The construction year (2032) increase or decrease in crashes is the top number, while the design year (2037) increase or reduction in crashes along the studied ramp is the bottom number in parentheses.

Although ISATe is great for analyzing projects in which weaving sections are added to a freeway, limitations of ISATe does not allow for the analysis of complete removal of ramps, therefore, the removal of the ramp in the Alternative conditions was accounted for by reducing the volume to nearly 0. The complete output from the ISATe spreadsheets can be seen in **Appendix G**.

Table 31: Build ISATe Results Comparison

Estimated Annual Crashes		**2032**			**2037**		
		No Build	**Alt 1**	**Alt 2**	**No Build**	**Alt 1**	**Alt 2**
Freeway	*PDO*	77.07	78.83	79.15	78.09	80.11	80.44
	Fatal/Injury	26.31	26.54	26.63	26.61	26.89	26.99
Ramps	*PDO*	9.86	10.47	10.47	10.09	10.71	10.71
	Fatal/Injury	6.24	7.26	7.26	6.35	7.41	7.41
Total		119.48	123.1	123.51	121.14	125.12	125.55
Fatal/Injury Total		32.55	33.8	33.89	32.96	34.3	34.4

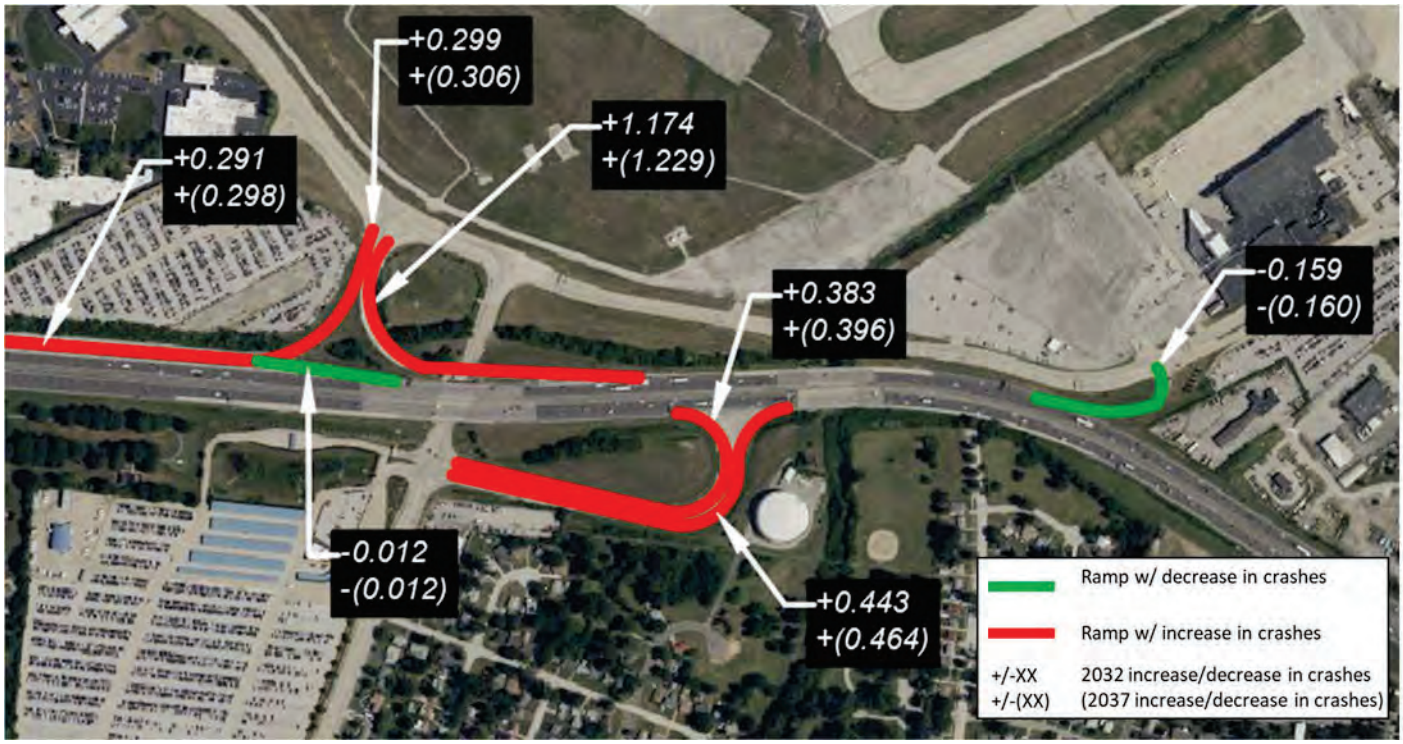

Figure 10 – No Build & Alternative Change in Crashes on Ramps (West Study Area)

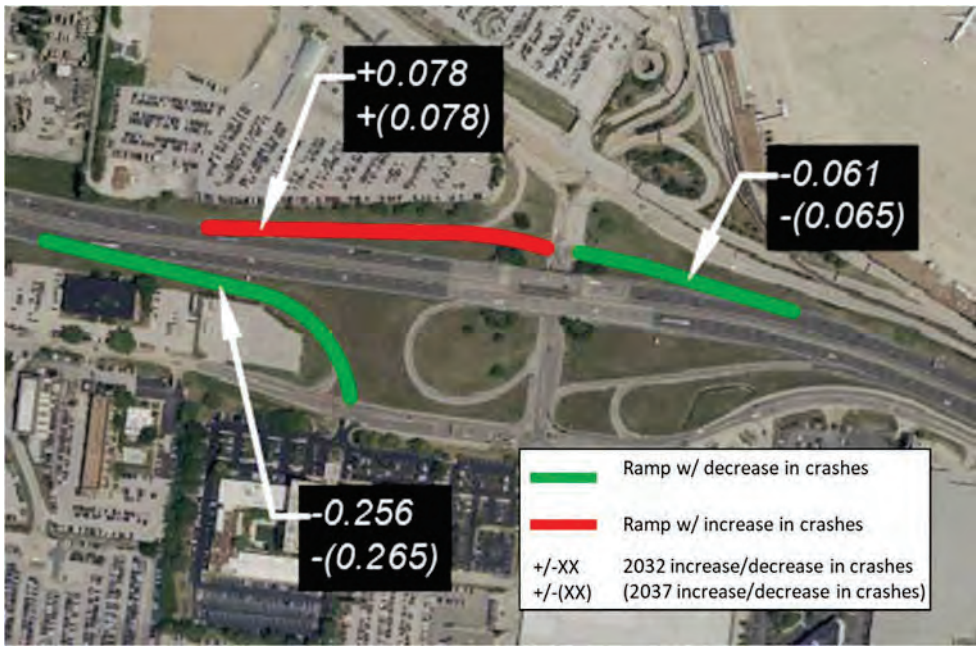

Figure 11 – No Build & Alternative Change in Crashes on Ramps (Central Study Area)

Figure 12 – No Build & Alternative Change in Crashes on Ramps (East Study Area)

4 Preferred Design Alternative

4.1 Coordination with Future Development

This project is coordinating with MoDOT's I-70 study (I-170 to Missouri River) and was designed to not conflict with any improvements that may be considered for that project. As part of the STL master plan, the planning team has engaged with surrounding communities to provide updates on the planning process and to document their concerns and feedback. The team most recently met with the surrounding communities in November 2023 to show the studied alternatives. The studied alternatives do not conflict or prevent a local connection to Woodson Terrace that has been proposed by the City of Woodson Terrace.

4.2 Coordination with NEPA Process

The Airport's Consolidated Terminal Program is currently conducting an Environmental Assessment with the Federal Aviation Administration (FAA) as lead agency. The landside elements of the program interfacing with the interstate will be reviewed by MoDOT and the Federal Highway Administration (FHWA) to conform with FAA's National Environmental Policy Act (NEPA) process. It was agreed with MoDOT that when design begins an Access Justification Report (AJR) will be developed for MoDOT and FHWA approval.

4.3 Conclusion

The Consolidated Terminal Program at Lambert St. Louis Airport will have regional impacts for air travel in the St. Louis metropolitan area. The studied alternatives provide improvements in mobility and safety for passengers, employees and vendors that travel to and from the terminal by vehicle. The existing service roadway configurations create less than desirable operational and safety conditions around the existing terminals. Currently, with two terminals drivers are required to make a number of decisions from where they exit I-70 to where they reach the terminal areas. Furthermore, each terminal requires decisions for either departures, arrivals or parking. The close proximity to I-70 requires short entrance roadways to the terminals that provide little time for this decision making for drivers entering the terminal parking and curbside areas. The redistribution of traffic to the Cypress Road interchange in order to provide an optimal one mile terminal roadway discussed in this report allow for a much-improved experience for airport traffic traveling between I-70 and the new terminal.

Future projects in the area were considered and accommodated when the studied alternatives. The nature of the alternatives provide flexibility for future improvements along I-70 that may extend outside of the study area of this project. The studied alternatives also maintain safe and efficient local access for businesses and communities within the immediate area around the airport.

As seen in sections 3.2 and 3.3 of this report, the proposed consolidated terminal has minimal impact on interstate and safety and operations in both of the studied alternatives. Both alternatives provide redistributed volumes away from Airflight Drive to the Cypress Road interchange while Alternative 2 provides new roadway improvements that mitigate the impact of increased volumes at key locations.

Based on results of the operational and safety analysis, it was determined that of the studied alternatives Alternative 2 best meets the criteria set forth in the Methods and Assumptions Report. For Alternative 2, average speeds and travel times on I-70 remain at or near free flow conditions during peak hours and crashes on I-70 are expected to increase by 1.44 fatal & injury crashes over No Build conditions through the studied future years. Furthermore, the auxiliary lane raises the LOS from a LOS C in No Build Conditions to a LOS B in the Alternative 2 conditions. While Alternative 1 provides acceptable LOS on mainline I-70 (LOS D), average speeds fall below free flow conditions between Airflight Drive and Cypress Road and results in a similar increase in crashes as compared to Alternative 2. Based on these results, it was concluded that the auxiliary lane included in Alternative 2 would be warranted in order to maintain average speeds on I-70.

Alternative 2 also includes improvements at the I-70 WB and Natural Bridge Road ramp terminal with the addition of a second westbound left turn lane. This additional lane is warranted based on the increase in traffic volumes per MoDOT EPG guidelines for left turn movements. With Alternative 2, the remaining intersections and other segments of I-70 operate at acceptable LOS. Both alternatives maintain access to Air Flight Drive with connections to airport related businesses on Pear Tree Drive and Natural Bridge Road to the south of I-70. Based on the two warranted improvements, Alternative 2 is recommended in order to mitigate the operational and safety impacts of the redistribution of traffic while providing a safe, clear and direct path to the CTP with low delay.

APPENDIX A

Consolidated Terminal Program

Method and Assumptions Report

9/11/2023

Prepared for:

Missouri Department of Transportation

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Jefferson City, MO 65102

Prepared by:

WSP USA

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St. Louis, MO 63102

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1.0 Stakeholders

The following project stakeholders are consulted and made aware of the plan of work set forth in this *Method and Assumptions Report* for the St Louis Lambert International Airport Consolidated Terminal Program.

Federal Aviation Administration (FAA)
- Lead federal agency

St. Louis Airport Authority
- Sponsoring agency

City of St. Louis
- Owner

Missouri Department of Transportation (MoDOT)
- Reviewing agency & roadway owner
    - I-70 mainline and ramps
    - Cypress Road between EB I-70 ramps and Natural Bridge Road
    - Pear Tree Lane/Natural Bridge Road/I-70 South Outer Road all the way through project area
    - Airflight from Pear Tree Lane until approximately 95' northbound of I-70 WB ramps
    - Brown Road from I-70 overpass to James S McDonnell Boulevard
    - Signals at Natural Bridge Road and westbound I-70 ramps
    - Signal at Natural Bridge Road/Lambert International Boulevard and Cypress Road
    - Signal at I-70 EB off-ramp and Pear Tree lane
    - Signals on Airflight Drive
    - Signal at I-70 South Outer Road and Natural Bridge Road

Federal Highway Administration (FHWA) – Missouri Division
- Partner federal agency

East-West Gateway Council of Governments (EWGCOG)
- Metropolitan planning organization

City of St. Louis
- Roadway/facility owner
    - St. Louis Lambert International Airport
    - Lambert International Boulevard east of Cypress Road
    - Air Cargo Road
    - Airflight Drive 95' north of I-70 WB ramps and onward
    - Signal at Lambert International Boulevard and I-70 WB

City of Bridgeton
- Roadway owner
    - Natural Bridge Road east of Lindbergh Boulevard ramps until Cypress Road

City of Edmundson
- Roadway owner
    - Airflight Drive south of Pear Tree Lane

St. Louis County
- Roadway owner
    - Cypress Road south of I-70 EB ramps
    - Brown Road south of I-70 overpass to Natural Bridge Road
    - James S McDonnell Boulevard

Bi-State Development Agency – Metro St. Louis

- Transit Agency serving the study area with bus and light rail service

2.0 Introduction

2.1 Need for Study

The St. Louis Lambert International Airport has completed a Master Plan (MP) . As a result of the plan, a new consolidated terminal program (CTP) has been proposed. A consolidated terminal is proposed in the location of the current Terminal 1 at the airport. In order to construct the consolidated terminal and associated facilities, including construction of a new terminal loop road, access improvements along I-70 are being studied.

2.2 Previous Studies

I-70 Planning and Environmental Linkages (PEL) Study – Completed by MoDOT and Approved by FHWA in 2018

2.3 Tentative Study Schedule

- Submit calibrated existing traffic models and calibration report for review
  - September 11, 2023
- Submit safety and traffic models and Traffic Safety and Operations (TS&O) Report
  - September 22, 2023
- Reviews completed
  - October 13, 2023
- Final Submittal
  - October 27, 2023

2.4 Key Project Staff and Stakeholders

The traffic and safety analysis will be completed by WSP under contract to St. Louis Lambert International Airport. The following staff will be active in the project and can be contacted if reviewers have any questions:

John van Woensel (John.Vanwoensel@wsp.com), Project Manager
Jennifer Kuchinski (Jennifer.Kuchinski@wsp.com), Deputy Project Manager
Dan DeArmond (Dan.Dearmond@wsp.com), Principal in Charge
James Neidel (jrneidel@flystl.com), St. Louis Lambert Airport Planning Manager
Mike Dolde (Michael.Dolde@wsp.com), Lead Traffic Engineer

3.0 Definition of the Study Area

The study area includes I-70 from MO 180 to the west side of the I-170 interchange (as shown in Figures 1 & 2 below). It is important to note that I-70 mainline and ramps only on the east side of MO 180 and west side of I-170 were included in the model for analysis. The conceptual roadway conditions are expected to impact the interchanges at Cypress Road and Airflight Drive. It is common in traffic modeling to include adjacent interchanges as a means of controlling traffic volumes entering the network. This study area was further expanded to the east to include the west of the I-170 interchange per MoDOT's request to study the interaction of traffic to and from Lambert International Boulevard. VISSIM will be utilized to analyze conditions throughout the study area including the added ramps at I-170.

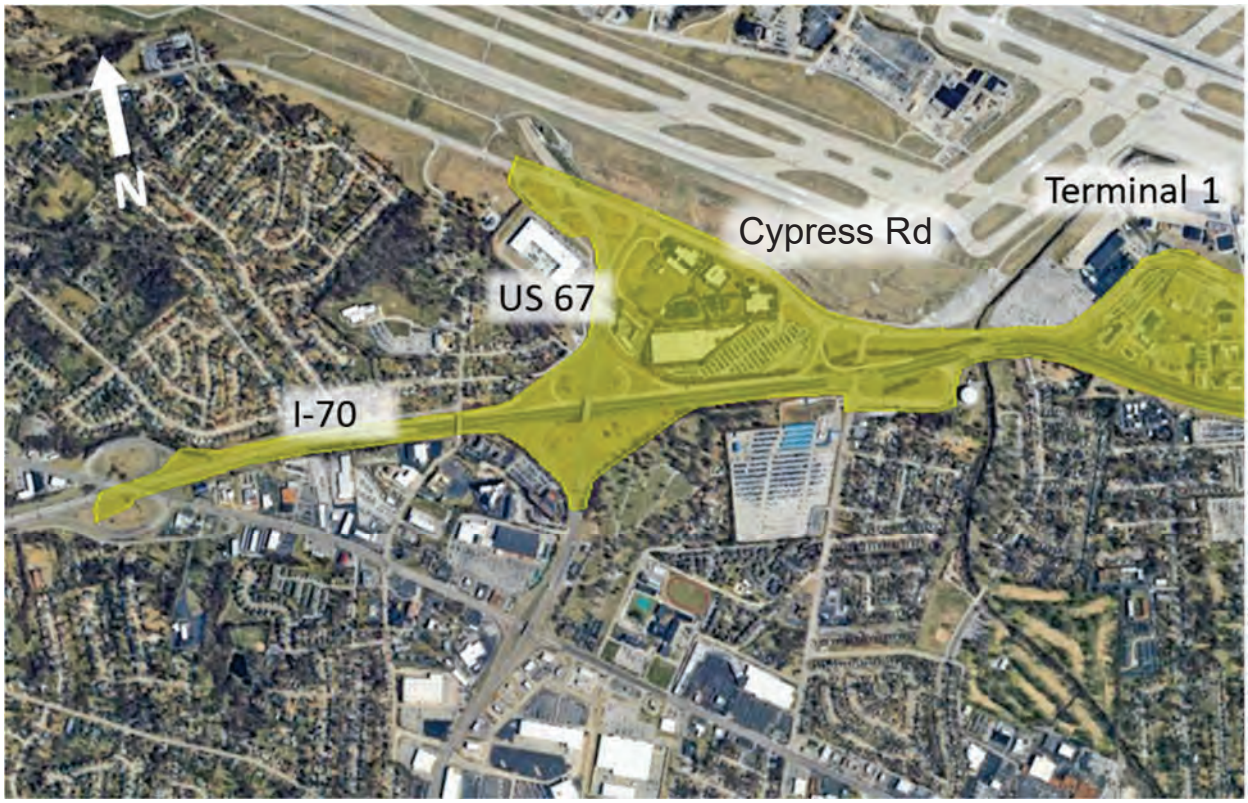

Figure 1 – West Side of Study Area (aerial image source: Google Earth)

Figure 2 – East Side of Study Area (aerial image source: Google Earth)

4.0 Analysis Years/Periods

Operational and Safety analysis will include AM and PM peak hours for the years listed below.

- Existing Base Year: 2022
- Assumed Interim/Opening Year: 2032
- Horizon/Design Year: 2037
    - Represents future conditions 5 years after proposed opening of consolidated terminal, see section 6.0 for traffic forecasts between 2032 and 2037

5.0 Design Alternatives

Existing – 2022

- Represents existing roadway conditions with 2022 traffic volumes. Existing 2,000 parking space garage remains at Terminal 1
- Existing airport operations with 2 terminals

No Build – 2032 & 2037

- Represents existing roadway network and existing Lambert Airport terminal and parking operations.

- Traffic volumes grown based on aviation growth (airline passenger origin and destination traffic only; airline connecting traffic is not included) and background mainline (highway) traffic growth. Origin and destination trips include only passengers that are from or are destined for St. Louis and do not include passengers that connect to other flights.
- 2032 and 2037 represent the same geometric conditions

Build – 2032 & 2037

- Represents the conceptual roadway conditions to serve a consolidated terminal at the airport. Currently, a new 7,200 parking space garage is also proposed to serve the consolidated terminal.
- Traffic volumes from No Build alternatives but redistributed based on conceptual roadway conditions.
- 2032 and 2037 represent the same geometric conditions

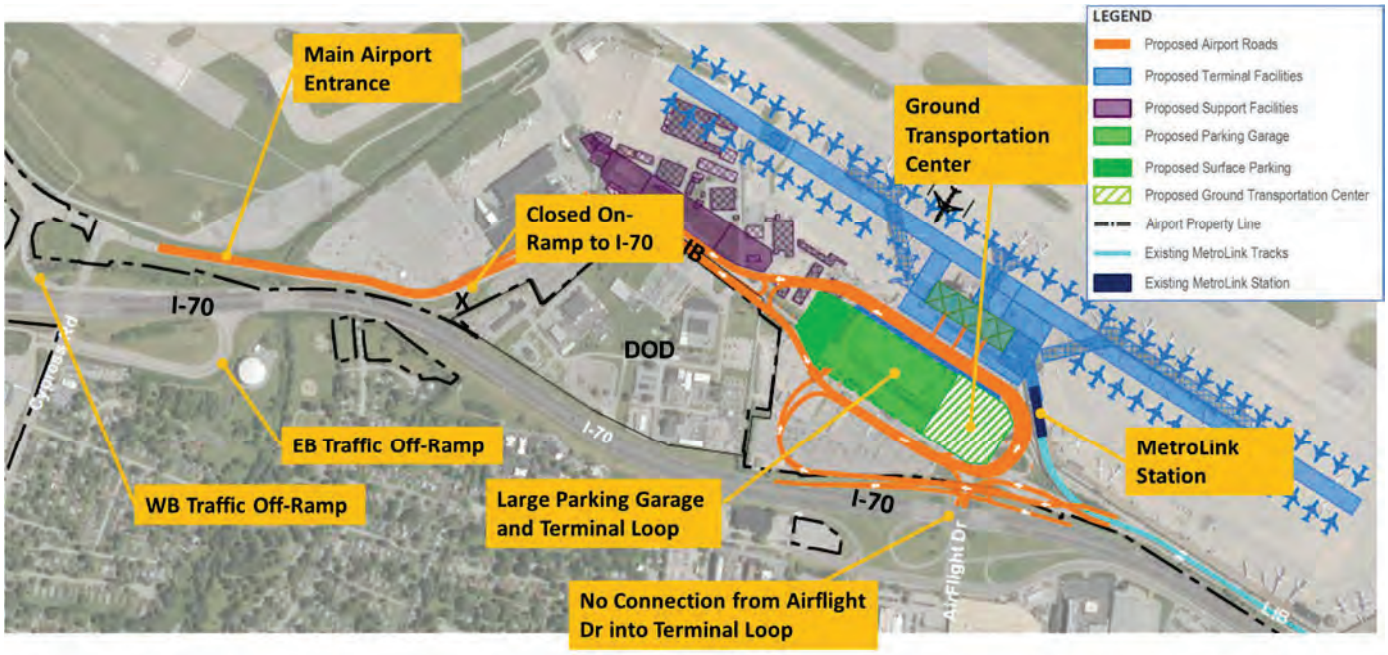

Figure 3 – Conceptual Roadway Conditions

6.0 Traffic Forecast

- Air passenger traffic growth has been projected out to the year 2040 as part of the St. Louis Airport Master Plan and was approved by FAA.
    - Airline passenger origin and destination trips were forecasted to grow an average of 1.2% until 2040. A 1.2%/year growth will be applied to all movements in and out of the airport.
        - Origin and destination trips include only passengers that are from or are destined for St. Louis and do not include passengers that connect to other flights.
    - STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments Technical Memo (dated September 30, 2022) is attached as an appendix to this report
- Historical volumes on I-70 in and near the study area were reviewed and showed no growth over the previous 10 years. It is our understanding that MoDOT is beginning a more detailed forecasting analysis that will be completed later in 2023. For our modeling purposes, an agreed upon (by MoDOT) 0.25% growth rate will be used for mainline I-70 vehicle inputs.
- WSP will contact EWGCOG to request data from the regional travel demand model for the study area. WSP will then present the proposed forecasting assumptions to EWGCOG to gain their consensus.
- It was discussed and agreed that sensitivity analysis will not be required.

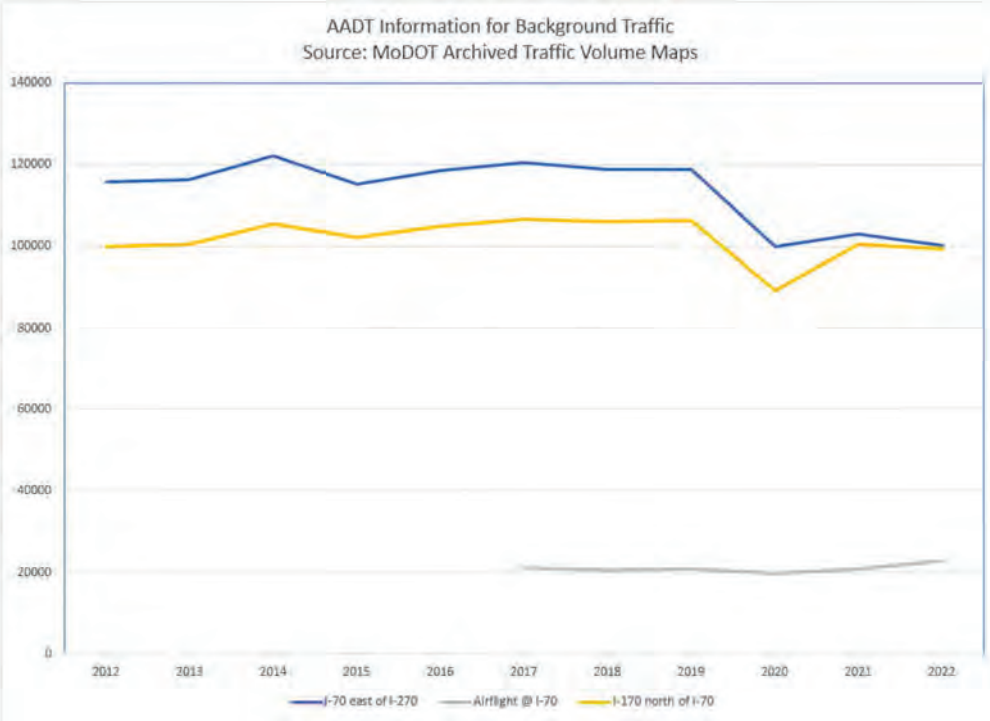

Figure 4 – I-70 Historic Growth

7.0 Traffic Operations and Safety Analysis

7.1 Minimum Levels of Service, Mobility, and Safety Targets

- Maintain intersection LOS D or better
  - Maintain existing LOS if existing intersection LOS is already D or worse
- Maintain existing interstate segments (basic, diverge, merge, weave) LOS D or better
  - Maintain existing LOS if existing segment LOS is already D or worse
  - Specify moved or redistributed congestion in reports
- Queue lengths not exceeding ramp storage
- Maintain reasonable travel times for routes into and out of the airport
- Maintain or decrease fatal and injury crash rates along I-70

7.2 Measures of Effectiveness and Data Collection

Measures of Effectiveness (MOEs) to be reported:

- Operational
  - Vehicle Throughput
  - Mainline Travel Time
  - Mainline Speeds
  - Mainline Density, LOS
  - Intersection Delay, LOS
  - Intersection Queueing

- Safety
  - Predicted crashes for future year

Data to be used in the analysis:

- Existing and historical traffic volumes
  - 2017 Intersection Traffic Movement Count for terminal roadways (Lambert Traffic Management Enhancement Timing Improvement CMAQ Project)
  - 2022 volumes gathered for mainline from MODOT Traffic Volume map
- Existing Signal Timing

- 2022 Roadway Details
  - Speed limits
  - Roadway geometries
  - Intersection control
- Preferred Conceptual Roadway Plan
  - Will be provided to project and review teams when available
- Historical crash data obtained from MoDOT Crash Map

7.3 Calibration Targets

All calibration targets and thresholds shown below are based on MoDOT's Engineering Policy Guide (EPG) 905.3.5.3.2.3.4.

- Link flows and GEH* statistics

Criteria and Measures	Calibration Acceptance Targets
Individual Link Flows	
Within 15%, for 700 veh/h < Flow < 2700 veh/h	> 85% of cases
Within 100 veh/h, for Flow < 700 veh/h	> 85% of cases
Within 400 veh/h, for Flow > 2700 veh/h	> 85% of cases
Sum of All Link Flows	Within 5% of sum of all link counts
GEH Statistic <5 for Individual Link Flows	> 85% of cases
GEH Statistic for Sum of All Link Flows	GEH < 4 for sum of all link counts
Source: FHWA Traffic Analysis Toolbox, Volume III, Section 5.6 (Table 4)	

Table 1 – Calibration Targets for Link Flows and GEH Statistics (Source: MoDOT EPG)

* GEH is a statistic that is commonly used in traffic modeling to compare expected volume and actual volumes during model calibration

- Regional Integrated Transportation Information System (RITIS) Speed Calibration
  - Model speeds will be within 5 mph of RITIS speeds on at least 85% of all freeway links.
- RITIS Travel Time Calibration
  - Freeway travel times will be within 15% of real-world travel times (or 1 minute maximum, if higher) for greater than 85% of the cases.
- Observed Arterial Operations
  - Operations match the existing conditions seen in the field.

7.4 Traffic Analysis Software Programs to be Used

- ☐ Highway Capacity Software (HCS)
- ☒ **VISSIM – 2022 (SP 12)**
- ☐ Synchro
- ☐ SimTraffic
- ☐ SIDRA
- ☐ Other: _____
- ☐ Other: _____

MoDOT currently has VISSIM version 2022 to use for review. VISSIM will be utilized throughout the study area and for the added ramps at I-170.

7.5 Safety Analysis Software Programs to be Used

- ☐ Highway Safety Manual (HSM) Spreadsheets
- ☒ **ISATe**
- ☐ IHSDM
- ☐ Other: _____
- ☐ Other: _____

Tool Version / Build: ISATe Build 6.10

8.0 Conclusion

FAA has requested a statement from MoDOT, once this Airport Master Plan landside concept evaluation is complete, that they are “unopposed” to the proposed concept at which point FAA will begin the NEPA evaluation of the proposal. It is expressly understood that the Airport will hire a future designer to carry forth the concept into detailed design and conduct an Access Justification Report (AJR). MoDOT/FHWA will be the reviewing and approving bodies of the AJR. Only with an approved AJR can the Airport carry out construction of the final designed concept. It should be noted that approval of an AJR is also dependent on approval of NEPA. The AJR will likely require additional analysis of a future design year (2050).

This analysis and study for the landside concept evaluation are to inform MoDOT of impacts generated by the Consolidated Terminal Program and preferred roadway improvements.

9.0 Record of Revisions

Revision #	Date of Revision	Content which was Revised
0	July 26, 2023	Original Content
1	Aug 10, 2023	For submittal to MoDOT
2	Aug 23, 2023	Received comments from MoDOT, FHWA, and STL Airport

APPENDIX B

Consolidated Terminal Program

Calibration Report

9/11/2023

Prepared for:

Missouri Department of Transportation

105 W. Capitol Avenue

Jefferson, MO 65102

Prepared by:

WSP USA

211 N. Broadway Suite 2800

St. Louis, MO 63102

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1.0 INTRODUCTION

Vissim modeling was started in 2020 as part of the St. Louis Lambert International (STL) Airport Layout Plan Update (ALPU), which later became the STL Master Plan. During the STL Master Plan, the intent of the modeling was to determine and analyze existing and future conditions of the airport's roadways that serve the airport, including Terminal 1 and Terminal 2. During the initial effort, only the airport roadways were modeled, and I-70 was excluded, as the analysis focused on the curbside and areas immediately surrounding the terminals. More recently, new airport roadway scenarios were studied that would serve a consolidated terminal at the site of the current Terminal 1, known as the Consolidated Terminal Program (CTP). These new roadway scenarios studied how terminal loop roads could connect to I-70 to improve and lengthen the distance from the interstate to the curbside. To better understand how these scenarios work in conjunction with the interchanges on I-70, existing models were created and calibrated to use as a basis in comparison to future models based on build and no build scenarios. For this project, it was determined that the airport peak hour and roadways peak hour aligned for the AM and PM peak periods. Therefore, for the conceptual phase of the project, there are two modeled periods: PM peak conditions (4:30pm-5:30pm) and AM Peak conditions (8:00am-9:00am). The boundary of modeling contains all of I-70 mainline and ramps within MO 180 and I-170. This technical memo describes the development, evaluation, and calibration of the existing models.

1.1 Version of Software Used

PTV Vissim 2022 (SP 12)

1.2 Future Applications of Calibrated Model

The calibrated existing models and their results will serve as the basis of comparison for future models' operations and performance changes.

2.0 MODEL DEVELOPMENT

2.1 Analysis Study Area

The study area includes I-70 from MO 180 to the west side of the I-170 interchange (as shown in Figures 1 & 2 below). The conceptual roadway conditions are expected to impact the interchanges at Cypress Road and Airflight Drive. It is common in traffic modeling to include adjacent interchanges to control traffic volumes entering the network. This study

area was further expanded to the east to include the west of the I-170 interchange per MoDOT's request to study the interaction of traffic to and from Lambert International Boulevard (LIB).

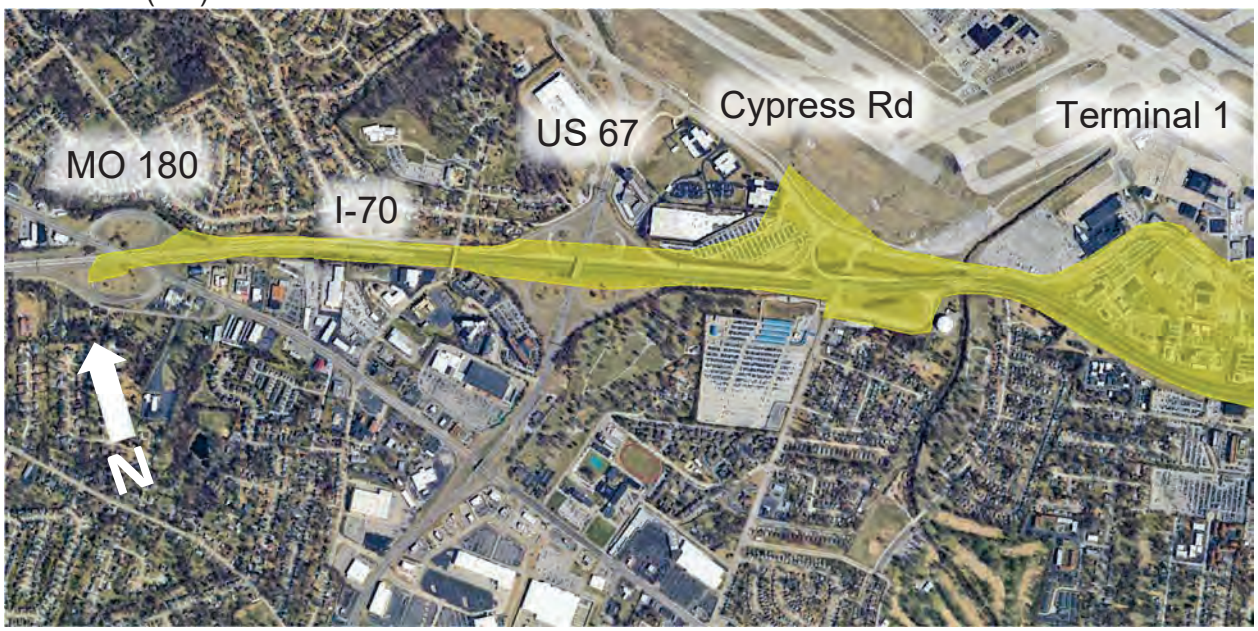


Figure 1 – West Side of Study Area (aerial image source: Google Earth)

Figure 2 – East Side of Study Area (aerial image source: Google Earth)

2.2 Analysis Years

Operational analysis will include AM and PM peak hours for the years listed below.

- Existing Base Year: 2022
- Assumed Interim/Opening Year of the CTP: 2032
- Horizon/Design Year: 2037

2.3 Analysis Peak Periods

The AM and PM peak hours were both modeled. The AM peak hour is 8:00am to 9:00am and the PM peak hour is 4:30pm to 5:30pm. Peak hour volumes were determined by evaluating the traffic count data for intersections directly serving the airport terminals and MoDOT's Traffic Volume Map. Therefore, the peak hour volumes used for the existing conditions analysis represent the highest traffic volumes that occur at the airport. Although there is peaking in the PM peak period, there was no sufficient evidence of peaking during the AM peak hour and therefore, the flow rate is constant throughout the 30-minute seeding period and each 15-minute interval following. Peaking for each period can be seen below in **Table 1**.

Table 1 – Peaking Input Examples

AM Peaking Input Example					
Input	Time Interval	Hourly Flow	Interval Factor	15-Min Flow	Average Flow
1	Seed	--	1.00	2300	--
	0-15	2300	1.00	2300	2300
	15-30		1.00	2300	
	30-45		1.00	2300	
	45-60		1.00	2300	

PM Peaking Input Example					
Input	Time Interval	Hourly Flow	Interval Factor	15-Min Flow	Average Flow
1	Seed	--	1.00	2395	--
	0-15	2395	0.88	2108	2395
	15-30		1.12	2682	
	30-45		0.88	2108	
	45-60		1.12	2682	

2.4 Data Collection and Preparation

2.4.1 Traffic and Roadway Data

Geometric data was gathered from field visits and Google Earth. Geometric data includes number of lanes, lane width, posted speeds, signage, storage length, signal locations and striping. Volume data was provided from four sources including: intersection turning movement counts from two associated projects, the MoDOT (Missouri Department of Transportation) Interactive Traffic Volumes map, and Transcore roadside sensor data. The newer of the two provided intersection turning movement counts listed below in **Table 2** were used for arterials in all cases, aside from a few missing intersections and movements which were not provided in these counts. The mainline volumes were primarily from MoDOT's Interactive Traffic Volumes Map, but where mainline segments were severely imbalanced, the volumes were taken from Transcore roadside sensor data. The RITIS (Regional Integrated Transportation Information System) data was normalized and used in tandem with incident data, weather conditions, and roadway sensor data to select each desired day of peak calibration data via k clustering. RITIS data was also used in the bidirectional speed distributions for mainline.

Table 2 - Data Items Used for Model Development

Data Item	*Source(s)*	*Model Incorporation*
Aerial's	*Google Earth*	*Roadway geometry, turn restrictions, number of lanes, signage*
Field Visits and Observations	*WSP*	*Roadway geometry, turn restrictions, number of lanes, driver behavior, signage*
Vehicle Travel Time and Speeds	*RITIS* (Regional Integrated Transportation Information System)	*Mainline speed distributions, Calibration data selection*
Volume and Speed Data	*Roadside Sensors, Transcore Transuite ATMS (Advanced Transportation Management System)*	*Verification of RITIS speeds, peak hour verification, analysis of peaking, mainline volumes, Calibration data selection*
Traffic signal timing plans	*St. Louis Lambert International Airport, MoDOT*	*Detector placement, signal phasing, splits, offsets*
Intersection Turning Movement Count	*Lambert Traffic Management Enhancement Project (2017), CBB Transportation & Engineers & Planners*	*Intersection movement, vehicle compositions*
Data Item	*Source(s)*	*Model Incorporation*
Intersection Turning Movement Count	*MoDOT I-70 Project Team (consultant collected)*	*Intersection movement, vehicle compositions*
MoDOT Interactive Traffic Volumes Map	*MoDOT*	*Mainline traffic volume estimates and verification of volume and heavy vehicle data collected*
Terminal Curbside Observations	*WSP*	*Docking times, vehicle and pedestrian behaviors, speeds, and congestion*
Incident Data	*MoDOT Data Zone*	*Calibration data selection*
Weather Data	*Weather Underground, wunderground.com*	*Roadway conditions, calibration data selection*

2.4.2 Base Model Development

Link geometries were first developed from provided data. Following the completion of link geometries, intersection control was coded throughout the model based on existing timings. As specified from existing timing, overlaps were coded to allow for permissive movements. Following this, all conflict areas were given the correct designation throughout the model to allow for proper movements. In several cases a priority rule and/or stop sign was coded to allow for the correct order of traffic movement operations, specifically for right turns that oppose a permissive left turn movement. Arterial desired speeds and reduced speed areas throughout were based on posted speed limits. These distributions are linear and were within 5 mph of the posted speed. Mainline speed distributions were based on actual data and represent the cumulative distribution (S-curve) as defined from free flow speeds derived from the RITIS data for each direction.

Vehicle routing is static throughout the model and done on a point-to-point basis. Origin-Destination data was not considered in this analysis and therefore, Origin-Destination vehicle routing was not implemented in the models. What can be seen is the combination of some routes throughout the model. In these instances, traffic operations looked more realistic with combined routes upstream. Following the coding of vehicle routing, interval data was set up.

The first 1800 simulation seconds (30 minutes) represents the seeding period. Following this, each 900 second (15 minute) interval represents the peak period being analyzed. Vehicle input volumes were then coded to equal the sum of the vehicle routing decision downstream of the vehicle input. Lastly, driver behaviors were updated for the freeway within the suggested ranges to represent realistic traffic movements on the mainline for this region. The values used for the altered driver behavior parameters can be seen in **Table 6** in section 3.5, Parameter Refinement.

2.5 Model Assumptions

Assumed data found in each model is within MoDOT Engineering Policy Guide (EPG) guidelines and follows recommendations found within FHWA's Traffic Analysis Toolbox. Several of the assumptions act as standardizations derived from tangible data. Assumptions include vehicle routing, speed distributions, vehicle compositions, intervals, peaking, and driver behaviors. The assumptions made during the base model development can be seen below in **Table 3**. These assumptions are to remain constant in future models to assure for the most realistic representation of results.

Table 3 - Model Assumptions

Type	Category	Setting	Assumption	Reason
Base Data	*Distribution*	*Desired speed*	*Linear distributions*	*Use posted speed limits +/-5 mph as the upper and lower bound of desired speed.*
		Turn-speed	*Linear distributions*	*Linear distribution of 7.5 to 15.5 mph and 12.4 to 18.6 mph was defined for each turn according to its turn-type.*
Base Data	*Distribution*	*Desired Speed*	*Cumulative Distributions*	*Distributions were developed based on available data and assume free flow speeds based on provided data.*
Traffic	*Vehicle composition*	*Highways/ local streets*	*Vehicles classified by combination trucks, single-unit trucks, and cars*	*Vehicle compositions were developed from available field data*
Vehicle Inputs	*Intervals & Volumes*	*Seeding Time Duration*	*30 minutes*	*Captures full throughput into model*
		Recording interval duration	*60 minutes*	
Routing Decisions	*Static*	*Relative Flows*	*Proportional traffic distribution*	*In the absence of any data regarding O/D patterns, all patterns were assumed to be proportional*
Vehicle Inputs	*Volume*	*Volume Per Intervals*	*Peaking was provided from data where applicable*	*Data did not provide sufficient evidence to include peaking during the AM peak period, but peaking was seen in the PM peak period.*
Driver Behavior	*Link Behavior Types*	*Driver Behavior Parameters*	*Values were assumed differently from the default assumed values*	*The selected values are all within recommended limits and enable vehicles to move more realistically throughout sections of the mainline*
Link Connector Attributes	*Lane Change*	*Lane Change Distance*	*Nearest exit signage beyond last exit sign*	*Consistency amongst methodologies. Many people begin to position themselves at this point*

3.0 MODEL PARAMETER CALIBRATION

Model calibration follows guidelines closely specified in FHWA's *Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software.* One representative day was selected for each peak period from our RITIS data sample. Selecting average travel times or speeds over a longer period would have led to the modeling of a synthetic day, which may not be representative of normal conditions.

3.1 Calibration Procedure

Calibration of the model to the specified calibration parameters was done in a trial-and-error manner. The model was close to being calibrated to the accepted calibration parameter targets using the speed distributions calculated from the RITIS data and default driver behaviors. For each subsequent iteration, the driver behaviors were adjusted (see **Table 6**) to enable vehicles to have more realistic interactions along mainline and reach realistic speeds and capacity thresholds.

3.2 Selection of Calibration Parameters

As mentioned in the TIA Methods and Assumptions Report, the calibration parameters used during the calibration process include vehicle travel times/vehicle speeds, link flows and GEH statistics[1], and observed arterial operations. An initial data sample for RITIS was considered for speed/travel time calibrations. The RITIS data sample was then narrowed down to one day for each peak period. This process was done through k clustering and follows the suggested guidelines in FHWA's *Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software.* Identifying one representative day for each peak period through k clustering helps to validate the data which the model is being calibrated to and ensures that a modeler is not attempting to calibrate a model to fictional conditions.

3.3 Measures of Effectiveness (MOEs) for Validation

Measures of Effectiveness (MOEs) to be reported:

- Vehicle Throughput
- Mainline Travel Time
- Mainline Speeds
- Mainline Density, Levels of Service (LOS)
- Intersection Delay, LOS
- Intersection Queueing

[1]The GEH (Geoffrey E. Havers) Statistic is a formula used in traffic engineering, traffic forecasting, and traffic modelling to compare two sets of traffic volumes.

3.4 Calibration Criteria and Targets

The accepted Calibration targets can be seen below in **Table 4** and **Table 5**.

Table 4 – Calibration Targets for Link Flows and GEH Statistics

Criteria and Measures	Calibration Acceptance Targets
Individual Link Flows	
Within 15%, for 700 veh/h < Flow < 2700 veh/h	> 85% of cases
Within 100 veh/h, for Flow < 700 veh/h	> 85% of cases
Within 400 veh/h, for Flow > 2700 veh/h	> 85% of cases
Sum of All Link Flows	Within 5% of sum of all link counts
GEH Statistic <5 for Individual Link Flows	> 85% of cases
GEH Statistic for Sum of All Link Flows	GEH < 4 for sum of all link counts
Source: FHWA Traffic Analysis Toolbox, Volume III, Section 5.6 (Table 4)	

(Source: Missouri Department of Transportation EPG)

Table 5 – Calibration Targets for Vehicle Travel Times and Speeds

Calibration Measures	Calibration Acceptance Target
Vehicle Speeds	Model speeds will be within 5 mph of RITIS speeds on at least 85% of all RITIS segments.
Vehicle Travel Time	Freeway travel times will be within 15% of real-world travel times (or 1 minute maximum, if higher) for greater than 85% of the cases.

(Source: Missouri Department of Transportation EPG)

3.5 Parameter Refinement

During the calibration process, several iterations were performed for both modeled peak periods to achieve realistic car movements and operations. Initially, the model used one behavior for freeway using Wiedemann 99 car following parameters and another for urban arterials using Wiedemann 74 car following parameters. The Urban driver behavior worked well as default for both peak periods. Insufficient lane changing and following behaviors were observed throughout the model in merge, diverge, and weave areas. Therefore, it was decided that a new behavior would be created to properly depict lane changes and following behaviors in these areas.

The “Merge/Diverge/Weave” driver behavior was created to be assigned to all merge, diverge, and weave areas. To create consistency for present and future models, the influence areas of the merge, weave, and diverge were coded as described in the highway capacity manual and is as follows: 1500’ upstream from gore of an exit ramp is defined as diverge segment, 1500’ downstream from the gore of an entrance ramp is defined as a merge segment, and all sections of highway which have an auxiliary lane that are directly connected to both an entry and exit ramp as well as 500’ before and after are defined as a weave segment. All driver behavior parameters are within MoDOT’s suggested parameters and can be seen below in **Table 6**.

Table 6 - Driver Behavior Parameters

Wiedemann 99 Car Following Parameters							
Parameter		Default	Unit	MoDOT Suggested Range		Existing Calibrated Model	
				Basic Segment	Merge/Diverge & Weaving	Freeway	Merge/Diverge
CC0	Standstill Distance	4.92	ft	4.50 - 5.50	> 4.92	Default	
CC1	Headway Time	0.9	s	0.70 - 3.00	0.90 - 3.00	Default	
CC2	Following' Oscillation	13.12	ft	6.56 - 22.97	13.12 - 39.37	Default	39.37
CC3	Threshold for entering 'following'	-8		Use Default		Default	
CC4	Negative 'following' threshold	-0.35		Use Default		Default	
CC5	Positive 'following' threshold	0.35		Use Default		Default	
CC6	Speed Dependancy of Oscillation	11.44		Use Default		Default	
CC7	Oscillatino Acceleration	0.82	ft/s²	Use Default		Default	
CC8	Standstill Acceleration	11.48	ft/s²	Use Default		Default	
CC9	Aceleration at 50 mph	4.92	ft/s²	Use Default		Default	

Lane Change Parameters					
General Behavior	Free Lane Selection			Existing Calibrated Model	
Necessary Lane Change (route)	Own	Trailing Vehicle	Unit	Freeway	Merge/Diverge
Maximum deceleration:	-15 to -12	-12 to -8	ft/s²	Default	
-1 ft/s² per distance:	150 to 250	150 to 250	ft	Default	
Accepted deceleration:	-2.5 to -4.0	-1.5 to 2.5	ft/s²	Default	
Waiting time before diffusion:		30 to 60	s	Default	
Min. headway (front/rear):		1.5 to 2.0	ft	Default	
To slower if collision time above:		0 to 0.5	s	Default	
Safety distance reduction factor:		0.25 to 1.00		Default	0.25
Maximum deceleration for cooperative breaking:		-8 to -15	ft/s²	Default	-15
Overtake reduced speed areas:		Leave Unchecked		Default	
Advanced Merging:		Can Adjust		Default	
Cooperative Lane Change:		Can Adjust		Default	Turned On
Rear correction of lateral position:		Leave Unchecked		Default	

(Source: Missouri Department of Transportation EPG)

4.0 MODEL VALIDATION RESULTS

The metrics used for calibration include traffic volumes, vehicle speeds and travel times, and arterial intersection operations. The raw data can be seen organized in the attached excel sheets titled “Existing Conditions Results,” “Existing VISSIM Node Evaluation (AM),” and “Existing VISSIM Node Evaluation (PM).”

4.1 Traffic Volumes

Vehicle Throughput was analyzed for arterial and mainline links within the model. Calibration targets described in section 3.4 were achieved in both the AM and PM peak periods as shown below in **Table 7**.

Table 7 - Traffic Volume Validation Summary

Criteria/Measures	*Targets*	*AM Peak*		*PM Peak*	
		Freeway	*Arterial*	*Freeway*	*Arterial*
Within 100 vph, for flow < 700 vph	*> 85%*	*100%*	*100%*	*100%*	*100%*
Within 15%, for 700 vph < flow < 2,700 vph	*> 85%*	*100%*	*100%*	*100%*	*100%*
Within 400 vph, for flow > 2,700 vph	*> 85%*	*100%*	*100%*	*100%*	*100%*
GEH < 5 for individual link flows	*> 85%*	*100%*	*100%*	*100%*	*100%*
GEH < 4 for sum of all link counts	*100%*	*100%*		*100%*	

(Source: Missouri Department of Transportation EPG)

4.2 RITIS Segment Speed Analysis

AM and PM period speeds were analyzed along the mainline (I-70). As described in section 3.4, model speeds must be within 5 miles per hour of RITIS speed. As seen below in **Table 8**, **Table 9**, **Table 10**, and **Table 11**, average speed over the peak hour for each segment is within 5 miles per hour of RITIS’s average peak hour speeds for 100% of the RITIS segments. For a more detailed analysis of the speeds, each 5-minute interval could be compared for the model and the RITIS data speeds. The 5-minute interval accuracy along each RITIS segment in the model for both peak periods was also studied. The AM peak period is within 5 miles per hour for 97% and 100% in the westbound and eastbound directions, respectively. The PM peak period is within 99% and 88% in the westbound and eastbound directions, respectively.

Table 8 - Westbound Speeds (AM Peak Period)

RITIS I-70 WB															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	67	66	66	63	66	66	66	64	65	67	64	67	65.7
119+04296		STL Airport - Airflight Dr	1.1	65	65	66	61	65	65	64	64	63	66	65	67	64.8
119+04297		Airflight Dr - LIB	0.5	63	64	66	63	65	66	65	64	64	63	66	66	64.5
119+04298		LIB - Cyprus Rd	0.4	64	65	64	64	63	64	64	64	65	64	66	67	64.4
119+04299		Cyprus Rd - US 67	0.8	66	67	65	64	62	65	65	67	66	66	67	67	65.5
119+04300		US 67 - MO 180	0.6	67	70	67	66	65	67	66	67	66	67	67	66	66.7
VISSIM I-70 WB																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63	63	63	63	63	63	63	63	64	63	63	63	63.3
119+04296		STL Airport - Airflight Dr	1.1	62	63	63	63	63	63	63	63	63	63	63	63	62.8
119+04297		Airflight Dr - LIB	0.5	62	63	63	63	63	63	62	62	62	63	63	62	62.5
119+04298		LIB - Cyprus Rd	0.4	62	62	62	62	62	62	62	62	60	63	62	62	61.9
119+04299		Cyprus Rd - US 67	0.8	63	63	63	63	63	63	63	63	63	63	63	63	63.0
119+04300		US 67 - MO 180	0.6	63	63	63	63	63	63	63	63	63	63	63	63	63.1

Table 9 - Eastbound Speeds (AM Peak Period)

RITIS I-70 EB															
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	64	63	63	64	62	61	61	63	62	63	66	66	63.2
119-04298		US 67 - Cypress Rd	0.5	65	65	65	66	64	62	62	64	63	63	64	67	64.1
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62	63	61	64	63	62	61	61	59	60	61	63	61.6
119-04295		Airflight Dr - MO 115	1.2	63	62	59	62	62	63	60	59	60	61	61	64	61.3
119-04294		MO 115 - I170	0.9	66	66	64	65	64	64	63	61	62	63	64	65	63.8
VISSIM I-70 EB																
Segment ID	**Corridor**	**Section**	**Length**	**8:00 AM**	**8:05 AM**	**8:10 AM**	**8:15 AM**	**8:20 AM**	**8:25 AM**	**8:30 AM**	**8:35 AM**	**8:40 AM**	**8:45 AM**	**8:50 AM**	**8:55 AM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62	62	62	62	62	62	62	62	62	63	63	62	62.4
119-04298		US 67 - Cypress Rd	0.5	62	61	62	62	62	62	62	62	62	62	62	61	61.8
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62	62	62	62	62	62	62	62	62	63	62	62	62.1
119-04295		Airflight Dr - MO 115	1.2	62	62	62	62	62	62	62	62	62	62	62	62	61.8
119-04294		MO 115 - I170	0.9	63	63	63	63	63	63	63	63	63	63	63	63	63.0

Table 10 - Westbound Speeds (PM Peak Period)

RITIS I-70 WB														
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63	62	65	62	60	62	65	64	63	64	64	62	63.0
119+04296		STL Airport - Airflight Dr	1.1	64	64	64	63	59	61	65	64	63	62	62	56	62.1
119+04297		Airflight Dr - LIB	0.5	61	63	64	63	61	60	62	63	63	61	62	57	61.7
119+04298		LIB - Cyprus Rd	0.4	61	63	65	63	60	59	61	62	60	61	57	61	60.9
119+04299		Cyprus Rd - US 67	0.8	58	62	65	63	61	63	64	63	62	65	61	64	62.5
119+04300		US 67 - MO 180	0.6	62	62	65	66	64	64	66	63	62	67	61	65	64.0
VISSIM I-70 WB																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63	63	63	63	62	63	63	63	64	63	63	63	63.0
119+04296		STL Airport - Airflight Dr	1.1	62	63	63	62	62	61	62	63	63	62	62	61	62.0
119+04297		Airflight Dr - LIB	0.5	62	62	62	62	61	61	61	62	62	62	61	61	61.7
119+04298		LIB - Cyprus Rd	0.4	61	62	62	61	60	58	59	61	62	61	60	56	60.4
119+04299		Cyprus Rd - US 67	0.8	62	63	63	62	62	61	62	62	63	63	62	62	62.2
119+04300		US 67 - MO 180	0.6	62	63	63	63	62	62	61	63	63	63	62	62	62.4

Table 11 - Eastbound Speeds (PM Peak Period)

RITIS I-70 EB															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	68	66	70	65	67	67	66	69	66	69	66	66	66.9
119-04298		US 67 - Cypress Rd	0.5	67	64	68	65	65	65	66	67	66	67	66	67	66.1
119-04297[1]		Cypress Rd - Airflight Dr	1.0	65	61	64	62	61	63	61	63	63	64	61	62	62.5
119-04295		Airflight Dr - MO 115	1.2	65	62	64	64	61	61	61	64	63	63	63	61	62.6
119-04294		MO 115 - I170	0.9	66	64	62	65	64	62	62	62	66	65	66	64	64.1
VISSIM I-70 EB																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	63	63	62	62	62	62	62	63	63	62	61	62	62.3
119-04298		US 67 - Cypress Rd	0.5	62	62	62	62	62	62	62	62	62	60	61	61	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	63	63	62	62	62	62	62	63	63	62	61	61	62.1
119-04295		Airflight Dr - MO 115	1.2	62	62	61	61	61	61	62	62	62	62	61	61	61.6
119-04294		MO 115 - I170	0.9	63	63	63	63	63	63	63	63	63	63	63	63	62.8

4.3 Travel Times

As specified in section 3.4, freeway travel times will be within 15% of real-world travel times (or 1 minute maximum, if higher) for greater than 85% of the cases in the calibrated model. As seen in **Table 12** and **Table 13**, the vehicle travel times meet the required target calibration parameters. For both peak periods, the modeled vehicle travel times were within 15% of RITIS vehicle travel times for 100% of cases. It is important to note that one of the segments in the eastbound direction was combined with the downstream segment due to its short length of less than 0.2 miles.

Table 12 - AM Vehicle Travel Times

AM Travel Time (I-70) - All Vehicles								
Segment ID	Corridor	Section	RITIS Length (mi)	RITIS AVG Travel Time (min)	Travel Time Percent Difference*	Travel Time Difference (min)	EXISTING VISSIM Travel Time (min)	EXISTING VISSIM Distance*
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.6	-2.5%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.0	-2.6%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	-0.6%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	-8.3%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	-6.3%	0.0	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.5	-5.1%	0.0	0.6	0.6
Total			**4.2**	**3.9**	**-4.0%**	**-0.2**	**4.0**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	-1.4%	0.0	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	0.5	-1.3%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	-0.9%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.2	2.4%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	0.9	-0.4%	0.0	0.9	0.9
Total			**5.9**	**5.7**	**-0.3%**	**0.0**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

Table 13 - PM Vehicle Travel Times

PM Travel Time (I-70) - All Vehicles								
Segment ID	Corridor	Section	RITIS Length (mi)	RITIS AVG Travel Time (min)	Travel Time Percent Difference*	Travel Time Difference (min)	EXISTING VISSIM Travel Time (min)	EXISTING VISSIM Distance (mi)
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.6	-0.9%	0.0	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.0	-2.8%	0.0	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	-1.1%	0.0	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	-9.2%	0.0	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	-7.1%	-0.1	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.5	-5.0%	0.0	0.6	0.6
Total			**4.2**	**3.9**	**-4.1%**	**-0.2**	**4.1**	**4.2**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	-5.6%	-0.1	1.1	1.2
119-04298		US 67 - Cypress Rd	0.5	0.5	-4.6%	0.0	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	-3.1%	0.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.1	-0.8%	0.0	1.1	1.2
119-04294		MO 115 - I170	0.9	0.9	-2.0%	0.0	0.9	0.9
Total			**5.9**	**5.5**	**-3.1%**	**-0.2**	**5.7**	**5.9**

* MoDOT Guidance 5.3.2.3.4 - Travel times should be within 15% (or 1 minute maximum) of real-world travel times for greater than 85% of cases

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

4.4 Intersection Operational Measures of Effectiveness

To maintain modeling accuracy, analysis of intersection operations was done through node evaluation. Delay, level-of-service, and queuing were all compared to existing observations to ensure the model was calibrated for the arterial roadways. The results for the AM node evaluation can be seen in **Table 14** and the results for the PM node evaluation can be seen in **Table 15**.

Table 14 - AM Node Evaluation Results

Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: MO 115/LIB @ Parking Lot D	NB	Left	0	0.0	0.0	0.0	0.0	A
1: MO 115/LIB @ Parking Lot D	NB	Right	12	5.5	0.2	61	1	A
1: MO 115/LIB @ Parking Lot D	EB	Through	171	0.1	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	EB	Right	16	0.6	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	WB	Left	0	0.0	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	WB	Through	211	0.0	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	Total	Total	410	0.2	0.0	61	0	A
2: I-70 WB @ MO 115/Cypress/LIB	NB	Left	111	14.7	7.8	128	8	B
2: I-70 WB @ MO 115/Cypress/LIB	NB	Right	140	3.4	0.1	89	1	A
2: I-70 WB @ MO 115/Cypress/LIB	EB	Through	173	9.9	3.8	103	6	A
2: I-70 WB @ MO 115/Cypress/LIB	EB	Right	11	1.1	0.0	10	0	A
2: I-70 WB @ MO 115/Cypress/LIB	WB	Left	82	5.1	2.4	87	2	A
2: I-70 WB @ MO 115/Cypress/LIB	WB	Through	100	5.3	1.8	66	1	A
2: I-70 WB @ MO 115/Cypress/LIB	Total	Total	617	7.8	3.1	133	3	A
3: Cypress @ MO 115/LIB	NB	Left	124	12.5	7.0	92	7	B
3: Cypress @ MO 115/LIB	NB	Right	96	1.0	0.0	0	0	A
3: Cypress @ MO 115/LIB	EB	Through	82	6.5	2.5	109	2	A
3: Cypress @ MO 115/LIB	EB	Right	231	1.6	0.1	93	1	A
3: Cypress @ MO 115/LIB	WB	Left	57	5.1	1.9	61	1	A
3: Cypress @ MO 115/LIB	WB	Through	58	4.3	1.3	51	1	A
3: Cypress @ MO 115/LIB	Total	Total	648	4.8	2.0	119	2	A
4: I-70 EB @ Cypress	NB	Left	10	5.9	3.4	25	0	A
4: I-70 EB @ Cypress	NB	Through	143	7.8	4.3	107	4	A
4: I-70 EB @ Cypress	NB	Right	139	1.6	0.2	27	0	A
4: I-70 EB @ Cypress	EB	Left	18	20.3	15.1	61	3	C
4: I-70 EB @ Cypress	EB	Through	12	20.6	14.3	61	3	C

4: I-70 EB @ Cypress	EB	Right	10	0.9	0.1	11	0	A
4: I-70 EB @ Cypress	SB	Left	68	5.0	2.2	63	1	A
4: I-70 EB @ Cypress	SB	Through	181	5.2	2.5	88	4	A
4: I-70 EB @ Cypress	SB	Right	40	0.8	0.0	0	0	A
4: I-70 EB @ Cypress	WB	Left	36	20.7	14.7	95	6	C
4: I-70 EB @ Cypress	WB	Through	15	26.3	17.5	95	6	C
4: I-70 EB @ Cypress	WB	Right	58	1.5	0.0	58	0	A
4: I-70 EB @ Cypress	Total	Total	730	6.2	3.4	123	1	A
5: T1 Cell Phone Lot	EB	Left	30	0.8	0.0	19	0	N/A
5: T1 Cell Phone Lot	EB	Through	148	0.0	0.0	0	0	N/A
5: T1 Cell Phone Lot	SB	Left	0	0.0	0.0	0	0	A
5: T1 Cell Phone Lot	SB	Right	0	0.0	0.0	0	0	A
5: T1 Cell Phone Lot	WB	Through	115	0.0	0.0	0	0	N/A
5: T1 Cell Phone Lot	WB	Right	0	0.0	0.0	0	0	N/A
5: T1 Cell Phone Lot	Total	Total	293	0.1	0.0	19	0	A
6: I-70 WB @ LIB (before Cypress)	EB	Left	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	EB	Through	147	2.0	0.6	49	1	A
6: I-70 WB @ LIB (before Cypress)	EB	Right	0	0	0	86	0	A
6: I-70 WB @ LIB (before Cypress)	SB	Left	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	SB	Through	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	SB	Right	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	WB	Left	239	2.1	0.1	78	0	A
6: I-70 WB @ LIB (before Cypress)	WB	Through	116	0.1	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	WB	Right	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	Total	Total	502	1.6	0.2	94	0	A
7: Parking Lot B	NB	Left	5	1.6	0.2	16	0	A
7: Parking Lot B	NB	Right	35	1.0	0.0	30	0	A
7: Parking Lot B	EB	Through	147	0.0	0.0	0	0	N/A
7: Parking Lot B	EB	Right	0	0.0	0.0	0	0	N/A
7: Parking Lot B	WB	Left	20	1.0	0.0	17	0	N/A
7: Parking Lot B	WB	Through	350	0.4	0.0	0	0	N/A
7: Parking Lot B	Total	Total	557	0.3	0.0	35	0	A
8: Lambert Field St @ LIB	NB	Left	0	0.0	0.0	30	1	A
8: Lambert Field St @ LIB	NB	Through	0	0.0	0.0	30	1	A
8: Lambert Field St @ LIB	NB	Right	4	58.7	52.9	30	1	E
8: Lambert Field St @ LIB	EB	Left 1	0	0.0	0.0	0	0	A
8: Lambert Field St @ LIB	EB	Left 2	33	3.4	1.1	54	1	A
8: Lambert Field St @ LIB	EB	Through	129	1.5	0.6	54	1	A

8: Lambert Field St @ LIB	EB	Right	21	1.9	0.9	24	0	A
8: Lambert Field St @ LIB	SEB	Left	12	62.3	49.2	44	4	E
8: Lambert Field St @ LIB	SEB	Right	0	0.0	0.0	44	4	A
8: Lambert Field St @ LIB	SEB	Through	0	0.0	0.0	44	4	A
8: Lambert Field St @ LIB	SWB	Left	8	46.8	38.8	42	2	D
8: Lambert Field St @ LIB	SWB	Right	0	0.0	0.0	42	2	A
8: Lambert Field St @ LIB	SWB	Through	0	0.0	0.0	42	2	A
8: Lambert Field St @ LIB	WB	Left	6	2.0	0.6	59	1	A
8: Lambert Field St @ LIB	WB	Through	370	1.0	0.2	59	1	A
8: Lambert Field St @ LIB	WB	Right 2	0	0.0	0.0	59	1	A
8: Lambert Field St @ LIB	WB	Right 1	20	1.4	0.4	59	1	A
8: Lambert Field St @ LIB	Total	Total	603	3.5	2.2	66	1	A
9: T2 Entrance	NB	Left	330	3.2	1.7	298	38	A
9: T2 Entrance	NB	Through	253	2.7	1.6	299	40	A
9: T2 Entrance	NB	Right	138	0.4	0.0	257	35	A
9: T2 Entrance	WB	Left	44	41.6	34.2	174	21	D
9: T2 Entrance	WB	Right	38	40.5	35.3	88	9	D
9: T2 Entrance	Total	Total	803	6.4	4.8	300	29	A
10: T1 Exit @ LIB	NB 1	Left	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 1	Through	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 1	Right	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 2	Right	48	7.6	1.2	44	2	A
10: T1 Exit @ LIB	EB	Through	146	18.0	12.4	96	11	B
10: T1 Exit @ LIB	EB	Right 2	8	17.7	12.2	96	11	B
10: T1 Exit @ LIB	EB	Right 1	0	0.0	0.0	96	11	A
10: T1 Exit @ LIB	WB	Left 1	94	8.8	5.2	99	4	A
10: T1 Exit @ LIB	WB	Left 2	0	0.0	0.0	139	18	A
10: T1 Exit @ LIB	WB	Through	254	19.6	13.6	139	18	B
10: T1 Exit @ LIB	SB - A	Left	184	47.5	39.5	179	40	D
10: T1 Exit @ LIB	SB - A	Through	9	51.6	43.1	179	40	D
10: T1 Exit @ LIB	SB - A	Right	43	39.9	33.9	179	40	D
10: T1 Exit @ LIB	SB - D	Left	239	38.8	31.6	209	49	D
10: T1 Exit @ LIB	SB - D	Through	0	0.0	0.0	209	49	A
10: T1 Exit @ LIB	SB - D	Right	99	40.8	33.7	209	49	D
10: T1 Exit @ LIB	Total	Total	1,124	29.5	23.0	216	18	C
11: I-70 WB @ Airflight	NB	Left	290	7.3	3.1	175	9	A
11: I-70 WB @ Airflight	NB	Through	415	3.3	1.4	123	5	A
11: I-70 WB @ Airflight	SB	Through	221	10.1	6.0	115	8	B
11: I-70 WB @ Airflight	WB	Left	213	39.8	30.4	244	45	D

11: I-70 WB @ Airflight	WB	Right	78	27.9	18.8	9	0	C
11: I-70 WB @ Airflight	Total	Total	1,217	13.4	8.8	253	10	B
12: I-70 EB @ Pear Tree	NEB	Right	32	7.2	0.6	71	1	A
12: I-70 EB @ Pear Tree	EB	Through	126	40.0	31.5	113	21	D
12: I-70 EB @ Pear Tree	EB	Right	5	40.5	35.2	113	21	D
12: I-70 EB @ Pear Tree	SB	Left	531	7.7	3.5	259	18	A
12: I-70 EB @ Pear Tree	SB	Through	25	7.6	3.7	259	18	A
12: I-70 EB @ Pear Tree	SB	Right	44	2.3	0.4	56	0	A
12: I-70 EB @ Pear Tree	WB	Through	48	34.6	29.0	98	10	C
12: I-70 EB @ Pear Tree	WB	Right	85	37.9	30.2	155	19	D
12: I-70 EB @ Pear Tree	Total	Total	896	16.5	11.2	259	11	B
13: I-70 EB @ Airflight	NB	Left	5	47.5	40.3	109	14	D
13: I-70 EB @ Airflight	NB	Through	38	47.4	39.0	109	14	D
13: I-70 EB @ Airflight	NB	Right	5	45.2	38.8	109	14	D
13: I-70 EB @ Airflight	EB	Left	430	20.8	15.5	202	37	C
13: I-70 EB @ Airflight	EB	Through	210	16.3	10.1	252	24	B
13: I-70 EB @ Airflight	EB	Right	50	16.0	11.4	252	24	B
13: I-70 EB @ Airflight	SB	Left	192	20.7	15.1	235	32	C
13: I-70 EB @ Airflight	SB	Through	73	21.4	14.5	235	32	C
13: I-70 EB @ Airflight	SB	Right	108	2.4	0.5	235	32	A
13: I-70 EB @ Airflight	WB	Left	11	48.5	41.8	47	3	D
13: I-70 EB @ Airflight	WB	Through	19	47.1	37.2	62	5	D
13: I-70 EB @ Airflight	WB	Right	251	3.2	0.6	121	2	A
13: I-70 EB @ Airflight	Total	Total	1,392	16.8	11.9	264	17	B
14: Pear Tree @ Edmundson	NB	Left	113	31.7	25.9	166	22	C
14: Pear Tree @ Edmundson	NB	Right	46	5.8	0.7	64	2	A
14: Pear Tree @ Edmundson	EB	Through	307	7.2	3.1	228	10	A
14: Pear Tree @ Edmundson	EB	Right	100	1.6	0.1	74	0	A
14: Pear Tree @ Edmundson	WB	Left	29	9.3	4.9	41	1	A
14: Pear Tree @ Edmundson	WB	Through	239	7.0	3.2	129	7	A
14: Pear Tree @ Edmundson	Total	Total	834	9.8	5.8	232	7	A
15: T2 Exit @ LIB	EB	Through	409	9.8	6.1	163	15	A
15: T2 Exit @ LIB	SB - A	Left	128	28.2	22.4	178	22	C
15: T2 Exit @ LIB	SB - A	Right	160	29.1	23.1	253	33	C
15: T2 Exit @ LIB	SB - D	Left	172	29.1	23.1	253	33	C
15: T2 Exit @ LIB	SB - D	Right	191	32.7	25.1	267	41	C
15: T2 Exit @ LIB	WB	Through	276	2.0	1.0	60	2	A
15: T2 Exit @ LIB	Total	Total	1,336	18.0	13.6	273	24	B

16: T2 Parking Exit @ LIB	EB	Through	712	2.9	0.6	174	3	N/A
16: T2 Parking Exit @ LIB	SB	Left	0	0.0	0.0	0	0	A
16: T2 Parking Exit @ LIB	SB	Right	28	44.5	38.1	65	7	E
16: T2 Parking Exit @ LIB	WB	Through	247	0.0	0.0	0	0	N/A
16: T2 Parking Exit @ LIB	Total	Total	987	3.3	1.5	174	3	E
17: T1 Entrance @ LIB	EB	Left	475	33.0	18.5	357	44	C
17: T1 Entrance @ LIB	EB	Through	235	1.6	0.2	27	0	A
17: T1 Entrance @ LIB	SB	Left	5	76.3	70.6	39	2	E
17: T1 Entrance @ LIB	SB	Right	39	6.9	0.3	85	2	A
17: T1 Entrance @ LIB	WB	Through	209	16.2	11.2	136	14	B
17: T1 Entrance @ LIB	WB	Right	247	20.4	13.3	146	18	C
17: T1 Entrance @ LIB	Total	Total	1,210	20.8	12.3	357	13	C
18: Parking Lot E @Air Cargo Rd	EB	Through	138	0.0	0.0	0	0	N/A
18: Parking Lot E @Air Cargo Rd	SB	Left	0	0.0	0.0	0	0	A
18: Parking Lot E @Air Cargo Rd	SB	Right	8	1.4	0.0	11	0	A
18: Parking Lot E @Air Cargo Rd	WB	Through	113	0.3	0.0	0	0	N/A
18: Parking Lot E @Air Cargo Rd	Total	Total	259	0.2	0.0	11	0	A
19: Air Cargo Rd @ James S McDonnell	NB	Left	70	0.6	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell	NB	Right	50	0.7	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell	EB	Through	68	10.9	0.2	2	0	B
19: Air Cargo Rd @ James S McDonnell	EB	Right	70	5.7	0.2	2	0	A
19: Air Cargo Rd @ James S McDonnell	WB	Left	29	6.2	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell	WB	Through	44	10.2	0.2	0	0	B
19: Air Cargo Rd @ James S McDonnell	Total	Total	331	5.6	0.1	2	0	A
20: MO 115 @ I-70 EB/SOR	NB	Left	66	27.4	21.1	188	18	C
20: MO 115 @ I-70 EB/SOR	NB	Through	44	28.1	21.5	188	18	C
20: MO 115 @ I-70 EB/SOR	NB	Right	110	5.7	2.3	26	0	A
20: MO 115 @ I-70 EB/SOR	EB	Through	308	11.9	6.7	158	17	B
20: MO 115 @ I-70 EB/SOR	EB	Right	22	12.2	7.9	158	17	B
20: MO 115 @ I-70 EB/SOR	WB	Left	126	28.1	22.2	167	20	C
20: MO 115 @ I-70 EB/SOR	WB	Through	172	4.7	2.0	87	3	A
20: MO 115 @ I-70 EB/SOR	WB	Right	108	5.0	2.2	74	2	A
20: MO 115 @ I-70 EB/SOR	Total	Total	956	13.1	8.6	196	10	B

Table 15 - PM Node Evaluation Results

Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: MO 115/LIB @ Parking Lot D	NB	Left	0	0.0	0.0	0.0	0.0	A
1: MO 115/LIB @ Parking Lot D	NB	Right	14	6.0	0.3	62	1	A
1: MO 115/LIB @ Parking Lot D	EB	Through	489	0.2	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	EB	Right	14	0.5	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	WB	Left	0	0.0	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	WB	Through	264	0.1	0.0	0	0	N/A
1: MO 115/LIB @ Parking Lot D	Total	Total	781	0.3	0.0	62	0	A
2: I-70 WB @ MO 115/Cypress/LIB	NB	Left	114	16.5	9.5	149	10	B
2: I-70 WB @ MO 115/Cypress/LIB	NB	Right	161	4.5	0.4	87	1	A
2: I-70 WB @ MO 115/Cypress/LIB	EB	Through	446	11.7	4.6	157	16	B
2: I-70 WB @ MO 115/Cypress/LIB	EB	Right	57	1.7	0.1	41	0	A
2: I-70 WB @ MO 115/Cypress/LIB	WB	Left	96	4.8	2.2	90	2	A
2: I-70 WB @ MO 115/Cypress/LIB	WB	Through	150	5.0	1.8	79	2	A
2: I-70 WB @ MO 115/Cypress/LIB	Total	Total	1,024	8.9	3.6	177	5	A
3: Cypress @ MO 115/LIB	NB	Left	168	12.3	6.9	110	9	B
3: Cypress @ MO 115/LIB	NB	Right	154	1.4	0.0	0	0	A
3: Cypress @ MO 115/LIB	EB	Through	138	7.3	2.8	196	10	A
3: Cypress @ MO 115/LIB	EB	Right	468	4.1	0.7	195	6	A
3: Cypress @ MO 115/LIB	WB	Left	73	5.4	1.8	79	1	A
3: Cypress @ MO 115/LIB	WB	Through	77	4.7	1.4	65	1	A
3: Cypress @ MO 115/LIB	Total	Total	1,078	5.5	2.0	206	5	A
4: I-70 EB @ Cypress	NB	Left	10	7.4	4.4	27	0	A
4: I-70 EB @ Cypress	NB	Through	183	14.0	8.8	185	11	B
4: I-70 EB @ Cypress	NB	Right	252	3.7	1.0	55	0	A
4: I-70 EB @ Cypress	EB	Left	54	26.7	21.5	88	9	C
4: I-70 EB @ Cypress	EB	Through	11	24.5	18.4	88	9	C
4: I-70 EB @ Cypress	EB	Right	14	1.0	0.1	14	0	A
4: I-70 EB @ Cypress	SB	Left	153	8.2	4.2	125	6	A
4: I-70 EB @ Cypress	SB	Through	324	7.8	4.2	129	9	A
4: I-70 EB @ Cypress	SB	Right	62	1.4	0.2	0	0	A
4: I-70 EB @ Cypress	WB	Left	63	29.2	22.9	130	13	C
4: I-70 EB @ Cypress	WB	Through	9	26.2	18.3	130	13	C
4: I-70 EB @ Cypress	WB	Right	85	2.0	0.1	69	0	A
4: I-70 EB @ Cypress	Total	Total	1,220	9.4	5.6	359	4	A
5: T1 Cell Phone Lot	EB	Left	35	0.0	0.0	23	0	N/A

5: T1 Cell Phone Lot	EB	Through	257	0.1	0.0	0	0	N/A
5: T1 Cell Phone Lot	SB	Left	0	0.0	0.0	0	0	A
5: T1 Cell Phone Lot	SB	Right	0	0.0	0.0	0	0	A
5: T1 Cell Phone Lot	WB	Through	150	0.0	0.0	0	0	N/A
5: T1 Cell Phone Lot	WB	Right	0	0.0	0.0	0	0	N/A
5: T1 Cell Phone Lot	Total	Total	442	0.0	0.0	23	0	A
6: I-70 WB @ LIB (before Cypress)	EB	Left	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (before Cypress)	EB	Through	253	2.6	0.9	73	2	A
6: I-70 WB @ LIB (before Cypress)	EB	Right	4	2	0	110	1	A
6: I-70 WB @ LIB (before Cypress)	SB	Left	4	61.0	54.2	44	2	E
6: I-70 WB @ LIB (before Cypress)	SB	Through	0	0.0	0.0	44	2	A
6: I-70 WB @ LIB (before Cypress)	SB	Right	4	6.4	0.3	34	0	A
6: I-70 WB @ LIB (before Cypress)	WB	Left	341	3.8	0.5	175	2	A
6: I-70 WB @ LIB (before Cypress)	WB	Through	147	0.3	0.1	24	0	A
6: I-70 WB @ LIB (before Cypress)	WB	Right	5	0.7	0.0	22	0	A
6: I-70 WB @ LIB (before Cypress)	Total	Total	758	3.0	0.8	175	1	A
7: Parking Lot B	NB	Left	0	0.0	0.0	0	0	A
7: Parking Lot B	NB	Right	28	1.0	0.1	23	0	A
7: Parking Lot B	EB	Through	257	0.1	0.0	0	0	N/A
7: Parking Lot B	EB	Right	0	0.0	0.0	0	0	N/A
7: Parking Lot B	WB	Left	0	0.0	0.0	0	0	N/A
7: Parking Lot B	WB	Through	494	0.6	0.0	0	0	N/A
7: Parking Lot B	Total	Total	779	0.4	0.0	23	0	A
8: Lambert Field St @ LIB	NB	Left	0	0.0	0.0	39	2	A
8: Lambert Field St @ LIB	NB	Through	0	0.0	0.0	39	2	A
8: Lambert Field St @ LIB	NB	Right	8	54.7	48.9	39	2	D
8: Lambert Field St @ LIB	EB	Left 1	0	0.0	0.0	0	0	A
8: Lambert Field St @ LIB	EB	Left 2	24	4.9	2.0	93	2	A
8: Lambert Field St @ LIB	EB	Through	264	2.5	1.1	93	2	A
8: Lambert Field St @ LIB	EB	Right	0	0.0	0.0	0	0	A
8: Lambert Field St @ LIB	SEB	Left	8	0.0	0.0	37	2	A
8: Lambert Field St @ LIB	SEB	Right	0	0.0	0.0	37	2	A
8: Lambert Field St @ LIB	SEB	Through	0	0.0	0.0	37	2	A
8: Lambert Field St @ LIB	SWB	Left	22	45.2	37.3	113	9	D
8: Lambert Field St @ LIB	SWB	Right	10	50.4	43.5	113	9	D
8: Lambert Field St @ LIB	SWB	Through	0	0.0	0.0	113	9	A
8: Lambert Field St @ LIB	WB	Left	0	0.0	0.0	110	3	A
8: Lambert Field St @ LIB	WB	Through	483	2.3	0.7	110	3	A
8: Lambert Field St @ LIB	WB	Right 2	0	0.0	0.0	110	3	A

8: Lambert Field St @ LIB	WB	Right 1	18	2.5	0.9	110	3	A
8: Lambert Field St @ LIB	Total	Total	837	4.6	2.8	125	3	A
9: T2 Entrance	NB	Left	234	3.7	2.2	288	25	A
9: T2 Entrance	NB	Through	211	3.0	1.8	287	25	A
9: T2 Entrance	NB	Right	147	0.4	0.0	247	23	A
9: T2 Entrance	WB	Left	79	42.1	34.7	181	30	D
9: T2 Entrance	WB	Right	28	41.2	36.3	75	6	D
9: T2 Entrance	Total	Total	699	8.6	6.7	289	22	A
10: T1 Exit @ LIB	NB 1	Left	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 1	Through	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 1	Right	0	0	0	0	0	A
10: T1 Exit @ LIB	NB 2	Right	128	8.7	1.9	62	5	A
10: T1 Exit @ LIB	EB	Through	293	20.3	14.0	166	22	C
10: T1 Exit @ LIB	EB	Right 2	10	23.2	16.5	166	22	C
10: T1 Exit @ LIB	EB	Right 1	0	0.0	0.0	166	22	A
10: T1 Exit @ LIB	WB	Left 1	55	8.5	4.8	90	2	A
10: T1 Exit @ LIB	WB	Left 2	0	0.0	0.0	160	23	A
10: T1 Exit @ LIB	WB	Through	305	21.0	15.0	160	23	C
10: T1 Exit @ LIB	SB - A	Left	380	41.8	33.4	247	67	D
10: T1 Exit @ LIB	SB - A	Through	9	44.4	35.9	247	67	D
10: T1 Exit @ LIB	SB - A	Right	118	37.0	29.8	247	67	D
10: T1 Exit @ LIB	SB - D	Left	207	40.6	33.3	181	43	D
10: T1 Exit @ LIB	SB - D	Through	0	0.0	0.0	181	43	A
10: T1 Exit @ LIB	SB - D	Right	78	43.0	36.4	181	43	D
10: T1 Exit @ LIB	Total	Total	1,583	29.4	22.5	247	23	C
11: I-70 WB @ Airflight	NB	Left	306	8.6	2.6	227	10	A
11: I-70 WB @ Airflight	NB	Through	345	4.9	1.4	206	6	A
11: I-70 WB @ Airflight	SB	Through	297	16.7	10.5	206	19	B
11: I-70 WB @ Airflight	WB	Left	280	39.7	29.9	275	55	D
11: I-70 WB @ Airflight	WB	Right	66	31.4	22.0	30	0	C
11: I-70 WB @ Airflight	Total	Total	1,294	17.4	11.0	286	13	B
12: I-70 EB @ Pear Tree	NEB	Right	58	7.3	0.8	89	2	A
12: I-70 EB @ Pear Tree	EB	Through	221	41.1	31.9	181	37	D
12: I-70 EB @ Pear Tree	EB	Right	10	35.8	29.9	181	37	D
12: I-70 EB @ Pear Tree	SB	Left	409	8.5	4.4	216	15	A
12: I-70 EB @ Pear Tree	SB	Through	22	7.2	3.7	216	15	A
12: I-70 EB @ Pear Tree	SB	Right	64	2.4	0.5	49	0	A
12: I-70 EB @ Pear Tree	WB	Through	50	26.1	20.3	120	7	C

12: I-70 EB @ Pear Tree	WB	Right	154	26.3	18.8	255	25	C
12: I-70 EB @ Pear Tree	Total	Total	988	19.2	13.4	267	14	B
13: I-70 EB @ Airflight	NB	Left	0	0.0	0.0	124	20	A
13: I-70 EB @ Airflight	NB	Through	58	47.8	39.5	124	20	D
13: I-70 EB @ Airflight	NB	Right	9	49.4	42.3	124	20	D
13: I-70 EB @ Airflight	EB	Left	412	18.0	12.8	210	30	B
13: I-70 EB @ Airflight	EB	Through	255	14.9	9.1	289	24	B
13: I-70 EB @ Airflight	EB	Right	22	12.8	8.6	289	24	B
13: I-70 EB @ Airflight	SB	Left	266	39.0	29.3	398	77	D
13: I-70 EB @ Airflight	SB	Through	34	39.1	28.1	398	77	D
13: I-70 EB @ Airflight	SB	Right	156	4.8	1.9	398	77	A
13: I-70 EB @ Airflight	WB	Left	11	44.3	37.6	43	3	D
13: I-70 EB @ Airflight	WB	Through	49	43.4	33.0	130	11	D
13: I-70 EB @ Airflight	WB	Right	196	4.1	1.2	132	3	A
13: I-70 EB @ Airflight	Total	Total	1,468	20.8	14.8	398	24	C
14: Pear Tree @ Edmundson	NB	Left	47	6.9	1.2	74	2	A
14: Pear Tree @ Edmundson	NB	Right	129	43.5	36.9	249	37	D
14: Pear Tree @ Edmundson	EB	Through	406	5.1	1.0	229	7	A
14: Pear Tree @ Edmundson	EB	Right	126	1.6	0.0	20	0	A
14: Pear Tree @ Edmundson	WB	Left	277	4.6	1.6	148	5	A
14: Pear Tree @ Edmundson	WB	Through	29	10.3	5.2	40	0	B
14: Pear Tree @ Edmundson	Total	Total	1,014	9.6	5.7	270	9	A
15: T2 Exit @ LIB	EB	Through	523	12.0	7.1	202	22	B
15: T2 Exit @ LIB	SB - A	Left	88	30.8	25.1	133	16	C
15: T2 Exit @ LIB	SB - A	Right	147	30.8	25.2	194	22	C
15: T2 Exit @ LIB	SB - D	Left	112	30.8	25.2	194	22	C
15: T2 Exit @ LIB	SB - D	Right	151	33.6	26.4	224	34	C
15: T2 Exit @ LIB	WB	Through	454	2.0	1.3	72	3	A
15: T2 Exit @ LIB	Total	Total	1,475	15.6	11.5	235	21	B
16: T2 Parking Exit @ LIB	EB	Through	723	3.6	1.0	155	5	N/A
16: T2 Parking Exit @ LIB	SB	Left	34	38.0	30.9	77	7	E
16: T2 Parking Exit @ LIB	SB	Right	29	36.9	31.0	59	5	E
16: T2 Parking Exit @ LIB	WB	Through	424	0.1	0.0	0	0	N/A
16: T2 Parking Exit @ LIB	Total	Total	1,210	4.1	2.2	155	5	E
17: T1 Entrance @ LIB	EB	Left	401	30.8	17.7	307	37	C
17: T1 Entrance @ LIB	EB	Through	351	1.4	0.2	31	0	A
17: T1 Entrance @ LIB	SB	Left	5	71.9	66.2	36	2	E
17: T1 Entrance @ LIB	SB	Right	74	8.9	0.4	116	5	A

17: T1 Entrance @ LIB	WB	Through	351	14.8	9.6	161	19	B
17: T1 Entrance @ LIB	WB	Right	193	16.1	10.9	123	12	B
17: T1 Entrance @ LIB	Total	Total	1,375	16.1	9.5	307	12	B
18: Parking Lot E @Air Cargo Rd	EB	Through	148	0.0	0.0	0	0	N/A
18: Parking Lot E @Air Cargo Rd	SB	Left	0	0.0	0.0	0	0	A
18: Parking Lot E @Air Cargo Rd	SB	Right	8	1.7	0.1	17	0	A
18: Parking Lot E @Air Cargo Rd	WB	Through	133	0.3	0.0	0	0	N/A
18: Parking Lot E @Air Cargo Rd	Total	Total	289	0.2	0.0	17	0	A
19: Air Cargo Rd @ James S McDonnell	NB	Left	84	0.7	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell	NB	Right	60	0.8	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell	EB	Through	75	11.3	0.2	4	0	B
19: Air Cargo Rd @ James S McDonnell	EB	Right	73	5.7	0.2	4	0	A
19: Air Cargo Rd @ James S McDonnell	WB	Left	44	6.1	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell	WB	Through	49	10.3	0.2	0	0	B
19: Air Cargo Rd @ James S McDonnell	Total	Total	385	5.5	0.1	4	0	A
20: MO 115 @ I-70 EB/SOR	NB	Left	62	33.7	25.7	368	44	C
20: MO 115 @ I-70 EB/SOR	NB	Through	94	35.7	27.2	368	44	D
20: MO 115 @ I-70 EB/SOR	NB	Right	177	13.9	7.6	47	0	B
20: MO 115 @ I-70 EB/SOR	EB	Through	375	13.4	7.7	175	22	B
20: MO 115 @ I-70 EB/SOR	EB	Right	32	13.0	8.6	175	22	B
20: MO 115 @ I-70 EB/SOR	WB	Left	177	33.5	26.9	217	35	C
20: MO 115 @ I-70 EB/SOR	WB	Through	338	5.7	2.3	151	7	A
20: MO 115 @ I-70 EB/SOR	WB	Right	181	5.3	2.1	107	3	A
20: MO 115 @ I-70 EB/SOR	Total	Total	1,436	15.4	10.2	368	19	B

5.0 SIMULATION RUNS

To determine the required number of replications, the formulas below were used. These formulas along with our methodology for determining the number of replications follow the suggestions and procedures outlined in FHWA's *Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software*. Each of the data clusters and their corresponding key performance measures were considered when the computations were performed for the minimum required runs. The maximum of these computations was used as the required number of simulations or replications. It is important to note that the small amount of variation found from run to run when considering the average of performance measures over the entirety of the simulations rendered a small minimum required number of runs. Because of this, a 5-minute time variant comparison was done for each of the considered measures and the 5-minute interval which had the most variation was considered in selecting the minimum number of runs. Results indicated using 9 simulation runs, which is acceptable under FHWA's guidance as mentioned in *Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software,* but it is stated in MoDOT's EPG "905.3.5.3.2.3.1 Initial Simulation Runs" that the minimum is 10, if justified. Therefore, for operational analysis via modeling, 10 simulation runs were used.

$$N_{min} = \left(\frac{t_{n-1,95\%}\, s}{e\,\bar{x}}\right)^2 \qquad (15)$$

where:

N_{min}	:	Required number of model runs
n	:	Number of initial model runs (i.e., 4)
$\bar{x}, s$	:	Mean and standard deviation of the initial runs
$t_{n-1,95\%}$	:	t statistic for n-1 degrees of freedom and 95% confidence level
e	:	Tolerance error

Tolerance error is computed as follows:

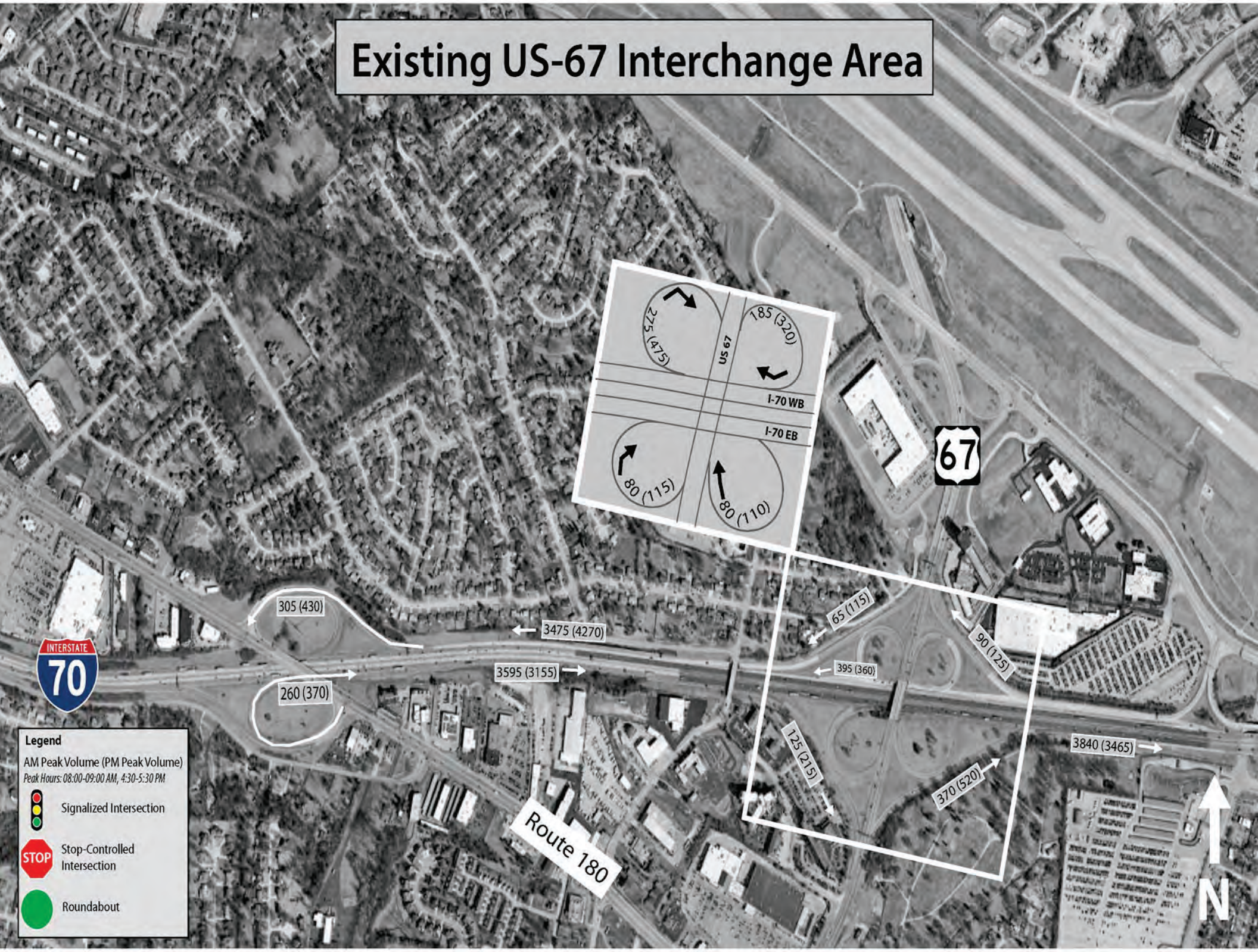
$$e = \frac{t_{n-1,95\%}\left(\frac{s}{\sqrt{n}}\right)}{\bar{x}} \qquad (17)$$

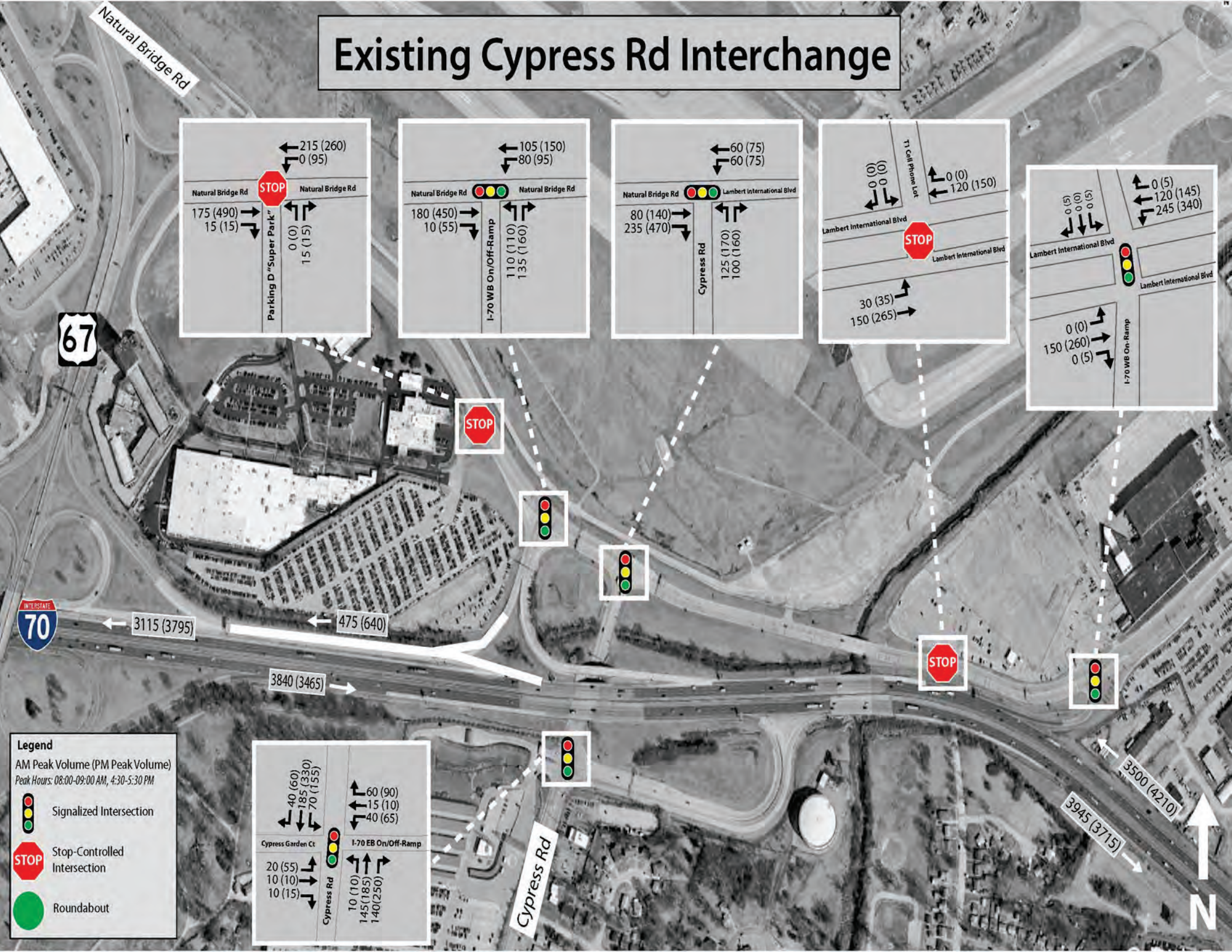
Figure 3 – *Formula for Minimum Number of Required Model Runs*
(Source: FHWA (Federal Highway Administration))

6.0 CONCLUSION

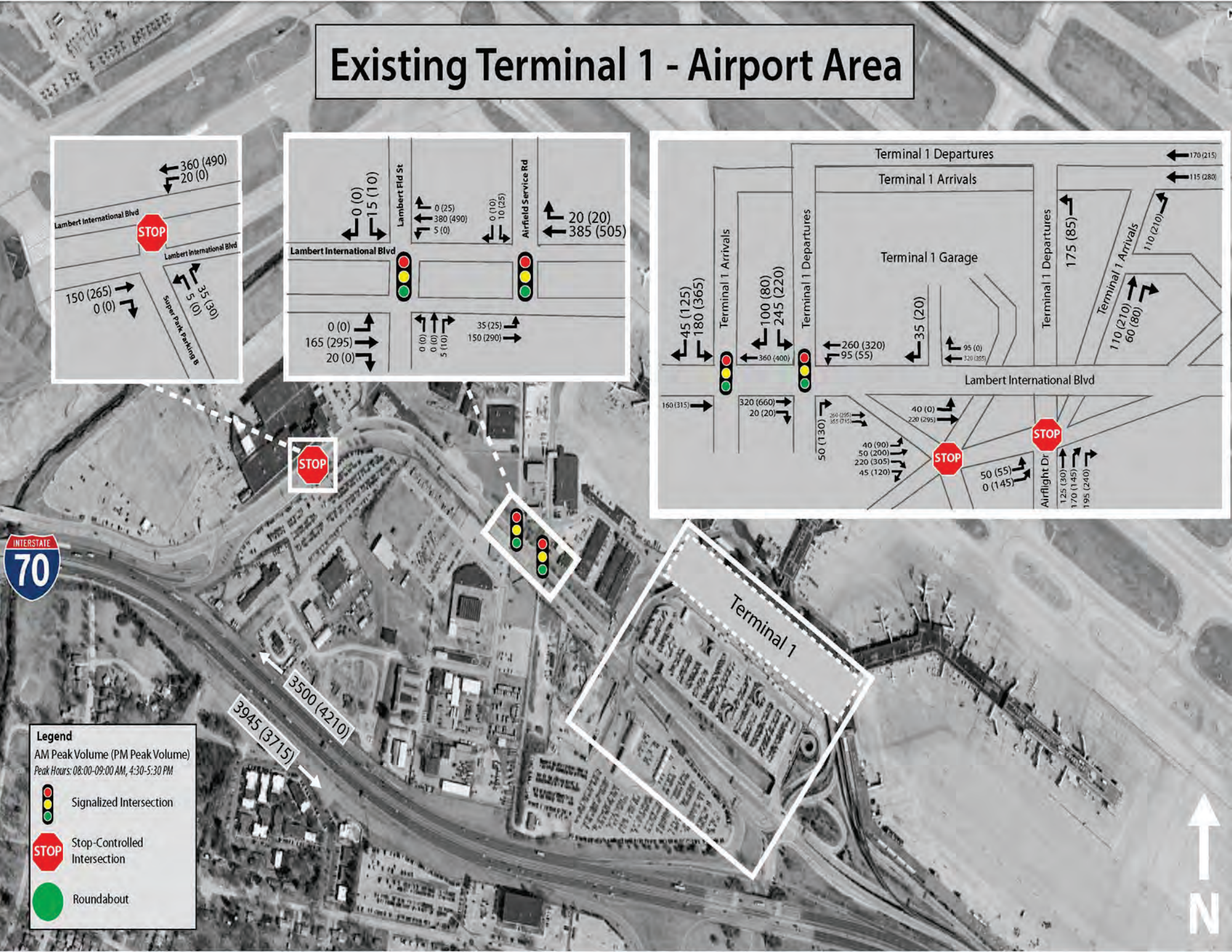
During the calibration process, several guidelines were followed including FHWA's Guidelines for Applying Traffic Microsimulation Modeling Software 2019 Update to the 2004 Version. Another guideline used during the calibration process includes MoDOT's EPG 905.3.5.3.2. The main goal of the calibration process was to create Vissim models which depict existing period conditions as accurately as possible by setting calibration thresholds such as speed, throughput, travel times, and operational measures. These calibration thresholds were found within MoDOT's EPG 905.3.5.3.2.3.4 and were agreed on in the previously submitted TIA Methods and Assumptions report. All calibration thresholds are well met in both modeled peak periods. Creating a well calibrated model using assumed and given parameters increases the accuracy of future models using the same inputs such as driver behaviors, speed distributions, and routing methods.

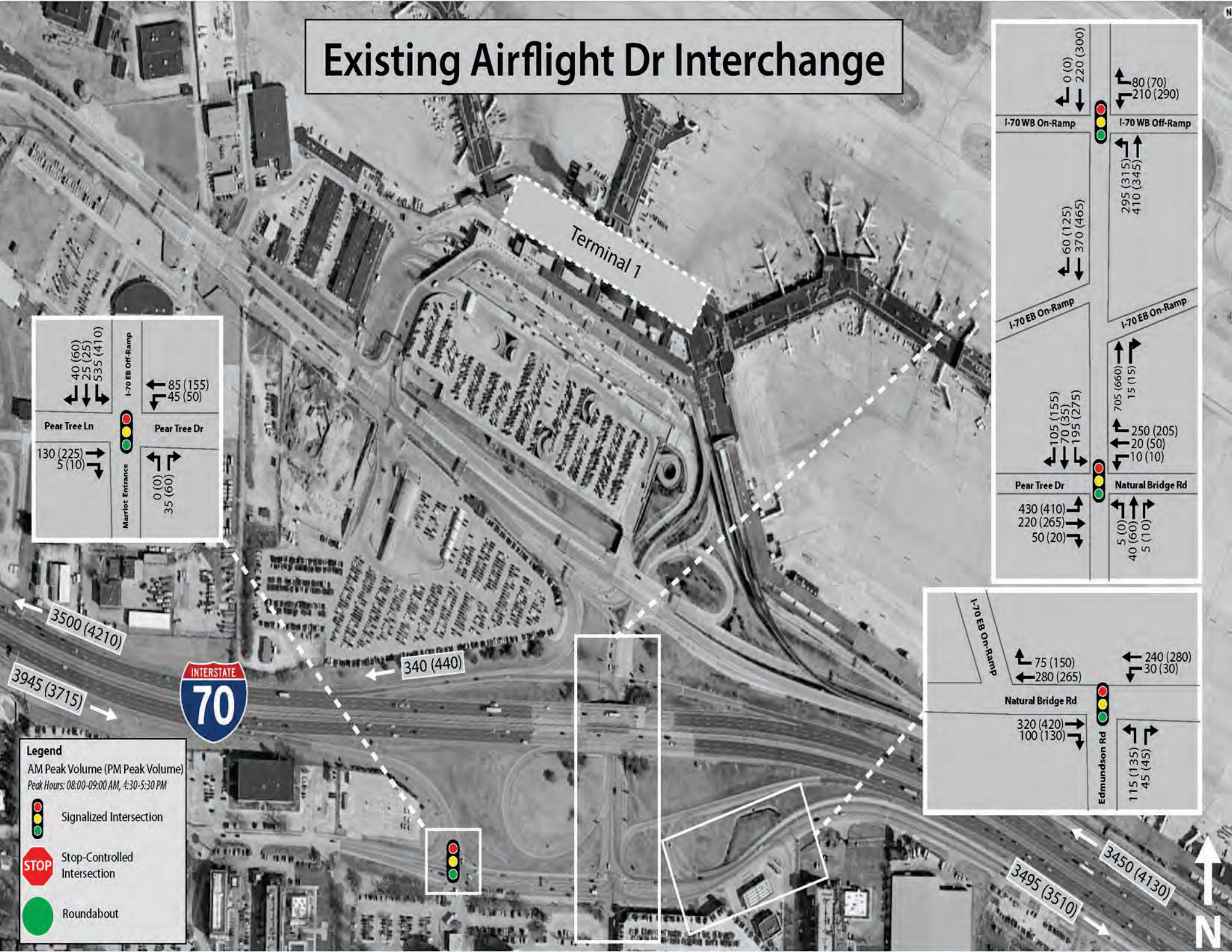
APPENDIX C


Existing US-67 Interchange Area
US 67
I-70 WB
I-70 EB
275 (475)
185 (320)
80 (115)
80 (110)
67
305 (430)
3475 (4270)
65 (115)
90 (125)
3595 (3155)
395 (360)
260 (370)
125 (215)
370 (520)
3840 (3465)
INTERSTATE
70
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

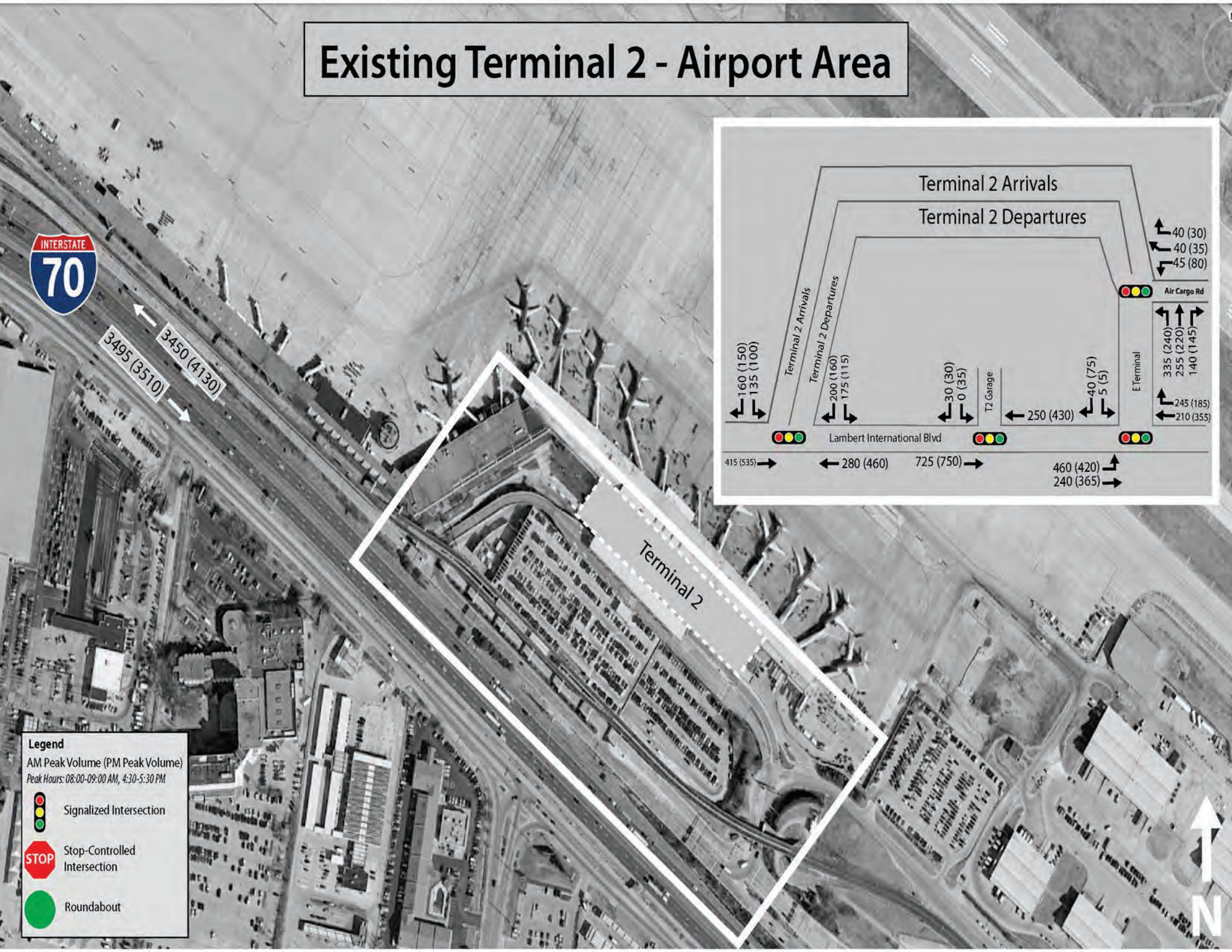

Existing Cypress Rd Interchange
Natural Bridge Rd
215 (260)
0 (95)
Natural Bridge Rd
STOP
Natural Bridge Rd
175 (490)
15 (15)
Parking D "Super Park"
0 (0)
15 (15)
105 (150)
80 (95)
Natural Bridge Rd
Natural Bridge Rd
180 (450)
10 (55)
I-70 WB On/Off-Ramp
110 (110)
135 (160)
60 (75)
60 (75)
Natural Bridge Rd
Lambert International Blvd
80 (140)
235 (470)
Cypress Rd
125 (170)
100 (160)
T1 Cell Phone Lot
0 (0)
0 (0)
0 (0)
120 (150)
Lambert International Blvd
STOP
Lambert International Blvd
30 (35)
150 (265)
0 (5)
0 (0)
0 (5)
0 (5)
120 (145)
245 (340)
Lambert International Blvd
Lambert International Blvd
0 (0)
150 (260)
0 (5)
I-70 WB On-Ramp
67
STOP
INTERSTATE
70
3115 (3795)
475 (640)
3840 (3465)
STOP
3500 (4210)
3945 (3715)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
40 (60)
185 (330)
70 (155)
Cypress Garden Ct
20 (55)
10 (10)
10 (15)
Cypress Rd
60 (90)
15 (10)
40 (65)
I-70 EB On/Off-Ramp
10 (10)
145(185)
140(250)
Cypress Rd

Existing Terminal 1 - Airport Area




Existing Airflight Dr Interchange
Terminal 1
I-70 WB On-Ramp
I-70 WB Off-Ramp
0 (0)
220 (300)
80 (70)
210 (290)
60 (125)
370 (465)
295 (315)
410 (345)
I-70 EB On-Ramp
I-70 EB On-Ramp
105 (155)
70 (35)
195 (275)
705 (660)
15 (15)
250 (205)
20 (50)
10 (10)
Pear Tree Dr
Natural Bridge Rd
430 (410)
220 (265)
50 (20)
5 (0)
40 (60)
5 (10)
I-70 EB Off-Ramp
40 (60)
25 (25)
535 (410)
85 (155)
45 (50)
Pear Tree Ln
Pear Tree Dr
130 (225)
5 (10)
Marriot Entrance
0 (0)
35 (60)
3500 (4210)
340 (440)
3945 (3715)
INTERSTATE
70
I-70 EB On-Ramp
75 (150)
280 (265)
240 (280)
30 (30)
Natural Bridge Rd
320 (420)
100 (130)
Edmundson Rd
115 (135)
45 (45)
3450 (4130)
3495 (3510)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

Existing Terminal 2 - Airport Area



Legend

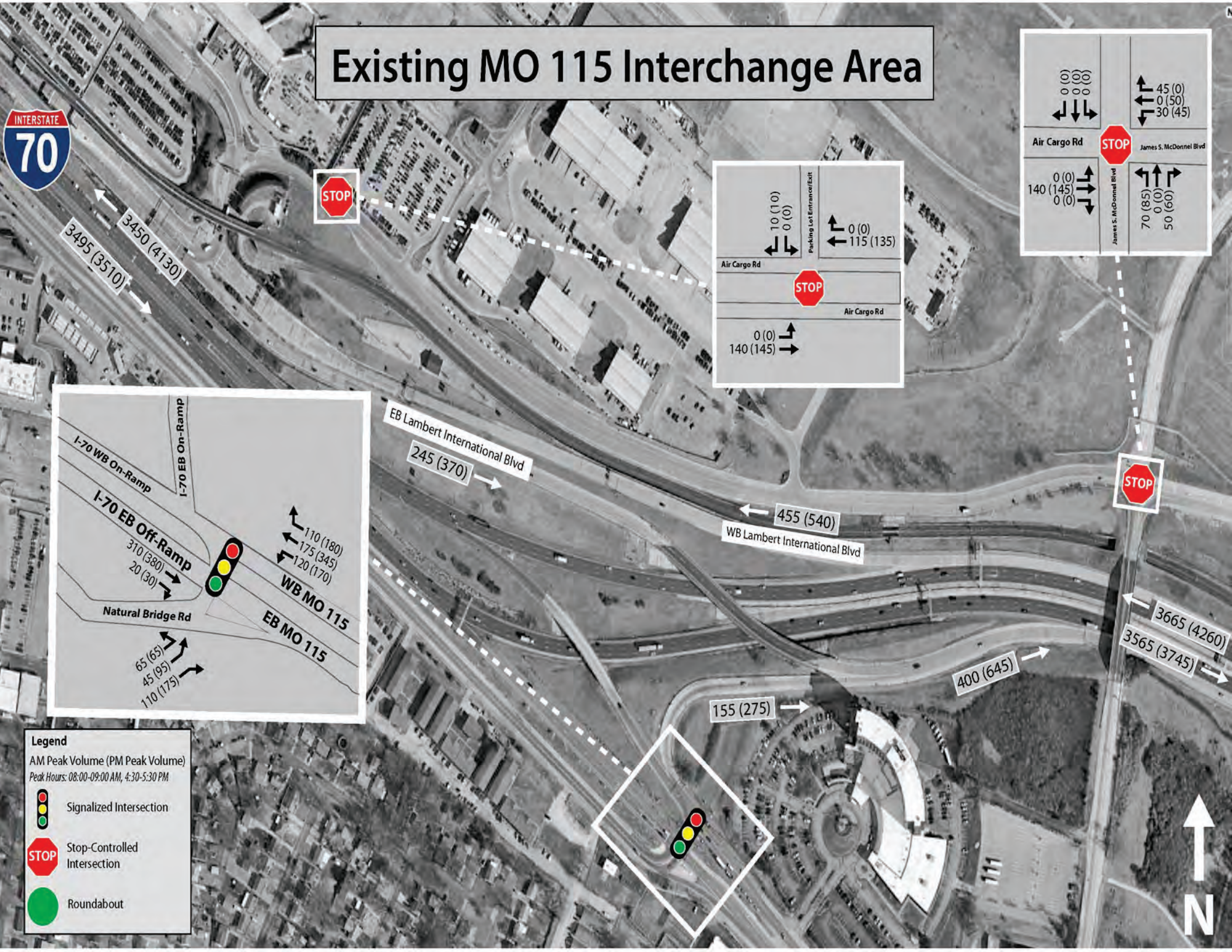
AM Peak Volume (PM Peak Volume)

Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

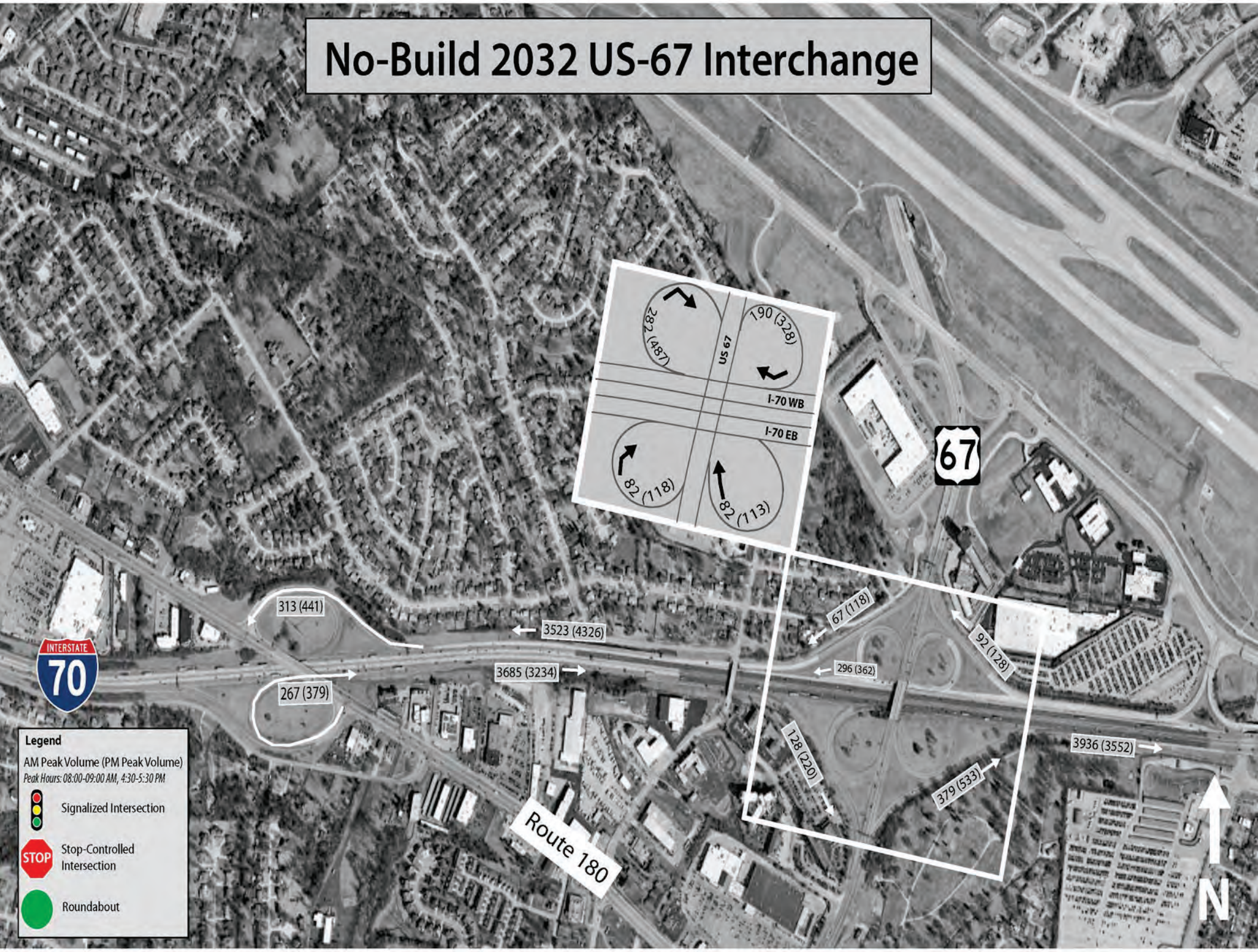
Signalized Intersection

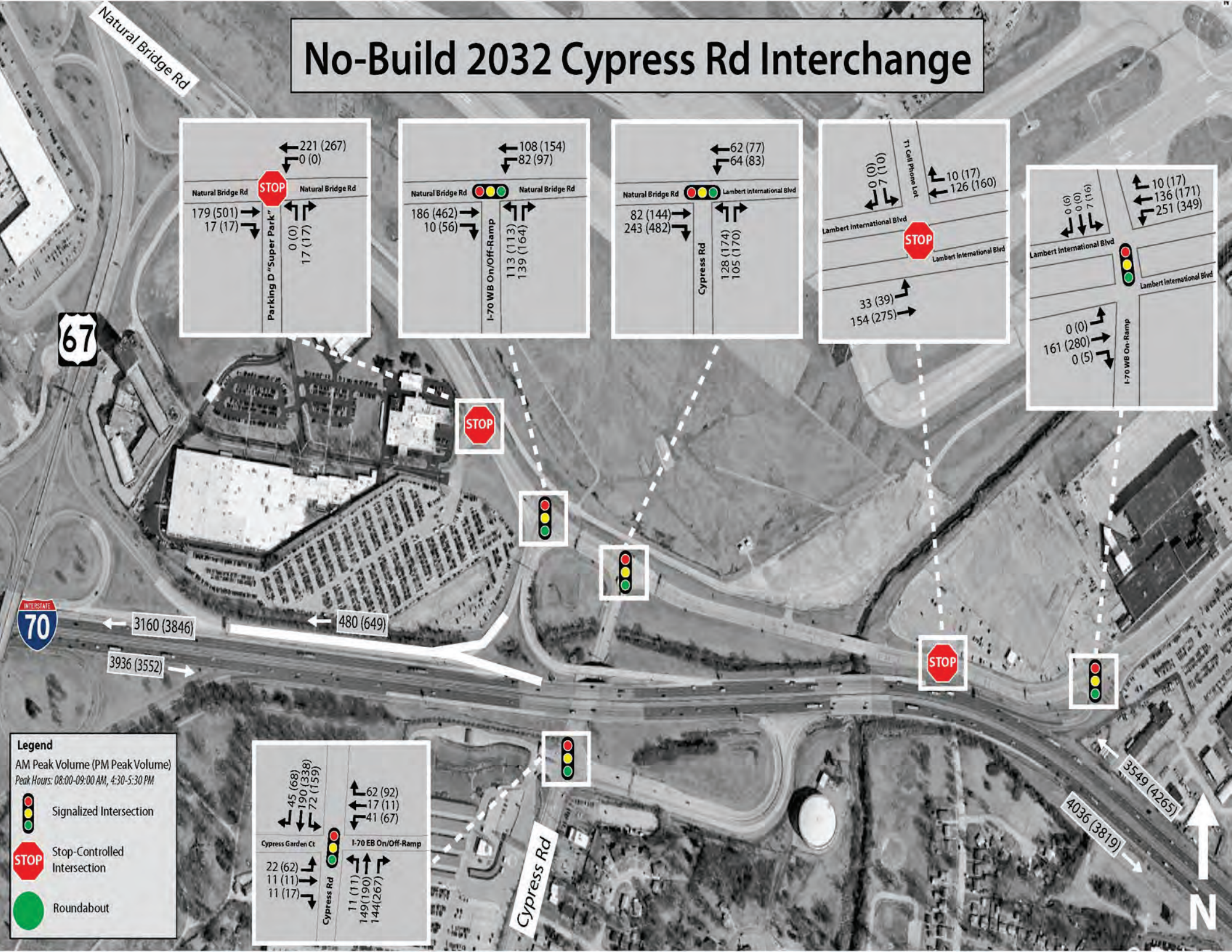
Stop-Controlled Intersection

Roundabout

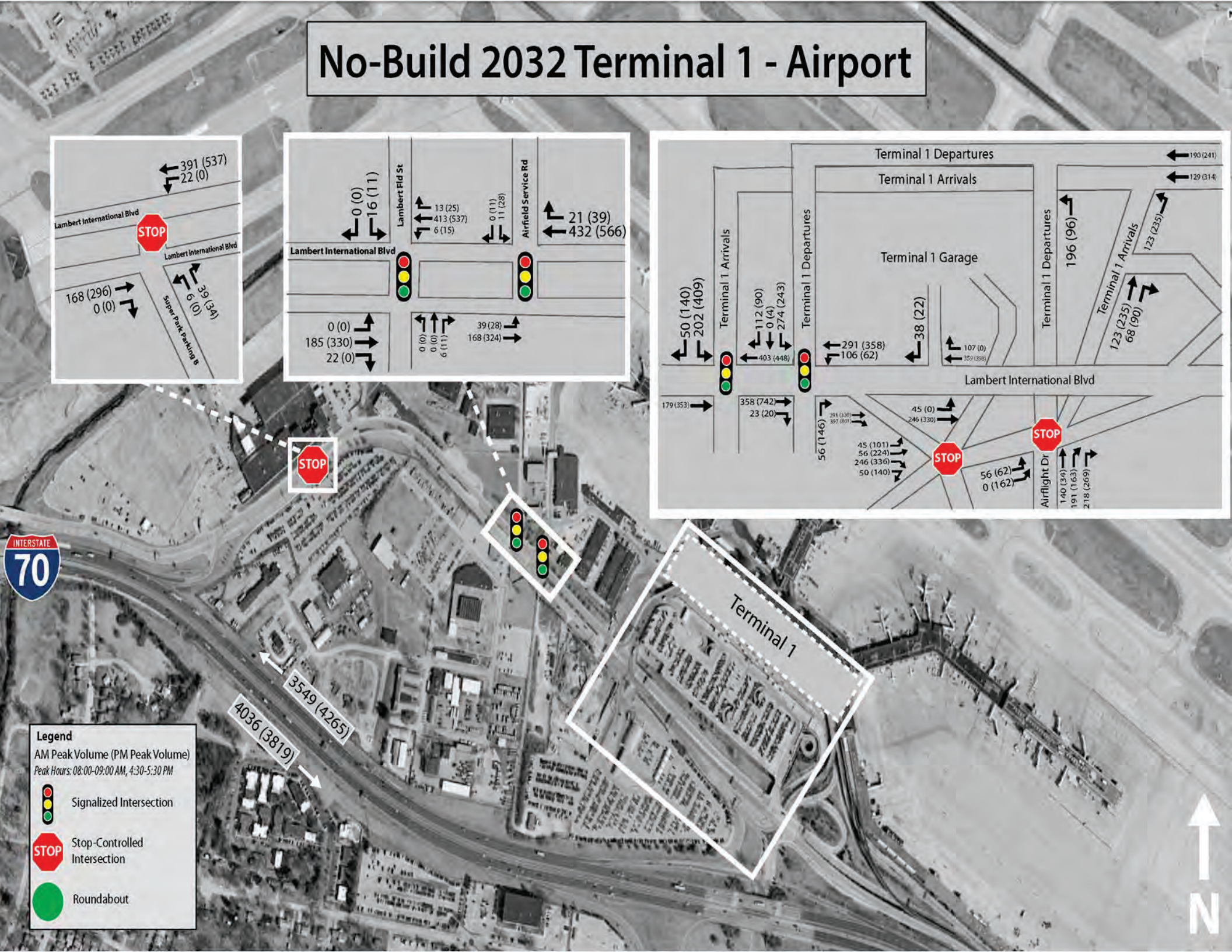

Existing MO 115 Interchange Area
INTERSTATE 70
3450 (4130)
3495 (3510)
STOP
10 (10)
0 (0)
Parking Lot Entrance/Exit
0 (0)
115 (135)
Air Cargo Rd
STOP
Air Cargo Rd
0 (0)
140 (145)
0 (0)
0 (0)
0 (0)
45 (0)
0 (50)
30 (45)
Air Cargo Rd
STOP
James S. McDonnel Blvd
0 (0)
140 (145)
0 (0)
James S. McDonnel Blvd
70 (85)
0 (0)
50 (60)
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
310 (380)
20 (30)
110 (180)
175 (345)
120 (170)
WB MO 115
EB MO 115
Natural Bridge Rd
65 (65)
45 (95)
110 (175)
EB Lambert International Blvd
245 (370)
455 (540)
WB Lambert International Blvd
STOP
3665 (4260)
3565 (3745)
400 (645)
155 (275)
111
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N


Existing I-170 Interchange Area
INTERSTATE
170
INTERSTATE
70
480 (560)
3665 (4260)
135 (140)
3565 (3745)
335 (470)
750 (1165)
940 (920)
2290 (2355)
2300 (2395)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N

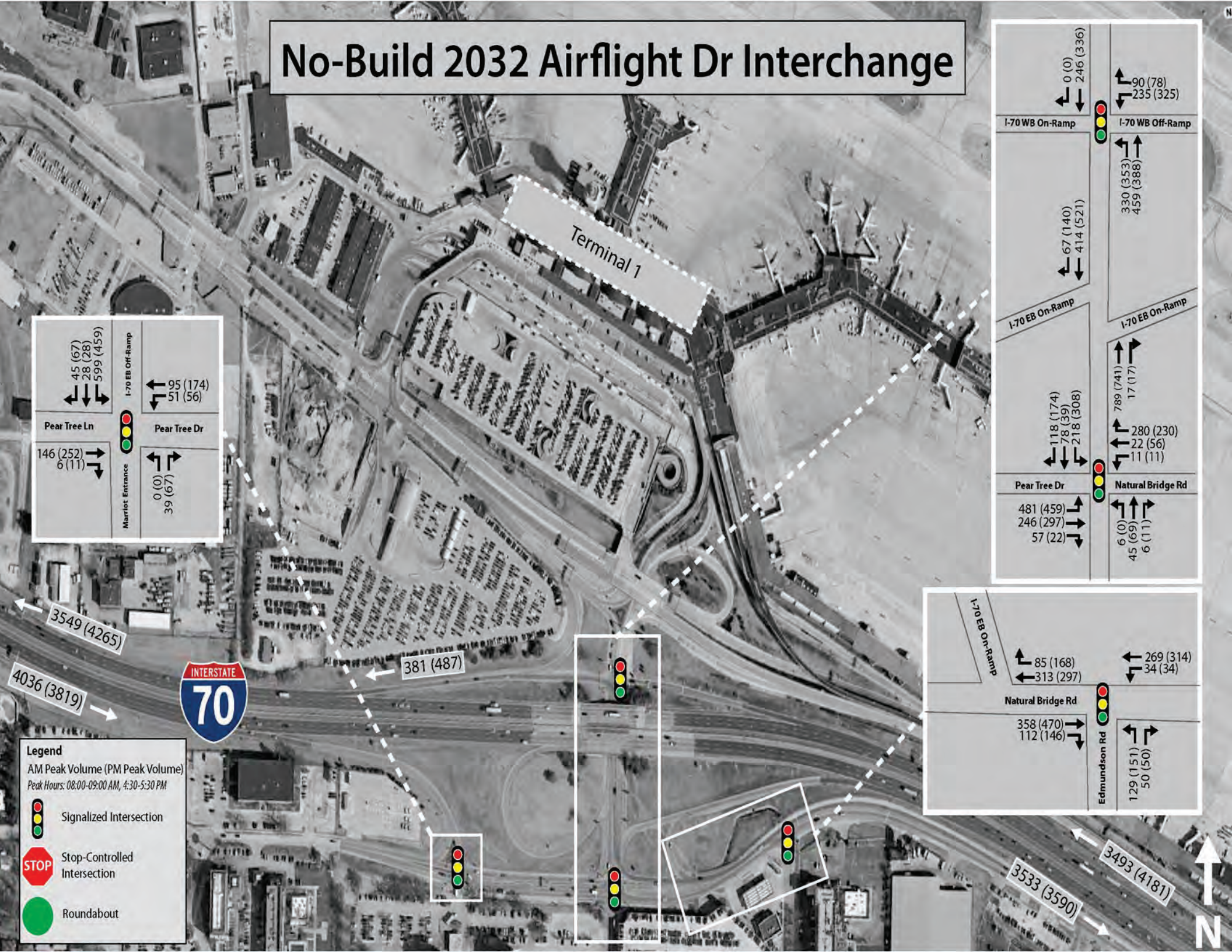

No-Build 2032 US-67 Interchange
US 67
I-70 WB
I-70 EB
282 (487)
190 (328)
82 (118)
82 (113)
67
313 (441)
3523 (4326)
67 (118)
92 (128)
3685 (3234)
296 (362)
267 (379)
128 (220)
379 (533)
3936 (3552)
INTERSTATE
70
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


No-Build 2032 Cypress Rd Interchange
Natural Bridge Rd
221 (267)
0 (0)
Natural Bridge Rd
STOP
Natural Bridge Rd
179 (501)
17 (17)
Parking D "Super Park"
0 (0)
17 (17)
108 (154)
82 (97)
Natural Bridge Rd
Natural Bridge Rd
186 (462)
10 (56)
I-70 WB On/Off-Ramp
113 (113)
139 (164)
62 (77)
64 (83)
Natural Bridge Rd
Lambert International Blvd
82 (144)
243 (482)
Cypress Rd
128 (174)
105 (170)
0 (0)
7 (10)
T1 Cell Phone Lot
10 (17)
126 (160)
Lambert International Blvd
STOP
Lambert International Blvd
33 (39)
154 (275)
0 (6)
0 (0)
7 (16)
10 (17)
136 (171)
251 (349)
Lambert International Blvd
Lambert International Blvd
0 (0)
161 (280)
0 (5)
I-70 WB On-Ramp
67
STOP
INTERSTATE
70
3160 (3846)
480 (649)
3936 (3552)
STOP
3549 (4265)
4036 (3819)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
45 (68)
190 (338)
72 (159)
Cypress Garden Ct
22 (62)
11 (11)
11 (17)
Cypress Rd
62 (92)
17 (11)
41 (67)
I-70 EB On/Off-Ramp
11 (11)
149(190)
144(267)
Cypress Rd
N

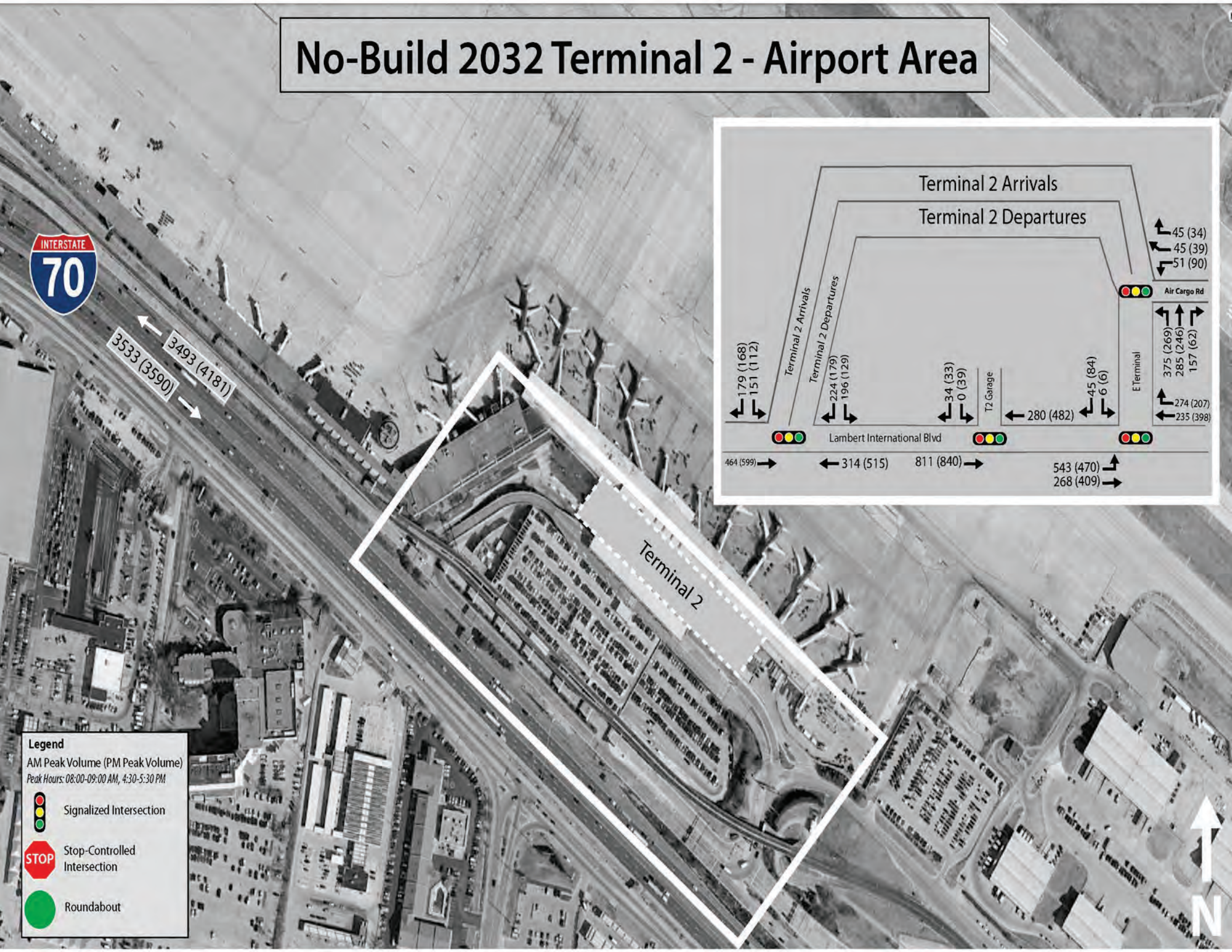
No-Build 2032 Terminal 1 - Airport

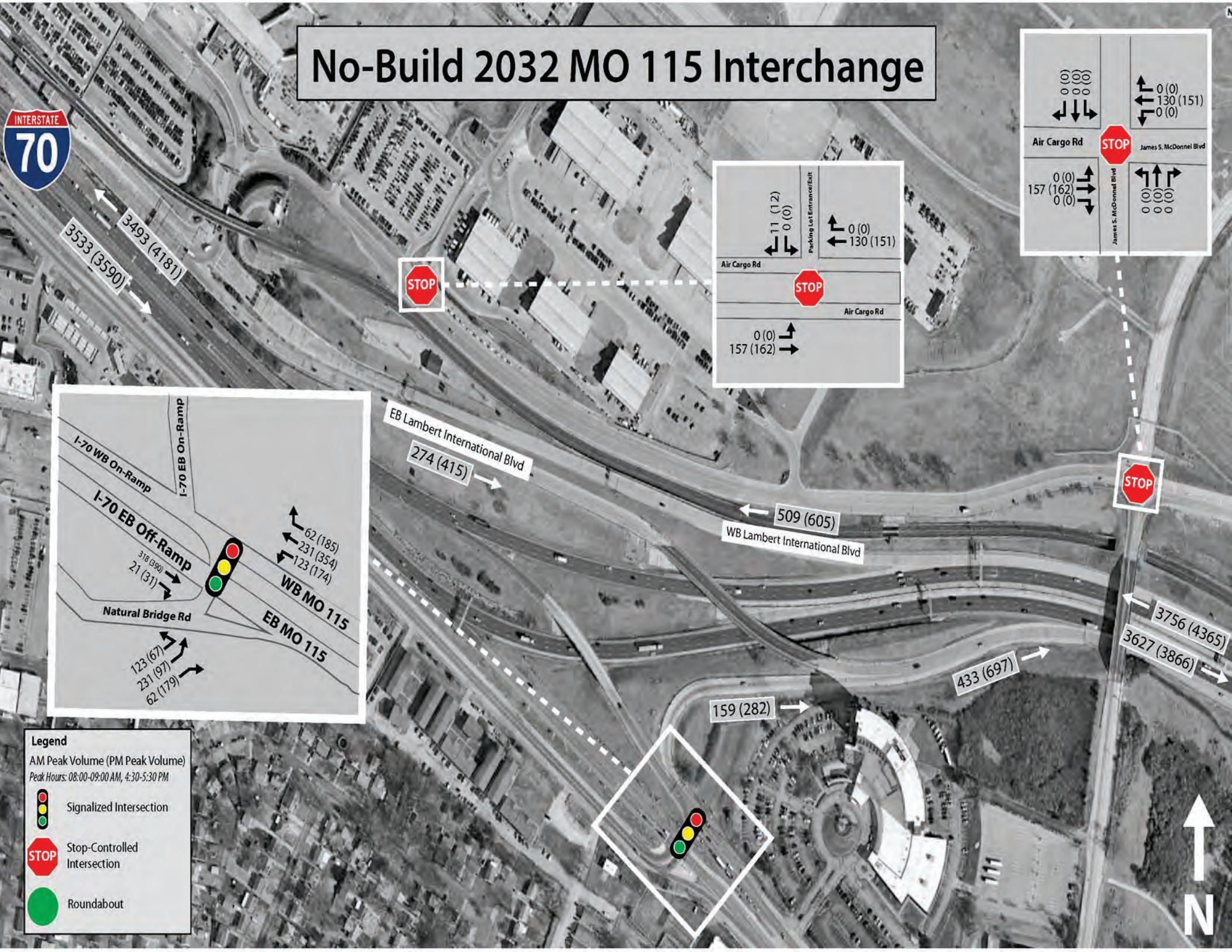


No-Build 2032 Airflight Dr Interchange

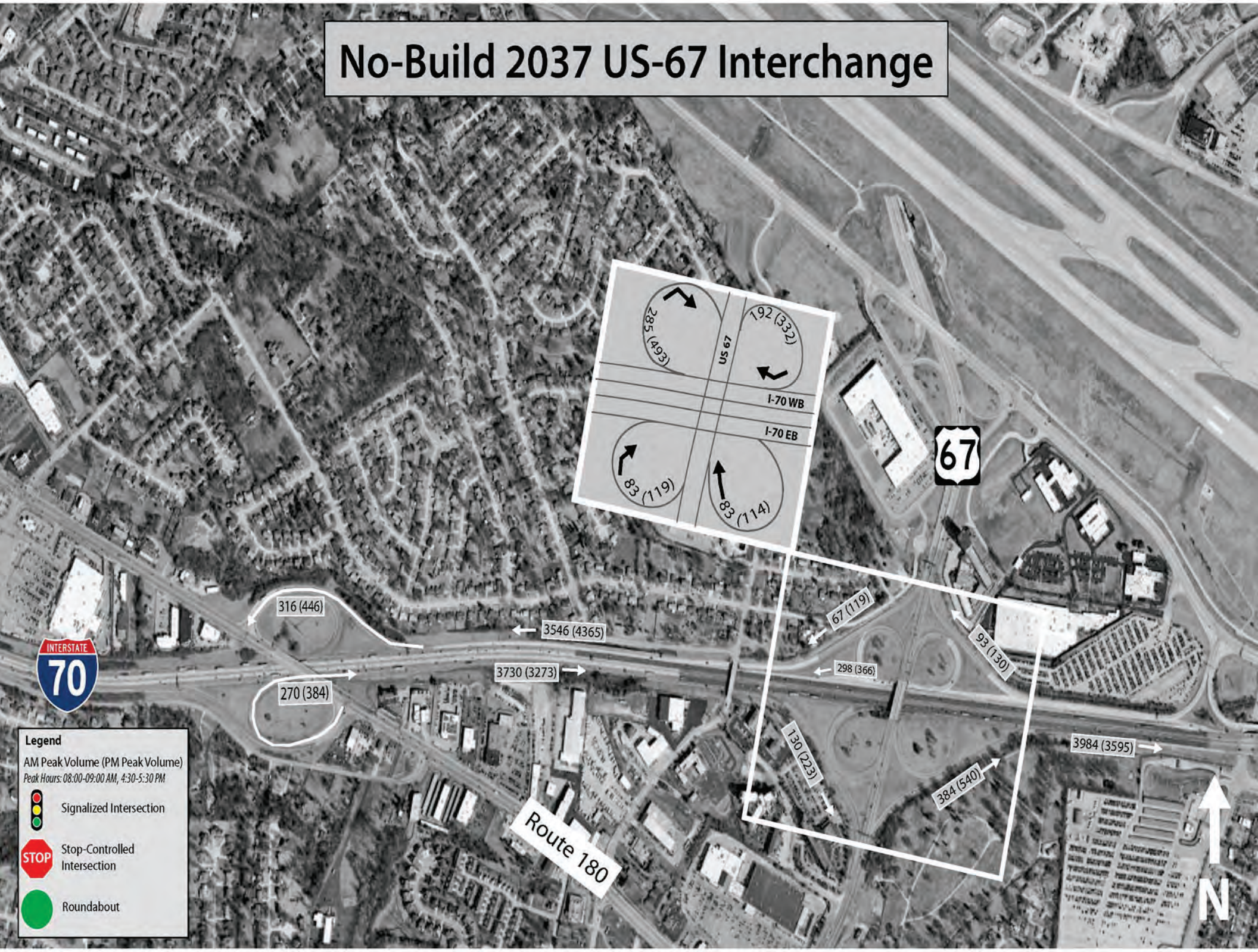


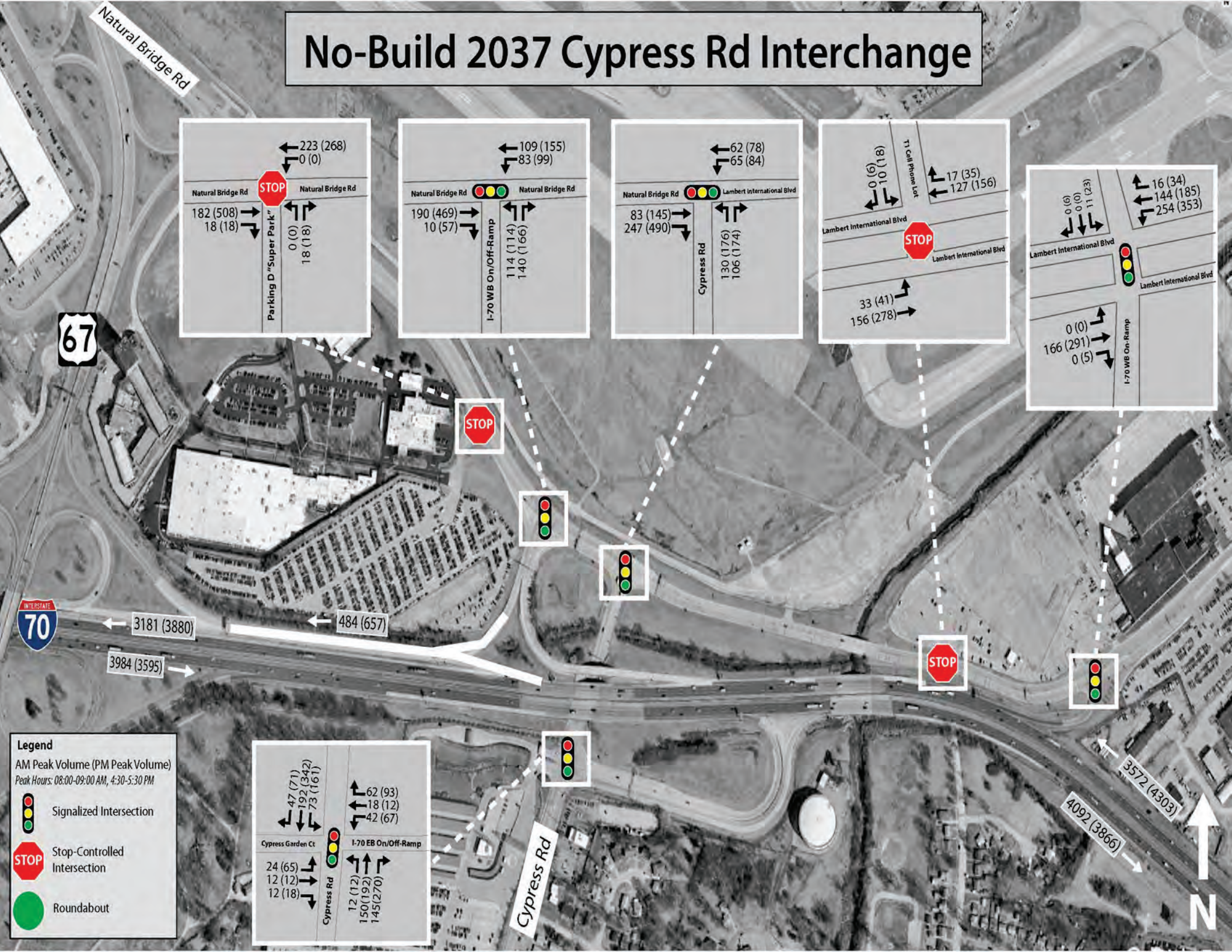
No-Build 2032 Terminal 2 - Airport Area



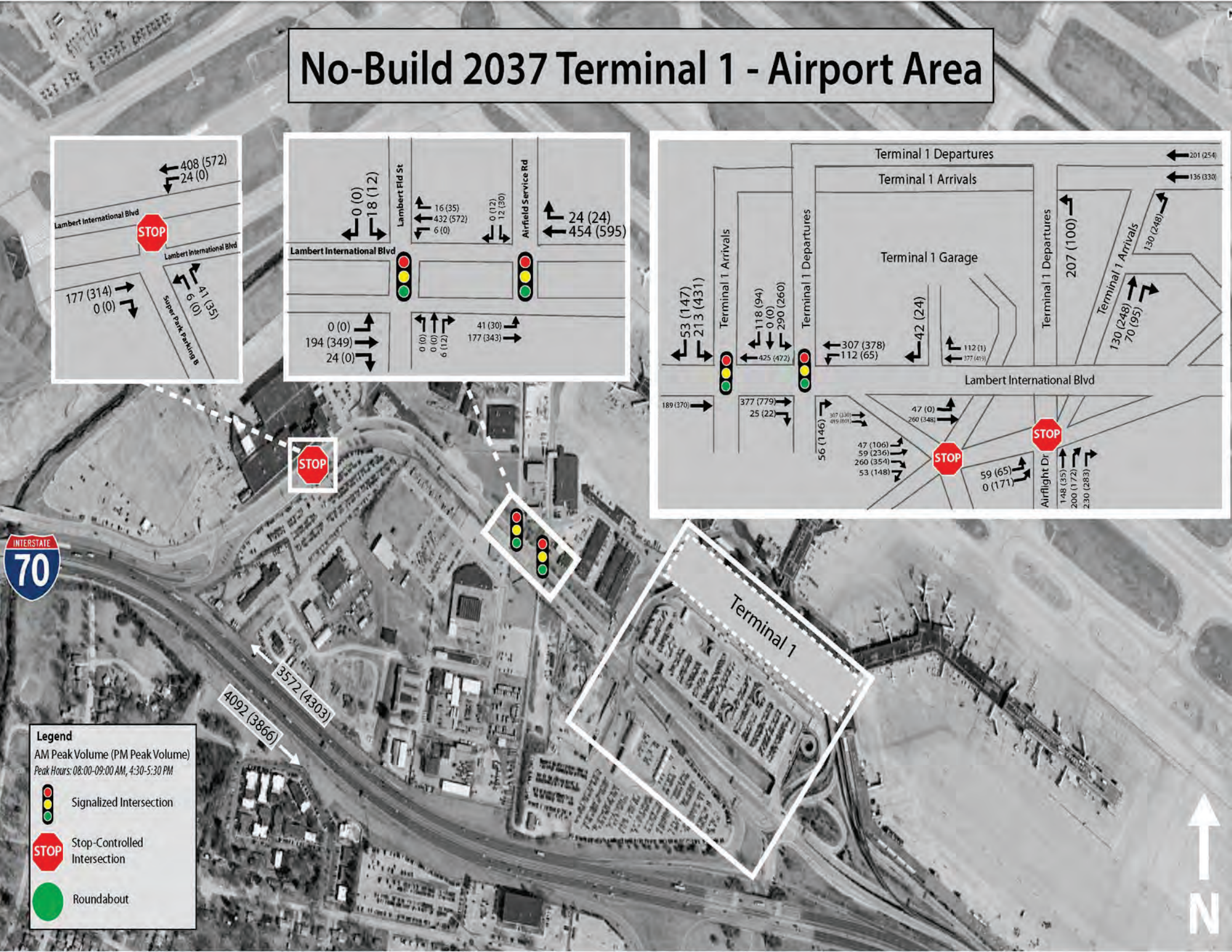

No-Build 2032 MO 115 Interchange
INTERSTATE 70
3493 (4181)
3533 (3590)
STOP
11 (12)
0 (0)
Parking Lot Entrance/Exit
0 (0)
130 (151)
Air Cargo Rd
STOP
Air Cargo Rd
0 (0)
157 (162)
0 (0)
130 (151)
0 (0)
Air Cargo Rd
STOP
James S. McDonnel Blvd
0 (0)
157 (162)
0 (0)
James S. McDonnel Blvd
EB Lambert International Blvd
274 (415)
509 (605)
WB Lambert International Blvd
STOP
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
318 (390)
21 (31)
62 (185)
231 (354)
123 (174)
WB MO 115
EB MO 115
Natural Bridge Rd
123 (67)
231 (97)
62 (179)
3756 (4365)
3627 (3866)
433 (697)
159 (282)
111
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


No-Build 2032 I-170 Interchange Area
INTERSTATE
170
INTERSTATE
70
492 (574)
3756 (4365)
138 (143)
3627 (3866)
341 (485)
769 (1194)
956 (950)
2330 (2431)
2357 (2454)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N

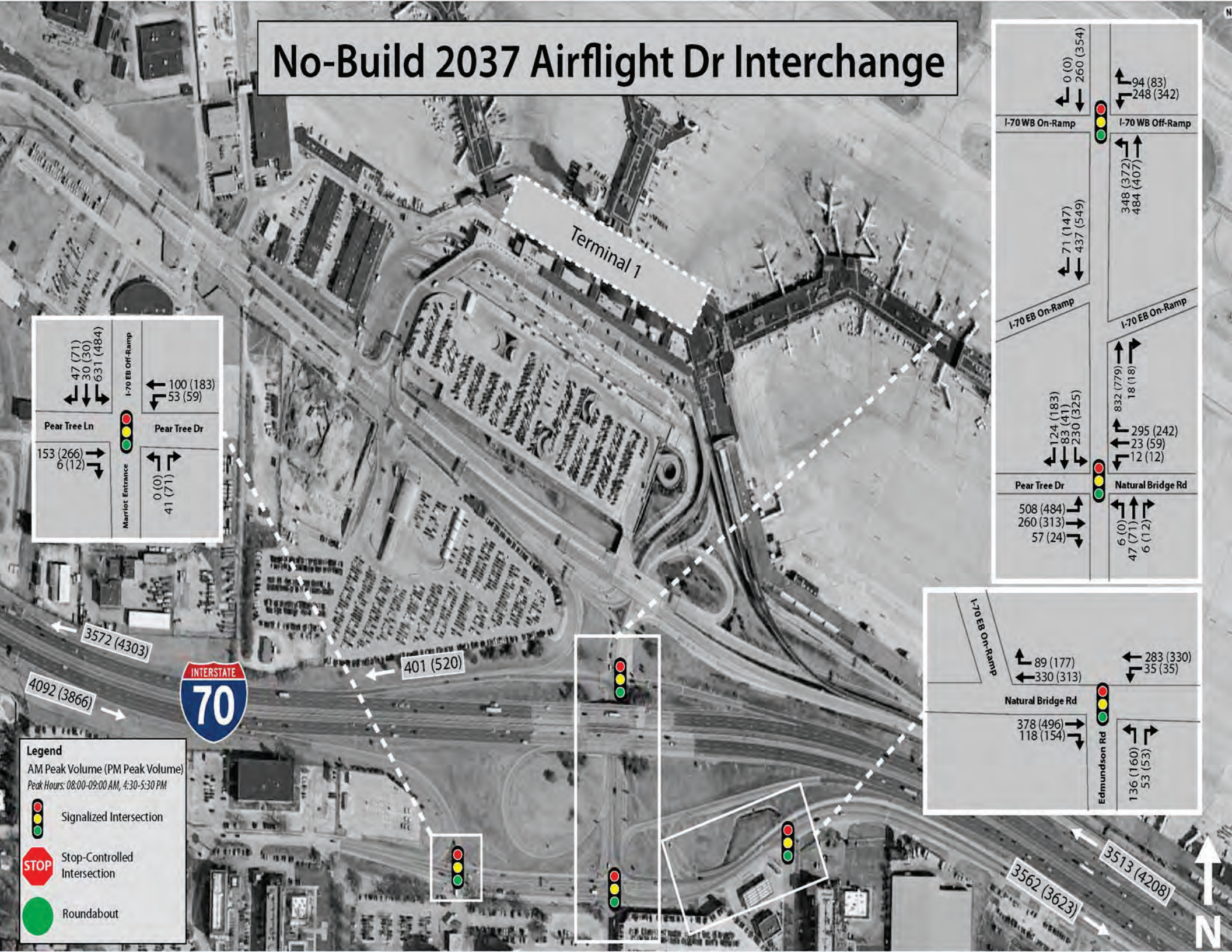

No-Build 2037 US-67 Interchange
285 (493)
US 67
192 (332)
I-70 WB
I-70 EB
83 (119)
83 (114)
67
316 (446)
3546 (4365)
67 (119)
93 (130)
INTERSTATE
70
3730 (3273)
298 (366)
270 (384)
130 (223)
384 (540)
3984 (3595)
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


No-Build 2037 Cypress Rd Interchange
Natural Bridge Rd
223 (268)
0 (0)
Natural Bridge Rd
STOP
Natural Bridge Rd
182 (508)
18 (18)
Parking D "Super Park"
0 (0)
18 (18)
109 (155)
83 (99)
Natural Bridge Rd
Natural Bridge Rd
190 (469)
10 (57)
I-70 WB On/Off-Ramp
114 (114)
140 (166)
62 (78)
65 (84)
Natural Bridge Rd
Lambert International Blvd
83 (145)
247 (490)
Cypress Rd
130 (176)
106 (174)
0 (6)
10 (18)
T1 Cell Phone Lot
17 (35)
127 (156)
Lambert International Blvd
STOP
Lambert International Blvd
33 (41)
156 (278)
0 (6)
0 (0)
11 (23)
16 (34)
144 (185)
254 (353)
Lambert International Blvd
Lambert International Blvd
0 (0)
166 (291)
0 (5)
I-70 WB On-Ramp
67
STOP
INTERSTATE
70
3181 (3880)
484 (657)
3984 (3595)
STOP
3572 (4303)
4092 (3866)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
47 (71)
192 (342)
73 (161)
62 (93)
18 (12)
42 (67)
Cypress Garden Ct
I-70 EB On/Off-Ramp
24 (65)
12 (12)
12 (18)
Cypress Rd
12 (12)
150(192)
145(270)
Cypress Rd

No-Build 2037 Terminal 1 - Airport Area



No-Build 2037 Airflight Dr Interchange



Legend

AM Peak Volume (PM Peak Volume)

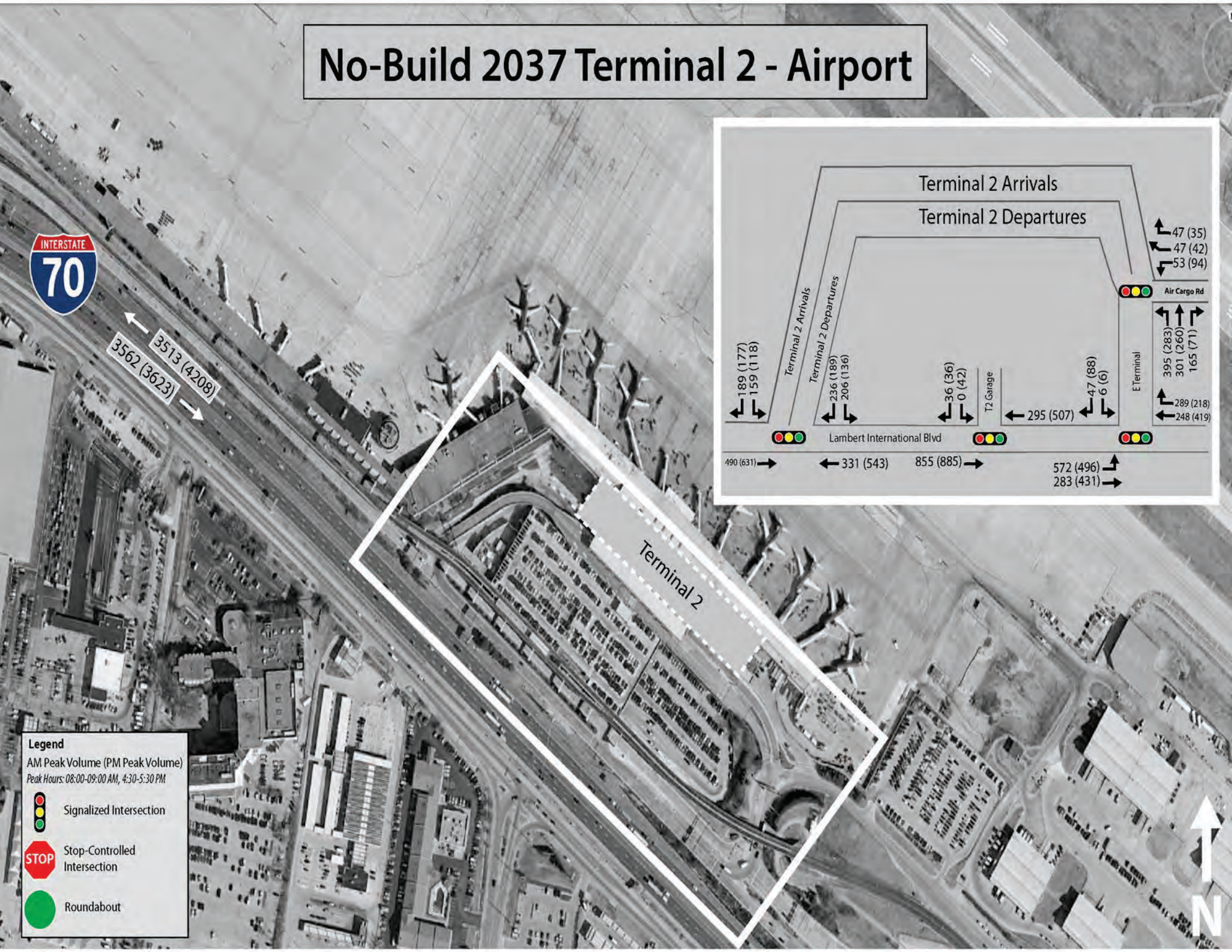
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

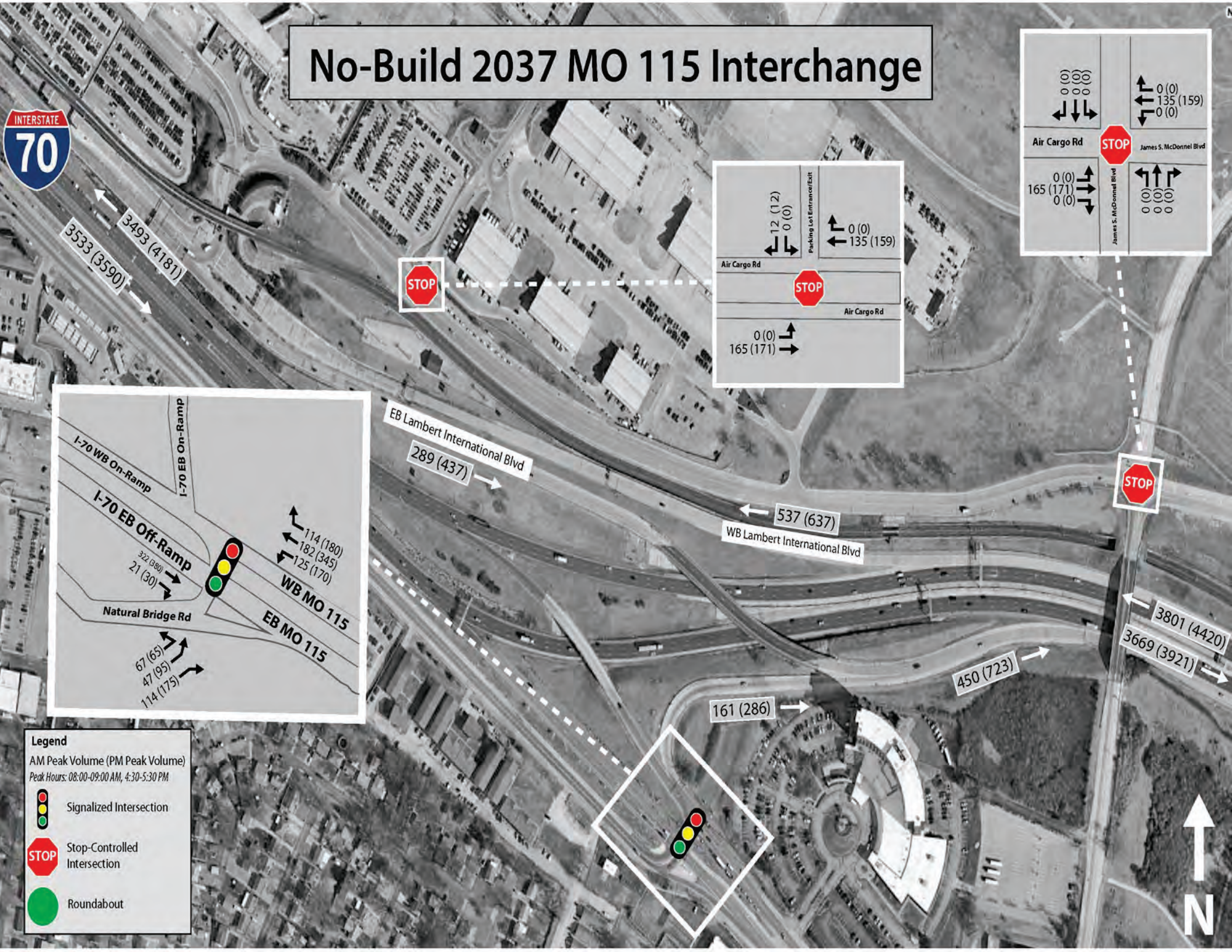
Signalized Intersection

Stop-Controlled Intersection

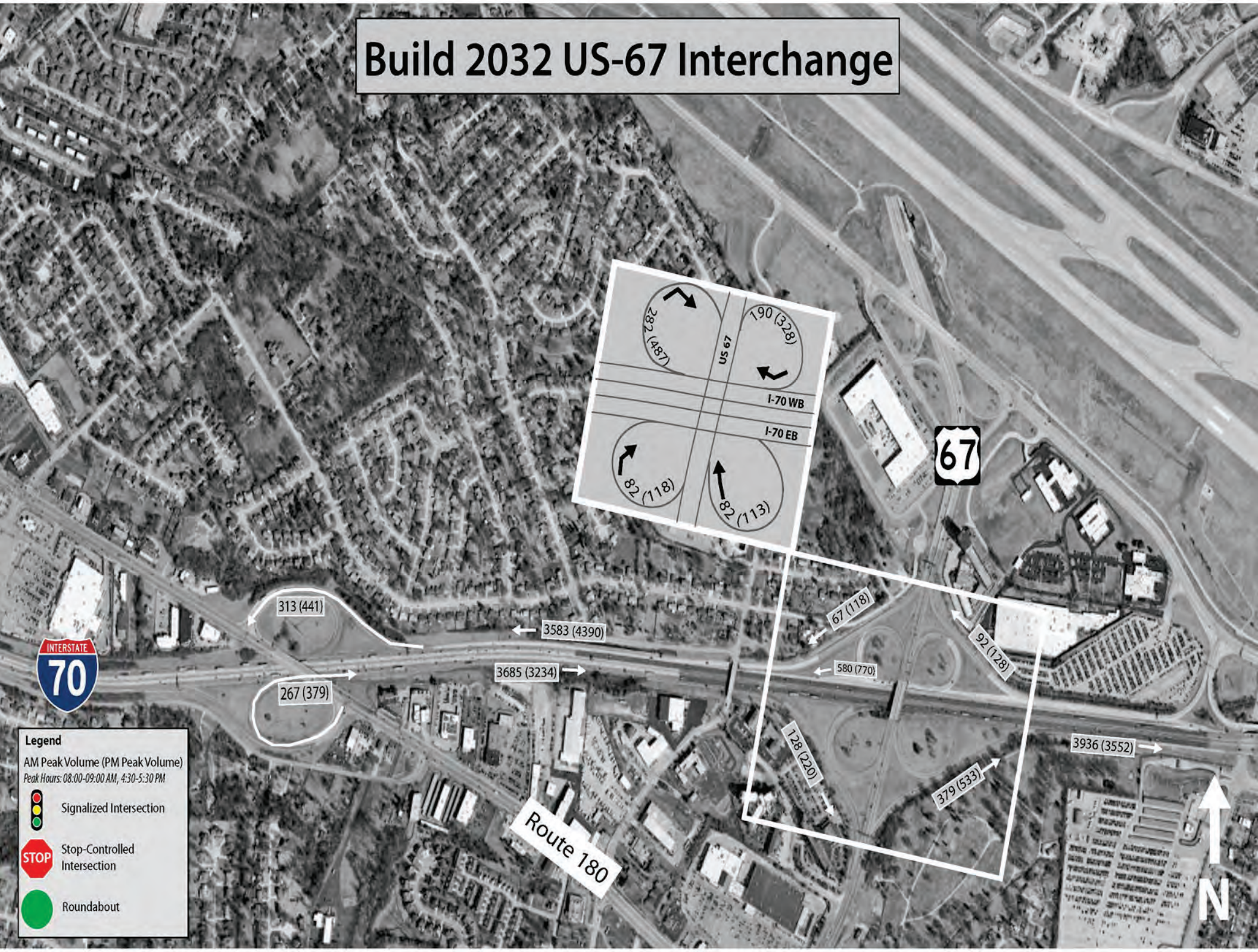
Roundabout

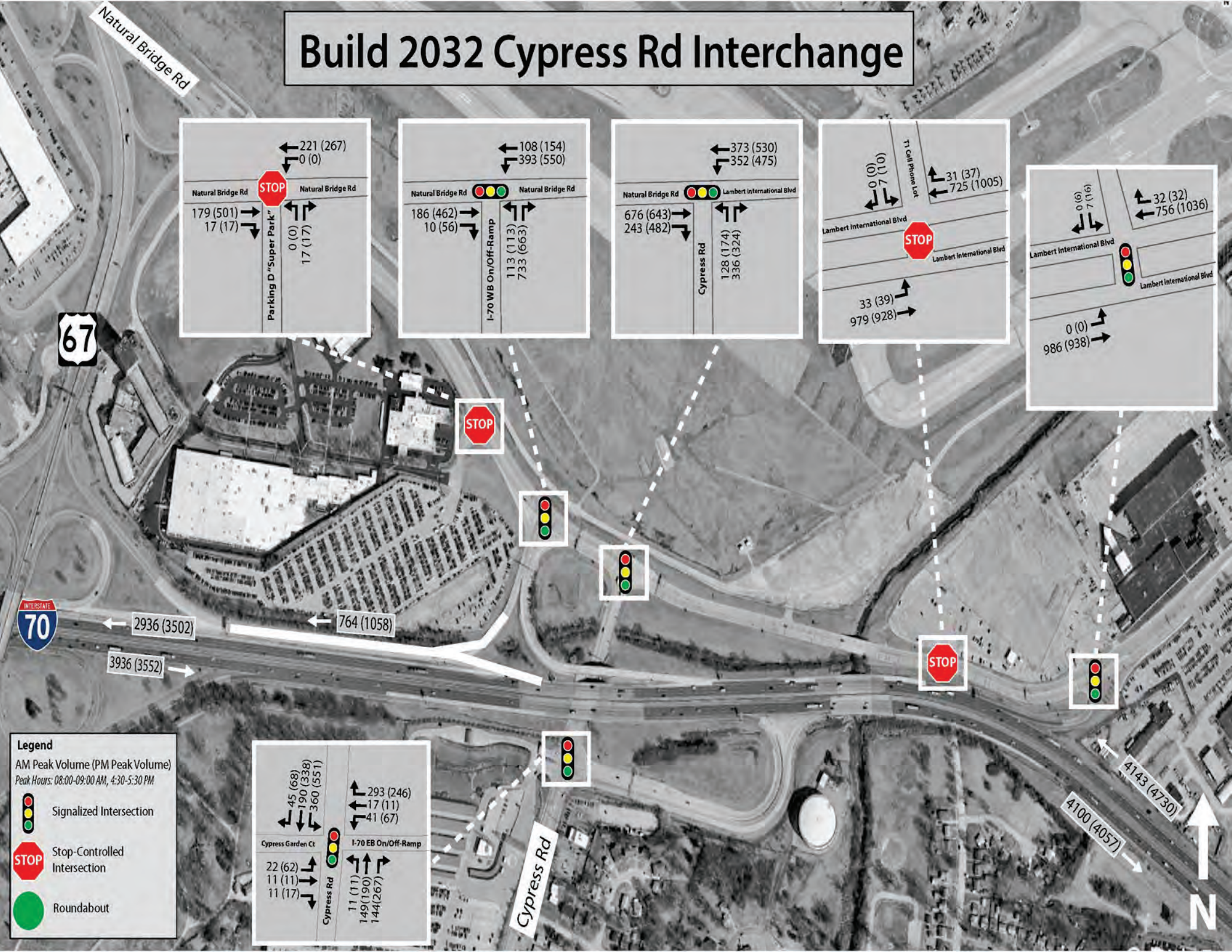
No-Build 2037 Terminal 2 - Airport



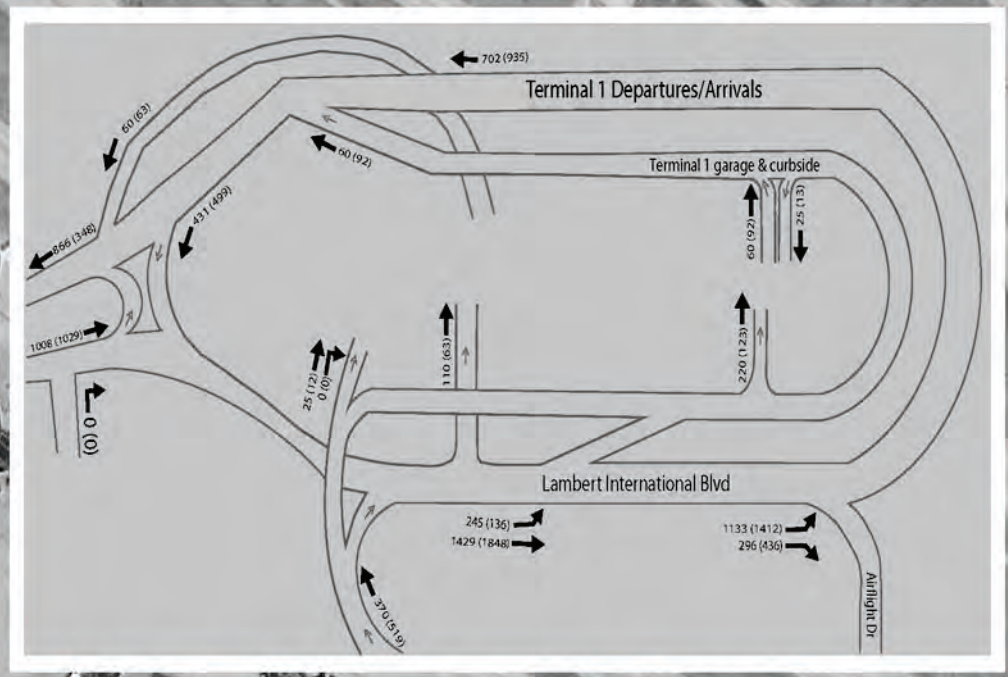

No-Build 2037 MO 115 Interchange
INTERSTATE 70
3493 (4181)
3533 (3590)
STOP
12 (12)
0 (0)
Parking Lot Entrance/Exit
0 (0)
135 (159)
Air Cargo Rd
STOP
Air Cargo Rd
0 (0)
165 (171)
0 (0)
135 (159)
0 (0)
Air Cargo Rd
STOP
James S. McDonnel Blvd
0 (0)
165 (171)
0 (0)
James S. McDonnel Blvd
EB Lambert International Blvd
289 (437)
537 (637)
WB Lambert International Blvd
STOP
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
322 (380)
21 (30)
114 (180)
182 (345)
125 (170)
WB MO 115
EB MO 115
Natural Bridge Rd
67 (65)
47 (95)
114 (175)
3801 (4420)
3669 (3921)
450 (723)
161 (286)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N


No-Build 2037 I-170 Interchange
INTERSTATE
170
INTERSTATE
70
498 (581)
3801 (4420)
140 (145)
3669 (3921)
345 (492)
778 (1209)
967 (964)
2357 (2465)
2385 (2485)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2032 US-67 Interchange
282 (487)
US 67
190 (328)
I-70 WB
I-70 EB
82 (118)
82 (113)
67
313 (441)
3583 (4390)
67 (118)
92 (128)
INTERSTATE
70
3685 (3234)
580 (770)
267 (379)
128 (220)
3936 (3552)
379 (533)
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2032 Cypress Rd Interchange
Natural Bridge Rd
221 (267)
0 (0)
Natural Bridge Rd
STOP
Natural Bridge Rd
179 (501)
17 (17)
Parking D "Super Park"
0 (0)
17 (17)
108 (154)
393 (550)
Natural Bridge Rd
Natural Bridge Rd
186 (462)
10 (56)
I-70 WB On/Off-Ramp
113 (113)
733 (663)
373 (530)
352 (475)
Natural Bridge Rd
Lambert International Blvd
676 (643)
243 (482)
Cypress Rd
128 (174)
336 (324)
0 (0)
7 (10)
T1 Cell Phone Lot
31 (37)
725 (1005)
Lambert International Blvd
STOP
Lambert International Blvd
33 (39)
979 (928)
0 (6)
7 (16)
32 (32)
756 (1036)
Lambert International Blvd
Lambert International Blvd
0 (0)
986 (938)
67
STOP
INTERSTATE
70
2936 (3502)
764 (1058)
3936 (3552)
STOP
4143 (4730)
4100 (4057)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
45 (68)
190 (338)
360 (551)
293 (246)
17 (11)
41 (67)
Cypress Garden Ct
I-70 EB On/Off-Ramp
22 (62)
11 (11)
11 (17)
Cypress Rd
11 (11)
149(190)
144(267)
Cypress Rd

Build 2032 Terminal 1 - Airport Area



STOP

Terminal 1

4143 (4730)

4100 (4075)

Legend

AM Peak Volume (PM Peak Volume)

Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

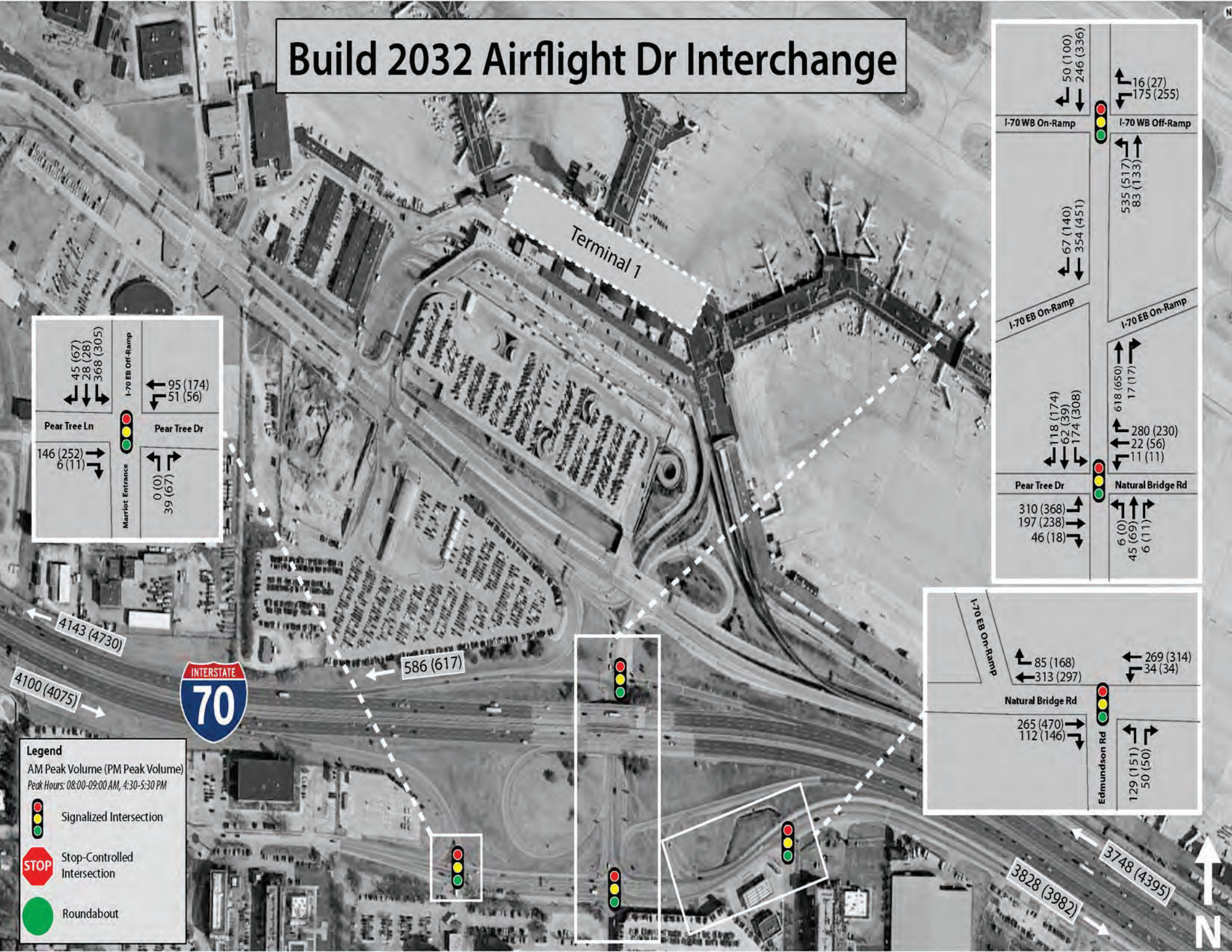
Signalized Intersection

STOP Stop-Controlled Intersection

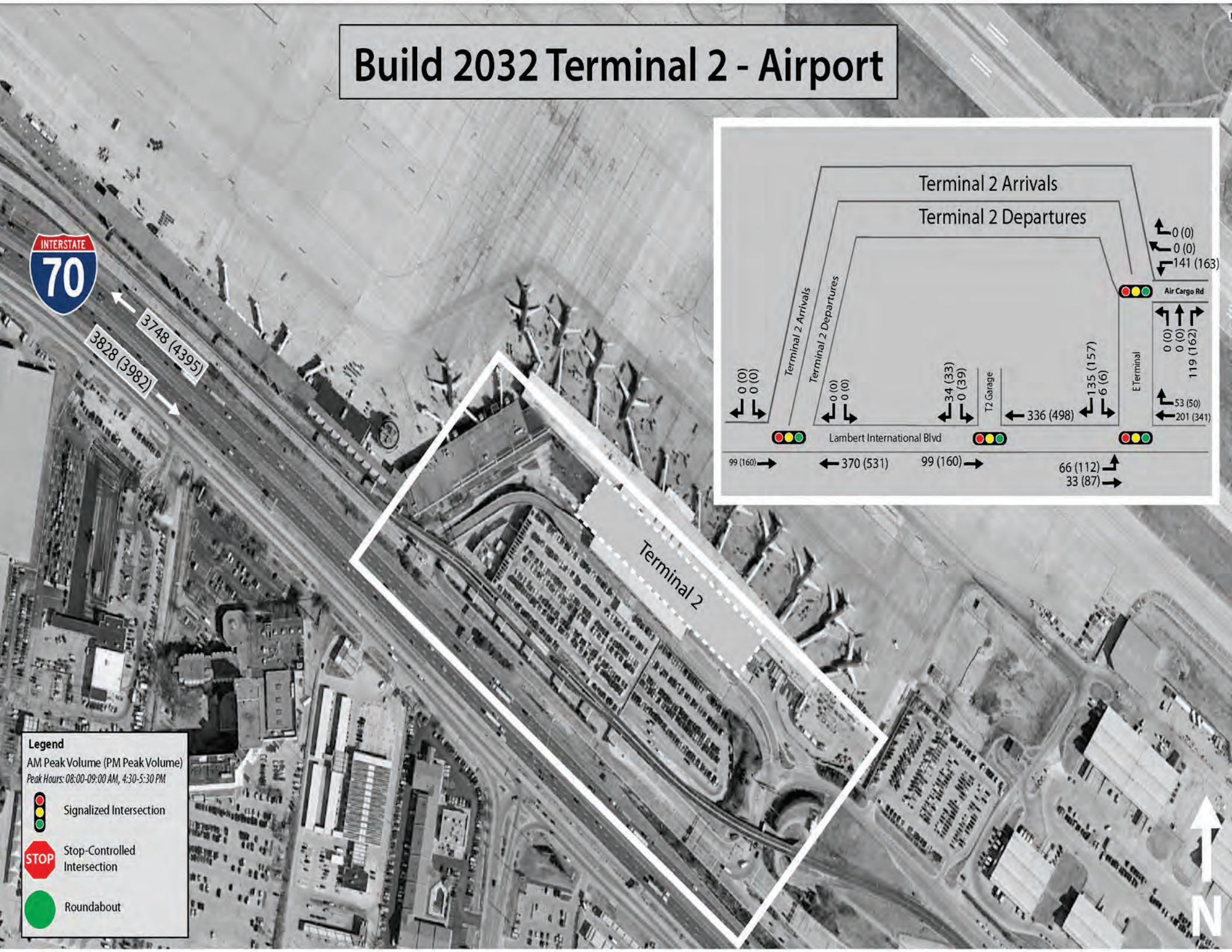
Roundabout

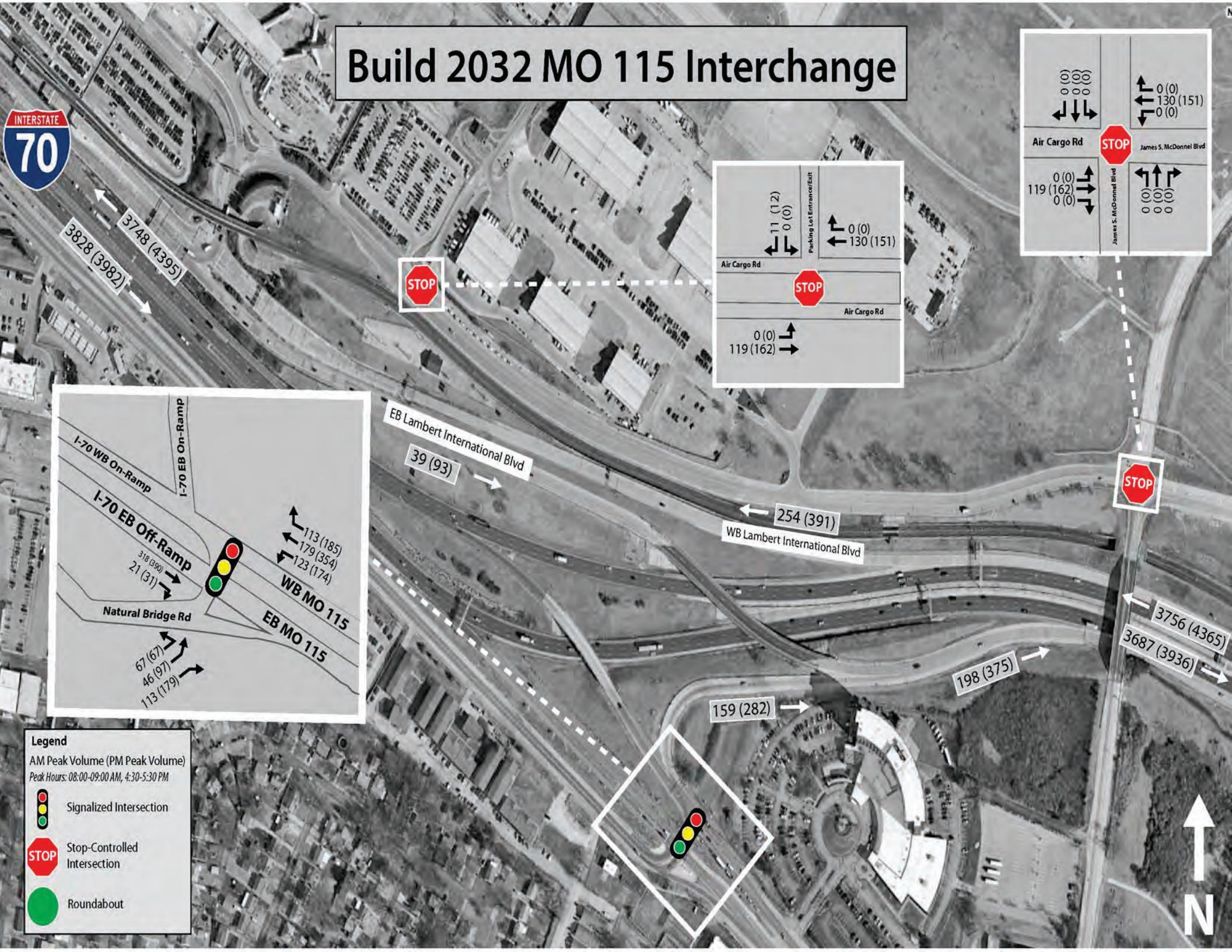
N

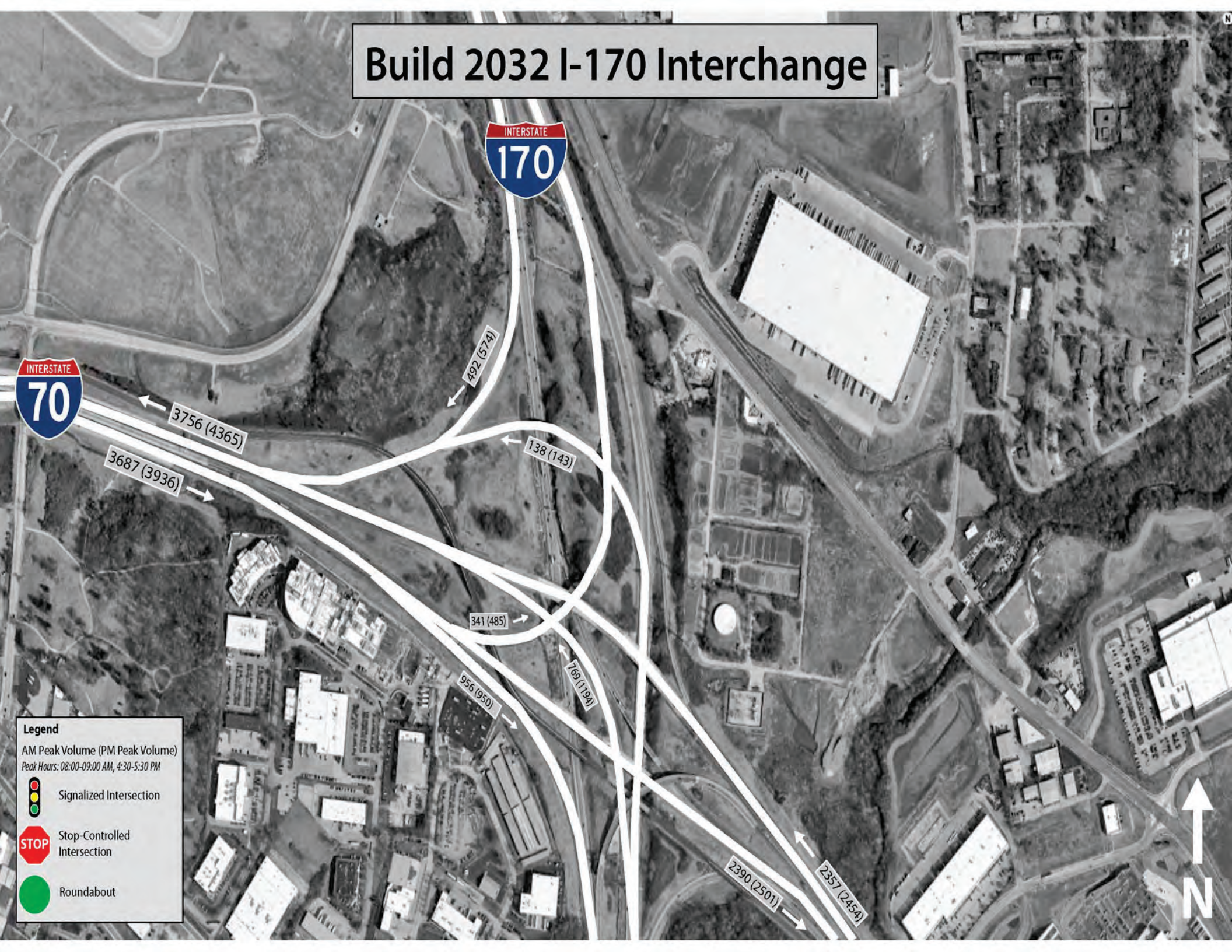
Build 2032 Airflight Dr Interchange

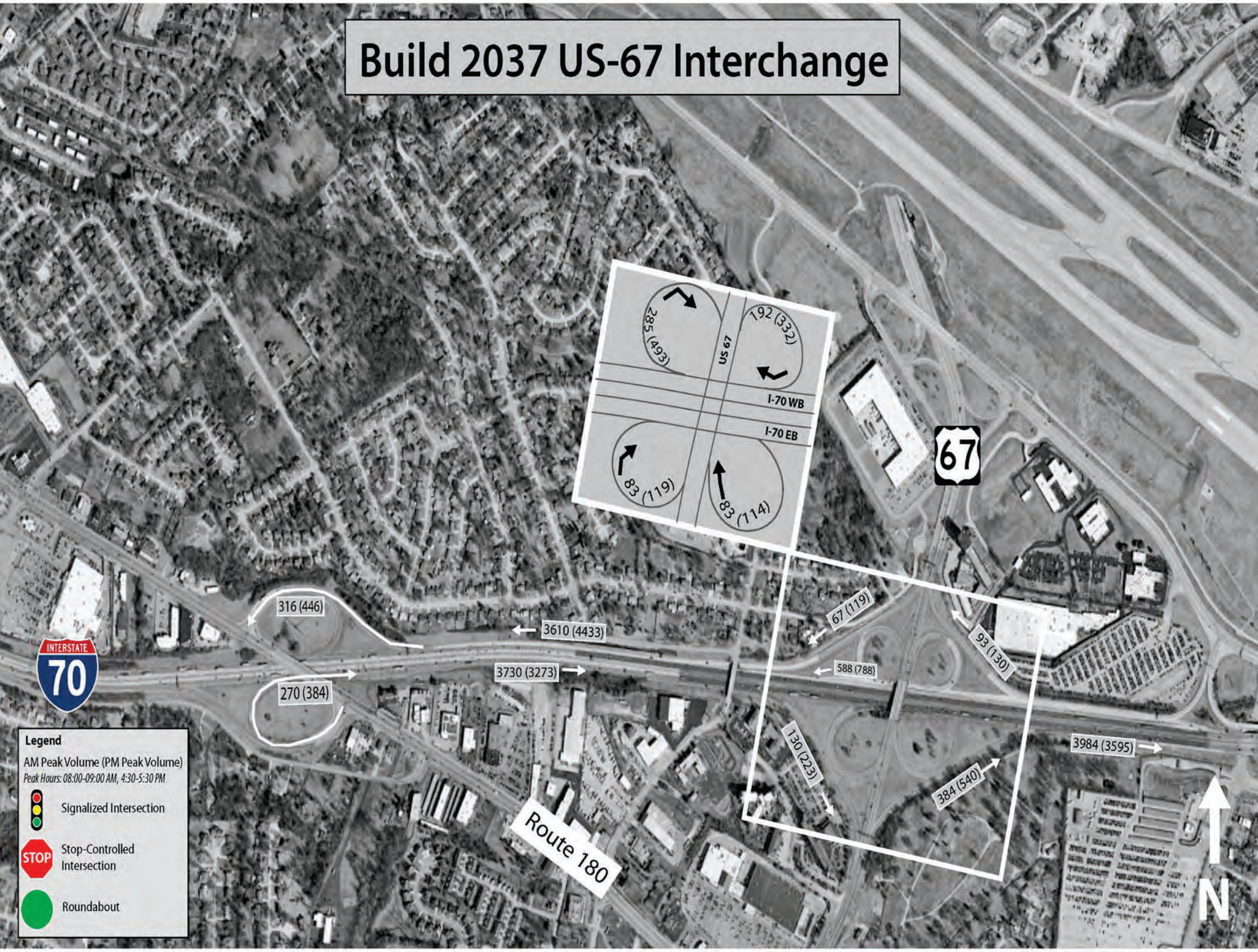


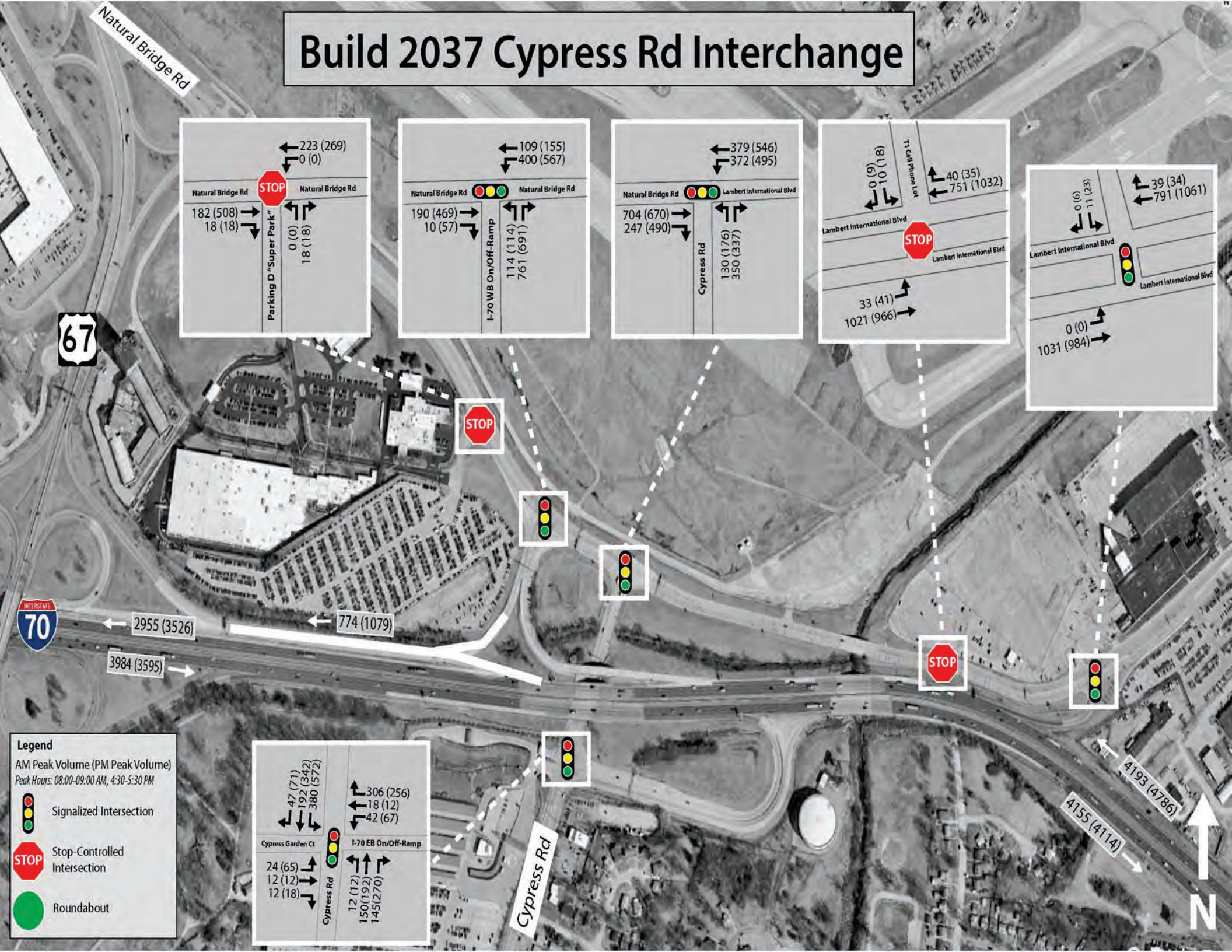
Build 2032 Terminal 2 - Airport



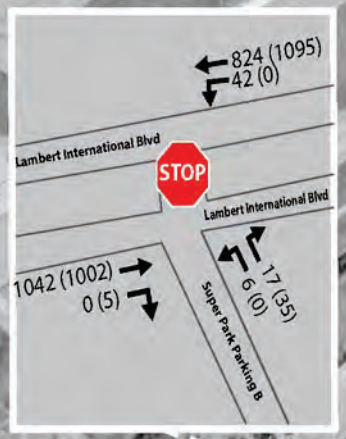

Build 2032 MO 115 Interchange
INTERSTATE 70
3748 (4395)
3828 (3982)
STOP
11 (12)
0 (0)
Parking Lot Entrance/Exit
0 (0)
130 (151)
Air Cargo Rd
STOP
Air Cargo Rd
0 (0)
119 (162)
0 (0)
130 (151)
Air Cargo Rd
STOP
James S. McDonnel Blvd
0 (0)
119 (162)
0 (0)
James S. McDonnel Blvd
EB Lambert International Blvd
39 (93)
254 (391)
WB Lambert International Blvd
STOP
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
318 (390)
21 (31)
113 (185)
179 (354)
123 (174)
WB MO 115
EB MO 115
Natural Bridge Rd
67 (67)
46 (97)
113 (179)
3756 (4365)
3687 (3936)
198 (375)
159 (282)
111
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

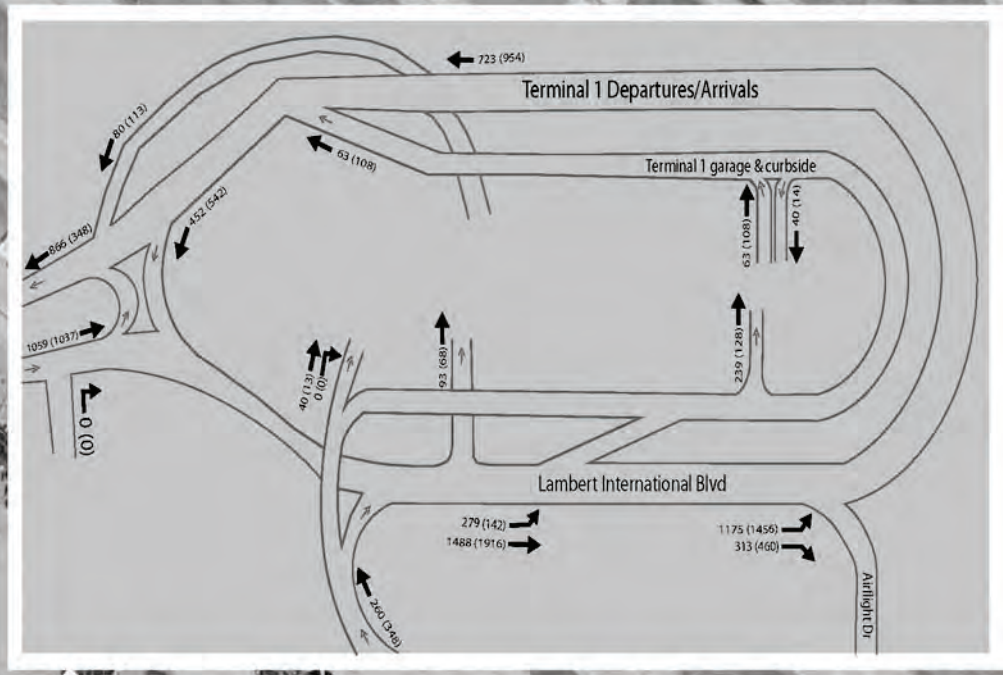

Build 2032 I-170 Interchange
INTERSTATE
170
INTERSTATE
70
492 (574)
3756 (4365)
3687 (3936)
138 (143)
341 (485)
769 (1194)
956 (950)
2390 (2501)
2357 (2454)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N


Build 2037 US-67 Interchange
285 (493)
US 67
192 (332)
I-70 WB
I-70 EB
83 (119)
83 (114)
67
316 (446)
3610 (4433)
67 (119)
93 (130)
INTERSTATE
70
3730 (3273)
588 (788)
270 (384)
130 (223)
384 (540)
3984 (3595)
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2037 Cypress Rd Interchange
Natural Bridge Rd
223 (269)
0 (0)
Natural Bridge Rd
STOP
Natural Bridge Rd
182 (508)
18 (18)
Parking D "Super Park"
0 (0)
18 (18)
109 (155)
400 (567)
Natural Bridge Rd
Natural Bridge Rd
190 (469)
10 (57)
I-70 WB On/Off-Ramp
114 (114)
761 (691)
379 (546)
372 (495)
Natural Bridge Rd
Lambert International Blvd
704 (670)
247 (490)
Cypress Rd
130 (176)
350 (337)
0 (9)
10 (18)
T1 Cell Phone Lot
40 (35)
751 (1032)
Lambert International Blvd
STOP
Lambert International Blvd
33 (41)
1021 (966)
0 (6)
11 (23)
39 (34)
791 (1061)
Lambert International Blvd
Lambert International Blvd
0 (0)
1031 (984)
67
STOP
INTERSTATE
70
2955 (3526)
774 (1079)
3984 (3595)
STOP
4193 (4786)
4155 (4114)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
47 (71)
192 (342)
380 (572)
306 (256)
18 (12)
42 (67)
Cypress Garden Ct
I-70 EB On/Off-Ramp
24 (65)
12 (12)
12 (18)
Cypress Rd
12 (12)
150(192)
145(270)
Cypress Rd

Build 2037 Terminal 1 - Airport Area





Terminal 1

4193 (4786)

4156 (4114)

Legend

AM Peak Volume (PM Peak Volume)

Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

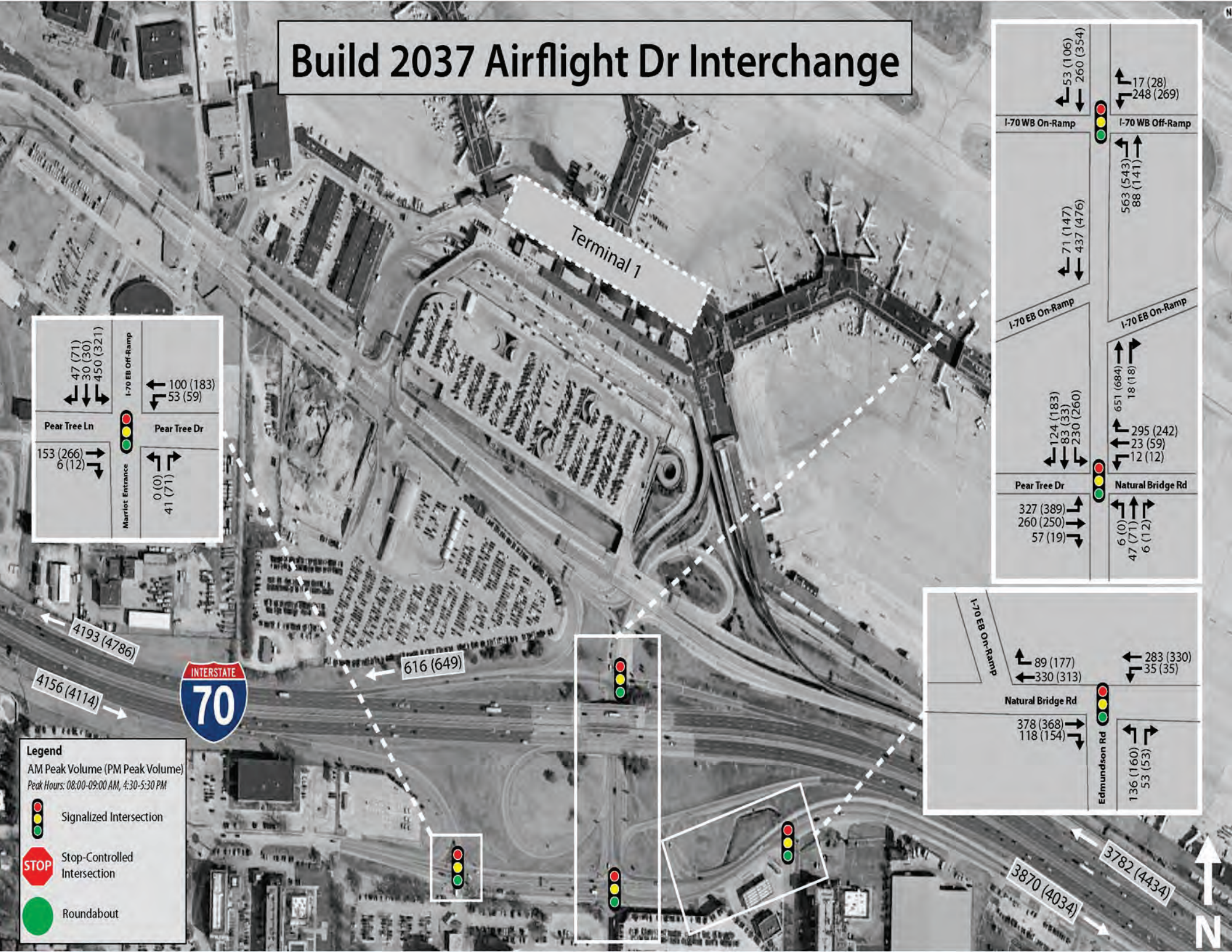
Signalized Intersection

STOP Stop-Controlled Intersection

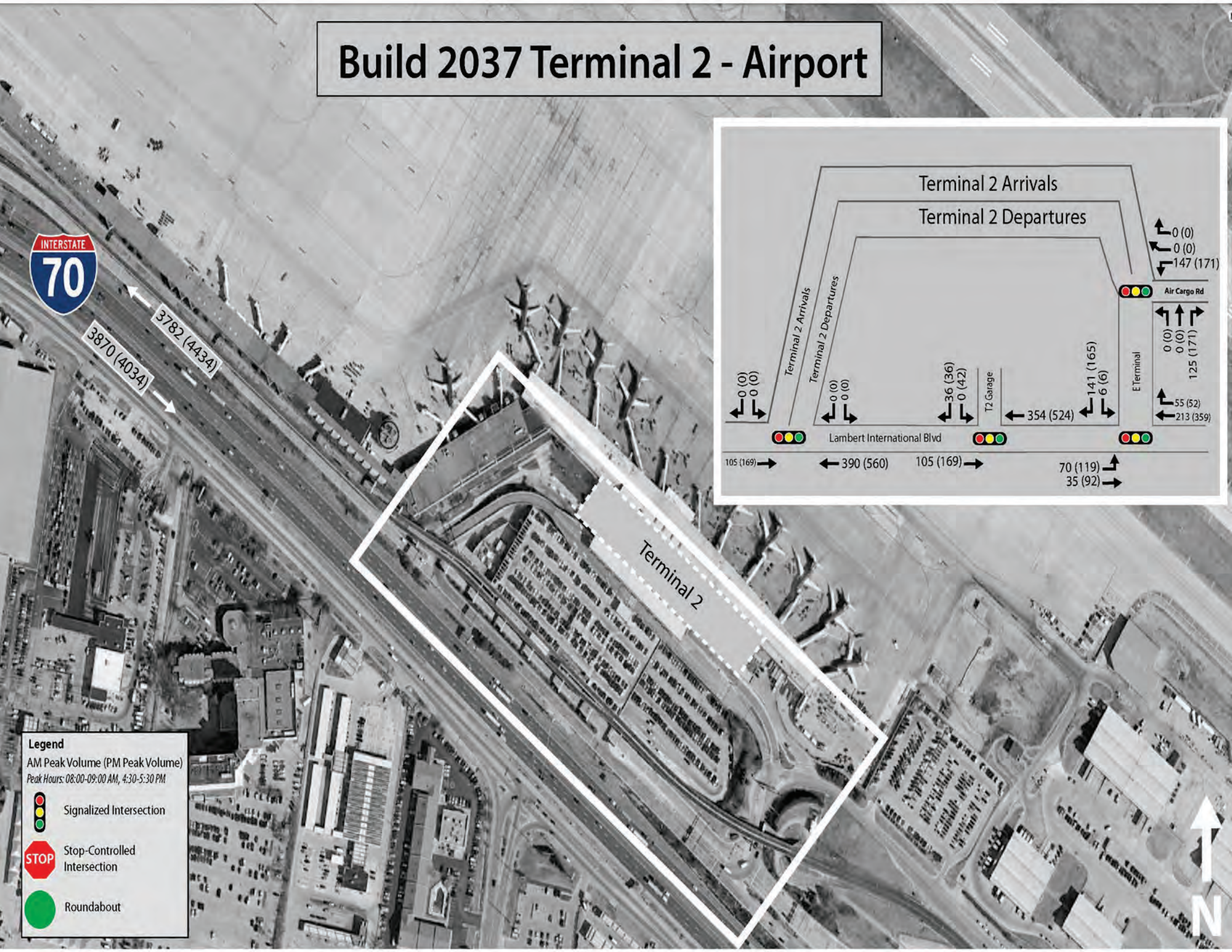
Roundabout

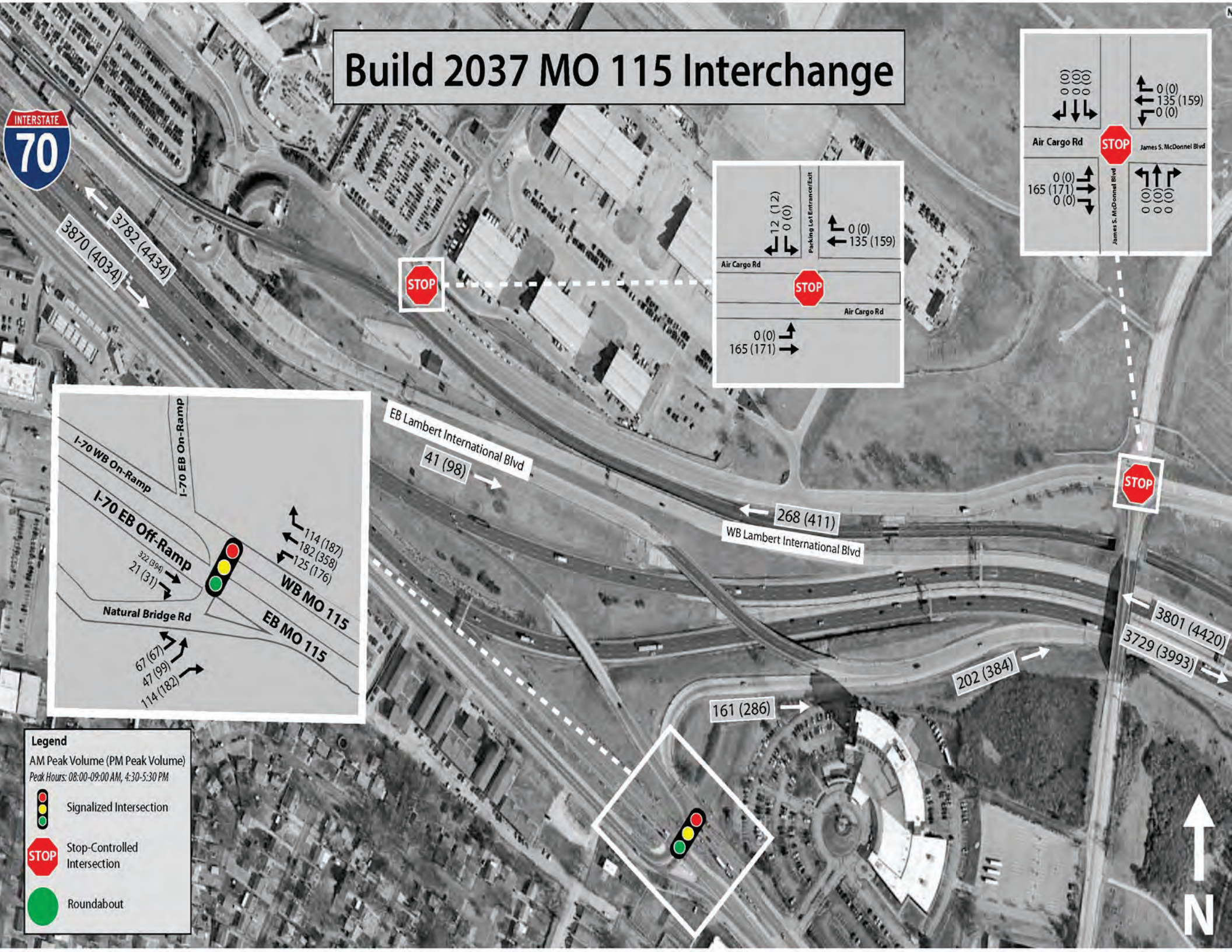
N

Build 2037 Airflight Dr Interchange



Build 2037 Terminal 2 - Airport




Build 2037 MO 115 Interchange
INTERSTATE 70
3782 (4434)
3870 (4034)
STOP
12 (12)
0 (0)
Parking Lot Entrance/Exit
0 (0)
135 (159)
Air Cargo Rd
STOP
Air Cargo Rd
0 (0)
165 (171)
0 (0)
0 (0)
135 (159)
0 (0)
Air Cargo Rd
STOP
James S. McDonnel Blvd
0 (0)
165 (171)
0 (0)
James S. McDonnel Blvd
0 (0)
0 (0)
0 (0)
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
322 (394)
21 (31)
114 (187)
182 (358)
125 (176)
WB MO 115
EB MO 115
Natural Bridge Rd
67 (67)
47 (99)
114 (182)
EB Lambert International Blvd
41 (98)
268 (411)
WB Lambert International Blvd
STOP
3801 (4420)
3729 (3993)
202 (384)
161 (286)
111
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2037 I-170 Interchange
INTERSTATE
170
INTERSTATE
70
498 (581)
3801 (4420)
140 (145)
3729 (3993)
345 (492)
778 (1209)
967 (964)
2417 (2537)
2385 (2485)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N

APPENDIX D

MEMO

TO: Jerry Beckmann, Dana Ryan, STLAA

FROM: John van Woensel

SUBJECT: **STL Master Plan Aviation Demand Forecast Review and Proposed Interim Adjustments**

DATE: **September 30, 2022**

EXECUTIVE SUMMARY

This memo presents findings of a review of the August 2020 FAA-accepted forecast for the St. Louis Lambert International Airport (STL) Airport Layout Plan Update and Master Plan (ALPU/MP), and provides a recommendation of proposed adjustments to the forecast elements to be used during advanced planning and environmental studies for the terminal program. The review was conducted to determine if industry trends and the actual recovery of aviation demand at STL from the impacts of the COVID-19 pandemic warrant adjustments to the demand forecast elements. After reviewing actual STL fiscal year (FY) 2022 passenger enplanements, aircraft operations, aircraft fleet, and the FAA Terminal Area Forecast (TAF) for STL, as well as national FAA forecasts and other industry outlooks, we propose the following:

- Passenger Enplanements: STL is recovering very closely to the FAA-accepted forecast, with passenger enplanements tracking approximately 4.1% above the forecast for FY 2022[1]. While STL is recovering slightly faster than anticipated, we expect that in several years, growth is expected to track with the accepted forecast. There is no indication that the long-term growth projections are invalid or should be changed. However, international service to Europe materialized in 2022 instead of the forecast 2036. While the numbers are relatively low, because international passengers have a greater facility impact, these projected enplanements should be added to the totals for FY 2032 and FY 2037.
- Passenger Aircraft Fleet Mix: only minor adjustments to the commercial aircraft fleet mix are proposed, as a result of accelerated airline fleet modernization, including:
  - Replacing older aircraft models with newer versions of the same models (e.g., A319 to A319neo)
  - Reflecting the earlier-than-planned retirement of some aircraft (e.g., B717-200)

[1] STLAA's fiscal year ends each year on June 30th. Unless otherwise indicated, the information presented in this memo is based on STLAA's fiscal year.

  - Accelerating the elimination of smaller (50-seat) regional jets (RJ) (e.g., CRJ-200, CRJ-700, E135/140/145)

- Passenger Aircraft Operations: updating the fleet by swapping similarly-sized aircraft has no impact on seats and total aircraft operations; however, the elimination of small RJs does. Approximately 2,500 fewer aircraft operations are anticipated in FY 2037, reflecting the replacement of smaller regional jets with larger regional jets. It is assumed that this replacement does not, on average, increase regional seats or enplanements.
- Flight schedule: current airline schedules do not contain notable changes in peak hour activity and day-night split.
- Documentation: we recommend that this memo be shared with the FAA for their comment and concurrence; it would then become part of the official forecast record in the form of an amendment or appendix to the ALPU/MP forecast chapter. Detailed adjusted spreadsheets would be attached to the final version of this memo.

EXISTING CONDITIONS/BACKGROUND

The St. Louis Airport Authority (STLAA) is initiating advanced planning and preNEPA efforts for the proposed consolidated terminal at STL, which resulted from the 2022 ALPU/MP, also referred to as "the master plan". The current planning forecast (FAA term) for STL is the master plan forecast, which was accepted by the FAA in August 2020. Since the forecast was prepared and accepted in the early days of the COVID-19 global pandemic, the aviation industry has continued to see dramatic change: there was limited growth in FY 2021, then significant growth in FY 2022, partially recovering to FY 2019 activity.

This memo documents a review of recent aviation industry and local trends and data, and a recommendation of whether any adjustments to the forecast (or a new planning forecast) are warranted. The purpose of this analysis is to ensure that a valid and current forecast is used in the advanced planning and preNEPA efforts. While the master plan forecast focuses on five-year intervals through 2040, this analysis uses FY 2032/2033 and FY 2037/2038, because of the planned late-2031 (calendar year [CY]) full opening date of the new consolidated terminal.

ACTIVITY COMPARISON

Planning forecast projections of aviation demand for FY 2022 were compared with actual passenger enplanements, fleet mix data, and aircraft operations. Actual aircraft operations and enplanements were obtained from the *STLAA Activity Statistics Reports*; fleet mix data was obtained from STL's ANOMS database (actual), Airline Data, Inc (airline schedules), and industry news reports.

PASSENGER ENPLANEMENTS

STL and many other U.S. airports are strongly recovering from COVID-19. Given the high rates of growth being experienced during this recovery, a variation of 4.1% in actual enplanements represents a close tracking to the projected recovery enplanements. Passenger enplanements were forecast at 6,048,202 in FY 2022, compared to actual FY 2022 enplanements of 6,293,730.

Based on review and comparison with the following industry outlooks, there is no indication that the long-term outlook reflected in the planning forecast should change:

- Boeing Outlook: in its *2022 Commercial Market Outlook*, Boeing projects that global aviation activity will return to 2019 levels in the 2023 to 2024 timeframe, at which time long-term growth rates will return to pre-2019 levels. According to this forecast, passengers in North America are projected to increase at a compound annual growth rate (CAGR) of 2.6% for the next 20 years.
- FAA National Forecast: The FAA *Aerospace Forecast Federal FY (FFY) 2022 through FFY 2042* shows enplanements recovering in the U.S. to FFY 2019 levels by FFY 2024. Enplanements are projected to increase at a CAGR of 2.5% from FFY 2024 through FFY 2042, which is similar to long-term growth rates historically and projected prior to the COVID-19 pandemic.
- STL FAA TAF: The STL TAF projects that STL will reach FFY 2019 enplanement levels by FFY 2024. The TAF long-term growth rate for STL is a CAGR of 1.9% from FFY 2025 through FFY 2040. This rate is slightly higher than the long-term growth rate of 1.6% for the FAA-accepted forecast for the master plan.
- Southwest Airlines: As the air carrier with the highest passenger share at STL, the outlook for this carrier is important. Southwest Airlines is financially among the strongest airlines, and its national and STL recovery have been stronger than most. In the second quarter of CY 2022, Southwest Airlines posted record quarterly revenues that were 13% higher than those of the same quarter in CY 2019, as well as net income that was 2.6% higher than the same quarter of CY 2022, despite a 57.7% increase in fuel costs per gallon in the same quarter of FY 2019.

However, international service to Europe materialized in 2022 instead of the forecast 2036, with thrice weekly flights to Frankfurt, Germany, starting in June 2022. Although the associated enplanement numbers are relatively low, international passengers have a greater impact on facilities, and as such, these enplanements should be added to the projections for FY 2032 and FY 2037. It is estimated that approximately 60% of the Frankfurt enplanements is new traffic. The remaining 40% of Frankfurt enplanements are diverted from connecting flights to Europe (i.e. 40% of the Frankfurt enplanements would have occured at STL without the Frankfurt flight).

Currently, the Lufthansa flight to Frankfurt operates three times a week; with an assumed annual average 75% load factor and an average A330-300 seating capacity of 255, this represents approximately 30,000 enplanements per year, or 18,000 new enplanements (60% of 30,000). In 2032 and 2037, assuming five weekly flights, this represents approximately 50,000 annual enplanements, or 30,000 new enplanements.

Table 1 summarizes proposed enplanement adjustments to the master plan forecast.

Table 1: Passenger Enplanements Adjustments

	PASSENGER ENPLANEMENTS		
	FY 2022 (ACTUAL)	FY 2032	FY 2037
Master Plan Forecast		9,162,376	10,039,620
Lufthansa Service to Frankfurt (Estimated New Traffic)		30,000	30,000
Adjusted Forecast	**6,296,168**	**9,192,376**	**10,069,620**

Source: WSP USA, 2022.

PASSENGER AIRCRAFT FLEET MIX

Fleet mix projections were reviewed against the latest aircraft fleet changes. Only minor adjustments to the commercial aircraft fleet mix are proposed due to accelerated airline fleet modernization, including:

- Replacing older aircraft models with newer versions of the same models (e.g., A319 to A319neo)
- Reflecting the earlier-than-planned retirement of some aircraft (e.g., B717-200)
- Accelerating the elimination of smaller (50-seat) regional jets (RJ) (e.g., CRJ-200, CRJ-700, E135/140/145)

For example, Delta Air Lines announced in September 2020 that the B717-200 would be completely retired from its fleet by December 2025. This aircraft was assumed to still be operating in the 2037 forecast. In this forecast adjustment effort, the B717 will be replaced with the A220, for which Delta has placed a large order, and which was not included in the original FY 2022 fleet mix forecast. Likewise, some aircraft models were replaced with their more recent equivalent (e.g A319 with A319neo).

Table 2 summarizes the proposed aircraft substitutions and additions.

Table 2: Proposed Aircraft Model Replacements

AIRCRAFT TYPE	PROPOSED ACTION
A220	Add in 2032
A319	2032 & 2037: 50% become A319neo
A320	2032: 75% become A320neo & 25% become A320S
A320neo	Add in 2032
A321	2032: 50% of A321 become A321S, 50% become A321neo
A321neo	Add in 2032
A330-300	2032 & 2037: add to reflect new Frankfurt service by Lufthansa (5 flights/week)
B717-200	2032 & 2037: 100% become A220
B737MAX 7	Add in 2032
B737-700	2032: 75% become B737MAX 7; 2037: 100% become B737MAX 7
B737-800	2032: 75% become B737MAX 8; 2037: 100% become B737MAX 8
B737-900	2032: 75% become B737MAX 9; 2037: 100% become B737MAX 9
Canadair Regional Jet 200	2032: 90% become E175; 2037: 100% become E175
Canadair Regional Jet 700 (50 seats)	2032: 90% become E175; 2037: 100% become E175
Canadair Regional Jet 700	2032: 90% become E175; 2037: 100% become E175
E135/140/145	2032 & 2037: 100% become E175

Note:
A320S/A321S = with sharklets

Sources: WSP USA, 2022; CMT, 2022.

Table 3 compares average seats for the proposed aircraft fleet changes and indicates whether an adjustment in aircraft operations is required to keep the number of seats relatively the same.

Aircraft seats and operations for the CRJ-200, CRJ-700 (50 seats) and E135/140/145 were reassigned to the E175. Since the E175 has a larger seating capacity, the resulting number of total aircraft operations decreased to keep the total number of seats the same. This adjustment is consistent with carriers reducing service frequency to some smaller makets. It should also be noted that aircraft operations were added for the new flight from STL to Frankfurt, Germany, introducing the Airbus A330-300 to the fleet mix.

Table 3: Comparison of Average Aircraft Seats

MASTER PLAN FORECAST		FORECAST ADJUSTMENTS		AIRCRAFT OPERATIONS ADJUSTMENT?
Original Aircraft	Average Seats	Replacement Aircraft	Average Seats	
B717-200	110	A220	120	No
CRJ-200	50	E175	70	Yes
CRJ-700 (50 seats)	50	E175	70	Yes
CRJ-700	69	E175	70	No
E135/140/145	50	E175	70	Yes
B737-700/-700W	143	B737MAX 7	150	No
B737-800/-800W	175	B737MAX 8	175	No
B737-900/-900W	180	B737MAX 9	180	No

Sources: WSP USA, 2022; CMT, 2022.

AIRCRAFT OPERATIONS

A comparison of actual to forecast aircraft operations shows a 5.4% decrease (163,554 forecast versus 154,940 actual). This change is also in line with industry trends, as carriers continue to upgauge and reduce frequencies to smaller makets. **Table 4** summarizes the adjusted fleet mix for FY 2032 and FY 2037, as well as the corresponding aircraft operations numbers.

As shown in Table 4, as a result of fleet mix changes (larger aircraft replacing smaller aircraft and addition of the Lufthansa flight), a net small reduction in aircraft operations is anticipated for both FY 2032 (approximately 1,900 fewer aircraft operations) and FY 2037 (approximately 2,300 fewer aircraft operations).

Table 4: Proposed Adjustments to STL's 2020 Aviation Activity Forecast

	AIRCRAFT OPERATIONS			
AIRCRAFT TYPE	FY 2032 FORECAST	FY 2032 ADJUSTED	FY 2037 FORECAST	FY 2037 ADJUSTED
A220-100		2,590	-	2,832
A319	6,915	3,457	7,554	3,777
A319 neo	1,642	5,099	1,795	5,572
A320	1,387	-	1,503	-
A320S	-	347	-	376
A320 neo	-	1,041	-	1,128
A321	4,437	-	4,808	-
A321S	-	2,219	-	2,404
A321 neo	-	2,219	-	2,404
A300-600	556	556	546	546
A330-300	-	520	-	520
B717-200	2,590	-	2,832	-
B737-700W	63,026	15,757	64,113	-
B737-700	9	2	10	-
B737-800W	15,154	3,789	18,972	-
B737-800	14,002	3,500	15,310	-
B737-900W	699	175	765	-
B737-900	1,439	360	1,573	-
B737MAX 7	-	47,277	-	64,123
B737MAX 8	8,434	30,302	11,624	45,907
B737MAX 9	-	1,604	-	2,338
B 757-200	28	28	-	-
B767-300	1,422	1,422	1,463	1,463
CRJ 200	3,736	374	4,018	-
CRJ 700 (50 seats)	1,151	115	1,259	
CRJ 700	7,130	713	7,779	-
CRJ 900	7,562	7,562	8,161	8,161
Cessna Single	11,089	11,089	11,642	11,642

Single TP	6,427	6,427	6,798	6,798
E170	485	485	530	530
E175	7,601	20,065	8,311	23,036
E175W	7,346	7,346	8,032	8,032
E190	-	-	-	-
E135/140/145	4,068	-	4,448	-
MD-11	4	4	-	-
Tecnam P2012	421	421	442	442
B787-800	-	-	208	208
Other	2,246	2,246	2,283	2,283
Total Passenger/Cargo Aircraft Operations	**181,007**	**179,108**	**196,783**	**194,525**

Source: WSP USA, 2022.

APPENDIX E

All Vissim Results

AM Travel Time

AM Travel Time (I-70) - All Vehicles										
Segment ID	**Corridor**	**Section**	**VISSIM Distance (mi)**	**EXISTING VISSIM Travel Time (min)**	**2032 No Build VISSIM Travel Time (min)**	**2032 Alt 1 VISSIM Travel Time (min)**	**2032 Alt 2 VISSIM Travel Time (min)**	**2037 No Build VISSIM Travel Time (min)**	**2037 Alt 1 VISSIM Travel Time (min)**	**2037 Alt 2 VISSIM Travel Time (min)**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5
Total			**4.2**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04298		US 67 - Cypress Rd	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04294		MO 115 - I170	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total			**5.9**	**5.7**	**5.7**	**5.8**	**5.8**	**5.7**	**5.8**	**5.8**

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

All Vissim Results

PM Travel Time

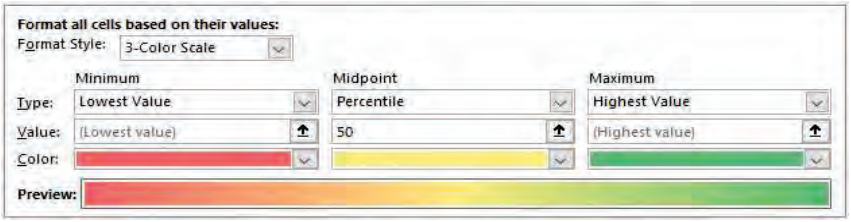
AM Travel Time (I-70) - All Vehicles										
Segment ID	**Corridor**	**Section**	**VISSIM Distance (mi)**	**EXISTING VISSIM Travel Time (min)**	**2032 No Build VISSIM Travel Time (min)**	**2032 Alt 1 VISSIM Travel Time (min)**	**2032 Alt 2 VISSIM Travel Time (min)**	**2037 No Build VISSIM Travel Time (min)**	**2037 Alt 1 VISSIM Travel Time (min)**	**2037 Alt 2 VISSIM Travel Time (min)**
119+04295	I-70 Westbound	I170 - STL Airport	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
119+04296		STL Airport - Airflight Dr	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119+04297		Airflight Dr - LIB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119+04298		LIB - Cyprus Rd	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
119+04299		Cyprus Rd - US 67	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
119+04300		US 67 - MO 180	0.6	0.6	0.6	0.5	0.5	0.6	0.5	0.5
Total			**4.2**	**4.1**	**4.1**	**4.0**	**4.0**	**4.1**	**4.1**	**4.0**
119-04299	I-70 Eastbound	MO 180 - Us 67	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
119-04298		US 67 - Cypress Rd	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
119-04297[1]		Cypress Rd - Airflight Dr	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
119-04295		Airflight Dr - MO 115	1.2	1.1	1.1	1.2	1.2	1.1	1.2	1.2
119-04294		MO 115 - I170	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total			**5.9**	**5.7**	**5.7**	**5.8**	**5.8**	**5.7**	**5.8**	**5.8**

[1]RITIS Segments 119-04297 and 119-04296 were combined due to the short length of 119-04296

All Vissim Results

Speeds

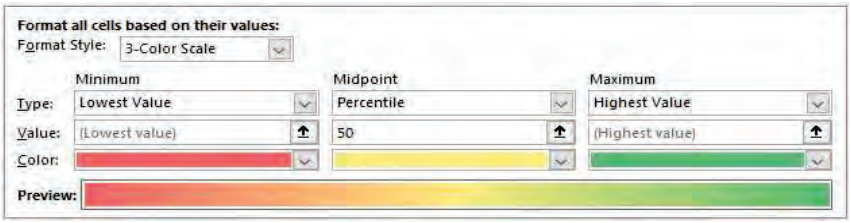
Existing VISSIM Westbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.2	63.3	63.4	62.7	62.5	62.8	63.3	63.3	63.5	63.0	62.7	62.6	63.0
119+04296		STL Airport - Airflight Dr	1.1	62.2	62.6	62.9	62.2	61.5	61.3	62.0	62.5	62.6	61.9	61.6	61.0	62.0
119+04297		Airflight Dr - LIB	0.5	61.9	62.4	62.4	62.1	61.4	60.8	61.3	61.9	62.5	61.9	61.0	60.8	61.7
119+04298		LIB - Cyprus Rd	0.4	61.3	61.9	61.8	61.1	60.4	58.0	59.3	61.2	61.9	61.5	59.9	56.3	60.4
119+04299		Cyprus Rd - US 67	0.8	62.0	62.7	62.6	62.4	61.7	61.4	62.0	62.5	62.7	62.6	61.7	61.5	62.2
119+04300		US 67 - MO 180	0.6	62.3	62.9	62.6	62.6	62.2	62.0	61.5	62.6	62.9	62.9	62.1	62.1	62.4
2032 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.3	63.4	62.9	61.8	62.7	62.8	63.3	63.3	62.9	62.2	62.8	62.9
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.6	62.7	61.9	61.1	61.2	61.7	62.4	62.5	62.1	61.3	61.4	61.9
119+04297		Airflight Dr - LIB	0.5	62.0	62.0	62.3	61.9	60.9	60.8	61.0	62.2	62.4	61.8	61.2	60.6	61.6
119+04298		LIB - Cyprus Rd	0.4	61.1	61.2	61.9	61.2	60.0	60.2	59.5	61.8	61.6	60.1	58.7	58.5	60.5
119+04299		Cyprus Rd - US 67	0.8	62.1	62.4	62.7	62.5	61.7	61.8	62.0	62.5	62.7	62.0	61.4	60.5	62.0
119+04300		US 67 - MO 180	0.6	62.5	62.6	62.8	62.6	62.2	62.0	62.1	62.7	62.7	62.7	62.0	61.5	62.4
2032 Alternative 1 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.8	63.0	63.0	62.6	62.1	62.2	62.8	63.0	63.0	62.0	61.8	62.3	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.3	62.6	62.6	61.7	61.6	61.2	60.2	62.2	62.6	61.9	61.2	61.4	61.8
119+04297		Airflight Dr - LIB	0.5	61.5	61.9	61.6	60.1	59.6	58.2	57.7	59.7	61.8	60.9	57.8	57.6	59.9
119+04298		LIB - Cyprus Rd	0.4	61.9	62.3	61.6	61.9	61.4	58.6	61.6	62.2	62.5	62.1	60.8	61.2	61.5
119+04299		Cyprus Rd - US 67	0.8	61.3	62.5	62.5	62.3	60.6	60.5	60.4	62.4	62.5	61.6	60.7	59.9	61.4
119+04300		US 67 - MO 180	0.6	61.7	62.8	62.9	62.6	61.6	61.4	61.5	62.1	62.8	62.1	61.6	60.9	62.0
2032 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.8	63.0	63.0	62.6	62.1	62.2	62.8	63.0	63.0	62.0	61.8	62.3	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.4	62.6	62.6	61.8	61.4	60.2	60.3	62.7	62.7	61.8	61.0	61.2	61.7
119+04297		Airflight Dr - LIB	0.5	62.5	62.5	62.4	62.3	61.8	61.7	62.0	62.6	62.7	62.2	61.9	61.9	62.2
119+04298		LIB - Cyprus Rd	0.4	62.4	62.4	62.6	61.9	61.7	59.1	60.5	62.5	62.6	61.6	60.1	57.6	61.2
119+04299		Cyprus Rd - US 67	0.8	61.9	62.4	62.6	61.7	61.0	59.8	59.0	62.5	62.3	61.7	60.9	59.6	61.3
119+04300		US 67 - MO 180	0.6	62.1	62.5	62.6	62.4	61.4	61.5	60.0	62.5	62.6	62.3	61.5	60.8	61.8
2037 No Build VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	63.0	63.4	63.3	61.4	62.4	62.2	62.8	63.2	63.3	62.2	62.7	61.9	62.7
119+04296		STL Airport - Airflight Dr	1.1	62.0	62.6	62.6	61.9	60.6	61.3	61.5	62.5	62.5	61.2	59.9	61.4	61.7
119+04297		Airflight Dr - LIB	0.5	61.7	62.0	62.3	61.8	60.9	61.0	60.9	62.2	62.4	61.8	59.9	60.9	61.5
119+04298		LIB - Cyprus Rd	0.4	61.2	61.4	61.1	58.8	57.9	58.2	56.2	61.1	62.1	60.6	59.5	58.7	59.7
119+04299		Cyprus Rd - US 67	0.8	62.1	62.6	62.8	62.1	61.6	61.4	60.4	62.5	63.0	62.4	61.5	61.4	62.0
119+04300		US 67 - MO 180	0.6	62.4	62.7	62.9	62.7	62.1	61.4	62.0	62.6	63.0	62.6	61.9	61.7	62.3
2037 Alternative 1 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.7	63.1	63.0	61.5	62.1	62.4	62.6	62.9	62.9	62.2	62.4	62.1	62.5
119+04296		STL Airport - Airflight Dr	1.1	61.6	62.7	62.6	61.6	60.4	60.5	60.1	62.1	62.5	61.8	60.7	59.8	61.4
119+04297		Airflight Dr - LIB	0.5	60.9	61.3	61.4	60.7	59.0	55.9	55.7	59.5	61.8	60.4	56.7	54.7	59.0
119+04298		LIB - Cyprus Rd	0.4	62.7	62.4	62.8	62.2	61.1	60.3	61.1	62.3	62.7	62.2	61.2	60.0	61.7
119+04299		Cyprus Rd - US 67	0.8	61.6	62.1	62.2	61.9	60.6	60.9	60.5	62.2	62.3	61.8	61.1	59.2	61.4
119+04300		US 67 - MO 180	0.6	62.1	62.2	62.4	62.6	61.2	61.4	61.2	62.2	62.5	62.2	62.0	61.2	61.9
2037 Alternative 2 VISSIM Westbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119+04295	I-70 Mainline Westbound	I170 - STL Airport	0.7	62.7	63.1	63.0	61.5	62.1	62.4	62.6	62.9	62.9	62.2	62.4	62.1	62.5
119+04296		STL Airport - Airflight Dr	1.1	62.2	62.6	62.6	61.4	60.7	61.4	61.9	62.6	62.6	61.8	61.7	60.0	61.8
119+04297		Airflight Dr - LIB	0.5	62.1	62.5	62.4	62.3	61.6	61.5	61.7	62.5	62.6	62.3	61.8	61.5	62.1
119+04298		LIB - Cyprus Rd	0.4	61.4	62.1	62.6	62.2	60.5	61.2	57.0	62.2	62.3	61.8	59.8	61.0	61.2
119+04299		Cyprus Rd - US 67	0.8	61.3	62.2	62.5	61.8	61.0	60.2	60.9	62.1	62.3	61.6	60.2	60.3	61.4
119+04300		US 67 - MO 180	0.6	62.0	62.5	62.6	62.2	61.7	61.2	61.0	62.4	62.7	62.4	61.1	59.3	61.8



All Vissim Results

Speeds

Existing VISSIM - Eastbound I-70															
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.6	62.7	62.5	61.9	62.0	62.2	62.4	62.7	62.7	62.1	61.4	62.0	62.3
119-04298		US 67 - Cypress Rd	0.5	62.0	62.0	62.0	61.6	61.6	61.6	61.9	62.2	62.2	60.3	61.1	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.5	62.5	62.5	62.2	61.7	61.6	62.0	62.5	62.6	62.4	61.5	61.2	62.1
119-04295		Airflight Dr - MO 115	1.2	62.0	62.0	61.4	61.4	61.1	61.2	61.6	62.1	62.2	61.8	61.5	61.4	61.6
119-04294		MO 115 - I170	0.9	63.0	62.9	62.9	62.7	62.5	62.5	62.5	63.2	63.1	63.0	62.7	62.6	62.8
2032 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.2	62.0	62.0	61.7	62.3	62.6	62.5	61.9	61.9	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	62.0	61.6	61.3	61.3	61.8	62.2	62.2	61.5	61.6	61.3	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.1	62.4	62.5	61.8	61.9	60.8	61.8	62.4	62.5	62.0	61.6	61.5	61.9
119-04295		Airflight Dr - MO 115	1.2	61.7	62.2	62.2	61.7	61.2	61.0	61.4	61.9	62.1	61.8	61.2	61.1	61.6
119-04294		MO 115 - I170	0.9	62.5	62.9	63.0	63.0	62.0	61.9	61.9	62.7	63.1	63.1	62.4	61.9	62.6
2032 Alternative 1 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.3	62.0	62.0	61.7	62.2	62.6	62.5	61.9	61.8	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	61.8	61.6	61.6	61.4	61.9	62.2	62.1	61.5	61.3	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.7	61.5	61.3	61.1	60.7	59.6	60.8	61.1	61.4	60.9	60.8	59.1	60.8
119-04295		Airflight Dr - MO 115	1.2	61.5	61.8	61.7	61.2	61.2	60.5	60.8	61.6	61.8	61.6	60.9	60.9	61.3
119-04294		MO 115 - I170	0.9	63.0	63.0	63.3	63.1	62.4	62.5	62.6	62.9	62.9	62.9	62.7	62.7	62.8
2032 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.4	62.8	62.3	62.0	62.0	61.7	62.2	62.6	62.5	61.9	61.8	62.1	62.2
119-04298		US 67 - Cypress Rd	0.5	61.8	62.1	61.8	61.6	61.6	61.4	61.9	62.2	62.1	61.5	61.3	61.4	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.6	61.2	61.2	61.0	60.4	59.7	61.0	61.2	61.4	60.9	60.7	60.4	60.9
119-04295		Airflight Dr - MO 115	1.2	61.3	61.4	61.9	61.4	60.9	60.7	61.2	61.7	61.8	61.5	60.8	60.7	61.3
119-04294		MO 115 - I170	0.9	62.8	63.0	63.4	63.2	62.7	62.1	62.5	63.2	63.2	63.2	62.5	62.8	62.9
2037 No Build VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	62.0	62.0	62.0	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.5	61.6	61.2	61.8	62.1	62.2	61.5	61.4	61.2	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.4	62.9	63.0	62.3	61.7	61.8	62.3	62.7	62.8	62.3	61.3	61.2	62.2
119-04295		Airflight Dr - MO 115	1.2	61.8	62.1	62.0	61.5	60.5	60.8	61.6	61.9	62.1	61.6	61.1	60.9	61.5
119-04294		MO 115 - I170	0.9	62.8	63.2	63.2	62.9	62.7	61.9	62.6	63.0	62.8	62.8	62.1	62.2	62.7
2037 Alternative 1 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	61.9	62.0	62.1	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.6	61.4	61.3	61.9	62.1	62.2	61.5	61.3	61.3	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	61.6	61.0	61.3	60.5	60.2	59.7	60.4	61.1	61.1	60.2	60.1	60.2	60.6
119-04295		Airflight Dr - MO 115	1.2	61.2	61.1	61.6	60.9	60.2	59.6	60.3	61.6	61.9	61.3	60.6	60.9	60.9
119-04294		MO 115 - I170	0.9	62.9	63.0	62.9	63.0	62.2	62.2	62.3	63.0	63.2	63.0	62.3	62.6	62.7
2037 Alternative 2 VISSIM - Eastbound I-70																
Segment ID	**Corridor**	**Section**	**Length**	**4:30 PM**	**4:35 PM**	**4:40 PM**	**4:45 PM**	**4:50 PM**	**4:55 PM**	**5:00 PM**	**5:05 PM**	**5:10 PM**	**5:15 PM**	**5:20 PM**	**5:25 PM**	**AVG**
119-04299	I-70 Mainline Eastbound	MO 180 - Us 67	1.2	62.3	62.8	62.2	62.0	62.0	62.0	62.3	62.6	62.7	62.0	61.6	61.7	62.2
119-04298		US 67 - Cypress Rd	0.5	61.6	62.1	62.0	61.5	61.6	61.2	61.8	62.1	62.2	61.5	61.4	61.2	61.7
119-04297[1]		Cypress Rd - Airflight Dr	1.0	62.4	62.9	63.0	62.3	61.7	61.8	62.3	62.7	62.8	62.3	61.3	61.2	62.2
119-04295		Airflight Dr - MO 115	1.2	61.8	62.1	62.0	61.5	60.5	60.8	61.6	61.9	62.1	61.6	61.1	60.9	61.5
119-04294		MO 115 - I170	0.9	62.8	63.2	63.2	62.9	62.7	61.9	62.6	63.0	62.8	62.8	62.1	62.2	62.7



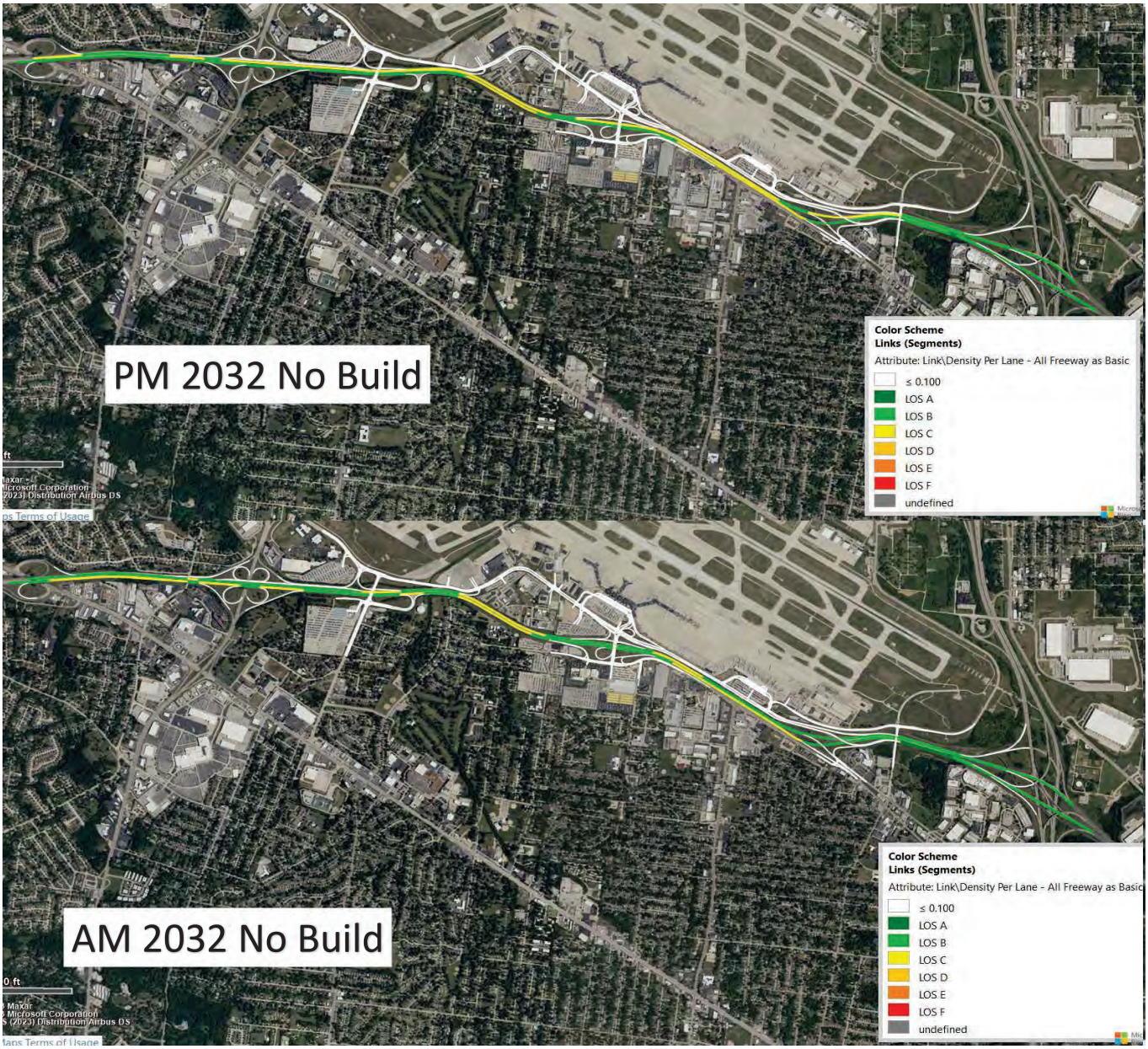
All Vissim Results

Network Performance Results

Metric	Average Vehicular Delay	Average Number of Stops	Average Speed	Average Stopped Delay	Total Distance Traveled (VMT)	Total Travel Time (VHT)	Total Delay	Total Number of Stops	Total Stopped Delay	Vehicles Arrived	Latent Total Delay	Latent Demand
Unit	**seconds/ vehicle**	**stops/ vehicle**	**miles/ hour**	**seconds/ vehicle**	**miles**	**Seconds**	**Seconds**	**stops**	**Seconds**	**vehicles**	**Seconds**	**vehicles**
AM Existing VISSIM	24	0.84	48.34	12	37,838	2,817,735	266,880	9,118	128,142	10,102	464	0.2
AM 2032 No Build VISSIM	27	0.97	47.22	13	38,804	2,958,163	308,105	10,928	148,172	10,465	514	0.3
AM 2032 Alt 1 VISSIM	21	0.45	50.00	8	41,055	2,955,881	234,297	5,083	93,327	10,450	513	0.3
AM 2032 Alt 2 VISSIM	22	0.49	49.84	9	41,061	2,965,721	243,830	5,473	101,688	10,450	514	0.3
AM 2037 No Build VISSIM	29	1.02	46.75	14	39,307	3,026,768	328,393	11,699	158,839	10,656	541	0.2
AM 2037 Alt 1 VISSIM	22	0.49	49.51	9	41,602	3,025,119	252,232	5,608	102,038	10,596	537	0.2
AM 2037 Alt 2 VISSIM	22	0.53	49.48	8	41,736	3,036,568	248,908	6,100	94,597	10,659	539	0.2
	Averaged Performance MOE Statistics				Aggregated Performance MOE Statistics					Throughput MOE Statistics		

Metric	Average Vehicular Delay	Average Number of Stops	Average Speed	Average Stopped Delay	Total Distance Traveled (VMT)	Total Travel Time (VHT)	Total Delay	Total Number of Stops	Total Stopped Delay	Vehicles Arrived	Latent Total Delay	Latent Demand
Unit	**seconds/ vehicle**	**stops/ vehicle**	**miles/ hour**	**seconds/ vehicle**	**miles**	**Seconds**	**Seconds**	**stops**	**Seconds**	**vehicles**	**Seconds**	**vehicles**
PM Existing VISSIM	29	1.05	46.52	14	41,400	3,203,686	374,283	13,459	176,416	11,789	883	0.4
PM 2032 No Build VISSIM	32	1.22	45.43	15	42,572	3,373,847	433,222	16,306	204,691	12,262	964	0.2
PM 2032 Alt 1 VISSIM	28	0.64	47.22	12	44,903	3,423,614	375,834	8,527	160,576	12,190	966	0.2
PM 2032 Alt 2 VISSIM	28	0.59	47.33	12	44,915	3,416,122	367,439	7,894	160,134	12,200	965	0.2
PM 2037 No Build VISSIM	34	1.31	44.92	16	43,195	3,462,020	463,813	17,742	215,615	12,506	1,002	0.3
PM 2037 Alt 1 VISSIM	31	0.73	46.48	13	45,718	3,541,401	419,733	9,938	176,785	12,428	1,009	0.3
PM 2037 Build VISSIM	30	0.69	46.63	13	45,731	3,530,747	404,403	9,380	175,523	12,437	1,006	0.3
	Averaged Performance MOE Statistics				Aggregated Performance MOE Statistics					Throughput MOE Statistics		

*Due to the limitations in Vissim, all segment LOS color coding is based on basic freeway segment thresholds as found in the Highway Capacity Manual.



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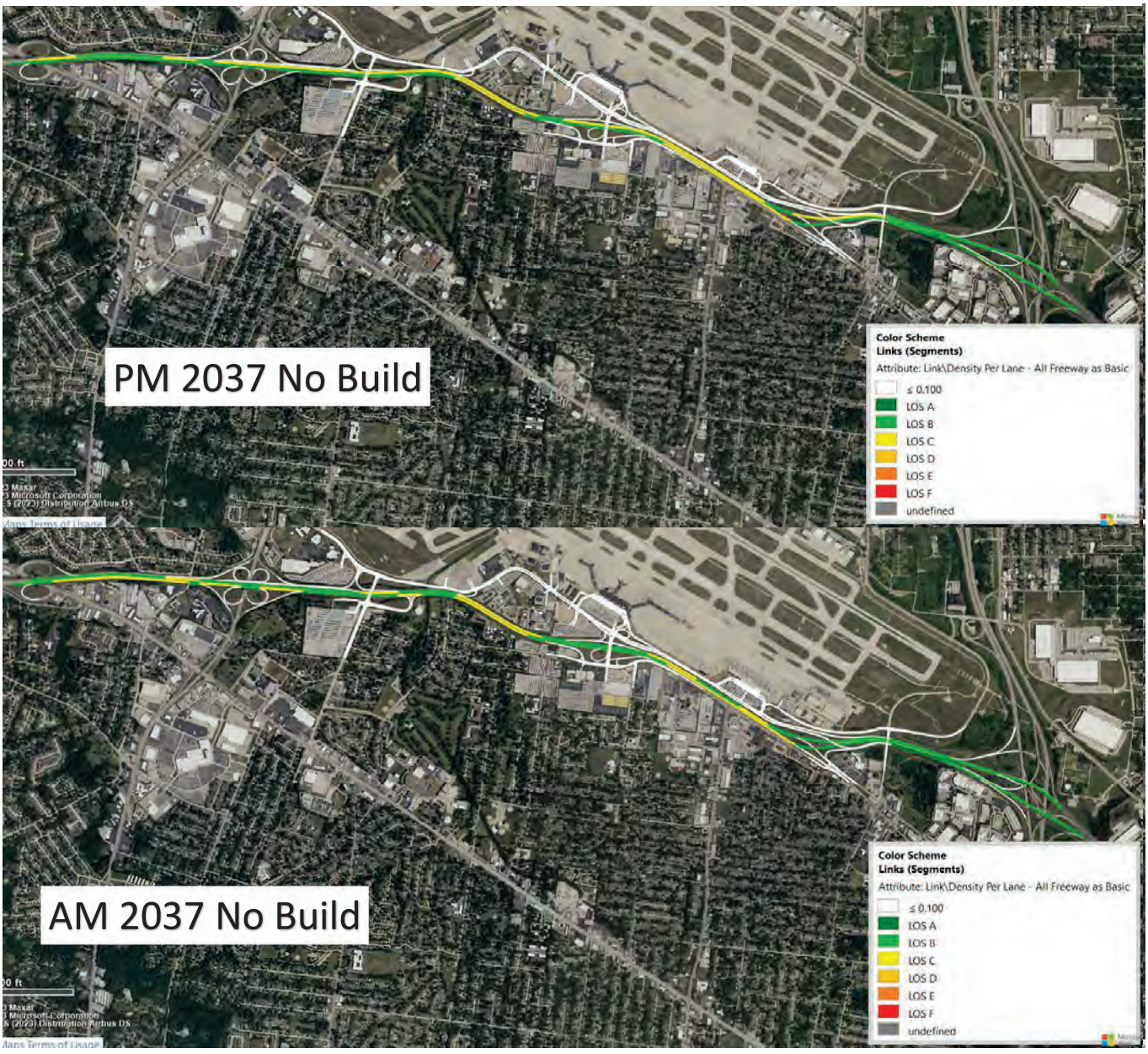

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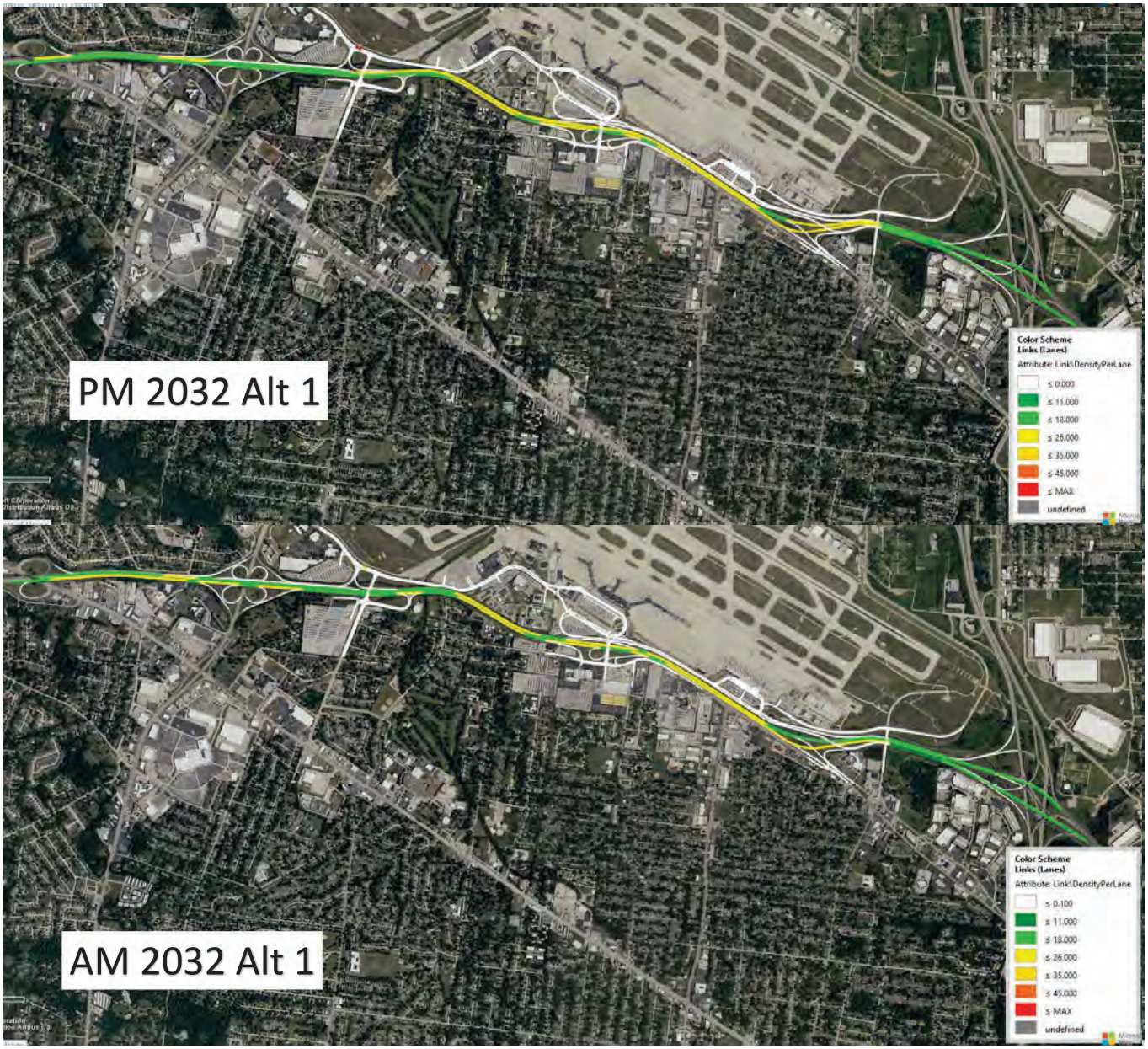

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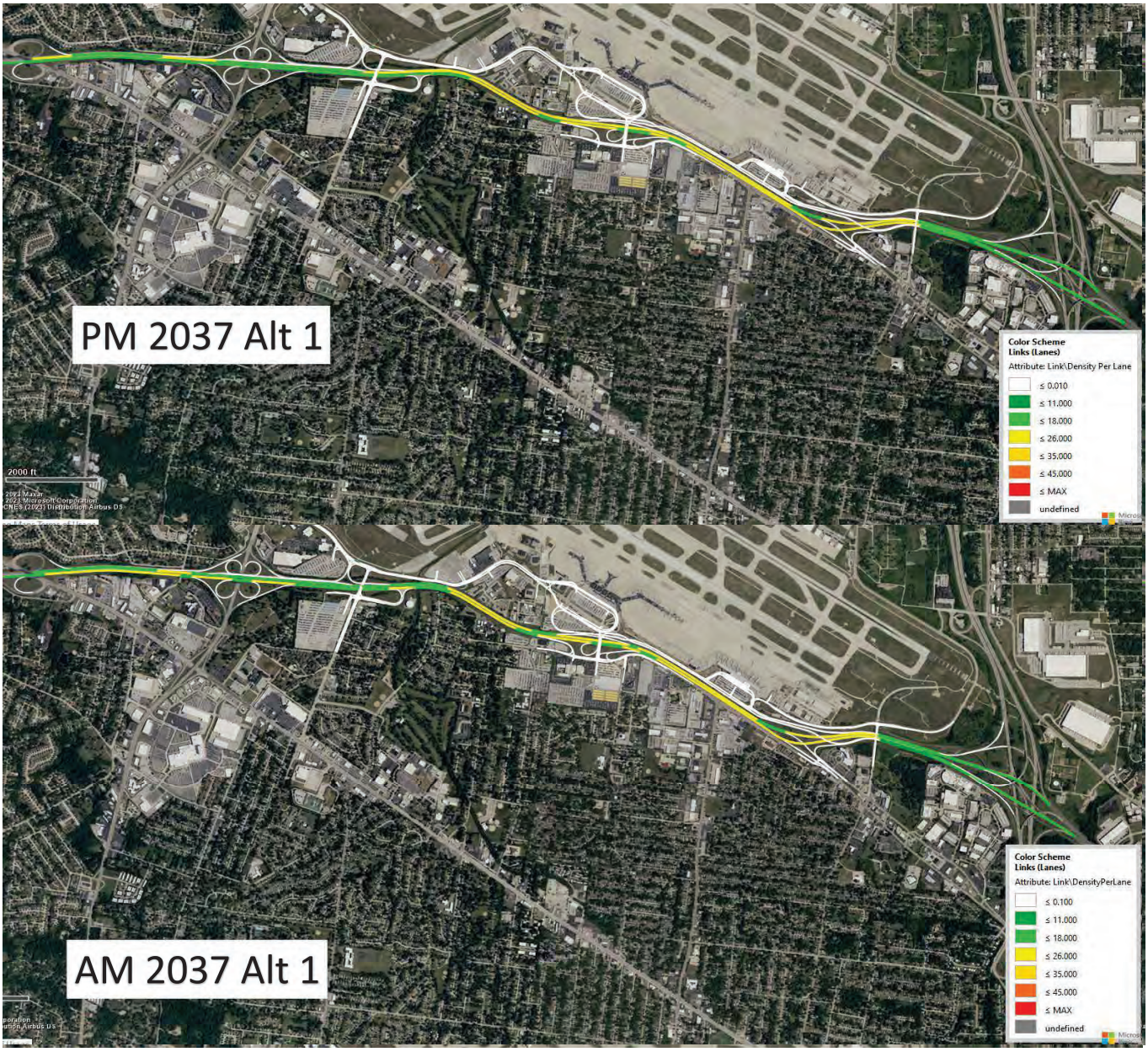

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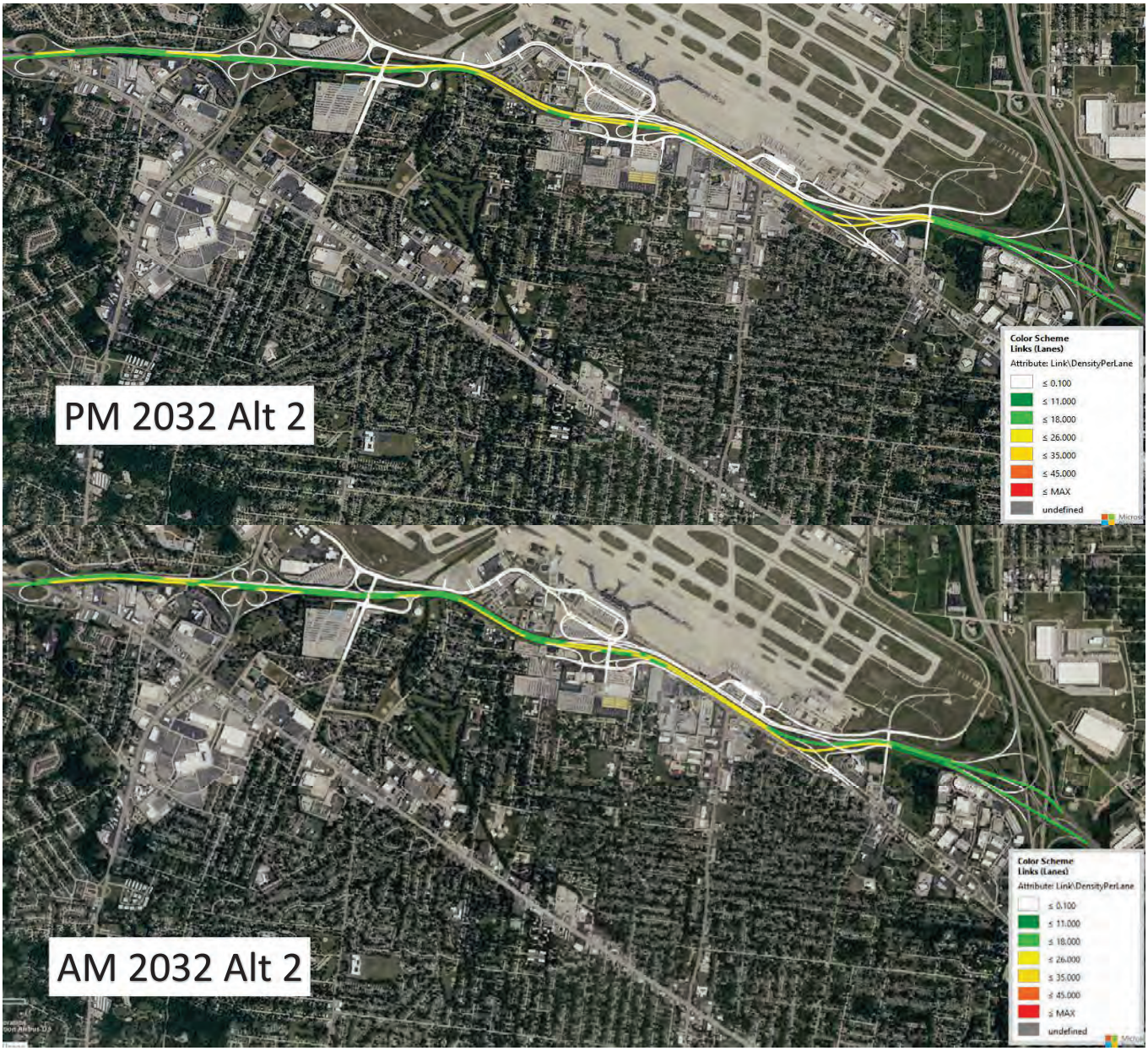

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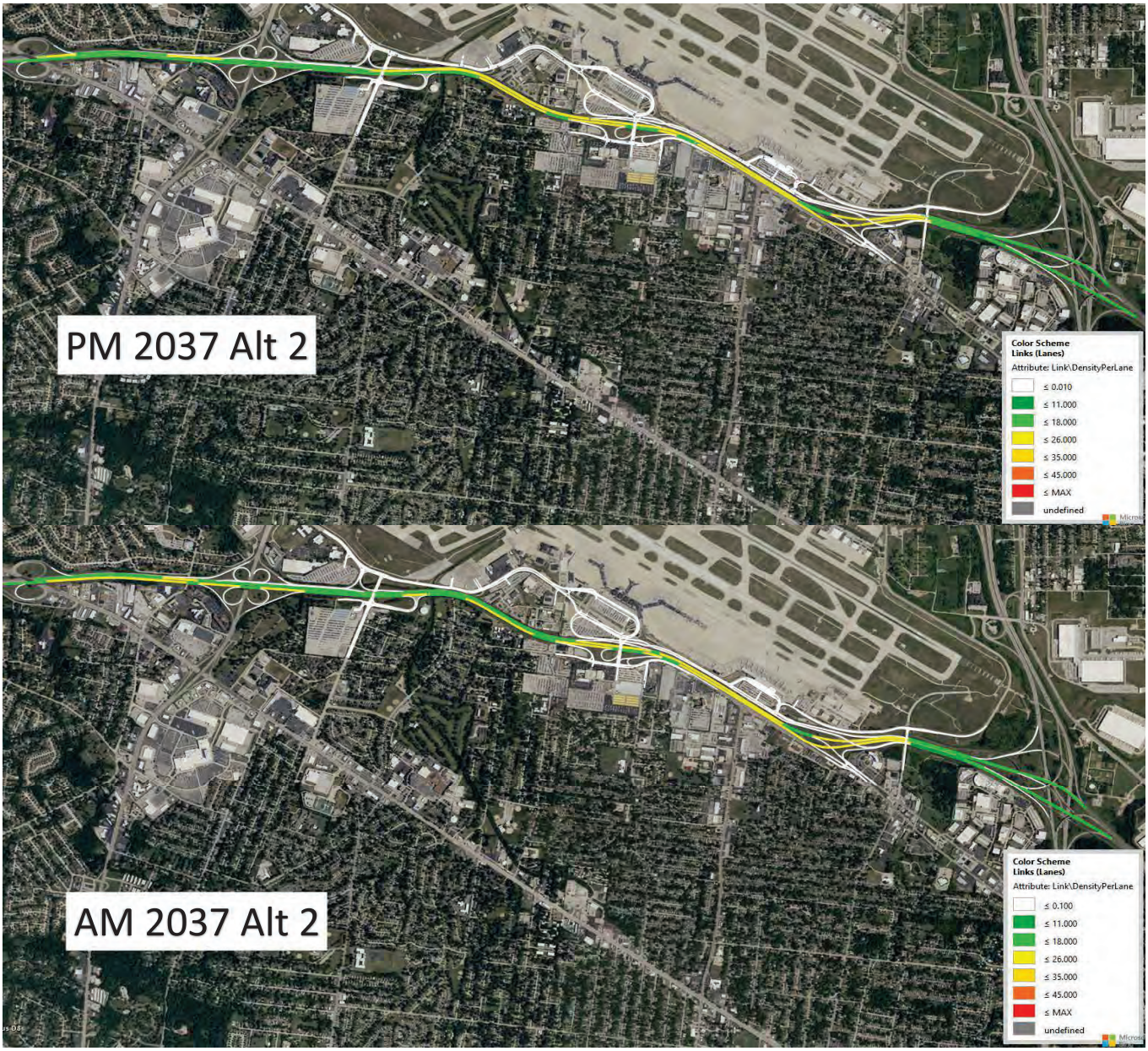


*Due to the limitations in Vissim, all segment LOS color coding is based on basic freeway segment thresholds as found in the Highway Capacity Manual.

All Vissim Results

Intersection Ops Existing

			Existing AM						Existing PM					
Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: Natural Bridge Rd @ Lot D*	NB	Left	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A
1: Natural Bridge Rd @ Lot D*	NB	Right	12	5.5	0.2	61	1	A	14	6.0	0.3	62	1	A
1: Natural Bridge Rd @ Lot D*	EB	Through	171	0.1	0.0	0	0	N/A	489	0.2	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	EB	Right	16	0.6	0.0	0	0	N/A	14	0.5	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	WB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
1: Natural Bridge Rd @ Lot D*	WB	Through	211	0.0	0.0	0	0	N/A	264	0.1	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	Total	Total	410	5.5	0.2	61	0	A	781	6.0	0.3	62	0	A
2: I-70 WB @ Natural Bridge Rd	NB	Left	111	14.7	7.8	128	8	B	114	16.5	9.5	149	10	B
2: I-70 WB @ Natural Bridge Rd	NB	Right	140	3.4	0.1	89	1	A	161	4.5	0.4	87	1	A
2: I-70 WB @ Natural Bridge Rd	EB	Through	173	9.9	3.8	103	6	A	446	11.7	4.6	157	16	B
2: I-70 WB @ Natural Bridge Rd	EB	Right	11	1.1	0.0	10	0	A	57	1.7	0.1	41	0	A
2: I-70 WB @ Natural Bridge Rd	WB	Left	82	5.1	2.4	87	2	A	96	4.8	2.2	90	2	A
2: I-70 WB @ Natural Bridge Rd	WB	Through	100	5.3	1.8	66	1	A	150	5.0	1.8	79	2	A
2: I-70 WB @ Natural Bridge Rd	Total	Total	617	7.8	3.1	133	3	A	1,024	8.9	3.6	177	5	A
3: Natrual Bridge Rd @ Cypress Rd	NB	Left	124	12.5	7.0	92	7	B	168	12.3	6.9	110	9	B
3: Natrual Bridge Rd @ Cypress Rd	NB	Right	96	1.0	0.0	0	0	A	154	1.4	0.0	0	0	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Through	82	6.5	2.5	109	2	A	138	7.3	2.8	196	10	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Right	231	1.6	0.1	93	1	A	468	4.1	0.7	195	6	A
3: Natrual Bridge Rd @ Cypress Rd	WB	Left	57	5.1	1.9	61	1	A	73	5.4	1.8	79	1	A
3: Natrual Bridge Rd @ Cypress Rd	WB	Through	58	4.3	1.3	51	1	A	77	4.7	1.4	65	1	A
3: Natrual Bridge Rd @ Cypress Rd	Total	Total	648	4.8	2.0	119	2	A	1,078	5.5	2.0	206	5	A
4: I-70 EB @ Cypress Rd	NB	Left	10	5.9	3.4	25	0	A	10	7.4	4.4	27	0	A
4: I-70 EB @ Cypress Rd	NB	Through	143	7.8	4.3	107	4	A	183	14.0	8.8	185	11	B
4: I-70 EB @ Cypress Rd	NB	Right	139	1.6	0.2	27	0	A	252	3.7	1.0	55	0	A
4: I-70 EB @ Cypress Rd	EB	Left	18	20.3	15.1	61	3	C	54	26.7	21.5	88	9	C
4: I-70 EB @ Cypress Rd	EB	Through	12	20.6	14.3	61	3	C	11	24.5	18.4	88	9	C
4: I-70 EB @ Cypress Rd	EB	Right	10	0.9	0.1	11	0	A	14	1.0	0.1	14	0	A
4: I-70 EB @ Cypress Rd	SB	Left	68	5.0	2.2	63	1	A	153	8.2	4.2	125	6	A
4: I-70 EB @ Cypress Rd	SB	Through	181	5.2	2.5	88	4	A	324	7.8	4.2	129	9	A
4: I-70 EB @ Cypress Rd	SB	Right	40	0.8	0.0	0	0	A	62	1.4	0.2	0	0	A
4: I-70 EB @ Cypress Rd	WB	Left	36	20.7	14.7	95	6	C	63	29.2	22.9	130	13	C
4: I-70 EB @ Cypress Rd	WB	Through	15	26.3	17.5	95	6	C	9	26.2	18.3	130	13	C
4: I-70 EB @ Cypress Rd	WB	Right	58	1.5	0.0	58	0	A	85	2.0	0.1	69	0	A
4: I-70 EB @ Cypress Rd	Total	Total	730	6.2	3.4	123	1	A	1,220	9.4	5.6	359	4	A
5: LIB @ T1 Cell Phone Lot*	EB	Left	30	0.8	0.0	19	0	A	35	0.9	0.0	23	0	A
5: LIB @ T1 Cell Phone Lot*	EB	Through	148	0.0	0.0	0	0	N/A	257	0.1	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
5: LIB @ T1 Cell Phone Lot*	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
5: LIB @ T1 Cell Phone Lot*	WB	Through	115	0.0	0.0	0	0	N/A	150	0.0	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	WB	Right	0	0.0	0.0	0	0	N/A	0	0.0	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	Total	Total	293	0.8	0.0	19	0	A	442	0.9	0.0	23	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Through	147	2.0	0.6	49	1	A	253	2.6	0.9	73	2	A
6: I-70 WB @ LIB (E of Cypress)	EB	Right	0	0	0	86	0	A	4	2	0	110	1	A
6: I-70 WB @ LIB (E of Cypress)	SB	Left	0	0.0	0.0	0	0	A	4	61.0	54.2	44	2	E
6: I-70 WB @ LIB (E of Cypress)	SB	Through	0	0.0	0.0	0	0	A	0	0.0	0.0	44	2	A
6: I-70 WB @ LIB (E of Cypress)	SB	Right	0	0.0	0.0	0	0	A	4	6.4	0.3	34	0	A
6: I-70 WB @ LIB (E of Cypress)	WB	Left	239	2.1	0.1	78	0	A	341	3.8	0.5	175	2	A
6: I-70 WB @ LIB (E of Cypress)	WB	Through	116	0.1	0.0	0	0	A	147	0.3	0.1	24	0	A
6: I-70 WB @ LIB (E of Cypress)	WB	Right	0	0.0	0.0	0	0	A	5	0.7	0.0	22	0	A
6: I-70 WB @ LIB (E of Cypress)	Total	Total	502	1.6	0.2	94	0	A	758	3.0	0.8	175	1	A
7: LIB @ Lot B*	NB	Left	5	1.6	0.2	16	0	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	NB	Right	35	1.0	0.0	30	0	A	28	1.0	0.1	23	0	A
7: LIB @ Lot B*	EB	Through	147	0.0	0.0	0	0	N/A	257	0.1	0.0	0	0	N/A
7: LIB @ Lot B*	EB	Right	0	0.0	0.0	0	0	N/A	0	0.0	0.0	0	0	N/A
7: LIB @ Lot B*	WB	Left	20	1.0	0.0	17	0	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	WB	Through	350	0.4	0.0	0	0	N/A	494	0.6	0.0	0	0	N/A
7: LIB @ Lot B*	Total	Total	557	1.1	0.0	35	0	A	779	1.0	0.1	23	0	A
8: LIB @ Lambert Field Dr	NB	Left	0	0.0	0.0	30	1	A	0	0.0	0.0	39	2	A
8: LIB @ Lambert Field Dr	NB	Through	0	0.0	0.0	30	1	A	0	0.0	0.0	39	2	A
8: LIB @ Lambert Field Dr	NB	Right	4	58.7	52.9	30	1	E	8	54.7	48.9	39	2	D
8: LIB @ Lambert Field Dr	EB	Left 1	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
8: LIB @ Lambert Field Dr	EB	Left 2	33	3.4	1.1	54	1	A	24	4.9	2.0	93	2	A
8: LIB @ Lambert Field Dr	EB	Through	129	1.5	0.6	54	1	A	264	2.5	1.1	93	2	A
8: LIB @ Lambert Field Dr	EB	Right	21	1.9	0.9	24	0	A	0	0.0	0.0	0	0	A
8: LIB @ Lambert Field Dr	SEB	Left	12	62.3	49.2	44	4	E	8	0.0	0.0	37	2	A
8: LIB @ Lambert Field Dr	SEB	Right	0	0.0	0.0	44	4	A	0	0.0	0.0	37	2	A
8: LIB @ Lambert Field Dr	SEB	Through	0	0.0	0.0	44	4	A	0	0.0	0.0	37	2	A
8: LIB @ Lambert Field Dr	SWB	Left	8	46.8	38.8	42	2	D	22	45.2	37.3	113	9	D
8: LIB @ Lambert Field Dr	SWB	Right	0	0.0	0.0	42	2	A	10	50.4	43.5	113	9	D
8: LIB @ Lambert Field Dr	SWB	Through	0	0.0	0.0	42	2	A	0	0.0	0.0	113	9	A
8: LIB @ Lambert Field Dr	WB	Left	6	2.0	0.6	59	1	A	0	0.0	0.0	110	3	A
8: LIB @ Lambert Field Dr	WB	Through	370	1.0	0.2	59	1	A	483	2.3	0.7	110	3	A
8: LIB @ Lambert Field Dr	WB	Right 2	0	0.0	0.0	59	1	A	0	0.0	0.0	110	3	A
8: LIB @ Lambert Field Dr	WB	Right 1	20	1.4	0.4	59	1	A	18	2.5	0.9	110	3	A
8: LIB @ Lambert Field Dr	Total	Total	603	3.5	2.2	66	1	A	837	4.6	2.8	125	3	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Left	330	3.2	1.7	298	38	A	234	3.7	2.2	288	25	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Through	253	2.7	1.6	299	40	A	211	3.0	1.8	287	25	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Right	138	0.4	0.0	257	35	A	147	0.4	0.0	247	23	A
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Left	44	41.6	34.2	174	21	D	79	42.1	34.7	181	30	D
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Right	38	40.5	35.3	88	9	D	28	41.2	36.3	75	6	D
9: Air Cargo Dr @ Terminal 1 Entrance	Total	Total	803	6.4	4.8	300	29	A	699	8.6	6.7	289	22	A

All Vissim Results

Intersection Ops Existing

10: LIB @ Terminal 1 Exit	NB 1	Left	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 1	Through	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 1	Right	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 2	Right	48	7.6	1.2	44	2	A	128	8.7	1.9	62	5	A
10: LIB @ Terminal 1 Exit	EB	Through	146	18.0	12.4	96	11	B	293	20.3	14.0	166	22	C
10: LIB @ Terminal 1 Exit	EB	Right 2	8	17.7	12.2	96	11	B	10	23.2	16.5	166	22	C
10: LIB @ Terminal 1 Exit	EB	Right 1	0	0.0	0.0	96	11	A	0	0.0	0.0	166	22	A
10: LIB @ Terminal 1 Exit	WB	Left 1	94	8.8	5.2	99	4	A	55	8.5	4.8	90	2	A
10: LIB @ Terminal 1 Exit	WB	Left 2	0	0.0	0.0	139	18	A	0	0.0	0.0	160	23	A
10: LIB @ Terminal 1 Exit	WB	Through	254	19.6	13.6	139	18	B	305	21.0	15.0	160	23	C
10: LIB @ Terminal 1 Exit	SB - A	Left	184	47.5	39.5	179	40	D	380	41.8	33.4	247	67	D
10: LIB @ Terminal 1 Exit	SB - A	Through	9	51.6	43.1	179	40	D	9	44.4	35.9	247	67	D
10: LIB @ Terminal 1 Exit	SB - A	Right	43	39.9	33.9	179	40	D	118	37.0	29.8	247	67	D
10: LIB @ Terminal 1 Exit	SB - D	Left	239	38.8	31.6	209	49	D	207	40.6	33.3	181	43	D
10: LIB @ Terminal 1 Exit	SB - D	Through	0	0.0	0.0	209	49	A	0	0.0	0.0	181	43	A
10: LIB @ Terminal 1 Exit	SB - D	Right	99	40.8	33.7	209	49	D	78	43.0	36.4	181	43	D
10: LIB @ Terminal 1 Exit	Total	Total	1,124	29.5	23.0	216	18	C	1,583	29.4	22.5	247	23	C
11: I-70 WB @ Airflight Dr	NB	Left	290	7.3	3.1	175	9	A	306	8.6	2.6	227	10	A
11: I-70 WB @ Airflight Dr	NB	Through	415	3.3	1.4	123	5	A	345	4.9	1.4	206	6	A
11: I-70 WB @ Airflight Dr	SB	Through	221	10.1	6.0	115	8	B	297	16.7	10.5	206	19	B
11: I-70 WB @ Airflight Dr	WB	Left	213	39.8	30.4	244	45	D	280	39.7	29.9	275	55	D
11: I-70 WB @ Airflight Dr	WB	Right	78	27.9	18.8	9	0	C	66	31.4	22.0	30	0	C
11: I-70 WB @ Airflight Dr	Total	Total	1,217	13.4	8.8	253	10	B	1,294	17.4	11.0	286	13	B
12: I-70 EB @ Pear Tree Ln	NEB	Right	32	7.2	0.6	71	1	A	58	7.3	0.8	89	2	A
12: I-70 EB @ Pear Tree Ln	EB	Through	126	40.0	31.5	113	21	D	221	41.1	31.9	181	37	D
12: I-70 EB @ Pear Tree Ln	EB	Right	5	40.5	35.2	113	21	D	10	35.8	29.9	181	37	D
12: I-70 EB @ Pear Tree Ln	SB	Left	531	7.7	3.5	259	18	A	409	8.5	4.4	216	15	A
12: I-70 EB @ Pear Tree Ln	SB	Through	25	7.6	3.7	259	18	A	22	7.2	3.7	216	15	A
12: I-70 EB @ Pear Tree Ln	SB	Right	44	2.3	0.4	56	0	A	64	2.4	0.5	49	0	A
12: I-70 EB @ Pear Tree Ln	WB	Through	48	34.6	29.0	98	10	C	50	26.1	20.3	120	7	C
12: I-70 EB @ Pear Tree Ln	WB	Right	85	37.9	30.2	155	19	D	154	26.3	18.8	255	25	C
12: I-70 EB @ Pear Tree Ln	Total	Total	896	16.5	11.2	259	11	B	988	19.2	13.4	267	14	B
13: Airflight Dr @ Pear Tree Ln	NB	Left	5	47.5	40.3	109	14	D	0	0.0	0.0	124	20	A
13: Airflight Dr @ Pear Tree Ln	NB	Through	38	47.4	39.0	109	14	D	58	47.8	39.5	124	20	D
13: Airflight Dr @ Pear Tree Ln	NB	Right	5	45.2	38.8	109	14	D	9	49.4	42.3	124	20	D
13: Airflight Dr @ Pear Tree Ln	EB	Left	430	20.8	15.5	202	37	C	412	18.0	12.8	210	30	B
13: Airflight Dr @ Pear Tree Ln	EB	Through	210	16.3	10.1	252	24	B	255	14.9	9.1	289	24	B
13: Airflight Dr @ Pear Tree Ln	EB	Right	50	16.0	11.4	252	24	B	22	12.8	8.6	289	24	B
13: Airflight Dr @ Pear Tree Ln	SB	Left	192	20.7	15.1	235	32	C	266	39.0	29.3	398	77	D
13: Airflight Dr @ Pear Tree Ln	SB	Through	73	21.4	14.5	235	32	C	34	39.1	28.1	398	77	D
13: Airflight Dr @ Pear Tree Ln	SB	Right	108	2.4	0.5	235	32	A	156	4.8	1.9	398	77	A
13: Airflight Dr @ Pear Tree Ln	WB	Left	11	48.5	41.8	47	3	D	11	44.3	37.6	43	3	D
13: Airflight Dr @ Pear Tree Ln	WB	Through	19	47.1	37.2	62	5	D	49	43.4	33.0	130	11	D
13: Airflight Dr @ Pear Tree Ln	WB	Right	251	3.2	0.6	121	2	A	196	4.1	1.2	132	3	A
13: Airflight Dr @ Pear Tree Ln	Total	Total	1,392	16.8	11.9	264	17	B	1,468	20.8	14.8	398	24	C
14: Pear Tree Ln @ Edmundson Rd	NB	Left	113	31.7	25.9	166	22	C	47	6.9	1.2	74	2	A
14: Pear Tree Ln @ Edmundson Rd	NB	Right	46	5.8	0.7	64	2	A	129	43.5	36.9	249	37	D
14: Pear Tree Ln @ Edmundson Rd	EB	Through	307	7.2	3.1	228	10	A	406	5.1	1.0	229	7	A
14: Pear Tree Ln @ Edmundson Rd	EB	Right	100	1.6	0.1	74	0	A	126	1.6	0.0	20	0	A
14: Pear Tree Ln @ Edmundson Rd	WB	Left	29	9.3	4.9	41	1	A	277	4.6	1.6	148	5	A
14: Pear Tree Ln @ Edmundson Rd	WB	Through	239	7.0	3.2	129	7	A	29	10.3	5.2	40	0	B
14: Pear Tree Ln @ Edmundson Rd	Total	Total	834	9.8	5.8	232	7	A	1,014	9.6	5.7	270	9	A
15: LIB @ Terminal 2 Exit	EB	Through	409	9.8	6.1	163	15	A	523	12.0	7.1	202	22	B
15: LIB @ Terminal 2 Exit	SB - A	Left	128	28.2	22.4	178	22	C	88	30.8	25.1	133	16	C
15: LIB @ Terminal 2 Exit	SB - A	Right	160	29.1	23.1	253	33	C	147	30.8	25.2	194	22	C
15: LIB @ Terminal 2 Exit	SB - D	Left	172	29.1	23.1	253	33	C	112	30.8	25.2	194	22	C
15: LIB @ Terminal 2 Exit	SB - D	Right	191	32.7	25.1	267	41	C	151	33.6	26.4	224	34	C
15: LIB @ Terminal 2 Exit	WB	Through	276	2.0	1.0	60	2	A	454	2.0	1.3	72	3	A
15: LIB @ Terminal 2 Exit	Total	Total	1,336	18.0	13.6	273	24	B	1,475	15.6	11.5	235	21	B
16: LIB @ Terminal 2 Parking*	EB	Through	712	2.9	0.6	174	3	N/A	723	3.6	1.0	155	5	N/A
16: LIB @ Terminal 2 Parking*	SB	Left	0	0.0	0.0	0	0	A	34	38.0	30.9	77	7	E
16: LIB @ Terminal 2 Parking*	SB	Right	28	44.5	38.1	65	7	E	29	36.9	31.0	59	5	E
16: LIB @ Terminal 2 Parking*	WB	Through	247	0.0	0.0	0	0	N/A	424	0.1	0.0	0	0	N/A
16: LIB @ Terminal 2 Parking*	Total	Total	987	44.5	38.1	174	3	E	1,210	37.5	30.9	155	5	E
17: LIB @ Terminal 2 Entrance	EB	Left	475	33.0	18.5	357	44	C	401	30.8	17.7	307	37	C
17: LIB @ Terminal 2 Entrance	EB	Through	235	1.6	0.2	27	0	A	351	1.4	0.2	31	0	A
17: LIB @ Terminal 2 Entrance	SB	Left	5	76.3	70.6	39	2	E	5	71.9	66.2	36	2	E
17: LIB @ Terminal 2 Entrance	SB	Right	39	6.9	0.3	85	2	A	74	8.9	0.4	116	5	A
17: LIB @ Terminal 2 Entrance	WB	Through	209	16.2	11.2	136	14	B	351	14.8	9.6	161	19	B
17: LIB @ Terminal 2 Entrance	WB	Right	247	20.4	13.3	146	18	C	193	16.1	10.9	123	12	B
17: LIB @ Terminal 2 Entrance	Total	Total	1,210	20.8	12.3	357	13	C	1,375	16.1	9.5	307	12	B
18: Air Cargo Rd @ Lot E*	EB	Through	138	0.0	0.0	0	0	N/A	148	0.0	0.0	0	0	N/A
18: Air Cargo Rd @ Lot E*	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	SB	Right	8	1.4	0.0	11	0	A	8	1.7	0.1	17	0	A
18: Air Cargo Rd @ Lot E*	WB	Through	113	0.3	0.0	0	0	N/A	133	0.3	0.0	0	0	N/A
18: Air Cargo Rd @ Lot E*	Total	Total	259	1.4	0.0	11	0	A	289	1.7	0.1	17	0	A
19: Air Cargo Rd @ James S McDonnell*	NB	Left	70	0.6	0.0	0	0	A	84	0.7	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell*	NB	Right	50	0.7	0.0	0	0	N/A	60	0.8	0.0	0	0	N/A
19: Air Cargo Rd @ James S McDonnell*	EB	Through	68	10.9	0.2	2	0	B	75	11.3	0.2	4	0	B
19: Air Cargo Rd @ James S McDonnell*	EB	Right	70	5.7	0.2	2	0	A	73	5.7	0.2	4	0	A
19: Air Cargo Rd @ James S McDonnell*	WB	Left	29	6.2	0.2	0	0	A	44	6.1	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell*	WB	Through	44	10.2	0.2	0	0	B	49	10.3	0.2	0	0	B
19: Air Cargo Rd @ James S McDonnell*	Total	Total	331	6.5	0.1	2	0	A	385	6.4	0.1	4	0	A
20: I-70 SOR @ Natural Bridge Rd	NB	Left	66	27.4	21.1	188	18	C	62	33.7	25.7	368	44	C
20: I-70 SOR @ Natural Bridge Rd	NB	Through	44	28.1	21.5	188	18	C	94	35.7	27.2	368	44	D
20: I-70 SOR @ Natural Bridge Rd	NB	Right	110	5.7	2.3	26	0	A	177	13.9	7.6	47	0	B
20: I-70 SOR @ Natural Bridge Rd	EB	Through	308	11.9	6.7	158	17	B	375	13.4	7.7	175	22	B
20: I-70 SOR @ Natural Bridge Rd	EB	Right	22	12.2	7.9	158	17	B	32	13.0	8.6	175	22	B
20: I-70 SOR @ Natural Bridge Rd	WB	Left	126	28.1	22.2	167	20	C	177	33.5	26.9	217	35	C
20: I-70 SOR @ Natural Bridge Rd	WB	Through	172	4.7	2.0	87	3	A	338	5.7	2.3	151	7	A
20: I-70 SOR @ Natural Bridge Rd	WB	Right	108	5.0	2.2	74	2	A	181	5.3	2.1	107	3	A
20: I-70 SOR @ Natural Bridge Rd	Total	Total	956	13.1	8.6	196	10	B	1,436	15.4	10.2	368	19	B

All Vissim Results

Intersection Ops No Build

			2032 AM No Build						2032 PM No Build						2037 AM No Build						2037 PM No Build					
Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: Natural Bridge Rd @ Lot D*	NB	Left	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A
1: Natural Bridge Rd @ Lot D*	NB	Right	16	5.4	0.2	59	1	A	14	6.3	0.3	61	1	A	16	5.5	0.2	63	1	A	18	6.3	0.5	61	1	A
1: Natural Bridge Rd @ Lot D*	EB	Through	177	0.1	0.0	0	0	N/A	501	0.2	0.0	0	0	N/A	180	0.1	0.0	0	0	N/A	506	0.2	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	EB	Right	18	0.6	0.0	0	0	N/A	16	0.6	0.0	0	0	N/A	19	0.6	0.0	0	0	N/A	17	0.6	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	WB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
1: Natural Bridge Rd @ Lot D*	WB	Through	219	0.1	0.0	0	0	N/A	268	0.1	0.0	0	0	N/A	223	0.0	0.0	0	0	N/A	273	0.1	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	Total	Total	430	5.4	0.2	59	0	A	799	6.3	0.3	61	0	A	438	5.5	0.2	63	0	A	814	6.3	0.5	61	0	A
2: I-70 WB @ Natural Bridge Rd	NB	Left	114	15.3	8.4	128	9	B	117	16.8	9.8	125	10	B	115	15.5	8.6	130	9	B	119	17.3	10.3	135	11	B
2: I-70 WB @ Natural Bridge Rd	NB	Right	145	3.4	0.1	76	1	A	164	4.7	0.5	99	1	A	146	3.3	0.1	79	1	A	165	4.8	0.6	87	1	A
2: I-70 WB @ Natural Bridge Rd	EB	Through	183	10.0	3.9	100	6	A	458	12.4	4.9	165	18	B	186	10.5	4.3	103	6	B	467	12.2	4.8	158	18	B
2: I-70 WB @ Natural Bridge Rd	EB	Right	10	1.1	0.0	7	0	A	57	1.7	0.1	33	0	A	10	1.0	0.0	4	0	A	57	1.7	0.1	24	0	A
2: I-70 WB @ Natural Bridge Rd	WB	Left	85	5.1	2.3	86	2	A	98	5.5	2.5	96	2	A	87	5.4	2.5	91	2	A	100	5.0	2.2	93	2	A
2: I-70 WB @ Natural Bridge Rd	WB	Through	105	5.3	1.8	71	2	A	151	5.3	1.8	73	2	A	107	5.0	1.7	63	1	A	154	5.5	2.0	73	2	A
2: I-70 WB @ Natural Bridge Rd	Total	Total	642	7.9	3.2	129	3	A	1,045	9.4	3.8	166	5	A	651	8.0	3.4	136	3	A	1,062	9.4	3.8	161	5	A
3: Natrual Bridge Rd @ Cypress Rd	NB	Left	127	12.0	6.6	85	6	B	173	13.0	7.4	113	9	B	129	12.4	6.9	91	7	B	176	12.7	7.1	112	9	B
3: Natrual Bridge Rd @ Cypress Rd	NB	Right	102	1.1	0.0	0	0	A	164	1.4	0.0	0	0	A	102	1.0	0.0	0	0	A	168	1.4	0.0	0	0	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Through	84	6.5	2.6	102	2	A	141	8.1	3.2	203	12	A	85	6.4	2.4	116	2	A	143	9.4	3.9	192	13	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Right	243	1.5	0.1	107	1	A	478	4.4	0.8	207	7	A	247	1.6	0.2	86	1	A	487	4.7	0.9	214	9	A
3: Natrual Bridge Rd @ Cypress Rd	WB	Left	60	4.7	1.5	80	1	A	76	5.4	1.9	76	1	A	60	4.8	1.5	98	1	A	79	5.3	1.8	74	1	A
3: Natrual Bridge Rd @ Cypress Rd	WB	Through	63	4.1	1.2	64	1	A	75	4.7	1.4	55	1	A	63	4.2	1.2	55	1	A	79	5.1	1.5	57	1	A
3: Natrual Bridge Rd @ Cypress Rd	Total	Total	679	4.6	1.8	125	2	A	1,107	5.9	2.1	219	5	A	686	4.7	1.9	131	2	A	1,132	6.1	2.2	215	6	A
4: I-70 EB @ Cypress Rd	NB	Left	10	5.2	2.9	25	0	A	11	7.8	4.5	32	0	A	11	6.1	3.4	29	0	A	12	8.5	5.2	34	0	A
4: I-70 EB @ Cypress Rd	NB	Through	149	8.5	4.7	110	5	A	191	15.3	9.7	185	13	B	150	8.9	5.0	110	5	A	192	15.1	9.6	195	13	B
4: I-70 EB @ Cypress Rd	NB	Right	145	1.8	0.3	29	0	A	267	4.0	1.1	74	0	A	145	1.8	0.3	25	0	A	269	4.1	1.2	65	0	A
4: I-70 EB @ Cypress Rd	EB	Left	20	22.0	16.7	62	4	C	61	25.4	20.2	87	10	C	23	20.5	15.4	73	4	C	64	25.3	20.1	93	11	C
4: I-70 EB @ Cypress Rd	EB	Through	13	22.3	16.2	62	4	C	11	23.5	18.0	87	10	C	14	24.2	17.6	73	4	C	12	24.7	18.7	93	11	C
4: I-70 EB @ Cypress Rd	EB	Right	11	0.7	0.0	3	0	A	16	0.9	0.1	16	0	A	12	0.7	0.0	8	0	A	18	1.2	0.1	23	0	A
4: I-70 EB @ Cypress Rd	SB	Left	69	4.9	2.3	72	1	A	159	8.9	4.6	141	6	A	70	5.5	2.7	73	2	A	162	8.8	4.5	130	7	A
4: I-70 EB @ Cypress Rd	SB	Through	187	5.2	2.4	86	4	A	328	8.5	4.5	129	10	A	189	5.8	2.9	82	4	A	333	8.5	4.5	141	10	A
4: I-70 EB @ Cypress Rd	SB	Right	46	0.8	0.0	0	0	A	67	1.6	0.4	0	0	A	48	0.9	0.0	0	0	A	70	1.6	0.3	0	0	A
4: I-70 EB @ Cypress Rd	WB	Left	37	22.1	16.3	84	6	C	65	28.2	22.0	130	13	C	38	22.2	16.0	108	7	C	65	28.4	22.3	118	13	C
4: I-70 EB @ Cypress Rd	WB	Through	16	23.9	15.2	84	6	C	10	29.9	21.8	130	13	C	17	24.4	16.1	108	7	C	11	29.1	21.6	118	13	C
4: I-70 EB @ Cypress Rd	WB	Right	61	1.6	0.0	48	0	A	87	2.1	0.1	69	0	A	61	1.5	0.0	49	0	A	88	2.0	0.1	74	0	A
4: I-70 EB @ Cypress Rd	Total	Total	764	6.5	3.6	121	2	A	1,273	9.8	5.9	213	4	A	778	6.9	3.9	122	2	A	1,296	9.8	5.9	290	4	A
5: LIB @ T1 Cell Phone Lot*	EB	Left	34	0.9	0.0	19	0	A	38	1.1	0.0	30	0	A	33	0.9	0.0	17	0	A	41	1.2	0.1	35	0	A
5: LIB @ T1 Cell Phone Lot*	EB	Through	153	0.0	0.0	0	0	N/A	267	0.1	0.0	0	0	N/A	154	0.0	0.0	0	0	N/A	269	0.1	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	SB	Left	4	0.0	0.0	45	0	A	8	0.0	0.0	48	0	A	8	0.0	0.0	48	0	A	16	0.0	0.0	56	1	A
5: LIB @ T1 Cell Phone Lot*	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	6	0.0	0.0	47	0	A
5: LIB @ T1 Cell Phone Lot*	WB	Through	121	0.0	0.0	0	0	N/A	150	0.0	0.0	0	0	N/A	122	0.0	0.0	0	0	N/A	151	0.1	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	WB	Right	10	0.0	0.0	0	0	N/A	17	0.0	0.0	0	0	N/A	17	0.0	0.0	0	0	N/A	37	0.0	0.0	0	0	N/A
5: LIB @ T1 Cell Phone Lot*	Total	Total	322	0.8	0.0	45	0	A	480	0.9	0.0	55	0	A	334	0.7	0.0	48	0	A	520	0.8	0.0	60	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Through	156	2.0	0.6	47	1	A	270	2.7	0.9	89	2	A	163	1.7	0.4	55	1	A	280	2.6	0.9	75	2	A
6: I-70 WB @ LIB (E of Cypress)	EB	Right	0	0	0	82	0	A	4	3	0	126	1	A	0	0	0	92	0	A	5	1	0	112	1	A
6: I-70 WB @ LIB (E of Cypress)	SB	Left	4	0.0	0.0	40	2	A	5	55.7	49.0	47	2	E	0	0.0	0.0	0	0	A	5	55.7	49.0	47	2	E
6: I-70 WB @ LIB (E of Cypress)	SB	Through	0	0.0	0.0	40	2	A	0	0.0	0.0	47	2	A	0	0.0	0.0	0	0	A	0	0.0	0.0	47	2	A
6: I-70 WB @ LIB (E of Cypress)	SB	Right	0	0.0	0.0	0	0	A	5	6.4	0.2	49	0	A	0	0.0	0.0	0	0	A	5	6.4	0.3	49	0	A
6: I-70 WB @ LIB (E of Cypress)	WB	Left	244	2.5	0.2	108	1	A	325	3.7	0.5	128	2	A	247	2.3	0.1	94	0	A	337	4.1	0.6	177	2	A
6: I-70 WB @ LIB (E of Cypress)	WB	Through	132	0.3	0.1	24	0	A	162	0.5	0.1	40	0	A	139	0.1	0.0	0	0	A	184	0.6	0.1	43	0	A
6: I-70 WB @ LIB (E of Cypress)	WB	Right	8	0.0	0.0	21	0	A	14	0.8	0.1	37	0	A	14	0.0	0.0	0	0	A	27	0.9	0.0	40	0	A
6: I-70 WB @ LIB (E of Cypress)	Total	Total	544	1.8	0.3	110	0	A	785	3.0	0.9	144	1	A	563	1.5	0.2	120	0	A	843	3.0	0.8	180	1	A
7: LIB @ Lot B*	NB	Left	6	1.5	0.0	11	0	A	0	0.0	0.0	0	0	A	5	2.1	0.1	22	0	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	NB	Right	39	0.9	0.0	22	0	A	32	1.1	0.1	27	0	A	39	1.0	0.0	35	0	A	32	1.1	0.1	26	0	A
7: LIB @ Lot B*	EB	Through	160	0.0	0.0	0	0	N/A	276	0.1	0.0	0	0	N/A	164	0.0	0.0	0	0	N/A	285	0.1	0.0	0	0	N/A
7: LIB @ Lot B*	EB	Right	0	0.0	0.0	0	0	N/A	0	0.0	0.0	0	0	N/A	0	0.0	0.0	0	0	N/A	0	0.0	0.0	0	0	N/A
7: LIB @ Lot B*	WB	Left	22	1.2	0.0	24	0	A	0	0.0	0.0	0	0	A	24	1.3	0.0	34	0	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	WB	Through	380	0.4	0.0	0	0	N/A	503	0.5	0.0	0	0	N/A	395	0.4	0.0	0	0	N/A	553	0.6	0.0	0	0	N/A
7: LIB @ Lot B*	Total	Total	607	1.1	0.0	31	0	A	811	1.1	0.1	27	0	A	627	1.2	0.0	46	0	A	870	1.1	0.1	26	0	A
8: LIB @ Lambert Field Dr	NB	Left	0	0.0	0.0	30	1	A	0	0.0	0.0	48	3	A	0	0.0	0.0	30	1	A	0	0.0	0.0	52	3	A
8: LIB @ Lambert Field Dr	NB	Through	0	0.0	0.0	30	1	A	0	0.0	0.0	48	3	A	0	0.0	0.0	30	1	A	0	0.0	0.0	52	3	A
8: LIB @ Lambert Field Dr	NB	Right	4	45.3	39.4	30	1	D	10	53.8	47.9	48	3	D	4	45.3	39.5	30	1	D	10	56.7	50.6	52	3	E
8: LIB @ Lambert Field Dr	EB	Left 1	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
8: LIB @ Lambert Field Dr	EB	Left 2	36	3.7	1.3	51	1	A	26	7.0	3.1	90	3	A	37	4.6	1.8	61	1	A	27	7.7	3.8	82	3	A
8: LIB @ Lambert Field Dr	EB	Through	141	2.0	0.9	51	1	A	282	3.4	1.7	90	3	A	143	1.9	0.9	61	1	A	291	3.3	1.6	82	3	A
8: LIB @ Lambert Field Dr	EB	Right	23	2.3	1.3	22	0	A	0	0.0	0.0	0	0	A	23	2.0	0.8	26	0	A	0	0.0	0.0	0	0	A
8: LIB @ Lambert Field Dr	SEB	Left	16	62.5	49.5	55	5	E	10	0.0	0.0	41	3	A	16	59.7	46.8	50	4	E	10	0.0	0.0	41	3	A
8: LIB @ Lambert Field Dr	SEB	Right	0	0.0	0.0	55	5	A	0	0.0	0.0	41	3	A	0	0.0	0.0	50	4	A	0	0.0	0.0	41	3	A
8: LIB @ Lambert Field Dr	SEB	Through	0	0.0	0.0	55	5	A	0	0.0	0.0	41	3	A	0	0.0	0.0	50	4	A	0	0.0	0.0	41	3	A
8: LIB @ Lambert Field Dr	SWB	Left	8	47.9	39.9	40	2	D	26	48.9	40.9	124	11	D	12	49.5	41.4	57	3	D	28	47.7	39.6	124	11	D
8: LIB @ Lambert Field Dr	SWB	Right	0	0.0	0.0	40	2	A	12	45.6	38.8	124	11	D	0	0.0	0.0	57	3	A	12	45.7	38.9	124	11	D
8: LIB @ Lambert Field Dr	SWB	Through	0	0.0	0.0	40	2	A	0	0.0	0.0	124	11	A	0	0.0	0.0	57	3	A	0	0.0	0.0	124	11	A
8: LIB @ Lambert Field Dr	WB	Left	7	2.3	0.4	79	1	A	14	0.0	0.0	108	5	A	7	3.0	0.9	71	2	A	0	0.0	0.0	127	5	A
8: LIB @ Lambert Field Dr	WB	Through	402	1.2	0.3	79	1	A	491	2.8	1.0	108	5	A	419	1.3	0.4	71	2	A	540	3.0	1.1	127	5	A
8: LIB @ Lambert Field Dr	WB	Right 2	12	0.0	0.0	79	1	A	21	0.0	0.0	108	5	A	16	0.0	0.0	71	2	A	35	0.0	0.0	127	5	A
8: LIB @ Lambert Field Dr	WB	Right 1	20	1.5	0.2	79	1	A	37	2.6	1.1	108	5	A	23	1.8	0.6	71	2	A	22	3.2	1.5	127	5	A
8: LIB @ Lambert Field Dr	Total	Total	669	3.8	2.4	83	1	A	929	5.4	3.3	133	4	A	700	4.0	2.5	84	2	A	975	5.4	3.4	138	4	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Left	372	3.8	2.3	319	61	A	267	3.8	2.3	298	34	A	391	4.1	2.5	322	67	A	280	4.2	2.6	303	41	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Through	287	3.0	1.8	321	63	A	235	3.8	2.4	302	37	A	302	3.2	2.0	326	71	A	249	3.6	2.3	307	42	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Right	157	0.4	0.0	276	56	A	164	0.5	0.0	256	33	A	163	0.5	0.0	282	61	A	173	0.5	0.0	264	38	A
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Left	48	43.6	36.2	172	24	D	88	42.2	34.6	197	33	D	50	42.8	35.3	173	25	D	92	40.9	33.2	203	34	D
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Right	42	38.8	33.6	82	9	D	33	36.2	30.9	83	6	D	46	38.8	33.6	116	10	D	34	36.5	31.1	96	7	D
9: Air Cargo Dr @ Terminal 1 Entrance	Total	Total	906	6.7	5.0	321	43	A	787	8.8	6.7	304	29	A	952	6.9	5.1	326	47	A	828	8.6	6.6	310	32	A
10: LIB @ Terminal 1 Exit	NB 1	Left	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 1	Through	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 1	Right	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A	0	0	0	0	0	A
10: LIB @ Terminal 1 Exit	NB 2	Right	56	8.3	1.9	44	2	A	146	9.0	2.1	74	5	A	56	8.2	1.7	48	2	A	150	9.3	2.2	67	6	A
10: LIB @ Terminal 1 Exit	EB	Through	162	19.3	13.5	108	12	B	319	22.6	16.0	178	27	C	166	19.6	13.7	107	14	B	329	23.8	16.8	200	29	C
10: LIB @ Terminal 1 Exit	EB	Right 2	9	21.8	15.5	108	12	C	10	22.8	16.2	178	27	C	10	20.8	14.5	107	14	C	10	24.4	17.7	200	29	C

All Vissim Results

Intersection Ops No Build

10: LIB @ Terminal 1 Exit	EB	Right 1	0	0.0	0.0	108	12	A	0	0.0	0.0	178	27	A	0	0.0	0.0	107	14	A	0	0.0	0.0	200	29	A
10: LIB @ Terminal 1 Exit	WB	Left 1	101	8.9	5.3	100	4	A	61	9.7	5.7	80	2	A	107	8.9	5.2	114	4	A	65	9.9	5.9	82	2	A
10: LIB @ Terminal 1 Exit	WB	Left 2	0	0.0	0.0	163	23	A	1	0.0	0.0	189	30	A	0	0.0	0.0	167	25	A	0	0.0	0.0	190	32	A
10: LIB @ Terminal 1 Exit	WB	Through	285	21.8	15.6	163	23	C	342	23.9	17.4	189	30	C	299	22.4	16.0	167	25	C	367	24.1	17.7	190	32	C
10: LIB @ Terminal 1 Exit	SB - A	Left	208	46.1	38.1	184	43	D	424	40.2	31.9	259	71	D	218	46.2	38.3	171	45	D	441	39.7	31.4	261	72	D
10: LIB @ Terminal 1 Exit	SB - A	Through	11	53.5	45.6	184	43	D	9	40.8	32.7	259	71	D	11	50.1	41.5	171	45	D	11	39.3	30.6	261	72	D
10: LIB @ Terminal 1 Exit	SB - A	Right	47	38.8	32.8	184	43	D	131	36.2	29.1	259	71	D	50	40.0	33.9	171	45	D	139	36.7	29.5	261	72	D
10: LIB @ Terminal 1 Exit	SB - D	Left	271	38.4	31.1	189	51	D	233	39.8	32.6	198	47	D	285	38.5	31.1	223	56	D	250	39.3	32.0	186	48	D
10: LIB @ Terminal 1 Exit	SB - D	Through	0	0.0	0.0	189	51	A	3	0.0	0.0	198	47	A	0	0.0	0.0	223	56	A	0	0.0	0.0	186	48	A
10: LIB @ Terminal 1 Exit	SB - D	Right	109	38.4	31.6	189	51	D	90	40.7	34.0	198	47	D	113	39.0	31.9	223	56	D	92	40.3	33.5	186	48	D
10: LIB @ Terminal 1 Exit	Total	Total	1,259	29.8	23.2	200	19	C	1,769	29.7	22.7	267	26	C	1,315	30.1	23.4	229	21	C	1,854	30.0	22.8	261	27	C
11: I-70 WB @ Airflight Dr	NB	Left	326	9.0	4.1	202	14	A	348	9.3	3.0	283	13	A	346	9.5	4.4	239	15	A	365	10.2	3.4	313	16	B
11: I-70 WB @ Airflight Dr	NB	Through	465	3.7	1.7	135	6	A	388	5.1	1.5	220	7	A	487	4.2	1.9	148	8	A	410	5.0	1.4	215	7	A
11: I-70 WB @ Airflight Dr	SB	Through	247	11.2	6.9	145	10	B	330	17.7	11.4	211	21	B	260	11.7	7.2	155	11	B	338	17.9	11.5	229	23	B
11: I-70 WB @ Airflight Dr	WB	Left	235	38.4	29.0	250	49	D	315	40.3	30.0	332	64	D	248	37.4	28.0	238	50	D	329	40.3	30.0	356	67	D
11: I-70 WB @ Airflight Dr	WB	Right	86	27.7	18.6	12	0	C	75	31.5	21.3	61	0	C	90	29.3	19.9	0	0	C	82	33.0	23.1	88	1	C
11: I-70 WB @ Airflight Dr	Total	Total	1,359	13.9	9.0	266	11	B	1,456	17.9	11.3	345	15	B	1,431	14.2	9.1	258	12	B	1,524	18.2	11.4	391	16	B
12: I-70 EB @ Pear Tree Ln	NEB	Right	36	7.6	0.9	50	1	A	64	8.2	1.3	86	2	A	40	7.9	1.0	76	1	A	71	8.5	1.5	84	2	A
12: I-70 EB @ Pear Tree Ln	EB	Through	146	39.5	30.8	123	24	D	248	39.6	30.3	174	39	D	151	40.0	31.1	129	25	D	263	40.5	30.9	178	42	D
12: I-70 EB @ Pear Tree Ln	EB	Right	6	43.5	38.1	123	24	D	12	37.0	31.4	174	39	D	6	37.0	32.1	129	25	D	12	33.6	28.1	178	42	C
12: I-70 EB @ Pear Tree Ln	SB	Left	594	8.7	3.9	265	21	A	460	9.3	4.8	224	18	A	626	9.1	4.0	264	23	A	481	10.2	5.5	242	21	B
12: I-70 EB @ Pear Tree Ln	SB	Through	28	6.7	2.9	265	21	A	25	7.1	3.4	224	18	A	31	8.7	4.4	264	23	A	28	9.7	5.7	242	21	A
12: I-70 EB @ Pear Tree Ln	SB	Right	50	2.6	0.5	64	0	A	71	2.8	0.7	61	0	A	52	2.6	0.6	27	0	A	77	3.1	0.8	77	0	A
12: I-70 EB @ Pear Tree Ln	WB	Through	54	32.3	26.6	149	11	C	56	25.9	20.2	149	8	C	57	32.3	26.5	117	11	C	59	25.3	19.2	161	8	C
12: I-70 EB @ Pear Tree Ln	WB	Right	95	36.0	28.4	199	22	D	176	26.3	18.8	283	29	C	100	34.2	26.7	196	21	C	182	25.9	18.6	282	30	C
12: I-70 EB @ Pear Tree Ln	Total	Total	1,009	16.8	11.2	265	13	B	1,112	19.3	13.3	286	16	B	1,063	16.9	11.1	265	14	B	1,173	19.8	13.6	285	17	B
13: Airflight Dr @ Pear Tree Ln	NB	Left	6	44.9	37.6	121	16	D	0	0.0	0.0	159	22	A	6	47.1	39.4	118	16	D	0	0.0	0.0	158	25	A
13: Airflight Dr @ Pear Tree Ln	NB	Through	44	46.8	38.6	121	16	D	66	47.7	39.2	159	22	D	44	46.7	38.4	118	16	D	70	49.2	40.6	158	25	D
13: Airflight Dr @ Pear Tree Ln	NB	Right	6	42.9	36.0	121	16	D	10	53.0	45.8	159	22	D	5	52.5	45.8	118	16	D	11	49.2	41.9	158	25	D
13: Airflight Dr @ Pear Tree Ln	EB	Left	488	22.4	16.7	327	46	C	466	19.6	14.0	263	38	B	512	22.9	17.1	331	48	C	490	20.5	14.6	262	41	C
13: Airflight Dr @ Pear Tree Ln	EB	Through	236	16.6	10.2	282	27	B	283	15.9	9.9	365	29	B	251	17.0	10.6	314	31	B	302	15.8	9.7	338	31	B
13: Airflight Dr @ Pear Tree Ln	EB	Right	56	14.7	10.3	282	27	B	22	14.6	10.1	365	29	B	55	16.9	12.1	314	31	B	24	15.4	10.5	338	31	B
13: Airflight Dr @ Pear Tree Ln	SB	Left	215	21.7	15.6	323	39	C	297	41.8	31.7	429	93	D	225	22.3	16.0	328	43	C	308	41.8	31.7	444	97	D
13: Airflight Dr @ Pear Tree Ln	SB	Through	79	23.5	16.0	323	39	C	37	42.5	31.6	429	93	D	84	24.0	16.4	328	43	C	39	44.3	33.3	444	97	D
13: Airflight Dr @ Pear Tree Ln	SB	Right	122	2.8	0.8	323	39	A	174	4.4	1.5	429	93	A	128	2.8	0.8	328	43	A	180	4.2	1.3	444	97	A
13: Airflight Dr @ Pear Tree Ln	WB	Left	12	56.2	49.5	53	4	E	12	46.5	40.1	51	3	D	13	51.9	45.3	51	4	D	12	46.4	40.0	49	3	D
13: Airflight Dr @ Pear Tree Ln	WB	Through	21	45.0	35.0	64	5	D	58	44.2	33.5	118	14	D	22	46.3	36.4	73	6	D	63	44.2	33.1	133	15	D
13: Airflight Dr @ Pear Tree Ln	WB	Right	276	3.8	0.9	133	3	A	221	5.1	1.7	149	5	A	294	4.2	1.0	139	4	A	232	5.7	2.1	176	6	A
13: Airflight Dr @ Pear Tree Ln	Total	Total	1,561	17.8	12.5	381	20	B	1,646	22.2	15.9	441	29	C	1,639	18.2	12.8	398	22	B	1,731	22.6	16.2	470	31	C
14: Pear Tree Ln @ Edmundson Rd	NB	Left	52	6.4	1.1	72	2	A	51	6.8	1.1	73	2	A	54	5.8	0.8	66	2	A	54	7.9	1.7	74	3	A
14: Pear Tree Ln @ Edmundson Rd	NB	Right	122	32.7	26.8	187	25	C	147	43.3	36.7	227	41	D	132	33.2	27.2	192	28	C	153	42.8	36.2	229	43	D
14: Pear Tree Ln @ Edmundson Rd	EB	Through	345	8.0	3.5	263	14	A	454	5.7	1.3	306	10	A	367	7.7	3.3	264	14	A	477	5.7	1.3	332	11	A
14: Pear Tree Ln @ Edmundson Rd	EB	Right	111	2.0	0.2	81	0	A	136	1.9	0.0	48	0	A	115	1.9	0.1	85	0	A	144	1.9	0.1	19	0	A
14: Pear Tree Ln @ Edmundson Rd	WB	Left	267	6.9	3.1	164	8	A	311	4.8	1.7	162	6	A	284	7.4	3.4	165	9	A	330	5.0	1.8	211	7	A
14: Pear Tree Ln @ Edmundson Rd	WB	Through	32	10.8	5.7	60	1	B	33	12.0	6.0	53	1	B	33	10.4	5.4	55	1	B	34	11.7	6.1	42	1	B
14: Pear Tree Ln @ Edmundson Rd	Total	Total	929	10.2	6.0	271	8	B	1,132	10.1	6.0	323	10	B	985	10.3	6.1	267	9	B	1,192	10.1	5.9	355	11	B
15: LIB @ Terminal 2 Exit	EB	Through	463	10.4	6.5	172	17	B	583	11.8	6.7	225	24	B	482	10.9	6.8	173	19	B	616	12.0	6.8	237	25	B
15: LIB @ Terminal 2 Exit	SB - A	Left	148	28.6	22.2	203	27	C	100	31.4	25.3	171	19	C	155	28.4	22.0	199	28	C	106	31.2	25.0	182	21	C
15: LIB @ Terminal 2 Exit	SB - A	Right	179	28.9	22.6	259	37	C	163	30.1	24.3	206	26	C	189	29.2	22.7	278	41	C	171	30.6	24.7	202	27	C
15: LIB @ Terminal 2 Exit	SB - D	Left	193	28.9	22.6	259	37	C	128	30.1	24.3	206	26	C	202	29.2	22.7	278	41	C	136	30.6	24.7	202	27	C
15: LIB @ Terminal 2 Exit	SB - D	Right	214	32.3	24.5	268	45	C	170	34.1	26.7	224	38	C	225	33.5	25.1	279	49	C	179	34.1	26.7	234	39	C
15: LIB @ Terminal 2 Exit	WB	Through	306	1.9	1.0	61	2	A	510	2.3	1.5	82	4	A	325	1.9	0.9	53	2	A	536	2.1	1.3	79	4	A
15: LIB @ Terminal 2 Exit	Total	Total	1,503	18.2	13.5	300	27	B	1,654	15.6	11.4	253	25	B	1,578	18.5	13.6	293	29	B	1,744	15.7	11.4	267	26	B
16: LIB @ Terminal 2 Parking*	EB	Through	807	3.1	0.5	166	3	N/A	813	4.0	1.1	183	6	N/A	843	3.4	0.5	180	4	N/A	861	4.2	1.1	170	7	N/A
16: LIB @ Terminal 2 Parking*	SB	Left	0	0.0	0.0	0	0	A	36	38.3	30.9	81	8	E	0	0.0	0.0	0	0	A	39	37.4	30.4	81	8	E
16: LIB @ Terminal 2 Parking*	SB	Right	31	41.1	34.9	63	7	E	33	34.2	28.5	53	6	D	35	40.3	34.0	73	8	E	36	35.8	30.1	66	7	E
16: LIB @ Terminal 2 Parking*	WB	Through	274	0.1	0.0	0	0	N/A	477	0.1	0.0	0	0	N/A	290	0.1	0.0	0	0	N/A	501	0.1	0.0	0	0	N/A
16: LIB @ Terminal 2 Parking*	Total	Total	1,112	41.1	34.9	166	3	E	1,359	36.3	29.8	183	5	E	1,168	40.3	34.0	180	3	E	1,437	36.6	30.2	170	5	E
17: LIB @ Terminal 2 Entrance	EB	Left	538	37.8	20.4	390	56	D	452	33.3	18.4	355	43	C	562	37.7	19.7	385	56	D	477	33.6	18.0	371	44	C
17: LIB @ Terminal 2 Entrance	EB	Through	264	2.0	0.3	26	0	A	393	1.9	0.3	37	0	A	277	2.1	0.3	28	0	A	416	2.0	0.3	39	0	A
17: LIB @ Terminal 2 Entrance	SB	Left	6	75.1	69.3	43	2	E	6	71.0	65.5	38	2	E	6	76.3	70.7	42	3	E	5	71.9	66.2	40	2	E
17: LIB @ Terminal 2 Entrance	SB	Right	42	7.1	0.3	93	2	A	83	9.6	0.4	132	6	A	44	7.3	0.4	96	2	A	86	9.7	0.4	127	6	A
17: LIB @ Terminal 2 Entrance	WB	Through	232	16.5	11.4	142	15	B	395	14.9	9.7	185	21	B	246	15.8	10.9	139	15	B	414	15.5	10.1	182	23	B
17: LIB @ Terminal 2 Entrance	WB	Right	279	25.3	16.2	161	23	C	216	18.5	12.2	134	14	B	293	26.4	16.7	160	24	C	225	20.2	13.3	136	16	C
17: LIB @ Terminal 2 Entrance	Total	Total	1,361	23.9	13.7	390	16	C	1,545	17.4	9.9	355	15	B	1,428	23.9	13.4	385	17	C	1,623	17.9	10.0	371	15	B
18: Air Cargo Rd @ Lot E*	EB	Through	157	0.1	0.0	0	0	N/A	165	0.1	0.0	0	0	N/A	163	0.1	0.0	0	0	N/A	173	0.1	0.0	0	0	N/A
18: Air Cargo Rd @ Lot E*	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	SB	Right	8	1.4	0.0	10	0	A	10	1.6	0.2	13	0	A	12	1.4	0.0	17	0	A	10	1.8	0.1	19	0	A
18: Air Cargo Rd @ Lot E*	WB	Through	125	0.3	0.0	0	0	N/A	149	0.4	0.0	0	0	N/A	129	0.3	0.0	0	0	N/A	157	0.5	0.0	0	0	N/A
18: Air Cargo Rd @ Lot E*	Total	Total	290	1.4	0.0	10	0	A	324	1.6	0.2	13	0	A	304	1.4	0.0	17	0	A	340	1.8	0.1	19	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Left	77	0.6	0.0	0	0	A	94	0.7	0.0	0	0	A	78	0.6	0.0	0	0	A	100	0.7	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Right	56	0.8	0.0	0	0	N/A	66	0.8	0.0	0	0	N/A	54	0.8	0.0	0	0	N/A	71	0.8	0.0	0	0	N/A
19: Air Cargo Rd @ James S McDonnell'	EB	Through	0	0.0	0.0	20	0	A	0	0.0	0.0	47	0	A	0	0.0	0.0	34	0	A	0	0.0	0.0	45	0	A
19: Air Cargo Rd @ James S McDonnell'	EB	Right	157	7.0	0.3	20	0	A	165	7.4	0.3	47	0	A	165	7.2	0.3	34	0	A	172	7.8	0.3	45	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Left	34	6.3	0.2	0	0	A	51	6.6	0.2	0	0	A	31	6.3	0.2	0	0	A	52	6.5	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Through	50	10.2	0.2	0	0	B	55	10.4	0.2	0	0	B	52	10.3	0.2	0	0	B	58	10.5	0.2	0	0	B
19: Air Cargo Rd @ James S McDonnell'	Total	Total	374	5.9	0.2	20	0	A	431	6.0	0.2	47	0	A	380	6.0	0.2	34	0	A	453	6.2	0.2	45	0	A
20: I-70 SOR @ Natural Bridge Rd	NB	Left	68	27.2	20.9	185	19	C	64	33.5	25.7	343	47	C	68	28.5	22.1	177	20	C	63	35.3	27.2	345	49	D
20: I-70 SOR @ Natural Bridge Rd	NB	Through	45	28.7	22.0	185	19	C	97	37.3	28.5	343	47	D	46	27.7	21.1	177	20	C	98	37.8	29.0	345	49	D
20: I-70 SOR @ Natural Bridge Rd	NB	Right	112	6.3	2.8	23	0	A	182	14.8	8.3	38	0	B	115	6.0	2.5	32	0	A	184	15.5	8.8	55	0	B
20: I-70 SOR @ Natural Bridge Rd	EB	Through	316	12.3	7.0	167	17	B	385	13.5	7.8	202	23	B	319	12.4	7.1	171	18	B	389	13.4	7.8	198	23	B
20: I-70 SOR @ Natural Bridge Rd	EB	Right	23	12.8	8.5	167	17	B	32	15.3	10.1	202	23	B	23	13.9	9.0	171	18	B	32	13.9	9.3	198	23	B
20: I-70 SOR @ Natural Bridge Rd	WB	Left	127	28.5	22.6	163	21	C	181	33.2	26.5	192	35	C	131	28.4	22.3	149	21	C	183	33.4	26.5	233	36	C
20: I-70 SOR @ Natural Bridge Rd	WB	Through	175	5.3	2.3	111	4	A	345	6.0	2.4	160	8	A	178	4.8	2.0	106	3	A	349	5.7	2.3	152	7	A
20: I-70 SOR @ Natural Bridge Rd	WB	Right	111	4.8	2.0	74	2	A	186	5.0	2.0	100	3	A	113	4.7	2.0	75	2	A	188	5.2	2.1	103	3	A
20: I-70 SOR @ Natural Bridge Rd	Total	Total	977	13.4	8.8	200	11	B	1,472	15.7	10.4	343	20	B	993	13.4	8.8	193	11	B	1,486	15.8	10.5	349	20	B

All Vissim Results

Intersection Ops Alt 1

			2032 Alt 1 AM						2032 Alt 1 PM						2037 Alt 1 AM						2037 Alt 1 PM					
Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: Natural Bridge Rd @ Lot D*	NB	Left	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A
1: Natural Bridge Rd @ Lot D*	NB	Right	16	5.4	0.2	59	1	A	14	6.9	0.6	61	1	A	16	5.5	0.2	63	1	A	18	6.9	0.9	61	1	A
1: Natural Bridge Rd @ Lot D*	EB	Through	177	0.1	0.0	0	0	N/A	501	0.5	0.0	0	0	N/A	180	0.1	0.0	0	0	N/A	506	0.7	0.1	0	0	N/A
1: Natural Bridge Rd @ Lot D*	EB	Right	18	0.6	0.0	0	0	N/A	16	0.6	0.0	0	0	N/A	19	0.6	0.0	0	0	N/A	17	0.6	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	WB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
1: Natural Bridge Rd @ Lot D*	WB	Through	225	0.1	0.0	0	0	N/A	262	0.1	0.0	0	0	N/A	221	0.1	0.0	0	0	N/A	266	0.1	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	Total	Total	436	0.0	0.0	59	0	A	793	6.9	0.6	61	0	A	436	5.5	0.2	63	0	A	807	6.9	0.9	61	0	A
2: I-70 WB @ Natural Bridge Rd	NB	Left	116	31.7	24.6	225	23	C	114	32.7	25.1	210	23	C	117	30.3	23.3	179	22	C	115	36.2	28.0	258	25	D
2: I-70 WB @ Natural Bridge Rd	NB	Right	721	6.1	0.5	186	5	A	643	10.6	2.8	317	6	B	752	6.2	0.5	190	5	A	674	14.6	4.8	469	14	B
2: I-70 WB @ Natural Bridge Rd	EB	Through	183	37.7	26.5	141	26	D	457	43.8	30.8	270	71	D	187	38.6	27.1	127	27	D	465	45.8	31.8	291	74	D
2: I-70 WB @ Natural Bridge Rd	EB	Right	10	5.8	3.0	26	0	A	57	14.8	8.8	71	2	B	10	4.8	1.9	28	0	A	57	14.2	8.7	65	1	B
2: I-70 WB @ Natural Bridge Rd	WB	Left	382	4.4	0.5	204	5	A	510	28.3	18.3	373	66	C	374	14.6	8.4	284	31	B	535	24.4	15.0	474	95	C
2: I-70 WB @ Natural Bridge Rd	WB	Through	108	6.0	3.2	79	3	A	147	8.1	4.6	373	66	A	104	5.8	3.2	70	2	A	150	7.1	4.0	85	4	A
2: I-70 WB @ Natural Bridge Rd	Total	Total	1,520	11.4	5.7	280	9	B	1,928	24.4	15.2	456	29	C	1,544	14.0	7.6	309	13	B	1,996	25.2	15.2	628	32	C
3: Natrual Bridge Rd @ Cypress Rd	NB	Left	140	39.0	32.5	187	33	D	172	39.0	32.7	143	31	D	137	40.1	33.4	187	32	D	173	39.6	32.7	207	39	D
3: Natrual Bridge Rd @ Cypress Rd	NB	Right	303	2.5	0.0	4	0	A	314	2.8	0.0	4	0	A	355	2.9	0.0	9	0	A	327	3.0	0.0	8	0	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Through	661	16.7	11.1	356	46	B	629	14.9	9.7	563	81	B	692	16.7	11.0	298	47	B	659	16.1	10.5	615	110	B
3: Natrual Bridge Rd @ Cypress Rd	EB	Right	242	5.2	1.7	230	9	A	464	16.2	7.8	606	86	B	246	6.3	2.5	242	14	A	476	18.5	9.6	657	120	B
3: Natrual Bridge Rd @ Cypress Rd	WB	Left	351	15.9	7.1	292	21	B	458	19.7	8.6	398	43	B	351	16.4	7.6	305	23	B	491	21.6	9.4	452	58	C
3: Natrual Bridge Rd @ Cypress Rd	WB	Through	352	4.7	1.4	175	4	A	486	6.4	1.8	268	9	A	341	4.6	1.3	159	4	A	515	11.4	3.9	388	17	B
3: Natrual Bridge Rd @ Cypress Rd	Total	Total	2,049	12.6	7.5	379	19	B	2,523	14.5	8.0	608	42	B	2,122	12.7	7.5	332	20	B	2,641	16.6	9.0	664	57	B
4: I-70 EB @ Cypress Rd	NB	Left	10	6.2	3.7	21	0	A	11	7.6	4.6	28	0	A	11	4.8	2.7	20	0	A	12	6.6	3.8	26	0	A
4: I-70 EB @ Cypress Rd	NB	Through	150	32.3	25.0	187	23	C	191	32.5	24.7	272	36	C	149	31.6	24.3	191	22	C	192	32.5	24.5	279	36	C
4: I-70 EB @ Cypress Rd	NB	Right	145	8.0	4.7	38	0	A	267	11.9	6.2	78	0	B	145	7.5	4.4	36	0	A	269	11.4	5.9	100	0	B
4: I-70 EB @ Cypress Rd	NB	Left	20	44.9	39.3	89	9	D	61	41.9	36.1	113	18	D	22	43.1	37.4	77	9	D	64	42.2	36.3	128	19	D
4: I-70 EB @ Cypress Rd	NB	Through	13	43.7	37.0	89	9	D	11	45.2	38.9	113	18	D	14	44.5	38.0	77	9	D	12	37.8	31.5	128	19	D
4: I-70 EB @ Cypress Rd	NB	Right	11	0.8	0.0	4	0	A	16	1.1	0.1	15	0	A	12	0.7	0.0	8	0	A	18	1.1	0.1	20	0	A
4: I-70 EB @ Cypress Rd	SB	Left	359	6.5	2.9	210	10	A	534	11.4	5.6	396	31	B	367	6.9	3.1	190	10	A	566	12.8	6.5	462	39	B
4: I-70 EB @ Cypress Rd	SB	Through	189	3.9	2.1	81	3	A	323	6.6	3.9	122	8	A	185	4.0	2.3	88	3	A	329	6.8	3.9	121	8	A
4: I-70 EB @ Cypress Rd	SB	Right	45	0.9	0.0	13	0	A	64	1.6	0.3	139	1	A	46	0.9	0.0	2	0	A	68	1.5	0.3	203	2	A
4: I-70 EB @ Cypress Rd	WB	Left	51	45.3	38.8	148	20	D	69	45.7	38.9	164	22	D	45	44.4	37.9	137	18	D	69	46.0	39.1	183	23	D
4: I-70 EB @ Cypress Rd	WB	Through	21	47.6	39.0	148	20	D	10	39.3	31.1	164	22	D	20	49.9	41.2	137	18	D	11	48.8	40.1	183	23	D
4: I-70 EB @ Cypress Rd	WB	Right	271	3.2	0.1	118	1	A	235	3.5	0.3	136	2	A	318	3.7	0.2	145	2	A	246	3.5	0.3	145	2	A
4: I-70 EB @ Cypress Rd	Total	Total	1,285	11.5	7.8	232	5	B	1,792	14.1	9.2	398	9	B	1,334	11.2	7.3	210	5	B	1,856	14.4	9.3	462	10	B
5: LIB @ T1 Cell Phone Lot*	EB	Left	30	4.0	1.0	141	1	A	37	4.7	1.3	142	1	A	31	3.5	0.7	120	1	A	40	5.2	1.6	178	2	A
5: LIB @ T1 Cell Phone Lot*	EB	Through	929	0.6	0.0	44	0	N/A	901	0.7	0.0	45	0	N/A	1,010	0.5	0.0	25	0	N/A	941	0.8	0.0	70	0	N/A
5: LIB @ T1 Cell Phone Lot*	SB	Left	4	0.0	0.0	45	0	A	8	0.0	0.0	48	1	A	8	0.0	0.0	48	1	A	14	0.0	0.0	56	1	A
5: LIB @ T1 Cell Phone Lot*	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	8	0.0	0.0	49	0	A
5: LIB @ T1 Cell Phone Lot*	WB	Through	704	0.2	0.0	0	0	N/A	951	0.3	0.0	15	0	N/A	693	0.2	0.0	3	0	N/A	1,002	0.4	0.0	18	0	N/A
5: LIB @ T1 Cell Phone Lot*	WB	Right	33	0.0	0.0	0	0	N/A	38	0.0	0.0	15	0	N/A	42	0.0	0.0	3	0	N/A	38	0.0	0.0	18	0	N/A
5: LIB @ T1 Cell Phone Lot*	Total	Total	1,700	0.0	0.0	143	0	A	1,935	3.9	0.0	142	0	A	1,784	2.8	0.0	120	0	A	2,043	3.3	0.0	178	1	A
6: I-70 WB @ LIB (E of Cypress)	EB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Through	938	0.5	0.0	52	0	A	916	0.8	0.1	82	1	A	1,023	0.7	0.1	78	1	A	961	0.9	0.2	86	1	A
6: I-70 WB @ LIB (E of Cypress)	EB	Right																								
6: I-70 WB @ LIB (E of Cypress)	SB	Left	4	62.3	55.4	40	2	E	14	50.9	44.3	59	4	D	8	57.1	50.2	54	3	E	22	51.1	44.5	83	7	D
6: I-70 WB @ LIB (E of Cypress)	SB	Through																								
6: I-70 WB @ LIB (E of Cypress)	SB	Right	0	0.0	0.0	0	0	A	6	8.4	1.4	61	1	A	0	0.0	0.0	32	0	A	6	9.8	3.3	85	2	A
6: I-70 WB @ LIB (E of Cypress)	WB	Left																								
6: I-70 WB @ LIB (E of Cypress)	WB	Through	739	0.6	0.1	102	1	A	985	1.6	0.4	171	4	A	734	0.9	0.3	116	1	A	1,035	1.8	0.5	206	5	A
6: I-70 WB @ LIB (E of Cypress)	WB	Right	27	1.2	0.1	99	1	A	28	1.7	0.3	168	3	A	31	1.2	0.1	113	1	A	31	2.0	0.4	203	4	A
6: I-70 WB @ LIB (E of Cypress)	Total	Total	1,708	0.7	0.2	106	1	A	1,949	1.6	0.6	171	2	A	1,796	1.0	0.4	124	1	A	2,055	1.9	0.8	206	3	A
7: LIB @ Lot B*	NB	Left	6	0.0	0.0	32	0	A	0	0.0	0.0	16	0	A	5	0.0	0.0	34	0	A	0	0.0	0.0	21	0	A
7: LIB @ Lot B*	NB	Right	15	3.2	1.4	31	0	A	32	2.8	1.1	37	0	A	15	3.2	1.2	34	0	A	32	3.0	1.1	39	0	A
7: LIB @ Lot B*	EB	Through	944	0.5	0.0	0	0	N/A	924	0.5	0.0	8	0	N/A	1,033	0.5	0.0	0	0	N/A	979	0.5	0.0	4	0	N/A
7: LIB @ Lot B*	EB	Right	0	0.0	0.0	0	0	N/A	6	0.0	0.0	8	0	N/A	0	0.0	0.0	0	0	N/A	6	0.0	0.0	4	0	N/A
7: LIB @ Lot B*	WB	Left	38	0.0	0.0	79	1	A	0	0.0	0.0	0	0	A	38	0.0	0.0	76	1	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	WB	Through	760	0.1	0.0	0	0	N/A	1,014	0.2	0.0	0	0	N/A	762	0.2	0.0	0	0	N/A	1,066	0.2	0.0	0	0	N/A
7: LIB @ Lot B*	Total	Total	1,763	41.9	0.1	79	0	C	1,976	2.8	1.1	42	0	A	1,853	0.8	0.3	77	0	A	2,083	3.0	1.1	39	0	A
8: LIB @ Lambert Field Dr	NB	Left																								
8: LIB @ Lambert Field Dr	NB	Through																								
8: LIB @ Lambert Field Dr	NB	Right																								
8: LIB @ Lambert Field Dr	EB	Left 1																								
8: LIB @ Lambert Field Dr	EB	Left 2																								
8: LIB @ Lambert Field Dr	EB	Through																								
8: LIB @ Lambert Field Dr	EB	Right																								
8: LIB @ Lambert Field Dr	SEB	Left																								
8: LIB @ Lambert Field Dr	SEB	Right																								
8: LIB @ Lambert Field Dr	SEB	Through																								
8: LIB @ Lambert Field Dr	SWB	Left																								
8: LIB @ Lambert Field Dr	SWB	Right																								
8: LIB @ Lambert Field Dr	SWB	Through																								
8: LIB @ Lambert Field Dr	WB	Left																								
8: LIB @ Lambert Field Dr	WB	Through																								
8: LIB @ Lambert Field Dr	WB	Right 2																								
8: LIB @ Lambert Field Dr	WB	Right 1																								
8: LIB @ Lambert Field Dr	Total	Total																								
9: Air Cargo Dr @ Terminal 1 Entrance		Left	0	0.0	0.0	123	0	A	0	0.0	0.0	152	1	A	0	0.0	0.0	114	0	A	0	0.0	0.0	156	1	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Through	0	0.0	0.0	123	0	A	0	0.0	0.0	152	1	A	0	0.0	0.0	116	0	A	0	0.0	0.0	156	1	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Right	115	0.4	0.0	90	0	A	147	0.6	0.0	119	1	A	120	0.5	0.0	93	0	A	164	0.7	0.0	118	2	A
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Left	134	41.5	34.5	186	34	D	165	40.7	33.2	226	41	D	142	41.4	34.2	196	36	D	169	40.5	33.0	228	42	D
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
9: Air Cargo Dr @ Terminal 1 Entrance	Total	Total	249	22.6	18.5	187	7	C	312	21.8	17.6	226	9	C	262	22.7	18.5	196	7	C	333	20.9	16.8	229	9	C
10: LIB @ Terminal 1 Exit	NB 1	Left																								
10: LIB @ Terminal 1 Exit	NB 1	Through																								
10: LIB @ Terminal 1 Exit	NB 1	Right																								
10: LIB @ Terminal 1 Exit	NB 2	Right																								
10: LIB @ Terminal 1 Exit	EB	Through																								

All Vissim Results

Intersection Ops Alt 1

10: LIB @ Terminal 1 Exit	EB	Right 2																						
10: LIB @ Terminal 1 Exit	EB	Right 1																						
10: LIB @ Terminal 1 Exit	WB	Left 1																						
10: LIB @ Terminal 1 Exit	WB	Left 2																						
10: LIB @ Terminal 1 Exit	WB	Through																						
10: LIB @ Terminal 1 Exit	SB - A	Left																						
10: LIB @ Terminal 1 Exit	SB - A	Through																						
10: LIB @ Terminal 1 Exit	SB - A	Right																						
10: LIB @ Terminal 1 Exit	SB - D	Left																						
10: LIB @ Terminal 1 Exit	SB - D	Through																						
10: LIB @ Terminal 1 Exit	SB - D	Right																						
10: LIB @ Terminal 1 Exit	Total	Total																						
11: I-70 WB @ Airflight Dr	NB	Left	532	13.1	5.0	383	37	B	469	14.2	5.3	394	33	B	570	15.1	6.0	402	48	B	537	16.8	6.8	461	52	B
11: I-70 WB @ Airflight Dr	NB	Through	83	1.7	0.6	40	0	A	120	2.7	0.9	52	1	A	87	2.2	0.9	50	1	A	139	3.0	1.0	71	1	A
11: I-70 WB @ Airflight Dr	SEB	Right	233	15.4	9.6	246	17	B	313	20.3	13.1	415	37	C	256	16.1	10.2	266	20	B	339	27.8	18.8	561	71	C
11: I-70 WB @ Airflight Dr	SEB	Right	46	9.1	4.5	249	18	A	96	13.8	7.8	417	38	B	49	10.5	5.5	269	21	B	101	20.9	13.2	564	72	C
11: I-70 WB @ Airflight Dr	WB	Left	178	41.5	32.7	164	33	D	251	43.5	34.0	199	49	D	190	41.4	32.5	194	35	D	261	42.6	33.0	277	52	D
11: I-70 WB @ Airflight Dr	WB	Right	14	27.3	19.4	176	18	C	20	32.9	23.4	210	38	C	15	30.1	21.2	199	22	C	27	33.8	24.0	289	42	C
11: I-70 WB @ Airflight Dr	Total	Total	1,086	17.4	10.4	383	14	B	1,269	20.7	12.9	445	22	C	1,167	18.6	11.1	403	16	B	1,404	23.5	14.8	593	32	C
12: I-70 EB @ Pear Tree Ln	SEB	Left	374	7.5	3.7	199	12	A	279	7.0	3.8	170	9	A	395	8.1	4.0	206	14	A	323	8.4	4.6	197	13	A
12: I-70 EB @ Pear Tree Ln	EB	Through	146	39.8	31.1	127	25	D	247	41.0	31.7	191	41	D	150	39.0	30.3	130	24	D	263	39.8	30.3	193	41	D
12: I-70 EB @ Pear Tree Ln	SEB	Right	26	7.0	3.7	199	12	A	26	7.5	3.9	170	9	A	26	6.6	3.2	206	14	A	32	7.5	4.1	197	13	A
12: I-70 EB @ Pear Tree Ln	EB	Right	6	39.6	34.5	127	25	D	12	39.2	33.1	191	41	D	6	35.4	30.7	130	24	D	12	31.4	25.7	193	41	C
12: I-70 EB @ Pear Tree Ln	SEB	Right	48	1.9	0.3	34	0	A	60	2.0	0.4	52	0	A	44	1.9	0.5	28	0	A	72	2.4	0.6	79	0	A
12: I-70 EB @ Pear Tree Ln	WB	Left	54	32.6	27.0	132	11	C	51	28.8	22.6	135	8	C	57	29.8	24.1	122	10	C	60	28.7	22.4	157	10	C
12: I-70 EB @ Pear Tree Ln	WB	Through	93	31.2	23.9	175	17	C	159	30.0	22.3	248	30	C	100	32.0	24.6	187	19	C	184	30.2	22.6	270	36	C
12: I-70 EB @ Pear Tree Ln	NEB	Right	36	7.1	0.8	55	1	A	64	7.5	0.9	93	2	A	40	6.9	0.7	65	1	A	70	7.5	1.0	97	2	A
12: I-70 EB @ Pear Tree Ln	Total	Total	783	17.9	12.7	204	11	B	898	21.8	15.8	252	15	C	818	17.9	12.6	229	11	B	1,016	21.4	15.3	276	17	C
13: Airflight Dr @ Pear Tree Ln	NB	Left	6	0.0	0.0	121	16	A	0	0.0	0.0	143	22	A	7	0.0	0.0	127	18	A	0	0.0	0.0	157	23	A
13: Airflight Dr @ Pear Tree Ln	NB	Through	44	46.9	38.6	121	16	D	68	46.2	37.8	143	22	D	52	48.2	39.8	127	18	D	71	46.8	38.4	157	23	D
13: Airflight Dr @ Pear Tree Ln	NB	Right	6	42.8	36.0	121	16	D	10	49.5	42.3	143	22	D	5	35.3	28.4	127	18	D	11	46.2	39.2	157	23	D
13: Airflight Dr @ Pear Tree Ln	EB	Left	312	19.6	14.1	206	32	B	315	18.0	12.5	190	27	B	329	20.8	15.2	184	35	C	391	17.8	12.2	213	32	B
13: Airflight Dr @ Pear Tree Ln	EB	Through	197	15.8	9.6	226	22	B	256	15.6	9.6	283	24	B	208	17.2	10.7	253	25	B	244	14.8	9.0	285	22	B
13: Airflight Dr @ Pear Tree Ln	EB	Right	47	14.4	10.1	226	22	B	21	15.7	11.1	283	24	B	48	14.5	9.9	253	25	B	21	13.7	9.7	285	22	B
13: Airflight Dr @ Pear Tree Ln	SB	Left	165	19.2	13.7	213	26	B	260	44.6	35.1	363	86	D	178	20.2	14.1	264	31	C	248	46.8	37.4	390	85	D
13: Airflight Dr @ Pear Tree Ln	SB	Through	62	20.9	13.8	213	26	C	33	45.7	35.2	363	86	D	83	20.7	13.6	264	31	C	31	47.0	36.6	390	85	D
13: Airflight Dr @ Pear Tree Ln	SB	Right	120	1.9	0.2	213	26	A	153	3.9	1.4	363	86	A	128	2.7	0.6	264	31	A	181	4.2	1.6	390	85	A
13: Airflight Dr @ Pear Tree Ln	WB	Left	12	56.2	49.5	54	4	E	12	49.1	42.7	49	3	D	13	51.9	45.3	51	4	D	12	55.2	48.7	51	4	E
13: Airflight Dr @ Pear Tree Ln	WB	Through	21	44.5	34.6	64	5	D	58	44.0	33.3	118	14	D	22	46.3	36.4	73	6	D	63	44.2	33.0	133	15	D
13: Airflight Dr @ Pear Tree Ln	WB	Right	276	2.2	0.2	93	1	A	221	2.9	0.6	123	2	A	294	2.3	0.2	92	1	A	232	3.8	0.9	168	3	A
13: Airflight Dr @ Pear Tree Ln	Total	Total	1,268	15.1	10.4	248	15	B	1,407	22.1	16.1	374	25	C	1,367	16.0	11.0	289	17	B	1,505	21.8	15.9	393	26	C
14: Pear Tree Ln @ Edmundson Rd	NB	Left	122	32.7	26.8	187	25	C	147	43.3	36.7	227	41	D	132	33.2	27.2	192	28	C	153	42.8	36.2	229	43	D
14: Pear Tree Ln @ Edmundson Rd	NB	Right	52	5.5	0.5	73	2	A	51	6.8	1.1	74	2	A	54	5.3	0.5	67	2	A	54	7.0	1.2	74	3	A
14: Pear Tree Ln @ Edmundson Rd	EB	Through	260	7.4	3.2	219	9	A	401	6.3	1.8	251	11	A	277	6.5	2.5	224	8	A	360	6.3	1.9	256	9	A
14: Pear Tree Ln @ Edmundson Rd	WB	Through	267	6.9	3.1	164	8	A	311	4.8	1.7	162	6	A	284	7.3	3.4	165	9	A	330	5.0	1.8	211	7	A
14: Pear Tree Ln @ Edmundson Rd	Total	Total	701	11.5	7.1	239	11	B	910	11.8	7.4	258	15	B	747	11.5	7.0	235	12	B	897	12.1	7.7	283	15	B
15: LIB @ Terminal 2 Exit	EB	Through	97	2.1	1.1	56	1	A	142	5.5	3.2	80	3	A	103	2.6	1.5	54	1	A	165	6.3	3.7	98	4	A
15: LIB @ Terminal 2 Exit	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	WB	Through	357	1.7	0.9	85	2	A	533	2.4	1.3	97	4	A	384	1.7	0.9	83	2	A	551	2.4	1.3	96	4	A
15: LIB @ Terminal 2 Exit	Total	Total	454	1.8	1.0	89	0	A	675	3.1	1.7	101	1	A	487	1.9	1.0	85	1	A	716	3.3	1.9	108	1	A
16: LIB @ Terminal 2 Parking*	EB	Through	98	1.0	0.5	30	0	A	143	2.8	1.5	66	2	A	103	0.9	0.4	41	0	A	164	2.7	1.5	69	2	A
16: LIB @ Terminal 2 Parking*	SB	Left	0	0.0	0.0	0	0	A	37	36.6	29.3	83	8	D	0	0.0	0.0	0	0	A	39	38.2	31.1	80	8	D
16: LIB @ Terminal 2 Parking*	SB	Right	31	41.7	35.3	62	7	D	36	35.8	30.2	64	6	D	35	40.3	34.1	73	8	D	36	36.8	31.0	60	7	D
16: LIB @ Terminal 2 Parking*	WB	Through	325	0.3	0.1	51	0	A	497	0.5	0.2	72	1	A	349	0.3	0.1	49	0	A	517	0.5	0.2	69	1	A
16: LIB @ Terminal 2 Parking*	Total	Total	454	41.7	35.3	74	2	D	713	36.2	29.7	91	4	D	487	40.3	34.1	77	2	D	756	37.5	31.1	92	4	D
17: LIB @ Terminal 2 Entrance	EB	Left	63	19.7	13.9	81	6	B	99	30.9	24.0	118	15	C	66	19.4	13.6	91	6	B	114	29.0	22.0	117	15	C
17: LIB @ Terminal 2 Entrance	EB	Through	36	0.1	0.0	8	0	A	80	0.4	0.1	20	0	A	37	0.1	0.0	7	0	A	88	0.5	0.1	24	0	A
17: LIB @ Terminal 2 Entrance	SB	Left	6	74.9	68.9	38	3	E	6	70.7	65.2	30	2	E	5	74.6	68.8	37	2	E	6	70.5	64.7	37	3	E
17: LIB @ Terminal 2 Entrance	SB	Right	128	12.9	0.6	184	14	B	159	15.6	0.6	208	21	B	137	13.5	0.6	196	15	B	162	15.5	0.7	213	21	B
17: LIB @ Terminal 2 Entrance	WB	Through	197	10.6	7.2	116	8	B	337	12.3	8.1	173	15	B	212	11.5	7.8	125	10	B	355	12.8	8.4	162	17	B
17: LIB @ Terminal 2 Entrance	WB	Right	53	10.8	8.2	82	3	B	49	11.8	8.9	72	3	B	54	10.5	8.0	74	3	B	51	11.9	9.0	73	3	B
17: LIB @ Terminal 2 Entrance	Total	Total	483	12.4	6.7	184	6	B	730	14.7	8.3	211	9	B	511	12.7	6.7	196	6	B	776	14.8	8.3	213	10	B
18: Air Cargo Rd @ Lot E*	EB	Through	114	0.0	0.0	0	0	A	147	0.1	0.0	0	0	A	120	0.0	0.0	0	0	A	164	0.1	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	SB	Right	8	1.7	0.1	13	0	A	10	1.6	0.1	15	0	A	12	1.5	0.1	15	0	A	10	1.8	0.1	21	0	A
18: Air Cargo Rd @ Lot E*	WB	Through	125	0.3	0.0	0	0	A	153	0.5	0.0	0	0	A	129	0.4	0.0	0	0	A	158	0.6	0.1	0	0	A
18: Air Cargo Rd @ Lot E*	WB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	Total	Total	247	15.2	0.0	13	0	B	310	0.6	0.0	15	0	A	261	0.5	0.0	15	0	A	332	0.6	0.1	21	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Left	77	0.6	0.0	0	0	A	94	0.7	0.0	0	0	A	78	0.6	0.0	0	0	A	100	0.7	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Right	56	0.8	0.0	0	0	A	66	0.8	0.0	0	0	A	54	0.8	0.0	0	0	A	71	0.8	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	EB	Through	115	0.1	0.0	0	0	A	147	0.2	0.0	0	0	A	121	0.1	0.0	0	0	A	165	0.2	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	EB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Left	34	0.6	0.0	0	0	A	47	0.6	0.0	0	0	A	31	0.6	0.0	0	0	A	52	0.6	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Through	50	0.1	0.0	0	0	A	59	0.1	0.0	0	0	A	52	0.1	0.0	0	0	A	58	0.2	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	Total	Total	332	0.0	0.0	0	0	A	413	0.4	0.0	0	0	A	336	0.3	0.0	0	0	A	446	0.4	0.0	0	0	A
20: I-70 SOR @ Natural Bridge Rd	NB	Through	45	29.4	22.7	200	20	C	96	36.7	28.1	344	47	D	46	28.9	22.2	202	21	C	98	37.8	29.0	356	49	D
20: I-70 SOR @ Natural Bridge Rd	NB	Left	67	27.8	21.4	200	20	C	63	35.8	27.8	344	47	D	68	28.6	22.1	202	21	C	63	35.8	27.6	356	49	D
20: I-70 SOR @ Natural Bridge Rd	NB	Right	112	6.5	2.9	25	0	A	181	14.4	8.1	48	0	B	115	6.8	3.1	29	0	A	184	14.7	8.0	38	0	B
20: I-70 SOR @ Natural Bridge Rd	EB	Through	318	12.1	6.8	156	17	B	383	13.9	8.1	198	23	B	319	12.1	6.8	150	17	B	389	13.6	7.9	189	23	B
20: I-70 SOR @ Natural Bridge Rd	EB	Right	22	13.1	8.8	156	17	B	32	14.3	9.4	198	23	B	22	11.8	7.7	150	17	B	31	15.1	10.1	189	23	B
20: I-70 SOR @ Natural Bridge Rd	WB	Left	127	28.6	22.7	151	21	C	180	33.6	26.9	206	36	C	131	29.1	23.0	159	22	C	182	33.4	26.6	221	37	C
20: I-70 SOR @ Natural Bridge Rd	WB	Through	175	5.0	2.1	100	3	A	345	5.8	2.4	152	8	A	178	5.0	2.2	102	3	A	349	6.0	2.5	149	8	A
20: I-70 SOR @ Natural Bridge Rd	WB	Right	110	5.3	2.3	86	2	A	185	5.5	2.3	112	4	A	113	4.5	1.9	72	2	A	187	5.3	2.2	104	4	A
20: I-70 SOR @ Natural Bridge Rd	Total	Total	976	13.5	8.9	203	11	B	1,465	15.9	10.5	344	20	B	992	13.5	8.9	202	11	B	1,483	15.9	10.5	356	20	B

All Vissim Results

Intersection Ops Alt 2

			2032 Alt 2 AM						2032 Alt 2 PM						2037 Alt 2 AM						2037 Alt 2 PM					
Intersection	Approach	Movement	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS	Volume	Delay (sec)	Delay Stopped (sec)	Queue Length Max (ft)	Queue Length Average (ft)	LOS
1: Natural Bridge Rd @ Lot D*	NB	Left	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A	0	0.0	0.0	0.0	0.0	A
1: Natural Bridge Rd @ Lot D*	NB	Right	16	5.4	0.2	59	1	A	14	6.9	0.6	61	1	A	16	5.5	0.2	63	1	A	18	6.8	0.7	61	1	A
1: Natural Bridge Rd @ Lot D*	EB	Through	177	0.1	0.0	0	0	N/A	501	0.5	0.0	0	0	N/A	180	0.1	0.0	0	0	N/A	506	0.7	0.2	0	0	N/A
1: Natural Bridge Rd @ Lot D*	EB	Right	18	0.6	0.0	0	0	N/A	16	0.6	0.0	0	0	N/A	19	0.6	0.0	0	0	N/A	17	0.6	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	WB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
1: Natural Bridge Rd @ Lot D*	WB	Through	225	0.1	0.0	0	0	N/A	262	0.1	0.0	0	0	N/A	228	0.1	0.0	0	0	N/A	268	0.1	0.0	0	0	N/A
1: Natural Bridge Rd @ Lot D*	Total	Total	436	5.4	0.2	59	0	A	793	6.9	0.6	61	0	A	443	5.5	0.2	63	0	A	809	6.8	0.7	61	0	A
2: I-70 WB @ Natural Bridge Rd	NB	Left	117	31.9	24.8	256	24	C	114	33.0	25.7	233	24	C	118	28.3	20.4	206	20	C	116	35.1	27.4	384	28	D
2: I-70 WB @ Natural Bridge Rd	NB	Right	721	6.3	0.6	208	5	A	645	7.4	1.1	186	4	A	753	6.4	0.4	153	5	A	679	8.3	1.4	300	8	A
2: I-70 WB @ Natural Bridge Rd	EB	Through	183	37.3	26.5	137	26	D	457	42.9	30.4	273	71	D	186	15.7	8.0	96	9	B	57	13.1	7.4	39	0	B
2: I-70 WB @ Natural Bridge Rd	EB	Right	10	4.9	2.3	14	0	A	57	13.0	7.0	51	1	B	10	3.1	0.6	21	0	A	467	44.2	31.1	302	74	D
2: I-70 WB @ Natural Bridge Rd	WB	Left	384	32.5	23.4	241	46	C	511	32.3	22.4	247	56	C	394	26.2	17.2	222	37	C	152	7.9	4.8	284	60	A
2: I-70 WB @ Natural Bridge Rd	WB	Through	108	6.8	3.8	241	46	A	147	7.6	4.7	247	56	A	110	4.9	1.8	222	37	A	542	33.9	22.4	284	60	C
2: I-70 WB @ Natural Bridge Rd	Total	Total	1,523	18.6	11.5	323	18	B	1,931	24.1	15.6	316	26	C	1,571	14.0	7.1	261	13	B	2,013	25.2	15.9	480	30	C
3: Natrual Bridge Rd @ Cypress Rd	NB	Left	140	38.5	32.4	142	27	D	172	38.8	32.5	139	30	D	138	23.3	17.0	114	15	C	178	38.4	31.9	150	32	D
3: Natrual Bridge Rd @ Cypress Rd	NB	Right	303	2.6	0.0	5	0	A	314	2.8	0.0	13	0	A	360	2.6	0.0	0	0	A	337	3.0	0.0	10	0	A
3: Natrual Bridge Rd @ Cypress Rd	EB	Through	661	15.9	10.5	299	43	B	632	14.4	9.3	444	49	B	695	16.6	9.3	285	43	B	663	15.5	10.1	330	53	B
3: Natrual Bridge Rd @ Cypress Rd	EB	Right	242	1.4	0.2	205	6	A	465	3.9	0.6	350	13	A	247	1.7	0.3	192	6	A	477	4.0	0.6	270	16	A
3: Natrual Bridge Rd @ Cypress Rd	WB	Left	349	17.8	8.5	329	32	B	458	22.7	10.9	441	61	C	376	14.3	6.6	338	26	B	493	25.4	12.1	524	79	C
3: Natrual Bridge Rd @ Cypress Rd	WB	Through	353	3.9	1.1	132	3	A	486	7.1	2.2	323	11	A	365	5.4	1.6	212	5	A	520	9.0	3.0	471	20	A
3: Natrual Bridge Rd @ Cypress Rd	Total	Total	2,048	12.0	7.2	348	18	B	2,527	12.8	7.1	476	27	B	2,181	10.8	5.5	344	16	B	2,668	14.0	7.6	524	33	B
4: I-70 EB @ Cypress Rd	NB	Left	10	5.8	3.6	21	0	A	11	7.6	4.7	28	0	A	11	6.1	3.8	24	0	A	12	6.2	3.4	26	0	A
4: I-70 EB @ Cypress Rd	NB	Through	150	32.2	25.0	187	23	C	191	32.7	24.8	274	37	C	150	15.2	9.8	137	9	B	192	32.7	24.6	287	37	C
4: I-70 EB @ Cypress Rd	NB	Right	145	8.0	4.6	38	0	A	267	11.9	6.2	80	0	B	145	3.0	0.9	36	0	A	269	11.9	6.3	91	0	B
4: I-70 EB @ Cypress Rd	NB	Left	20	44.9	39.3	89	9	D	61	41.9	36.1	113	18	D	22	28.4	22.9	72	6	C	64	41.9	36.0	131	18	D
4: I-70 EB @ Cypress Rd	NB	Through	13	43.7	37.0	89	9	D	11	45.2	38.9	113	18	D	14	28.0	21.7	72	6	C	12	37.6	31.3	131	18	D
4: I-70 EB @ Cypress Rd	NB	Right	11	0.9	0.0	6	0	A	16	1.2	0.1	29	0	A	12	1.0	0.1	12	0	A	18	1.3	0.1	26	0	A
4: I-70 EB @ Cypress Rd	SB	Left	359	7.3	3.2	206	10	A	534	12.1	5.8	330	32	B	384	9.2	4.0	271	16	A	567	13.5	6.7	421	41	B
4: I-70 EB @ Cypress Rd	SB	Through	188	3.5	2.1	70	3	A	324	4.6	2.8	107	6	A	193	6.1	3.2	105	4	A	333	5.5	3.3	109	7	A
4: I-70 EB @ Cypress Rd	SB	Right	45	0.9	0.1	0	0	A	63	1.4	0.3	116	1	A	47	1.3	0.2	35	0	A	69	2.0	0.7	191	3	A
4: I-70 EB @ Cypress Rd	WB	Left	51	45.3	38.8	148	20	D	69	45.7	38.9	164	22	D	45	30.2	23.9	119	12	C	72	44.3	37.4	175	24	D
4: I-70 EB @ Cypress Rd	WB	Through	21	47.6	38.9	148	20	D	10	39.3	31.1	164	22	D	20	31.9	23.5	119	12	C	11	43.3	34.7	175	24	D
4: I-70 EB @ Cypress Rd	WB	Right	271	3.2	0.1	121	1	A	235	3.5	0.3	141	2	A	327	3.6	0.1	158	2	A	259	3.7	0.4	182	2	A
4: I-70 EB @ Cypress Rd	Total	Total	1,284	11.7	7.9	226	5	B	1,792	14.0	9.0	378	9	B	1,370	8.6	4.5	271	4	A	1,878	14.4	9.2	433	10	B
5: LIB @ T1 Cell Phone Lot*	EB	Left	30	3.4	0.7	127	1	A	37	5.1	1.5	135	1	A	32	3.4	0.8	154	1	A	40	5.5	1.7	173	2	A
5: LIB @ T1 Cell Phone Lot*	EB	Through	928	0.5	0.0	19	0	N/A	902	0.6	0.0	34	0	N/A	1,021	0.5	0.0	55	0	N/A	953	0.7	0.0	76	0	N/A
5: LIB @ T1 Cell Phone Lot*	SB	Left	4	0.0	0.0	45	0	A	8	0.0	0.0	49	1	A	8	0.0	0.0	48	0	A	14	0.0	0.0	57	1	A
5: LIB @ T1 Cell Phone Lot*	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	8	0.0	0.0	50	0	A
5: LIB @ T1 Cell Phone Lot*	WB	Through	705	0.2	0.0	0	0	N/A	952	0.3	0.0	5	0	N/A	744	0.2	0.0	0	0	N/A	1,007	0.3	0.0	8	0	N/A
5: LIB @ T1 Cell Phone Lot*	WB	Right	33	0.0	0.0	0	0	N/A	38	0.0	0.0	5	0	N/A	45	0.0	0.0	0	0	N/A	38	0.0	0.0	8	0	N/A
5: LIB @ T1 Cell Phone Lot*	Total	Total	1,700	3.0	0.0	127	0	A	1,937	4.2	0.0	135	0	A	1,850	2.7	0.0	154	0	A	2,060	3.6	0.0	173	1	A
6: I-70 WB @ LIB (E of Cypress)	EB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
6: I-70 WB @ LIB (E of Cypress)	EB	Through	938	0.6	0.1	53	0	A	915	0.8	0.1	79	1	A	1,029	1.2	0.3	210	2	A	973	0.9	0.2	84	1	A
6: I-70 WB @ LIB (E of Cypress)	EB	Right																								
6: I-70 WB @ LIB (E of Cypress)	SB	Left	4	60.0	52.9	40	2	E	14	50.9	44.3	57	4	D	8	56.0	49.1	51	3	E	22	50.6	44.1	83	6	D
6: I-70 WB @ LIB (E of Cypress)	SB	Through																								
6: I-70 WB @ LIB (E of Cypress)	SB	Right	0	0.0	0.0	0	0	A	6	8.2	1.5	59	1	A	0	0.0	0.0	25	0	A	6	9.6	3.1	85	1	A
6: I-70 WB @ LIB (E of Cypress)	WB	Left																								
6: I-70 WB @ LIB (E of Cypress)	WB	Through	739	0.7	0.2	136	1	A	985	1.6	0.5	184	4	A	790	0.9	0.2	127	1	A	1,041	1.9	0.5	240	5	A
6: I-70 WB @ LIB (E of Cypress)	WB	Right	27	1.2	0.1	133	1	A	28	1.7	0.2	181	4	A	34	1.1	0.0	124	1	A	32	1.7	0.2	237	5	A
6: I-70 WB @ LIB (E of Cypress)	Total	Total	1,708	0.8	0.2	136	1	A	1,948	1.6	0.6	184	2	A	1,861	1.3	0.5	227	1	A	2,074	2.0	0.8	240	3	A
7: LIB @ Lot B*	NB	Left	6	0.0	0.0	31	0	A	0	0.0	0.0	13	0	A	5	0.0	0.0	22	0	A	0	0.0	0.0	24	0	A
7: LIB @ Lot B*	NB	Right	15	3.2	1.4	32	0	A	32	2.8	1.1	36	0	A	15	2.8	1.0	33	0	A	32	3.4	1.3	39	0	A
7: LIB @ Lot B*	EB	Through	944	0.5	0.0	0	0	N/A	926	0.5	0.0	7	0	N/A	1,039	0.4	0.0	0	0	N/A	991	0.6	0.0	21	0	N/A
7: LIB @ Lot B*	EB	Right	0	0.0	0.0	0	0	N/A	5	0.0	0.0	7	0	N/A	0	0.0	0.0	0	0	N/A	6	0.0	0.0	21	0	N/A
7: LIB @ Lot B*	WB	Left	38	0.0	0.0	54	1	A	0	0.0	0.0	0	0	A	42	0.0	0.0	64	1	A	0	0.0	0.0	0	0	A
7: LIB @ Lot B*	WB	Through	760	0.2	0.0	0	0	N/A	1,013	0.2	0.0	0	0	N/A	820	0.2	0.0	0	0	N/A	1,073	0.2	0.0	0	0	N/A
7: LIB @ Lot B*	Total	Total	1,763	0.8	0.4	55	0	A	1,976	2.8	1.1	40	0	A	1,921	0.7	0.2	65	0	A	2,102	3.4	1.3	53	0	A
8: LIB @ Lambert Field Dr	NB	Left																								
8: LIB @ Lambert Field Dr	NB	Through																								
8: LIB @ Lambert Field Dr	NB	Right																								
8: LIB @ Lambert Field Dr	EB	Left 1																								
8: LIB @ Lambert Field Dr	EB	Left 2																								
8: LIB @ Lambert Field Dr	EB	Through																								
8: LIB @ Lambert Field Dr	EB	Right																								
8: LIB @ Lambert Field Dr	SEB	Left																								
8: LIB @ Lambert Field Dr	SEB	Right																								
8: LIB @ Lambert Field Dr	SEB	Through																								
8: LIB @ Lambert Field Dr	SWB	Left																								
8: LIB @ Lambert Field Dr	SWB	Right																								
8: LIB @ Lambert Field Dr	SWB	Through																								
8: LIB @ Lambert Field Dr	WB	Left																								
8: LIB @ Lambert Field Dr	WB	Through																								
8: LIB @ Lambert Field Dr	WB	Right 2																								
8: LIB @ Lambert Field Dr	WB	Right 1																								
8: LIB @ Lambert Field Dr	Total	Total																								
9: Air Cargo Dr @ Terminal 1 Entrance		Left	0	0.0	0.0	120	0	A	0	0.0	0.0	144	1	A	0	0.0	0.0	132	0	A	0	0.0	0.0	141	1	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Through	0	0.0	0.0	122	0	A	0	0.0	0.0	143	1	A	0	0.0	0.0	134	0	A	0	0.0	0.0	141	1	A
9: Air Cargo Dr @ Terminal 1 Entrance	NB	Right	115	0.4	0.0	85	0	A	147	0.6	0.0	116	1	A	120	0.4	0.0	89	0	A	164	0.7	0.0	101	1	A
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Left	134	40.9	33.8	187	33	D	165	40.7	33.2	226	41	D	142	41.7	34.2	203	36	D	169	40.1	32.5	220	42	D
9: Air Cargo Dr @ Terminal 1 Entrance	WB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
9: Air Cargo Dr @ Terminal 1 Entrance	Total	Total	249	22.2	18.2	187	7	C	312	21.8	17.6	226	9	C	262	22.8	18.6	211	7	C	333	20.7	16.5	220	9	C
10: LIB @ Terminal 1 Exit	NB 1	Left																								
10: LIB @ Terminal 1 Exit	NB 1	Through																								
10: LIB @ Terminal 1 Exit	NB 1	Right																								
10: LIB @ Terminal 1 Exit	NB 2	Right																								
10: LIB @ Terminal 1 Exit	EB	Through																								

All Vissim Results

Intersection Ops Alt 2

10: LIB @ Terminal 1 Exit	EB	Right 2																						
10: LIB @ Terminal 1 Exit	EB	Right 1																						
10: LIB @ Terminal 1 Exit	WB	Left 1																						
10: LIB @ Terminal 1 Exit	WB	Left 2																						
10: LIB @ Terminal 1 Exit	WB	Through																						
10: LIB @ Terminal 1 Exit	SB - A	Left																						
10: LIB @ Terminal 1 Exit	SB - A	Through																						
10: LIB @ Terminal 1 Exit	SB - A	Right																						
10: LIB @ Terminal 1 Exit	SB - D	Left																						
10: LIB @ Terminal 1 Exit	SB - D	Through																						
10: LIB @ Terminal 1 Exit	SB - D	Right																						
10: LIB @ Terminal 1 Exit	Total	Total																						
11: I-70 WB @ Airflight Dr	NB	Left	532	12.8	4.8	374	36	B	469	14.4	5.6	421	35	B	570	15.3	6.1	378	49	B	537	17.4	7.3	471	53	B
11: I-70 WB @ Airflight Dr	NB	Through	83	1.8	0.6	41	0	A	121	2.4	0.8	52	1	A	87	1.9	0.7	38	0	A	139	2.6	0.9	59	1	A
11: I-70 WB @ Airflight Dr	SEB	Right	234	14.6	9.0	235	16	B	312	21.6	13.9	501	42	C	258	16.6	10.6	291	21	B	340	29.8	20.2	550	79	C
11: I-70 WB @ Airflight Dr	SEB	Right	46	9.1	4.6	237	17	A	96	15.3	8.8	503	43	B	49	10.9	5.8	293	23	B	101	22.9	14.4	553	81	C
11: I-70 WB @ Airflight Dr	WB	Left	178	41.6	32.8	167	32	D	252	43.7	34.2	208	50	D	190	41.5	32.6	182	35	D	260	42.3	32.8	231	52	D
11: I-70 WB @ Airflight Dr	WB	Right	14	25.8	18.0	175	17	C	20	34.0	24.3	221	40	C	15	32.1	22.9	194	22	C	26	35.2	25.1	242	42	D
11: I-70 WB @ Airflight Dr	Total	Total	1,087	17.1	10.2	376	13	B	1,270	21.2	13.4	522	23	C	1,169	18.9	11.2	385	17	B	1,403	24.3	15.3	596	34	C
12: I-70 EB @ Pear Tree Ln	SEB	Left	374	7.5	3.7	176	12	A	280	7.2	3.9	163	9	A	396	7.7	3.9	209	13	A	322	8.1	4.5	187	12	A
12: I-70 EB @ Pear Tree Ln	EB	Through	146	39.2	30.6	122	24	D	247	41.0	31.7	184	41	D	150	39.5	30.8	126	25	D	263	39.1	29.8	180	41	D
12: I-70 EB @ Pear Tree Ln	SEB	Right	27	6.9	3.7	176	12	A	26	6.4	3.2	163	9	A	26	5.9	2.9	209	13	A	32	6.6	3.6	187	12	A
12: I-70 EB @ Pear Tree Ln	EB	Right	6	39.0	33.8	122	24	D	12	38.5	32.6	184	41	D	6	37.0	32.4	126	25	D	12	35.0	29.1	180	41	C
12: I-70 EB @ Pear Tree Ln	SEB	Right	48	1.7	0.1	35	0	A	61	2.2	0.5	67	0	A	44	2.2	0.5	45	0	A	72	2.4	0.5	59	0	A
12: I-70 EB @ Pear Tree Ln	WB	Left	54	32.2	26.8	107	10	C	51	28.9	22.7	119	8	C	57	31.3	25.7	141	11	C	59	30.7	24.6	155	10	C
12: I-70 EB @ Pear Tree Ln	WB	Through	93	33.5	26.0	172	19	C	159	29.5	21.7	259	30	C	99	30.7	23.4	199	19	C	184	30.6	23.1	340	38	C
12: I-70 EB @ Pear Tree Ln	NEB	Right	36	7.1	0.8	65	1	A	64	7.4	0.9	83	2	A	40	6.7	0.5	67	1	A	70	7.5	1.0	93	2	A
12: I-70 EB @ Pear Tree Ln	Total	Total	784	18.0	12.8	189	11	B	900	21.7	15.7	269	15	C	818	17.8	12.5	241	12	B	1,014	21.4	15.3	342	17	C
13: Airflight Dr @ Pear Tree Ln	NB	Left	6	0.0	0.0	121	16	A	0	0.0	0.0	147	23	A	7	0.0	0.0	127	18	A	0	0.0	0.0	161	24	A
13: Airflight Dr @ Pear Tree Ln	NB	Through	44	47.1	38.8	121	16	D	67	47.9	39.5	147	23	D	52	48.4	40.0	127	18	D	70	47.1	38.7	161	24	D
13: Airflight Dr @ Pear Tree Ln	NB	Right	6	42.8	36.0	121	16	D	10	49.9	42.6	147	23	D	5	35.3	28.4	127	18	D	11	46.3	39.3	161	24	D
13: Airflight Dr @ Pear Tree Ln	EB	Left	312	19.7	14.2	178	31	B	316	18.7	13.1	202	27	B	330	20.0	14.6	203	32	C	391	18.2	12.5	200	32	B
13: Airflight Dr @ Pear Tree Ln	EB	Through	197	16.1	9.8	229	22	B	256	15.8	9.6	279	26	B	209	17.0	10.4	286	25	B	244	15.3	9.3	291	23	B
13: Airflight Dr @ Pear Tree Ln	EB	Right	47	14.2	9.7	229	22	B	20	15.5	10.7	279	26	B	48	15.1	10.6	286	25	B	21	13.6	9.1	291	23	B
13: Airflight Dr @ Pear Tree Ln	SB	Left	165	19.6	14.1	231	26	B	260	44.5	34.8	418	87	D	180	20.6	14.4	262	32	C	248	46.2	36.9	406	84	D
13: Airflight Dr @ Pear Tree Ln	SB	Through	62	21.2	14.2	231	26	C	33	46.7	36.1	418	87	D	84	20.7	13.6	262	32	C	31	46.0	35.5	406	84	D
13: Airflight Dr @ Pear Tree Ln	SB	Right	120	2.0	0.2	231	26	A	151	5.1	2.4	418	87	A	128	2.5	0.5	262	32	A	180	4.4	1.7	406	84	A
13: Airflight Dr @ Pear Tree Ln	WB	Left	12	56.2	49.5	54	4	E	12	52.9	46.5	50	3	D	13	51.9	45.3	51	4	D	12	48.1	41.6	48	3	D
13: Airflight Dr @ Pear Tree Ln	WB	Through	21	44.5	34.6	64	5	D	58	44.1	33.4	118	14	D	22	46.4	36.4	73	6	D	63	45.1	33.6	133	15	D
13: Airflight Dr @ Pear Tree Ln	WB	Right	276	2.2	0.2	91	1	A	221	3.0	0.6	132	2	A	294	2.3	0.2	94	1	A	232	3.7	0.9	175	3	A
13: Airflight Dr @ Pear Tree Ln	Total	Total	1,268	15.2	10.5	247	15	B	1,404	22.6	16.5	420	26	C	1,372	15.8	10.9	313	17	B	1,503	21.9	15.9	406	26	C
14: Pear Tree Ln @ Edmundson Rd	NB	Left	122	32.7	26.8	187	25	C	147	43.3	36.7	227	41	D	132	33.1	27.1	192	28	C	153	42.8	36.2	229	43	D
14: Pear Tree Ln @ Edmundson Rd	NB	Right	52	5.7	0.7	71	2	A	51	6.8	1.1	74	2	A	54	5.4	0.5	67	2	A	54	6.9	1.2	75	3	A
14: Pear Tree Ln @ Edmundson Rd	EB	Through	260	7.1	3.0	210	8	A	402	6.3	1.8	248	11	A	290	6.6	2.6	223	8	A	356	6.5	2.1	244	10	A
14: Pear Tree Ln @ Edmundson Rd	WB	Through	267	6.9	3.1	164	8	A	311	4.8	1.7	162	6	A	284	7.3	3.4	165	9	A	330	5.0	1.8	211	7	A
14: Pear Tree Ln @ Edmundson Rd	Total	Total	701	11.4	7.0	239	11	B	911	11.8	7.4	254	15	B	760	11.4	7.0	237	8	B	893	12.2	7.8	281	10	B
15: LIB @ Terminal 2 Exit	EB	Through	98	2.0	1.0	52	1	A	142	5.8	3.4	90	3	A	103	2.5	1.4	51	1	A	164	6.1	3.5	92	4	A
15: LIB @ Terminal 2 Exit	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Left	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	SB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
15: LIB @ Terminal 2 Exit	WB	Through	357	1.6	0.8	81	2	A	533	2.5	1.4	95	4	A	384	1.8	0.9	82	2	A	552	2.4	1.3	104	4	A
15: LIB @ Terminal 2 Exit	Total	Total	455	1.7	0.9	83	0	A	675	3.2	1.8	109	1	A	487	1.9	1.0	83	1	A	716	3.2	1.8	113	1	A
16: LIB @ Terminal 2 Parking*	EB	Through	98	1.1	0.6	31	0	A	142	2.8	1.6	68	2	A	103	0.9	0.4	32	0	A	164	2.7	1.4	69	2	A
16: LIB @ Terminal 2 Parking*	SB	Left	0	0.0	0.0	0	0	A	37	37.1	29.8	83	8	D	0	0.0	0.0	0	0	A	39	39.1	31.9	80	8	D
16: LIB @ Terminal 2 Parking*	SB	Right	31	41.7	35.3	63	7	D	36	36.3	30.6	64	7	D	35	41.5	35.2	73	8	D	36	37.8	31.9	63	7	D
16: LIB @ Terminal 2 Parking*	WB	Through	325	0.3	0.1	49	0	A	498	0.5	0.2	72	1	A	349	0.3	0.1	51	0	A	517	0.4	0.2	71	1	A
16: LIB @ Terminal 2 Parking*	Total	Total	454	41.7	35.3	73	2	D	713	36.7	30.2	95	4	D	487	41.5	35.2	76	2	D	756	38.5	31.9	91	4	D
17: LIB @ Terminal 2 Entrance	EB	Left	63	20.9	15.1	84	6	C	99	30.5	23.7	122	14	C	66	20.0	14.2	84	6	B	114	29.8	22.9	110	16	C
17: LIB @ Terminal 2 Entrance	EB	Through	36	0.2	0.1	4	0	A	80	0.5	0.1	28	0	A	37	0.1	0.1	9	0	A	88	0.6	0.2	26	0	A
17: LIB @ Terminal 2 Entrance	SB	Left	6	74.8	68.7	38	3	E	6	70.6	65.2	30	2	E	5	75.7	70.1	38	2	E	6	71.1	65.4	38	3	E
17: LIB @ Terminal 2 Entrance	SB	Right	128	12.8	0.5	188	14	B	159	15.6	0.7	208	21	B	137	13.6	0.6	201	16	B	162	15.3	0.7	212	21	B
17: LIB @ Terminal 2 Entrance	WB	Through	197	11.2	7.6	116	9	B	339	12.3	8.1	177	15	B	212	11.2	7.6	125	9	B	355	12.9	8.5	158	17	B
17: LIB @ Terminal 2 Entrance	WB	Right	53	11.6	8.9	85	3	B	49	11.7	8.8	71	3	B	55	9.4	7.0	68	3	A	51	12.1	9.2	75	4	B
17: LIB @ Terminal 2 Entrance	Total	Total	483	12.9	7.0	188	6	B	732	14.6	8.2	211	9	B	512	12.6	6.6	201	6	B	776	14.9	8.5	212	10	B
18: Air Cargo Rd @ Lot E*	EB	Through	115	0.0	0.0	0	0	A	147	0.0	0.0	0	0	A	120	0.1	0.0	0	0	A	163	0.0	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	SB	Right	8	1.3	0.0	7	0	A	10	1.6	0.1	15	0	A	12	1.5	0.1	13	0	A	10	2.1	0.2	20	0	A
18: Air Cargo Rd @ Lot E*	WB	Through	125	0.3	0.0	0	0	A	153	0.5	0.0	0	0	A	129	0.4	0.0	0	0	A	158	0.5	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	WB	Right	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	0	0	A
18: Air Cargo Rd @ Lot E*	Total	Total	248	0.4	0.0	7	0	A	310	0.6	0.0	15	0	A	261	0.5	0.0	13	0	A	331	0.6	0.1	20	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Left	77	0.9	0.0	30	0	A	94	0.7	0.0	0	0	A	78	6.8	0.2	0	0	A	99	7.0	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell'	NB	Right	56	0.8	0.0	0	0	A	66	0.8	0.0	0	0	A	54	0.8	0.0	0	0	A	71	0.9	0.0	0	0	A
19: Air Cargo Rd @ James S McDonnell'	EB	Through	116	11.7	0.3	8	0	B	147	0.2	0.0	0	0	A	121	11.9	0.3	7	0	B	165	13.3	0.3	40	0	B
19: Air Cargo Rd @ James S McDonnell'	EB	Right	0	0.0	0.0	8	0	A	0	0.0	0.0	0	0	A	0	0.0	0.0	7	0	A	0	0.0	0.0	40	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Left	34	6.3	0.2	96	3	A	47	0.6	0.0	0	0	A	31	6.2	0.2	0	0	A	52	6.2	0.2	0	0	A
19: Air Cargo Rd @ James S McDonnell'	WB	Through	50	10.1	0.2	0	0	B	59	0.1	0.0	0	0	A	52	10.2	0.2	0	0	B	58	10.5	0.2	0	0	B
19: Air Cargo Rd @ James S McDonnell'	Total	Total	333	7.7	0.2	96	1	A	413	0.4	0.0	0	0	A	336	9.5	0.2	7	0	A	445	10.2	0.3	40	0	B
20: I-70 SOR @ Natural Bridge Rd	NB	Through	45	27.9	21.3	210	19	C	96	37.5	28.7	334	48	D	46	28.5	21.8	200	20	C	98	37.6	28.8	354	50	D
20: I-70 SOR @ Natural Bridge Rd	NB	Left	67	26.5	20.3	210	19	C	63	36.4	28.3	334	48	D	68	27.7	21.3	200	20	C	63	36.7	28.5	354	50	D
20: I-70 SOR @ Natural Bridge Rd	NB	Right	112	6.1	2.5	26	0	A	182	14.6	8.0	40	0	B	115	6.5	2.7	29	0	A	183	15.0	8.3	45	0	B
20: I-70 SOR @ Natural Bridge Rd	EB	Through	319	12.3	6.9	182	18	B	384	13.7	7.9	187	23	B	319	12.3	7.0	174	17	B	387	13.6	7.9	198	23	B
20: I-70 SOR @ Natural Bridge Rd	EB	Right	22	13.2	8.6	182	18	B	32	15.2	10.0	187	23	B	22	12.4	8.2	174	17	B	31	13.9	9.2	198	23	B
20: I-70 SOR @ Natural Bridge Rd	WB	Left	127	28.5	22.6	165	21	C	180	33.3	26.5	215	35	C	130	29.8	23.7	157	22	C	183	34.2	27.3	213	37	C
20: I-70 SOR @ Natural Bridge Rd	WB	Through	175	4.6	1.9	99	3	A	345	5.8	2.3	158	8	A	178	5.3	2.3	100	3	A	348	5.8	2.4	158	8	A
20: I-70 SOR @ Natural Bridge Rd	WB	Right	111	4.5	1.9	86	2	A	185	5.5	2.3	107	4	A	113	4.5	1.8	73	2	A	188	5.5	2.3	108	4	A
20: I-70 SOR @ Natural Bridge Rd	Total	Total	978	13.2	8.6	221	10	B	1,467	15.9	10.5	334	20	B	991	13.6	9.0	210	11	B	1,481	16.0	10.6	354	20	B

All Vissim Results

Intersection Ops Summary

Intersection	Existing				2032 No Build				2032 Alt 1				2032 Alt 2				2037 No Build				2037 Alt 1				2037 Alt 2			
	LOS		Delay		LOS		Delay		LOS		Delay		LOS		Delay		LOS		Delay		LOS		Delay		LOS		Delay	
Natural Bridge Rd @ Lot D*	A	(A)	5.5	(6.1)	A	(A)	5.4	(6.3)	A	(A)	5.4	(6.9)	A	(A)	5.4	(6.9)	A	(A)	5.5	(6.3)	A	(A)	5.5	(6.9)	A	(A)	5.5	(6.8)
I-70 WB @ Natural Bridge Rd	A	(A)	7.8	(8.9)	A	(A)	7.9	(9.4)	B	(C)	11.4	(24.4)	B	(C)	18.6	(24.1)	A	(A)	8.0	(9.4)	B	(C)	14.0	(25.2)	B	(C)	14.0	(25.2)
Cypress Rd & Natural Bridge Rd	A	(A)	4.8	(5.5)	A	(A)	4.6	(5.9)	B	(B)	12.6	(14.5)	B	(B)	12.0	(12.8)	A	(A)	4.7	(6.1)	B	(B)	12.7	(16.6)	B	(B)	10.8	(14)
I-70 EB @ Cypress Rd	A	(A)	6.2	(9.4)	A	(A)	6.5	(9.8)	B	(B)	11.5	(14.1)	B	(B)	11.7	(14)	A	(A)	6.9	(9.8)	B	(B)	11.2	(14.4)	A	(B)	8.6	(14.4)
LIB @ T1 Cell Phone Lot*	A	(A)	0.8	(0.9)	A	(A)	0.8	(0.9)	A	(A)	3.5	(3.9)	A	(A)	3.0	(4.2)	A	(A)	0.7	(0.8)	A	(A)	2.8	(3.3)	A	(A)	2.7	(3.6)
I-70 WB @ LIB (E of Cypress)	A	(A)	1.6	(3.1)	A	(A)	1.8	(3.1)	A	(A)	0.7	(1.6)	A	(A)	0.8	(1.6)	A	(A)	1.5	(3.1)	A	(A)	1.0	(1.9)	A	(A)	1.3	(2)
LIB @ Lot B*	A	(A)	1.1	(1.1)	A	(A)	1.1	(1.1)	A	(A)	0.8	(2.8)	A	(A)	0.8	(2.8)	A	(A)	1.2	(1.1)	A	(A)	0.8	(3)	A	(A)	0.7	(3.4)
LIB @ Lambert Field Dr	A	(A)	3.5	(4.6)	A	(A)	3.8	(5.4)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	A	(A)	4.0	(5.4)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
Air Cargo Rd @ Terminal 2 Entrance	A	(A)	6.4	(8.6)	A	(A)	6.7	(8.8)	C	(C)	22.6	(21.8)	C	(C)	22.2	(21.8)	A	(A)	6.9	(8.6)	C	(C)	22.7	(20.9)	C	(C)	22.8	(20.7)
LIB @ Terminal 1 Exit	C	(C)	29.5	(29.4)	C	(C)	29.8	(29.7)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	C	(C)	30.1	(30.1)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)	N/A	(N/A)
I-70 WB @ Airlfight Dr	B	(B)	13.4	(17.4)	B	(B)	13.9	(17.9)	B	(C)	17.4	(20.7)	B	(C)	17.1	(21.2)	B	(B)	14.2	(18.2)	B	(C)	18.6	(23.5)	B	(C)	18.9	(24.3)
I-70 EB @ Pear Tree Ln	B	(B)	16.5	(19.2)	B	(B)	16.8	(19.3)	B	(C)	17.9	(21.8)	B	(C)	18.0	(21.7)	B	(B)	16.9	(19.8)	B	(C)	17.9	(21.4)	B	(C)	17.8	(21.4)
Airflight Dr @ Pear Tree Ln	B	(C)	16.8	(20.8)	B	(C)	17.8	(22.2)	B	(C)	15.1	(22.1)	B	(C)	15.2	(22.6)	B	(C)	18.2	(22.6)	B	(C)	16.0	(21.8)	B	(C)	15.8	(21.9)
Pear Tree Ln @ Edmunson Rd	A	(A)	9.8	(9.6)	B	(B)	10.2	(10.1)	B	(B)	11.5	(11.8)	B	(B)	11.4	(11.8)	B	(B)	10.3	(10.1)	B	(B)	11.5	(12.1)	B	(B)	11.4	(12.2)
LIB @ Terminal 2 Exit	B	(B)	18.0	(15.6)	B	(B)	18.2	(15.6)	A	(A)	1.8	(3.1)	A	(A)	1.7	(3.2)	B	(B)	18.5	(15.7)	A	(A)	1.9	(3.3)	A	(A)	1.9	(3.2)
LIB @ Terminal 2 Parking *	E	(E)	44.5	(37.5)	E	(E)	41.1	(36.3)	D	(D)	41.7	(36.2)	D	(D)	41.7	(36.7)	E	(E)	40.3	(36.6)	D	(D)	40.3	(37.5)	D	(D)	41.5	(38.5)
LIB @ Terminal 2 Entrance	C	(B)	20.8	(16.1)	C	(B)	23.9	(17.4)	B	(B)	12.4	(14.7)	B	(B)	12.9	(14.6)	C	(B)	23.9	(17.9)	B	(B)	12.7	(14.8)	B	(B)	12.6	(14.9)
Air Cargo Rd @ Lot E*	A	(A)	1.4	(1.7)	A	(A)	1.4	(1.6)	A	(A)	0.4	(0.6)	A	(A)	0.4	(0.6)	A	(A)	1.4	(1.8)	A	(A)	0.5	(0.6)	A	(A)	0.5	(0.6)
Air Cargo Rd @ James S McDonnell*	A	(A)	6.5	(6.4)	A	(A)	5.9	(5.9)	A	(A)	0.3	(0.4)	A	(A)	7.7	(0.4)	A	(A)	6.0	(6.2)	A	(A)	0.3	(0.4)	A	(B)	9.5	(10.2)
I-70 SOR @ Natural Bridge Rd	B	(B)	13.1	(15.4)	B	(B)	13.4	(15.7)	B	(B)	13.5	(15.9)	B	(B)	13.2	(15.9)	B	(B)	13.4	(15.8)	B	(B)	13.5	(15.9)	B	(B)	13.6	(16)

*Stop controlled intersection level of service follows methodlogies described in Chapter 20 & Chapter 21 of the 6th Edition HCM

Red intersections are owned by the Missouri Department of Transportation

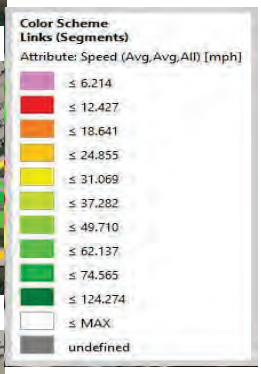
All Vissim Results

C-D AM Speeds

Existing AM

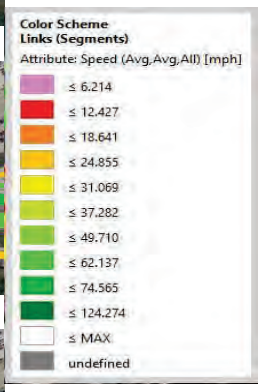
2032 No Build AM

2037 No Build AM



2032 Alternative 1 AM

2037 Alternative 1 AM



2032 Alternative 2 AM

2037 Alternative 2 AM

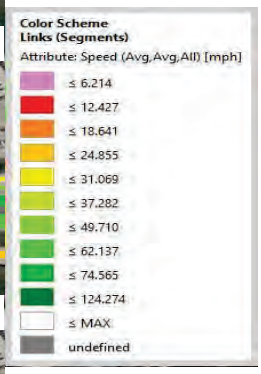
All Vissim Results

C-D PM Speeds

Existing AM

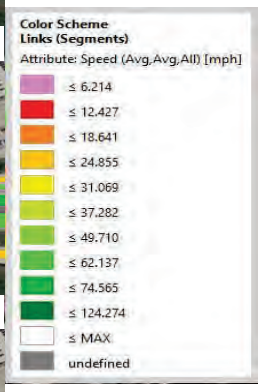
2032 No Build AM

2037 No Build AM



2032 Alternative 1 AM

2037 Alternative 1 AM



2032 Alternative 2 AM

2037 Alternative 2 AM

APPENDIX F

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 Swingley Ridge Rd., Suite 300 T. 636 537 5585
Chesterfield, Missouri 63017 F. 636 537 0275
Missouri State Engineering Corporation #001523

N

800' 400' 0' 800'
1"=800'

STUDY AREA

NEW AIRPORT TERMINAL
NEW GARAGE
NEW ACCESS ROADS

RELOCATED LIB
I-70 ON-RAMP
I-70 OFF-RAMP
INTERSTATE 70
AIR FLIGHT DR

INTERSTATE 170

AIRFLIGHT DR

INTERSTATE 70

INTERSTATE 70

AUXILIARY LANE FROM
AIR FLIGHT DR TO CYPRESS EXIT

MO 180

MO 67

MO 115

NATURAL BRIDGE RD
RESTRIPING
AND/OR LANE
WIDENING
CYPRESS RD
INTERSTATE 70

CYPRESS INTERSECTION

LAMBERT INTERNATIONAL BLVD
INTERSTATE 70

RAMP REMOVAL

I-70 AIRPORT STUDY AREA

EDSI
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16141 Swingley Ridge Rd., Suite 300 T. 636 537 5585
Chesterfield, Missouri 63017 F. 636 537 0275
Missouri State Engineering Corporation #001523

AIR FLIGHT DR

A. NORTH BOUND AIR FLIGHT DR MUST CONTINUE ON TO EASTBOUND LIB
B. LIB ACCESS TO INTERSTATE 70
C. STRUCTURE OVER AIR FLIGHT DR
D. AIRPORT LOOP RD ACCESS RAMP TO AIR FLIGHT DR.

LEGEND

NEW CONSTRUCTION

SURFACE PARKING 110,000 SF
GARAGE 459,000 SF
GROUND TRANSPORTATION CENTER (GTC)
UNCOVERED GTC
CBP Secondary & Support
BSD seating & concessions
FIS exit
el. 150
SHOPPES DR
100 50 0 100
1"=100'-0"
Lambert International Boulevard
Lambert International Boulevard
Ummerd Road
Ummerd Road
INTERSTATE 70
Route 70
AIR FLIGHT DR
Air Flight Drive
Air Flight Drive
Edmundson Road
Hurl Bridge Road
A
B
C
D

AIR FLIGHT DR

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 Swingley Ridge Rd., Suite 300 T. 636 537 5585
Chesterfield, Missouri 63017 F. 636 537 0275
Missouri State Engineering Corporation #001523

100 50 0 100'
1"=100'-0"

AUXILIARY LANE NOTES

A. REMOVE RAMP TO I-70.
B. RELOCATE OVERHEAD CANTILEVER TRUSS.
C. 1700' LOW BARRIER WALL / MSE WALL FOR SLOPE RETENTION WITH DRAINAGE GUTTER.

LEGEND

- EXISTING TO BE DEMOLISHED
- DEMOLISHED IN PREVIOUS STAGE
- NEW CONSTRUCTION
- CONSTRUCTED IN PREVIOUS STAGE

Lambert International Boulevard
Unnamed Road
Route 70
INTERSTATE 70
4450' AUXILIARY LANE ADDITION
Pear Tree Drive
Saint Nicholas Court
A
B
C

AUXILIARY LANE ADDITION TO INTERSTATE 70

(CONSTRUCTION DURATION 6 MONTHS)

EDSI
ENGINEERING DESIGN SOURCE, INC.
16141 Swingley Ridge Rd., Suite 300 T. 636 537 5585
Chesterfield, Missouri 63017 F. 636 537 0275
Missouri State Engineering Corporation #001523

100 50 0 100'
1"=100'-0"

CYPRESS IMPROVEMENT NOTES

A. RECONFIGURE NATURAL BRIDGE RD FOR DUAL LEFT TURN LANES.
B. RECONFIGURE SOUTHBOUND CYPRESS FOR TWO LANES.
C. RECONFIGURE THE WESTBOUND I-70 ON RAMP TO TWO RECEIVING LANES.

LEGEND

- EXISTING TO BE DEMOLISHED
- DEMOLISHED IN PREVIOUS STAGE
- NEW CONSTRUCTION
- CONSTRUCTED IN PREVIOUS STAGE

NATURAL BRIDGE RD
LAMBERT INTERNATIONAL BLVD
INTERSTATE 70
CYPRESS RD
A
B
C

CYPRESS ROAD IMPORVEMENTS

(CONSTRUCTION DURATION 6 MONTHS)

APPENDIX G

2022 Existing

Output Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	JLY	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2022				
Last year of analysis:	2022				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	116.2	0.7	2.0	10.8	18.1	84.5
Estimated average crash freq. during Study Period, crashes/yr:	116.2	0.7	2.0	10.8	18.1	84.5

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	20	100.8	0.6	1.6	8.6	15.0	75.1
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2022	116.2	0.7	2.0	10.8	18.1	84.5
	2023						
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.5	0.0	0.0	0.2	0.3	1.0
	Rear-end crashes:	51.2	0.3	0.8	4.4	7.6	38.1
	Sideswipe crashes:	18.2	0.1	0.2	1.0	1.8	15.1
	Other multiple-vehicle crashes:	2.1	0.0	0.0	0.2	0.4	1.4
	Total multiple-vehicle crashes:	73.3	0.4	1.1	5.8	10.2	55.8
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	31.7	0.2	0.7	3.6	5.7	21.5
	Crashes with other object:	3.7	0.0	0.0	0.2	0.3	3.2
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.4	0.1	0.2	1.1	1.8	3.2
	Total single-vehicle crashes:	43.0	0.3	1.0	5.0	8.0	28.7
	Total crashes:	116.2	0.7	2.0	10.8	18.1	84.5

Evaluation Site Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	JLY	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2022	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2022				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Xypress Exit	I-70 Wb Xypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2032 No Build

Output Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032				
Last year of analysis:	2032				

Crash Data Description				
Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	Total	K	A	B	C	PDO
Estimated number of crashes during Study Period, crashes:	118.8	0.8	2.1	11.0	18.5	86.5
Estimated average crash freq. during Study Period, crashes/yr:	118.8	0.8	2.1	11.0	18.5	86.5

Crashes by Facility Component	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	20	103.4	0.6	1.6	8.7	15.4	77.1
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:	2032	118.8	0.8	2.1	11.0	18.5	86.5
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						

Distribution of Crashes for Entire Facility

Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.5	0.0	0.0	0.2	0.3	1.0
	Rear-end crashes:	52.7	0.3	0.8	4.5	7.9	39.3
	Sideswipe crashes:	18.8	0.1	0.2	1.1	1.9	15.5
	Other multiple-vehicle crashes:	2.1	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	75.4	0.4	1.1	6.0	10.5	57.5
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	32.0	0.3	0.7	3.6	5.8	21.7
	Crashes with other object:	3.8	0.0	0.0	0.2	0.3	3.2
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.4	0.1	0.2	1.1	1.8	3.2
	Total single-vehicle crashes:	43.4	0.3	1.0	5.0	8.0	29.0
	Total crashes:	118.8	0.8	2.1	11.0	18.5	86.5

Evaluation Site Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2032				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Cypress Exit	I-70 Wb Cypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2037 No Build

Output Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	JLY	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2037				
Last year of analysis:	2037				

Crash Data Description				
Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	Total	K	A	B	C	PDO
Estimated number of crashes during Study Period, crashes:	120.1	0.8	2.1	11.0	18.7	87.5
Estimated average crash freq. during Study Period, crashes/yr:	120.1	0.8	2.1	11.0	18.7	87.5

Crashes by Facility Component	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	20	104.7	0.6	1.6	8.8	15.6	78.1
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:	2037	120.1	0.8	2.1	11.0	18.7	87.5
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						
	2056						
	2057						
	2058						
	2059						
	2060						

Distribution of Crashes for Entire Facility

Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.6	0.0	0.0	0.2	0.3	1.0
	Rear-end crashes:	53.5	0.3	0.8	4.5	8.0	39.9
	Sideswipe crashes:	19.1	0.1	0.2	1.1	1.9	15.8
	Other multiple-vehicle crashes:	2.1	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	76.5	0.4	1.1	6.0	10.7	58.3
Single vehicle	Crashes with animal:	0.5	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	32.2	0.3	0.7	3.6	5.8	21.8
	Crashes with other object:	3.8	0.0	0.0	0.2	0.3	3.3
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.4	0.1	0.2	1.1	1.8	3.2
	Total single-vehicle crashes:	43.6	0.3	1.0	5.0	8.1	29.2
	Total crashes:	120.1	0.8	2.1	11.0	18.7	87.5

Evaluation Site Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	JLY	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2037	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2037				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Xypress Exit	I-70 Wb Xypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2032 Alternative 1

Output Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032				
Last year of analysis:	2032				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	120.8	0.8	2.1	11.0	18.8	88.2
Estimated average crash freq. during Study Period, crashes/yr:	120.8	0.8	2.1	11.0	18.8	88.2

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	20	105.4	0.6	1.6	8.7	15.6	78.8
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2032	120.8	0.8	2.1	11.0	18.8	88.2
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
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	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.6	0.0	0.0	0.2	0.3	1.0
	Rear-end crashes:	53.4	0.3	0.8	4.4	7.9	39.9
	Sideswipe crashes:	19.1	0.1	0.2	1.1	1.9	15.8
	Other multiple-vehicle crashes:	2.1	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	76.4	0.4	1.1	5.9	10.5	58.4
Single vehicle	Crashes with animal:	0.6	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	32.8	0.3	0.7	3.6	5.9	22.3
	Crashes with other object:	3.9	0.0	0.0	0.2	0.3	3.4
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.5	0.1	0.2	1.1	1.8	3.3
	Total single-vehicle crashes:	44.4	0.4	1.0	5.0	8.2	29.8
	Total crashes:	120.8	0.8	2.1	11.0	18.8	88.2

Evaluation Site Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2032				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Cypress Exit	I-70 Wb Cypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2037 Alternative 1

Output Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032				
Last year of analysis:	2032				

Crash Data Description				
Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	Total	K	A	B	C	PDO
Estimated number of crashes during Study Period, crashes:	122.4	0.8	2.1	11.1	19.0	89.5
Estimated average crash freq. during Study Period, crashes/yr:	122.4	0.8	2.1	11.1	19.0	89.5

Crashes by Facility Component	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	20	107.0	0.6	1.6	8.8	15.8	80.1
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:	2032	122.4	0.8	2.1	11.1	19.0	89.5
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
	2044						
	2045						
	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						

Distribution of Crashes for Entire Facility

Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.6	0.0	0.0	0.2	0.3	1.1
	Rear-end crashes:	54.3	0.3	0.8	4.5	8.0	40.7
	Sideswipe crashes:	19.4	0.1	0.2	1.1	1.9	16.1
	Other multiple-vehicle crashes:	2.2	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	77.8	0.4	1.1	6.0	10.7	59.5
Single vehicle	Crashes with animal:	0.6	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	32.9	0.3	0.7	3.6	6.0	22.4
	Crashes with other object:	4.0	0.0	0.0	0.2	0.3	3.4
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.6	0.1	0.2	1.1	1.8	3.3
	Total single-vehicle crashes:	44.7	0.4	1.0	5.0	8.3	30.0
	Total crashes:	122.4	0.8	2.1	11.1	19.0	89.5

Evaluation Site Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2032				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Cypress Exit	I-70 Wb Cypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2032 Alternative 2

Output Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032				
Last year of analysis:	2032				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	121.2	0.8	2.1	11.0	18.8	88.6
Estimated average crash freq. during Study Period, crashes/yr:	121.2	0.8	2.1	11.0	18.8	88.6

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	20	105.8	0.6	1.6	8.8	15.6	79.2
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2032	121.2	0.8	2.1	11.0	18.8	88.6
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
	2043						
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	2046						
	2047						
	2048						
	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.6	0.0	0.0	0.2	0.3	1.0
	Rear-end crashes:	53.5	0.3	0.8	4.4	7.9	40.1
	Sideswipe crashes:	19.1	0.1	0.2	1.1	1.9	15.8
	Other multiple-vehicle crashes:	2.1	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	76.6	0.4	1.1	5.9	10.5	58.6
Single vehicle	Crashes with animal:	0.6	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	32.9	0.3	0.7	3.6	6.0	22.4
	Crashes with other object:	3.9	0.0	0.0	0.2	0.3	3.4
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.6	0.1	0.2	1.1	1.8	3.3
	Total single-vehicle crashes:	44.7	0.4	1.0	5.1	8.3	30.0
	Total crashes:	121.2	0.8	2.1	11.0	18.8	88.6

Evaluation Site Summary

General Information

Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2032				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Cypress Exit	I-70 Wb Cypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

2037 Alternative 2

Output Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032				
Last year of analysis:	2032				

Crash Data Description				
Freeway segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2018
	Project-level crash data available?	No	Last year of crash data:	2022

Estimated Crash Statistics

Crashes for Entire Facility	Total	K	A	B	C	PDO
Estimated number of crashes during Study Period, crashes:	122.9	0.8	2.1	11.1	19.1	89.9
Estimated average crash freq. during Study Period, crashes/yr:	122.9	0.8	2.1	11.1	19.1	89.9

Crashes by Facility Component	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	20	107.4	0.6	1.6	8.9	15.9	80.4
Ramp segments, crashes:	28	15.4	0.1	0.5	2.2	3.2	9.4
Crossroad ramp terminals, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0

Crashes for Entire Facility by Year	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:	2032	122.9	0.8	2.1	11.1	19.1	89.9
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						
	2041						
	2042						
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	2049						
	2050						
	2051						
	2052						
	2053						
	2054						
	2055						

Distribution of Crashes for Entire Facility

Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.3	0.0	0.0	0.0	0.1	0.1
	Right-angle crashes:	1.6	0.0	0.0	0.2	0.3	1.1
	Rear-end crashes:	54.5	0.3	0.8	4.5	8.0	40.9
	Sideswipe crashes:	19.4	0.1	0.2	1.1	1.9	16.1
	Other multiple-vehicle crashes:	2.2	0.0	0.0	0.2	0.4	1.5
	Total multiple-vehicle crashes:	77.9	0.4	1.1	6.0	10.7	59.7
Single vehicle	Crashes with animal:	0.6	0.0	0.0	0.0	0.0	0.5
	Crashes with fixed object:	33.1	0.3	0.7	3.7	6.0	22.5
	Crashes with other object:	4.0	0.0	0.0	0.2	0.3	3.4
	Crashes with parked vehicle:	0.6	0.0	0.0	0.1	0.1	0.4
	Other single-vehicle crashes	6.6	0.1	0.2	1.1	1.9	3.3
	Total single-vehicle crashes:	44.9	0.4	1.0	5.1	8.4	30.1
	Total crashes:	122.9	0.8	2.1	11.1	19.1	89.9

Evaluation Site Summary

General Information					
Project description:	I-70 STL Airport Safety Analysis				
Analyst:	WLM	Date:	2/23/2024	Area type:	Urban
First year of analysis:	2032	Total length of freeway segments for Study Period (mi):	3.607		
Last year of analysis:	2032				

Site Description

Freeway Segments

Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	6	0.139	SB Lindbergh EB On Ramp	SB Lindbergh EB On Ramp
2	6	0.074	I-70 WB Off Ramp to S Lindbergh	I-70 WB Off Ramp to S Lindbergh
3	6	0.088	Gore to Gore CD - Lindbergh	Gore to Gore CD - Lindbergh
4	6	0.096	Lindbergh Weave	Lindbergh Weave
5	6	0.163	Gore to Gore after weave	Gore to Gore after weave
6	6	0.237	NB Lindbergh WB On Ramp	NB Lindbergh WB On Ramp
7	6	0.191	CD Entrance	CD Entrance
8	6	0.034	I-70 Wb Cypress Exit	I-70 Wb Cypress Exit
9	6	0.067	I-70 WB Cypress Exit	I-70 WB Cypress Exit
10	6	0.172	Cypress to I-70 EB On Ramp	Cypress to I-70 EB On Ramp
11	6	0.470	LIB to I-70 WB On Ramp	LIB to I-70 WB On Ramp
12	6	0.054	I-70 EB Pear tree Off Ramp	I-70 EB Pear tree Off Ramp
13	6	0.133	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
14	6	0.173	Aurflight Loop On Ramp to I-70 EB	Airflight to I-70 EB On Ramp
15	6	0.055	I-70 WB to Airflight Off Ramp	I-70 WB to Airflight Off Ramp
16	6	0.623	Airflight to I-70 EB On Ramp	Airflight to I-70 EB On Ramp
17	6	0.131	Median change	Median change
18	6	0.285	Natural Bridhe On/Of ramps	Natural Bridhe On/Of ramps
19	6	0.094	I-70 WB to LIB Off ramp	I-70 WB to LIB Off ramp
20	6	0.327	LIB&MO115 I-70 EB On Ramp	LIB&MO115 I-70 EB On Ramp

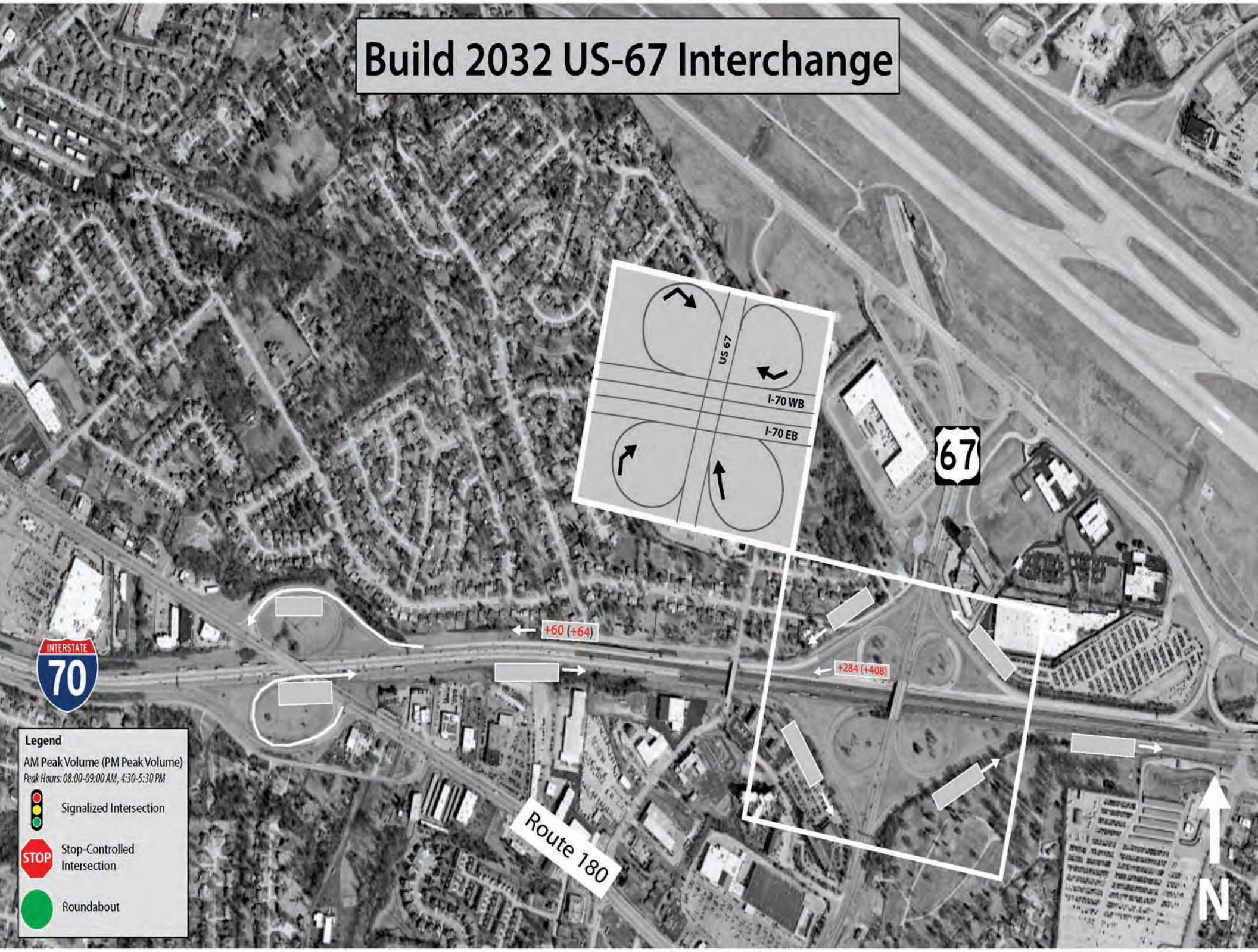
Ramp Segments

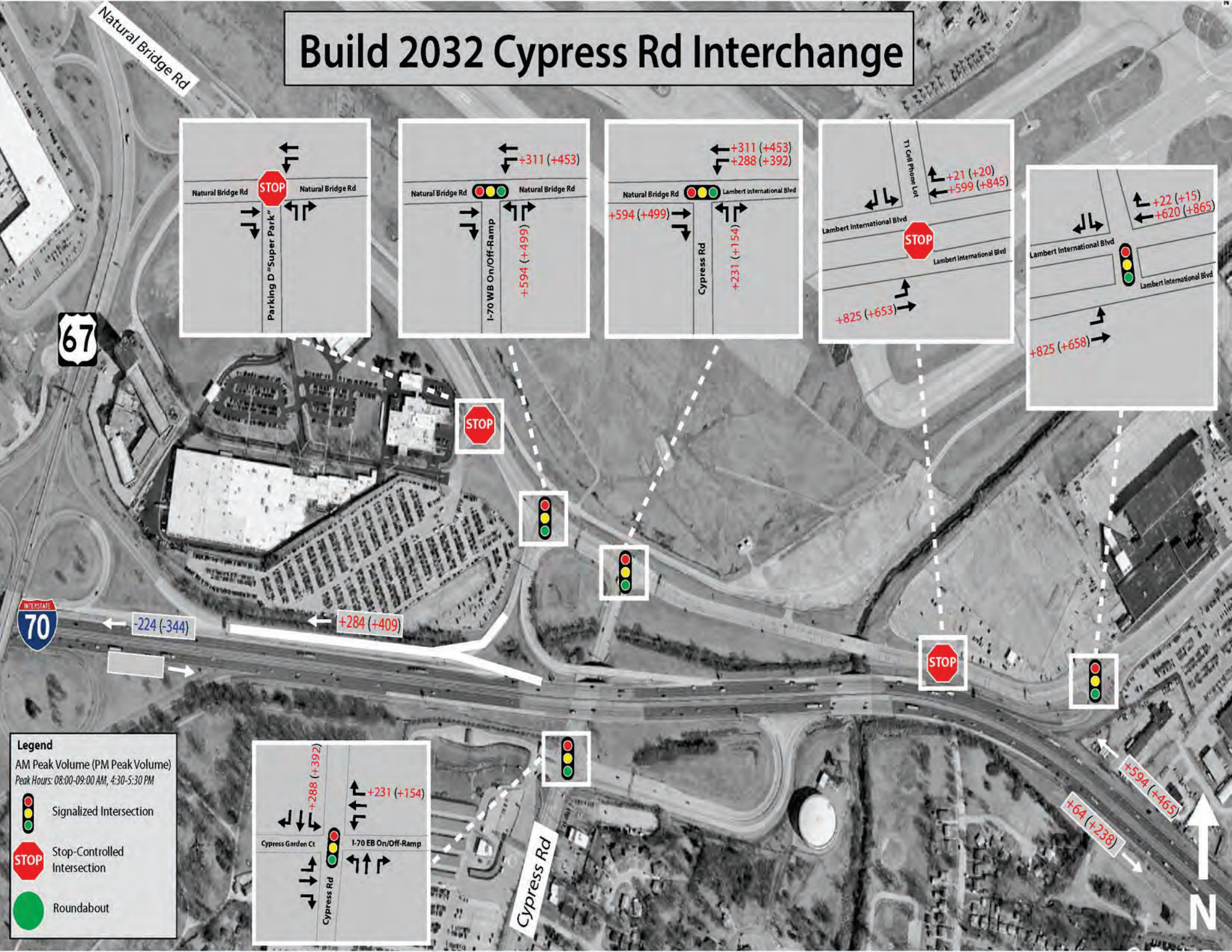
Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	2A. EB I-70 to SB US-67	2A. EB I-70 to SB US-67	21	5C. EB I-70 to Pear Tree	5C. EB I-70 to Pear Tree
2	2B. EB I-70 to NB US-67	2B. EB I-70 to NB US-67	22	5D. Lambert Intl Blvd to WB	5D. Lambert Intl Blvd to WB I-70
3	2C. WB I-70 to NB US-67	2C. WB I-70 to NB US-67	23	5E. WB I-70 to Airflight Dr	5E. WB I-70 to Airflight Dr
4	2D. WB I-70 to SB US-67	2D. WB I-70 to SB US-67	24	8A. EB I-70 to Natural Bridg	8A. EB I-70 to Natural Bridge Rd
5	2E. SB US-67 to WB I-70	2E. SB US-67 to WB I-70	25	8B. WB I-70 to Lambert Intl	8B. WB I-70 to Lambert Intl Blvd
6	2F. SB US-67 to EB I-70	2F. SB US-67 to EB I-70	26	8C. merged EB I-70 On-Ran	8C. merged EB I-70 On-Ramp
7	2G. NB US-67 to EB I-70	2G. NB US-67 to EB I-70	27	8E. WB Natural Bridge Rd t	8E. WB Natural Bridge Rd to EB I-70
8	2H. NB US-67 to WB I-70	2H. NB US-67 to WB I-70	28	8F. Natural Bridge Rd to WE	8F. Natural Bridge Rd to WB I-70
9	CD1. btwn 2E & 2D	CD1. btwn 2E & 2D	29	0	0
10	CD2. btwn 2D & 2H	CD2. btwn 2D & 2H	30	0	0
11	CD3. btwn 2H & 2C	CD3. btwn 2H & 2C	31	0	0
12	CD4. btwn 2C & 4D/CD5	CD4. btwn 2C & 4D/CD5	32	0	0
13	CD5. btwn I-70 & 4D	CD5. btwn I-70 & 4D	33	0	0
14	4A. EB I-70 to Cypress Rd	4A. EB I-70 to Cypress Rd	34	0	0
15	4B. WB I-70 Natural Bridge	4B. WB I-70 Natural Bridge	35	0	0
16	4C. Cypress Rd to EB I-70	4C. Cypress Rd to EB I-70	36	0	0
17	4D. Natural Bridge Rd to WI	4D. Natural Bridge Rd to WE	37	0	0
18	4F. Lambert Intl Blvd to WB	4F. Lambert Intl Blvd to WB	38	0	0
19	5A. SB Airflight Dr to EB I-7(	5A. SB Airflight Dr to EB I-7(	39	0	0
20	5B. NB Airflight Dr to EB I-7(	5B. NB Airflight Dr to EB I-7(	40	0	0

Crossroad Ramp Terminals

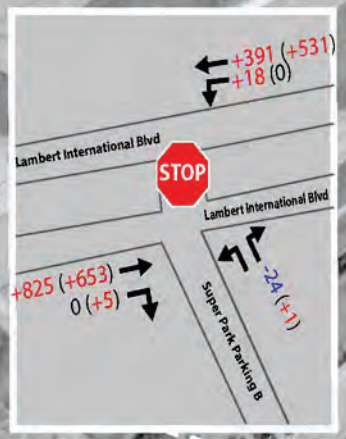
Number	Config.	Control	Crash Period Description	Study Period Description
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0

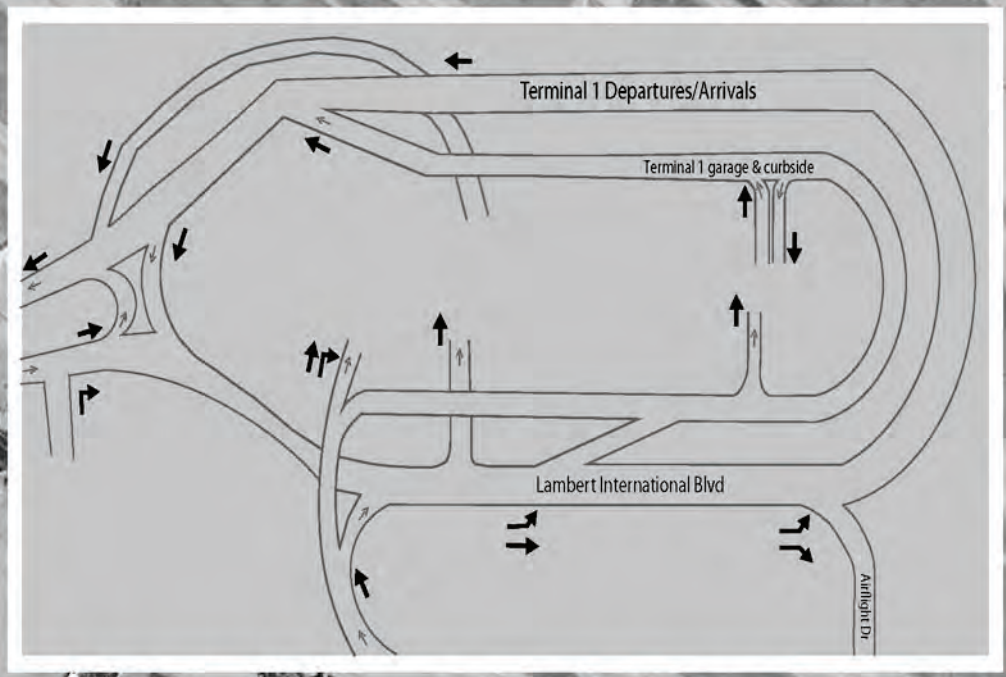
APPENDIX H


Build 2032 US-67 Interchange
US 67
I-70 WB
I-70 EB
67
+60 (+64)
+284 (+408)
INTERSTATE
70
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2032 Cypress Rd Interchange
Natural Bridge Rd
Natural Bridge Rd
STOP
Natural Bridge Rd
Parking D "Super Park"
+311 (+453)
Natural Bridge Rd
Natural Bridge Rd
I-70 WB On/Off-Ramp
+594 (+499)
+311 (+453)
+288 (+392)
Natural Bridge Rd
Lambert International Blvd
+594 (+499)
Cypress Rd
+231 (+154)
T1 Cell Phone Lot
+21 (+20)
+599 (+845)
Lambert International Blvd
STOP
Lambert International Blvd
+825 (+653)
+22 (+15)
+620 (+865)
Lambert International Blvd
Lambert International Blvd
+825 (+658)
67
STOP
INTERSTATE
70
-224 (-344)
+284 (+409)
STOP
+288 (+392)
+231 (+154)
Cypress Garden Ct
I-70 EB On/Off-Ramp
Cypress Rd
Cypress Rd
+594 (+465)
+64 (+238)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

Build 2032 Terminal 1 - Airport Area





STOP

INTERSTATE 70

Terminal 1

+594 (+465)

+64 (+238)

Legend

AM Peak Volume (PM Peak Volume)

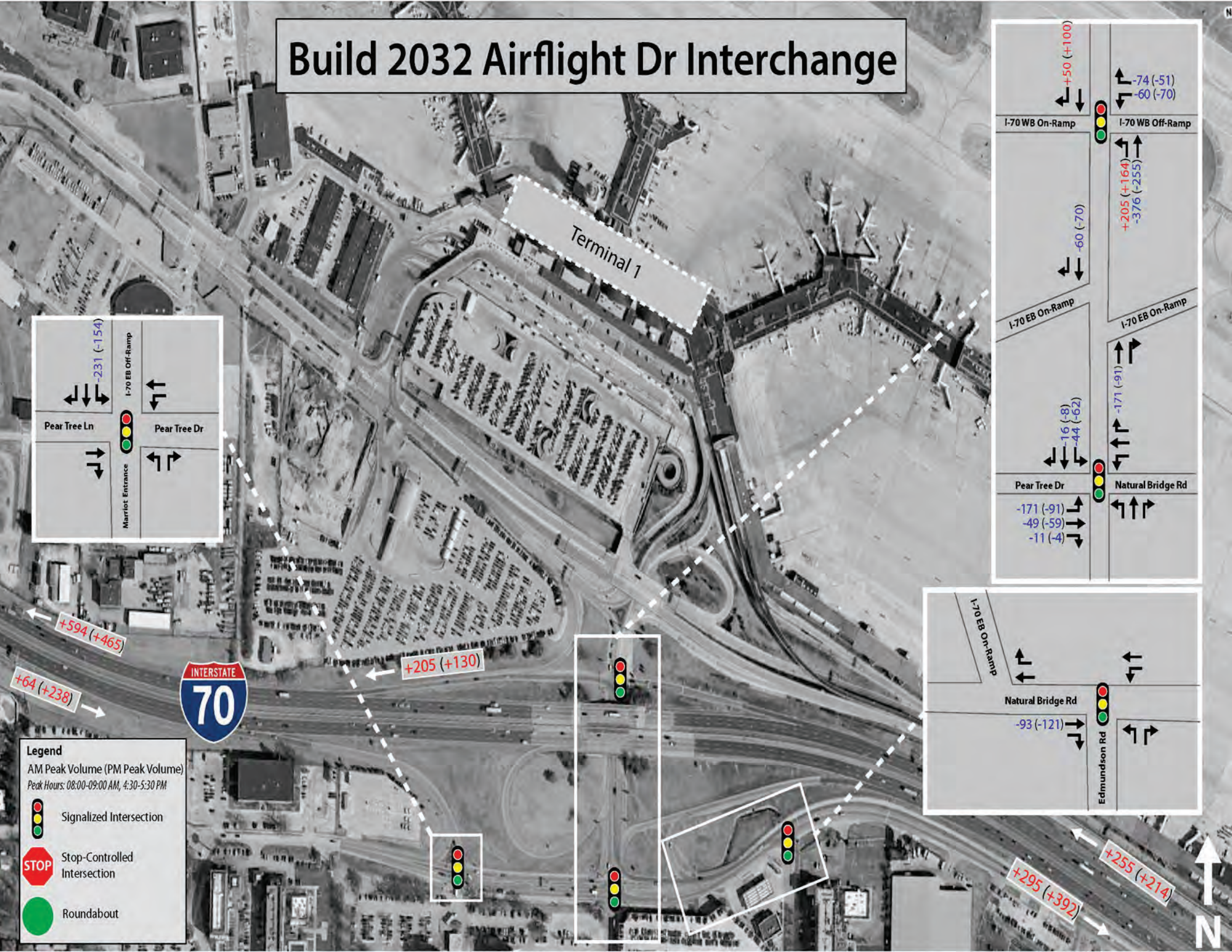
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

Signalized Intersection

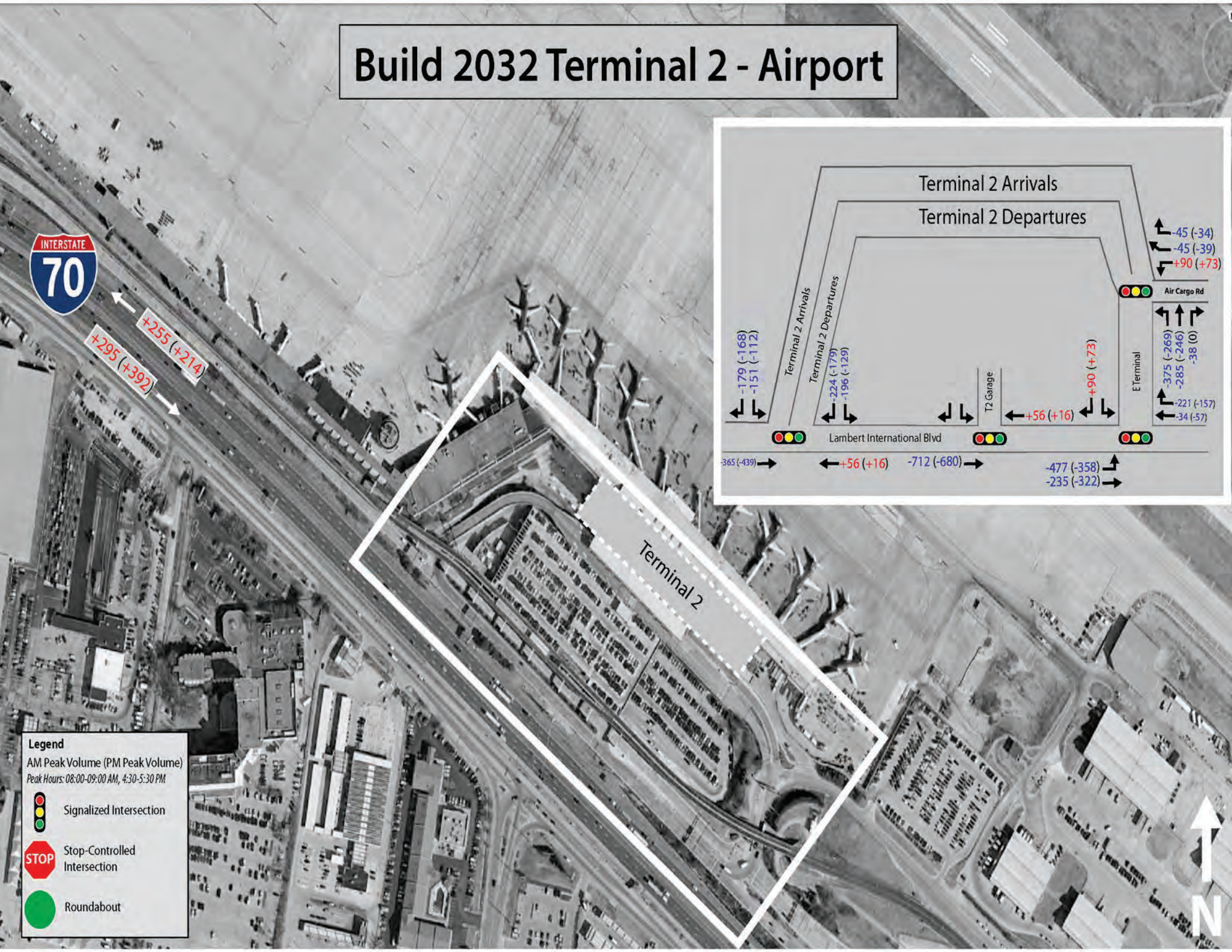
STOP Stop-Controlled Intersection

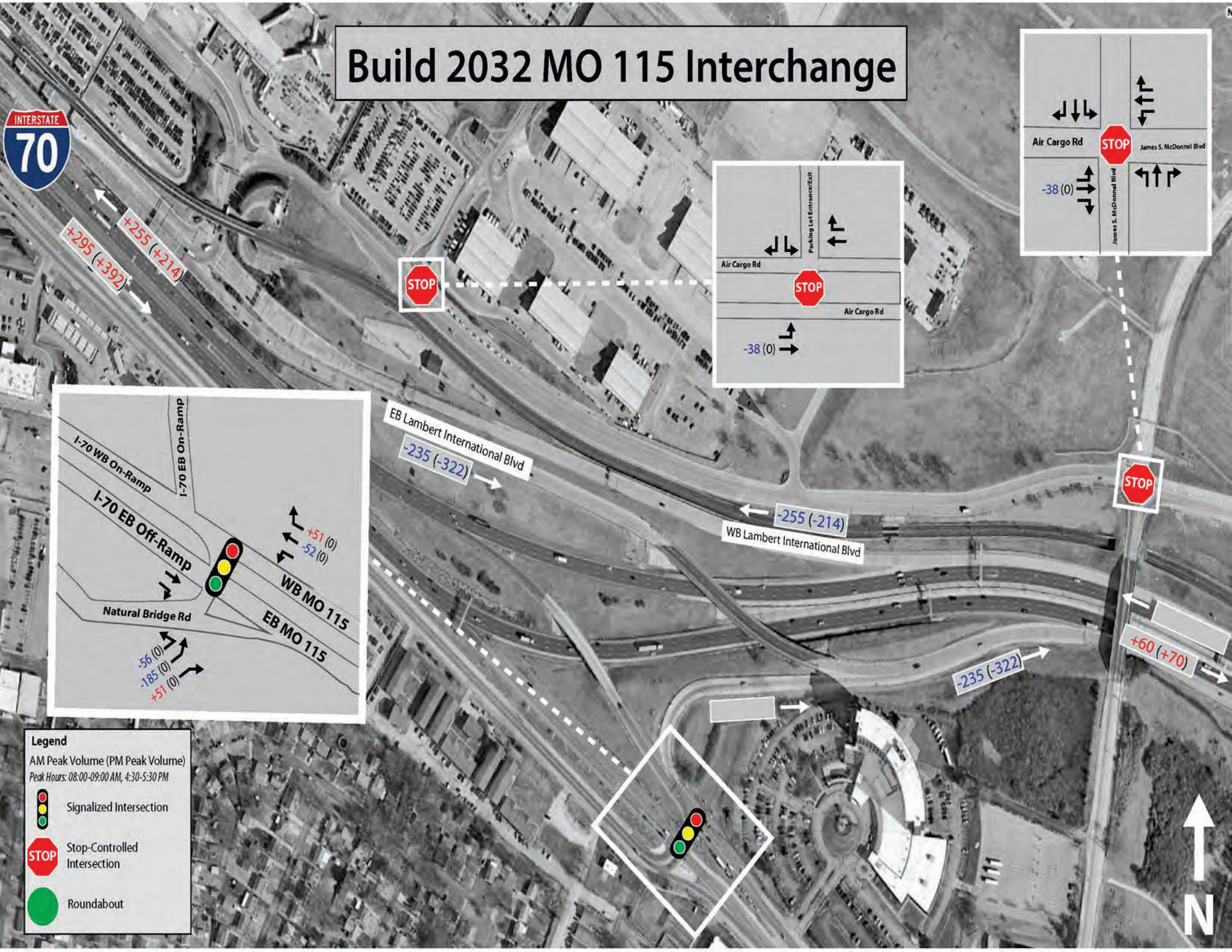
Roundabout

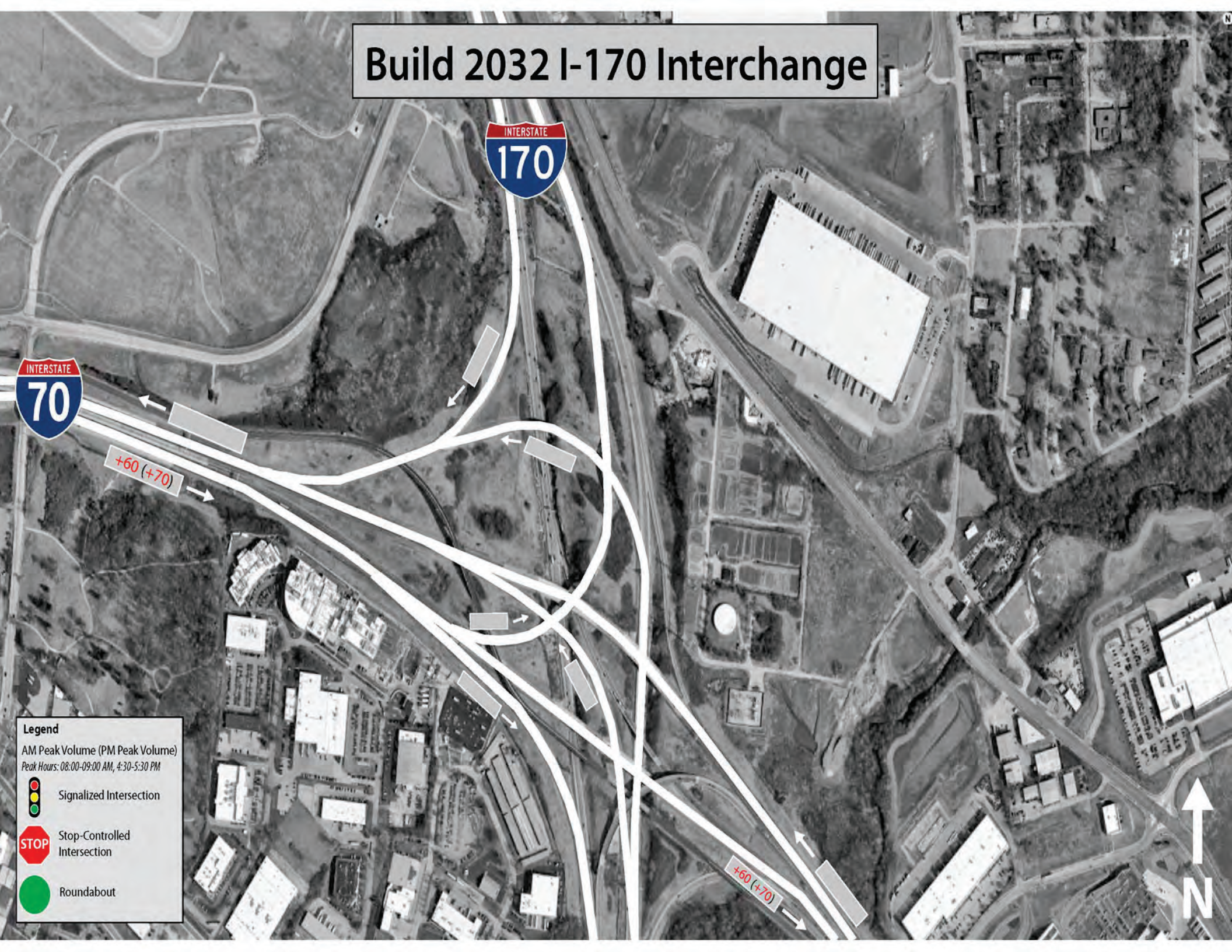
N

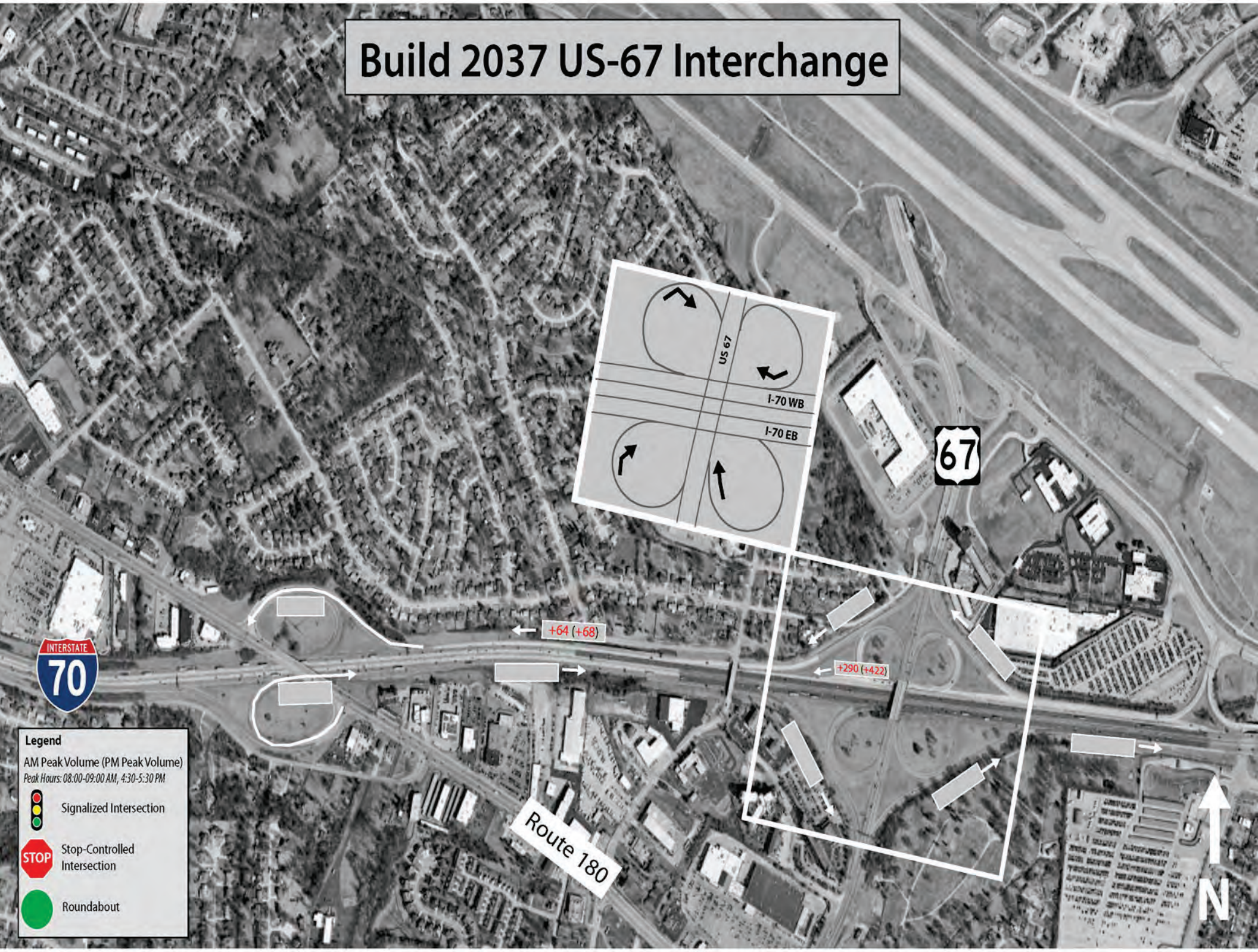

Build 2032 Airflight Dr Interchange
Terminal 1
I-70 WB On-Ramp
I-70 WB Off-Ramp
+50 (+100)
-74 (-51)
-60 (-70)
-60 (-70)
+205 (+164)
-376 (-255)
I-70 EB On-Ramp
I-70 EB On-Ramp
-171 (-91)
-16 (-8)
-44 (-62)
Pear Tree Dr
Natural Bridge Rd
-171 (-91)
-49 (-59)
-11 (-4)
I-70 EB Off-Ramp
-231 (-154)
Pear Tree Ln
Pear Tree Dr
Marriot Entrance
I-70 EB On-Ramp
Natural Bridge Rd
-93 (-121)
Edmundson Rd
+594 (+465)
+64 (+238)
+205 (+130)
INTERSTATE
70
+295 (+392)
+255 (+214)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

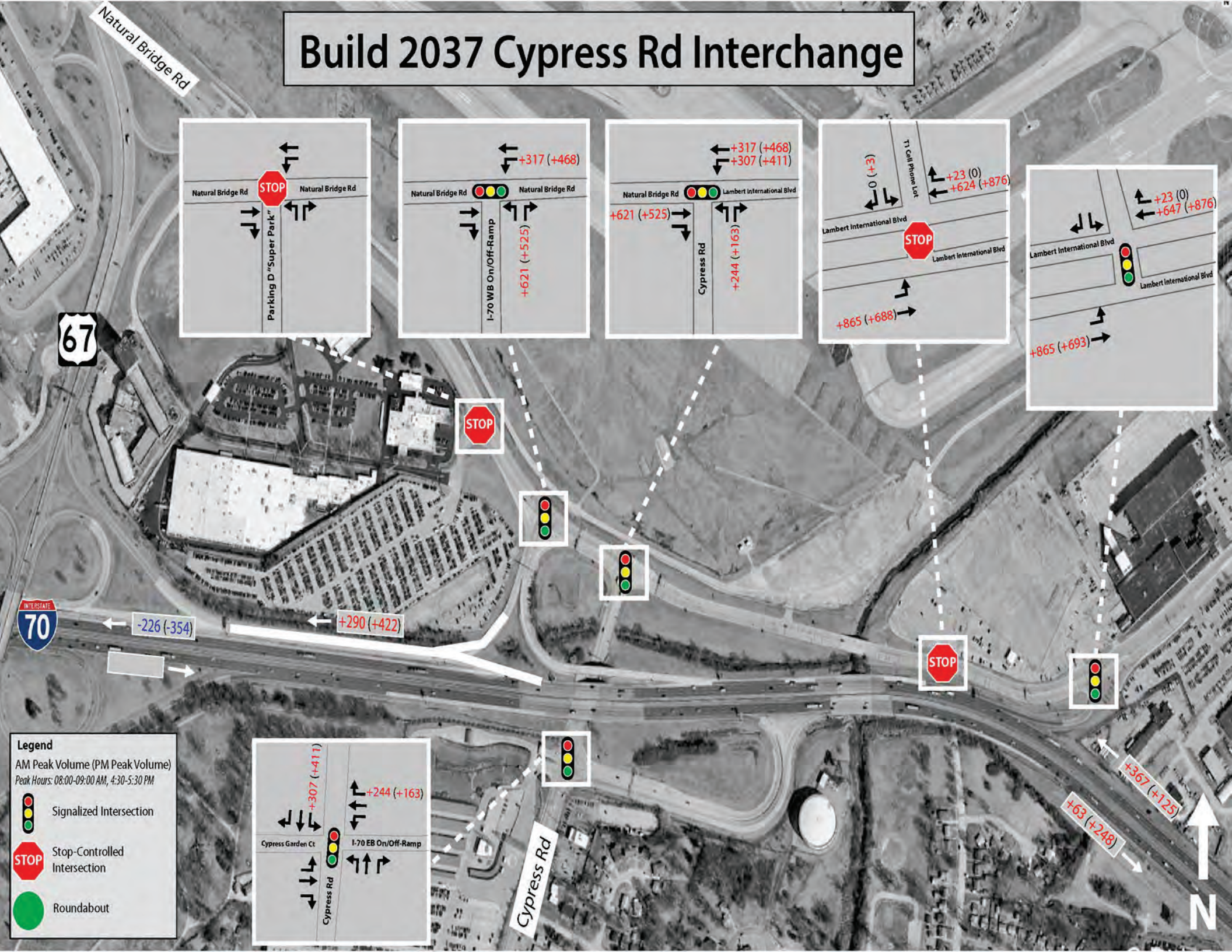
Build 2032 Terminal 2 - Airport



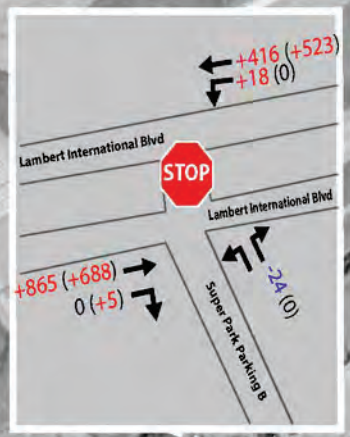

Build 2032 MO 115 Interchange
INTERSTATE 70
+255 (+214)
+295 (+392)
STOP
Air Cargo Rd
Parking Lot Entrance/Exit
Air Cargo Rd
STOP
-38 (0)
Air Cargo Rd
STOP
James S. McDonnel Blvd
-38 (0)
James S. McDonnel Blvd
STOP
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
+51 (0)
-52 (0)
WB MO 115
EB MO 115
Natural Bridge Rd
-56 (0)
-185 (0)
+51 (0)
EB Lambert International Blvd
-235 (-322)
-255 (-214)
WB Lambert International Blvd
-235 (-322)
+60 (+70)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N

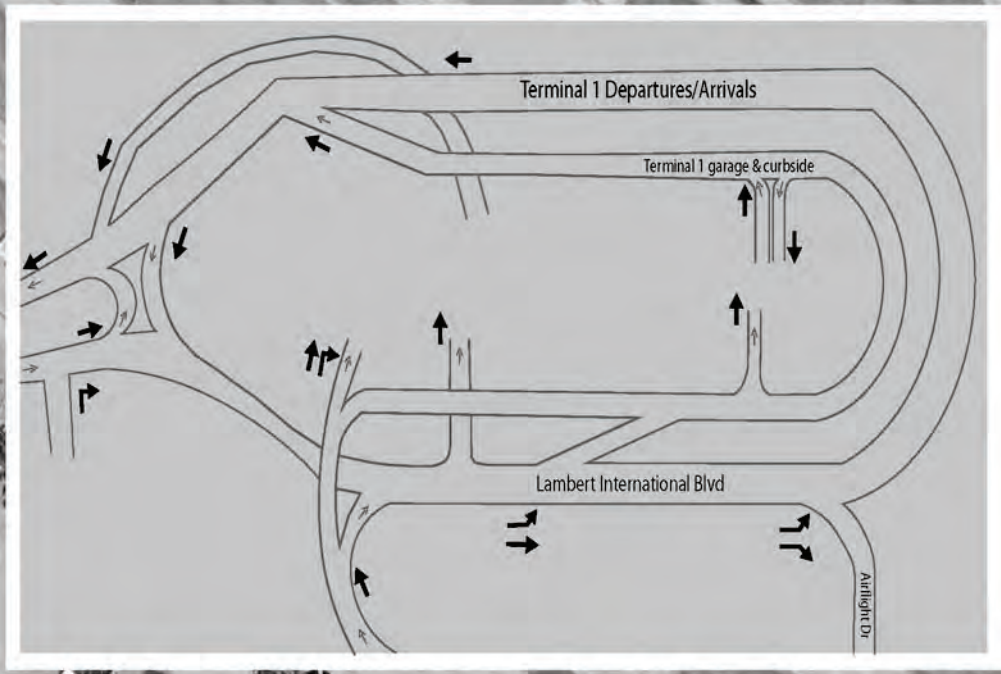

Build 2032 I-170 Interchange
INTERSTATE
170
INTERSTATE
70
+60 (+70)
+60 (+70)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N


Build 2037 US-67 Interchange
US 67
I-70 WB
I-70 EB
67
+64 (+68)
+290 (+422)
INTERSTATE
70
Route 180
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout


Build 2037 Cypress Rd Interchange
Natural Bridge Rd
Natural Bridge Rd
STOP
Natural Bridge Rd
Parking D "Super Park"
+317 (+468)
Natural Bridge Rd
Natural Bridge Rd
I-70 WB On/Off-Ramp
+621 (+525)
+317 (+468)
+307 (+411)
Natural Bridge Rd
Lambert International Blvd
+621 (+525)
Cypress Rd
+244 (+163)
(+3) 0
T1 Cell Phone Lot
+23 (0)
+624 (+876)
Lambert International Blvd
STOP
Lambert International Blvd
+865 (+688)
+23 (0)
+647 (+876)
Lambert International Blvd
Lambert International Blvd
+865 (+693)
67
STOP
INTERSTATE
70
-226 (-354)
+290 (+422)
STOP
+307 (+411)
+244 (+163)
Cypress Garden Ct
I-70 EB On/Off-Ramp
Cypress Rd
Cypress Rd
+367 (+125)
+63 (+248)
N
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout

Build 2037 Terminal 1 - Airport Area





STOP

INTERSTATE 70

Terminal 1

+367 (+125)

+63 (+248)

Legend

AM Peak Volume (PM Peak Volume)

Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM

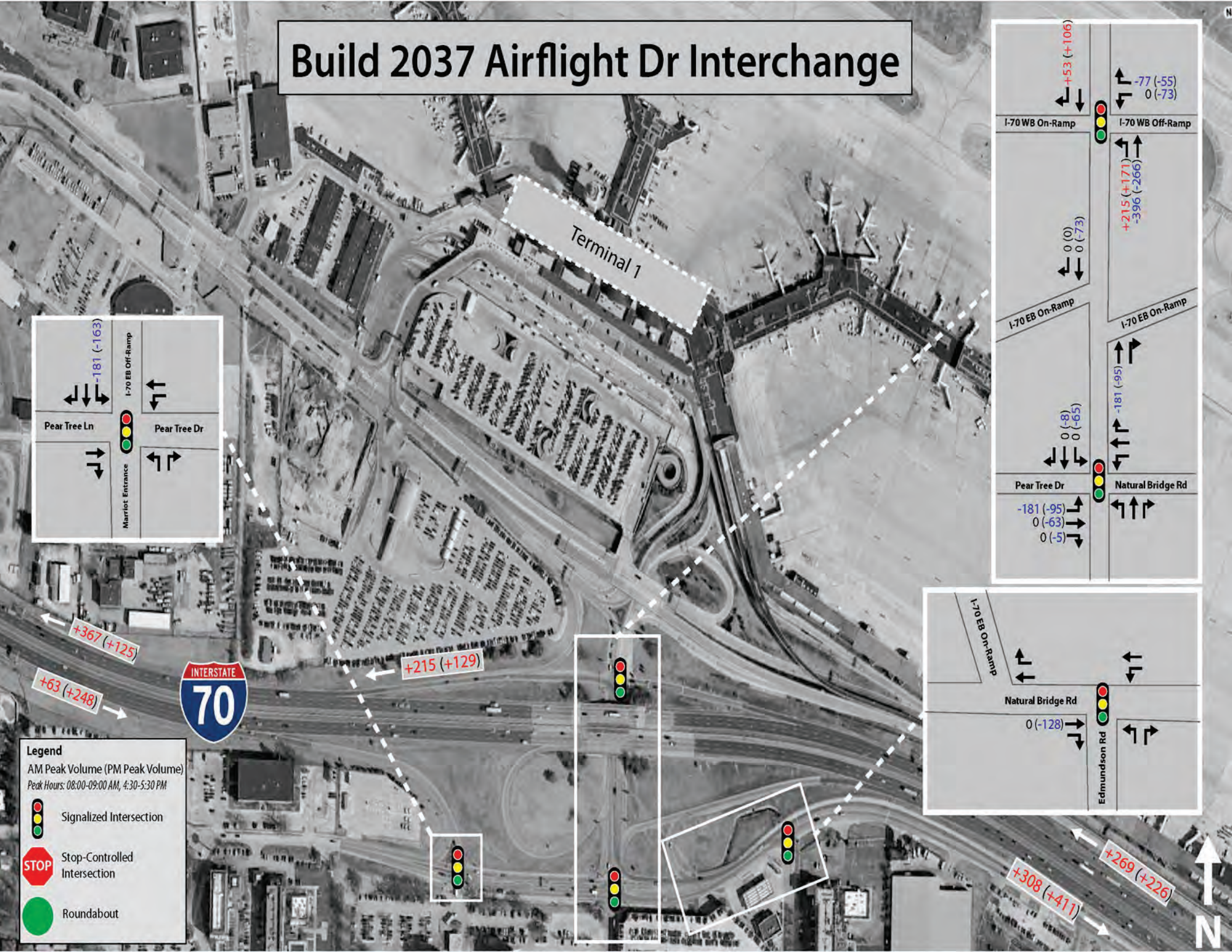
Signalized Intersection

STOP Stop-Controlled Intersection

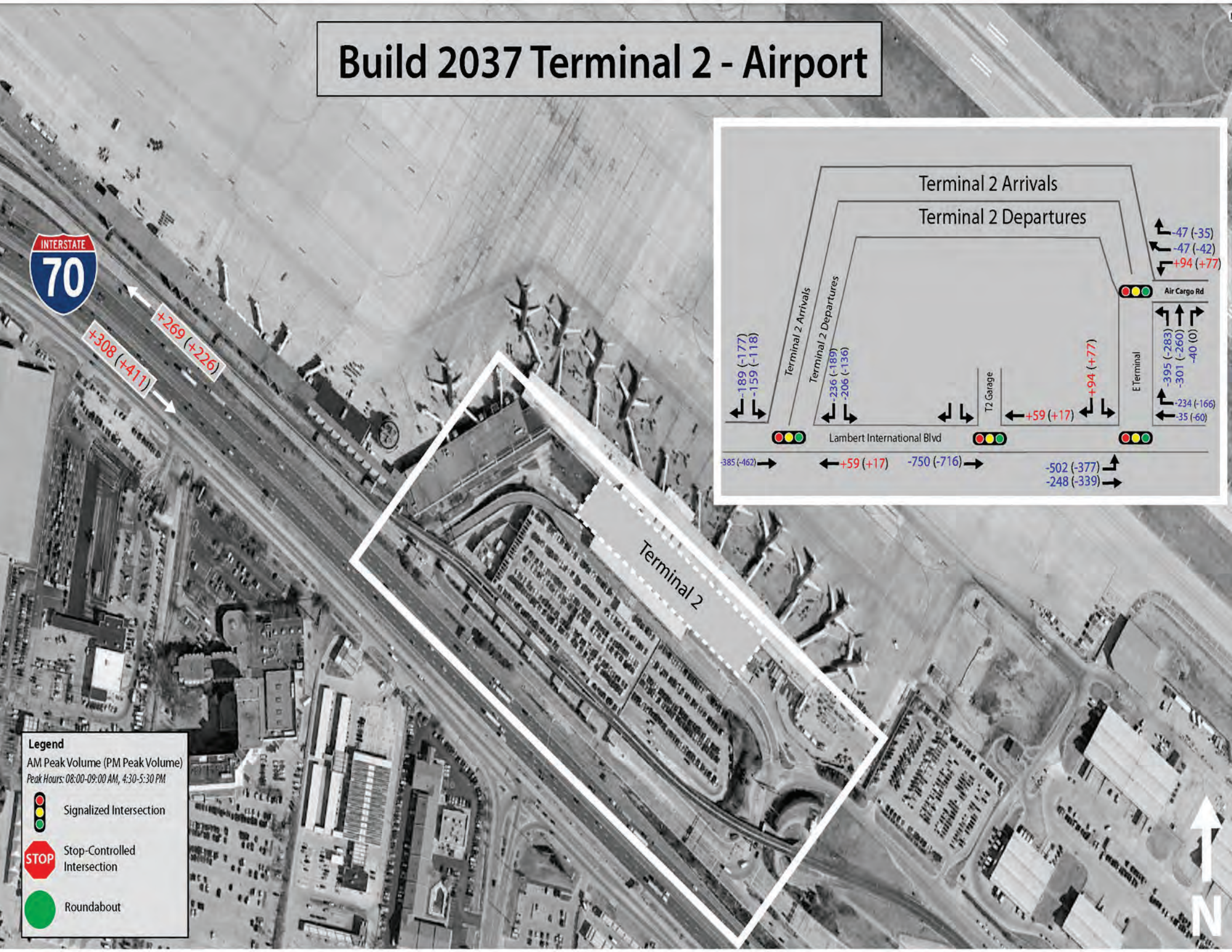
Roundabout

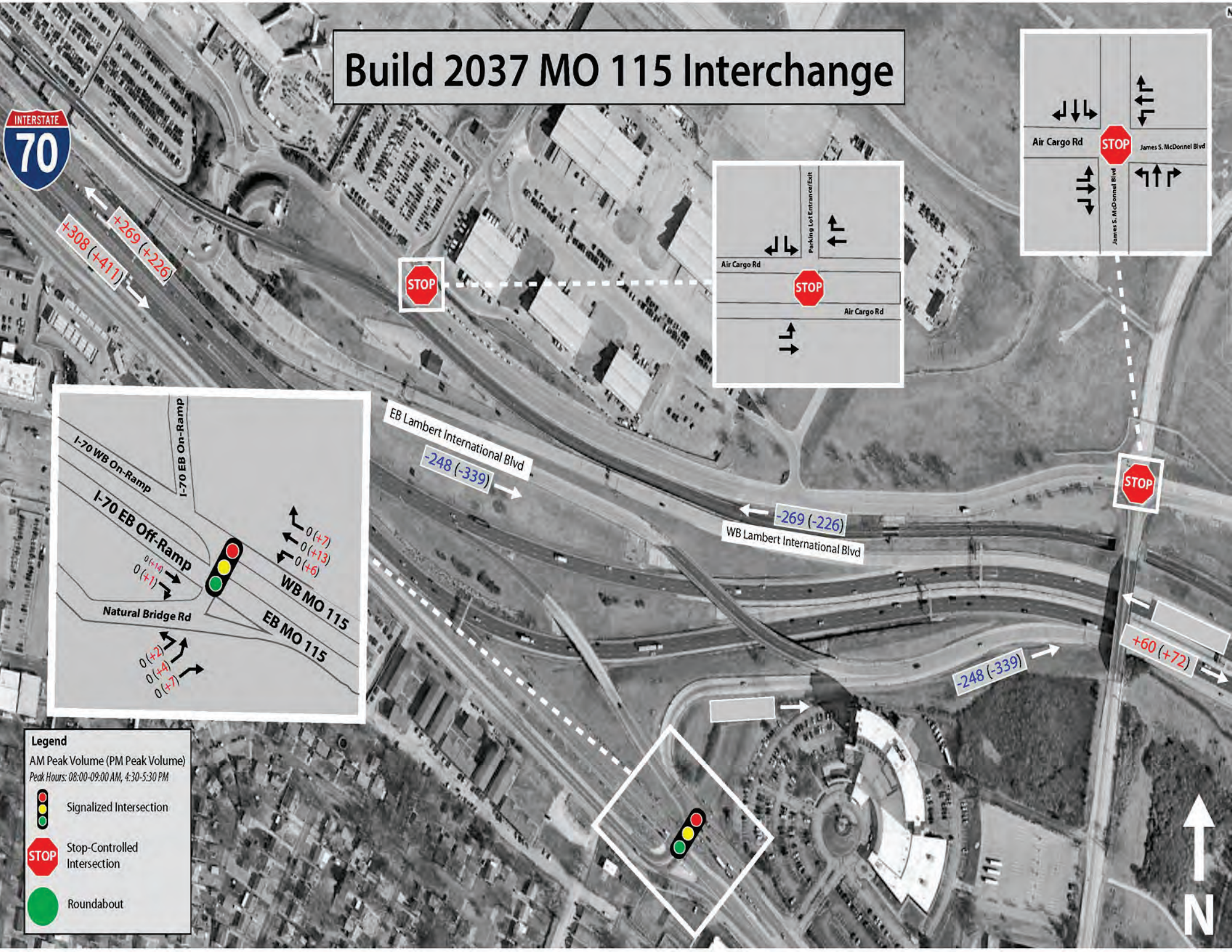
N

Build 2037 Airflight Dr Interchange



Build 2037 Terminal 2 - Airport




Build 2037 MO 115 Interchange
INTERSTATE 70
+269 (+226)
+308 (+411)
STOP
Air Cargo Rd
Parking Lot Entrance/Exit
Air Cargo Rd
STOP
Air Cargo Rd
STOP
James S. McDonnel Blvd
James S. McDonnel Blvd
STOP
EB Lambert International Blvd
-248 (-339)
-269 (-226)
WB Lambert International Blvd
I-70 WB On-Ramp
I-70 EB On-Ramp
I-70 EB Off-Ramp
0 (+14)
0 (+1)
0 (+7)
0 (+13)
0 (+6)
WB MO 115
EB MO 115
Natural Bridge Rd
0 (+2)
0 (+4)
0 (+7)
+60 (+72)
-248 (-339)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N


Build 2037 I-170 Interchange
INTERSTATE
170
INTERSTATE
70
+60 (+72)
+60 (+72)
Legend
AM Peak Volume (PM Peak Volume)
Peak Hours: 08:00-09:00 AM, 4:30-5:30 PM
Signalized Intersection
STOP
Stop-Controlled Intersection
Roundabout
N

Draft TS&O Review Correspondence

From:	Beckmann, Gerald A.
To:	LISA L KUNTZ; EDDIE WATKINS JR; Kuchinski, Jennifer; Jennifer L. Becker; Carrie Falkenrath; Travis Pfeiffer
Cc:	Neidel II, James R.; Douglas Gregory; Heather Lacey; DeArmond, Dan; Michael.Dolde@wsp.com
Subject:	RE: TS&O Report Submittal
Date:	Friday, May 24, 2024 4:32:22 PM
Attachments:	image004.png image005.png image006.png image007.png

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External Message: *This email was sent from someone outside of CMT. Please use caution with links and attachments from unknown senders or receiving unexpected emails.*

Hi Lisa,

Thank you for the review of the February 28th TS&O report. The team is working to review the comments and provide responses as appropriate. With regards to approval of the TS&O report, we understand that MoDOT won't be able to officially approve the report until all comments are addressed and certain comments will need resolution through additional design phases. We appreciate the cooperation and collaboration with the MoDOT team to date and look forward to next steps on the CTP. As noted below, there are two study components in which MoDOT requested clarification:

- Redistribution of Traffic due to Consolidated Terminal: At this time, the traffic redistribution assumptions are based on the best information available from our planning assessment and are subject to change based on design outcomes (i.e., final size of parking garage and Ground Transportation Center – GTC). We believe there is no increased precision we can make to the model at this time, this will be best left to the design phases when more is known.

- Fatality & Injury Crashes (F&IC): In review of the materials provided, the analysis identified a slight increase within the model tolerances and given the analysis was based upon planning level assumptions, including traffic distributions that we fully expect to change in the design phase, we do not believe there is value in making adjustments to the F&IC model at this time but will be best left to the design phases for further analysis. We should also note that the analysis was limited to only the I-70 corridor. This was done for efficiency and to specifically assess if there was a significant impact the project would have to the highway infrastructure. We believe that the planning level model confirms there are no significant impacts imparted on other existing systems by the project. Once design gets underway, we intend to incorporate into the model planned improvements along Lambert International Airport Blvd as well as those for the highway and are confident a model result of no F&IC increases can be achieved during the design phase.

Please let me know if you have any questions. The WSP team has expressed that the monthly MoDOT coordination meetings have been very positive.

Have a great holiday weekend.

Jerry

Gerald A Beckmann
Deputy Director
P 314-551-5034
GABeckmann@flystl.com
www.flystl.com

From: LISA L KUNTZ <Lisa.Kuntz@modot.mo.gov>
Sent: Friday, April 26, 2024 10:53 AM
To: EDDIE WATKINS JR <Eddie.Watkins@modot.mo.gov>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Jennifer L. Becker <Jennifer.Becker@modot.mo.gov>; carrie@tsquaredtt.com; Travis Pfeiffer <tpfeiffer@hntb.com>
Cc: Beckmann, Gerald A. <GABeckmann@flystl.com>; Neidel II, James R. <jrneidel@flystl.com>; Douglas Gregory <dgregory@cmtengr.com>; Heather Lacey <hlacey@cmtengr.com>; DeArmond, Dan <Dan.Dearmond@wsp.com>; Michael.Dolde@wsp.com
Subject: [EXTERNAL] RE: TS&O Report Submittal

Mike/Jennifer-

I am going to try this again, I attachments are too large to send through email. Can you please send me a link to a shared folder & I will drop in the documents with our comments in them? Thank you!

The MoDOT Team has completed our review of the TS&O Report and exhibits. Our comments are included in the documents attached. During previous coordination meetings; the WSP Team had requested that any comments to the TS&O be delayed and subsequently addressed by the Airport's (Lambert) CTP (Combined Terminal Program) Design Team; not yet selected or under contract. MoDOT will not be able to officially approve the TS&O report until all comments are addressed. The MoDOT team will work with the Airport move forward with a delayed resubmittal; if Lambert is comfortable with pushing that risk to the design phase.

There are two issues from the latest review that our team would like to discuss and potentially address immediately:

- We still have questions about the redistribution of traffic due to the consolidated terminal – noted both in report and Appendix H. MoDOT needs these comments to be addressed so we can incorporate these traffic volume changes into traffic models for MoDOT's study that is moving forward this summer.
- According to Table 31 in the report, Fatality & Injury crashes are increasing along the corridor from the no build for both alternatives – this is a concern. Per the Methods & Assumptions report, the proposed alternative should maintain or decrease Fatal & injury crashes along the corridor. In the recent submittal, the proper information was not provided a full review the

safety analysis. When resubmitting the ISATe spreadsheets, please provide a map identifying the segments along the corridor to aide in the review. Please note, there seems to be several discrepancies between the spreadsheets and the report itself.

Thank you!

Lisa Kuntz, P.E.
Missouri Department of Transportation
Project Manager – North St. Louis County
Phone: 314-453-1879
Lisa.Kuntz@modot.mo.gov

From: EDDIE WATKINS JR <Eddie.Watkins@modot.mo.gov>
Sent: Saturday, March 2, 2024 7:11 PM
To: Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; LISA L KUNTZ <Lisa.Kuntz@modot.mo.gov>; Jennifer L. Becker <Jennifer.Becker@modot.mo.gov>; carrie@tsquaredtt.com; Travis Pfeiffer <tpfeiffer@hntb.com>
Cc: Beckmann, Gerald A. <GABeckmann@flystl.com>; Jim Neidel <jrneidel@flystl.com>; Douglas Gregory <dgregory@cmtengr.com>; Heather Lacey <hlacey@cmtengr.com>; DeArmond, Dan <Dan.Dearmond@wsp.com>; Michael.Dolde@wsp.com
Subject: RE: TS&O Report Submittal

Is the ISATe model included in the software models that were provided to MoDOT for review? If not, please make these models available, so that I can review them.

EDDIE WATKINS JR

Traffic Operations

Missouri Department of Transportation
St. Louis District – Traffic
14301 South Outer Forty Rd., Chesterfield, MO 63017
314-275-1543 or 314-650-5461 (mobile)
Email: Eddie.Watkins@modot.mo.gov
www.modot.org [modot.org] www.savemolives.com [savemolives.com]

From: Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>
Sent: Wednesday, February 28, 2024 1:44 PM

To: LISA L KUNTZ <Lisa.Kuntz@modot.mo.gov>; Jennifer L. Becker <Jennifer.Becker@modot.mo.gov>; carrie@tsquaredtt.com; Travis Pfeiffer <tpfeiffer@hntb.com>; EDDIE WATKINS JR <Eddie.Watkins@modot.mo.gov>
Cc: Beckmann, Gerald A. <GABeckmann@flystl.com>; Jim Neidel <jrneidel@flystl.com>; Douglas Gregory <dgregory@cmtengr.com>; Heather Lacey <hlacey@cmtengr.com>; DeArmond, Dan <Dan.Dearmond@wsp.com>; Michael.Dolde@wsp.com
Subject: FW: TS&O Report Submittal

Lisa, Jen, Eddie, Travis, Carrie

Please see below link for the TS&O Report. Carrie reports that you all have received and can access the model, and will be comparing the model to the report.

We appreciate your hard work in reaching this point with us. Look forward to turning our attention with you to the EA documentation with FAA Scott Tener.

JMK

314-698-0974
Please text if outside normal business hours

From: Atallah, Stephanie <Stephanie.Atallah@wsp.com>
Sent: Monday, February 26, 2024 10:47 AM
To: Neidel II, James R. <jrneidel@flystl.com>
Cc: Mitchell, Weston <WESTON.MITCHELL@wsp.com>; DeArmond, Dan <Dan.Dearmond@wsp.com>; Van Woensel, John <JOHN.VANWOENSEL@wsp.com>; Dolde, Mike <Michael.Dolde@wsp.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>
Subject: TS&O Report Submittal

Good morning Jim,

Please see below the link to access the revised Traffic Safety & Operations (TS&O) report. We'd like to send the report to MoDOT as soon as possible but wanted to give you a chance to read through it before doing so and get your ok to send when you're comfortable with it.

Visit the Workspace to retrieve files.
This link will expire on 3/26/2024 4:43:12 PM

As always, let us know if you have any questions as you review or if you issues accessing the file.

Thank you,

Stephanie Atallah, Ph.D.
Lead Consultant | US Advisory Services
stephanie.atallah@wsp.com

T: +1 314-206-4259
M: +1 540-230-9354

WSP USA Inc.
211 N Broadway Suite 2800
St. Louis, MO 63102

wsp.com

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-LAEmHhHzdJzBlTWfa4Hgs7pbKl

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MoDOT Coordination Letter

MoDOT

Missouri Department of Transportation

St. Louis District
Thomas K. Blair, P.E., District Engineer

1590 Woodlake Drive
Chesterfield, Missouri 63017-5712
314.275.1500
Fax: 573.522.6475
1.888.ASK MODOT (275.6636)

November 10, 2023

Rhonda K Hamm-Niebruegge
Airport Director
10701 Lambert International Blvd.
St. Louis, MO 63145-0212

Dear Director Hamm-Niebruegge,

Beginning in 2020, MoDOT has been an active member of the technical advisory committee for St. Louis Lambert International Airport (STL) Airport Layout Plan Update and Master Plan (ALPU/MP). An ALPU/MP serves as a critical planning tool that looks at forecast aviation activity for an airport. STL intends to use this forecast as a guide in reviewing existing and future terminal, airside and landside improvements.

As part of the ALPU/MP, the Airport identified a preferred landside access concept to provide access to/from the proposed consolidated terminal. Due to the proximity of I-70 to the airport, the preferred landside access concept included proposed modifications to I-70 mainline and interchanges at Cypress Rd, Air Flight Drive, and Natural Bridge Road. In order to understand the traffic impacts to I-70 due to the proposed landside access concept, the Airport moved forward with preparation of a Traffic and Safety Operations (TS&O) report in July of 2023. MoDOT received the draft TS&O report and a functioning traffic model for the proposed build improvements on October 25, 2023. Based upon MoDOT's initial 2 week review of that submission, comments were provided under separate correspondence to the Airport team on 11/9/2023.

Acknowledging that we are still working with your team to address MoDOT's comments to the draft TS&O Report and the traffic and safety models for the Airport's preferred landside access concept, **MoDOT is unopposed to the preferred landside access concept identified in the ALPU/MP**. The Airport should continue to work with our team on the following remaining action items:

- Address and finalize MoDOT and FHWA comments to the TS&O Report.
- Funding for construction of any recommended roadway improvements identified in the approved TS&O Report.
- The proposed landside access concept does not provide direct access on northbound Air Flight Drive to the proposed consolidated terminal. While alternate routes are available, this change in access needs to be communicated clearly to the adjacent communities. The engagement with adajacent communities is still pending.

MoDOT will continue to work with your team as you complete federally required National Environmental Policy Act (NEPA). Prior to beginning the landside access/roadway design, it is an expectation that your agency will reconvene with MoDOT and FHWA staff to outline requirements and any necessary agreements under the guidelines listed below:

- MoDOT's Engineering Policy Guide, Standards & Specifications shall govern the design of the project.
- An Access Justification Report (AJR) will be required for modifications made to the interstate system.
- This project must comply with all environmental requirements through FHWA/MoDOT policies, including public engagement and outreach.
- All right-of-way acquisition must follow the Uniform Act. The city should have a contingency plan for acquisition of Right of Way if condemnation is needed. If Right of Way lines are adjusted with this project, the appropriate Location Survey must be performed after construction as part of the scope of the project.

Sincerely,

Thomas K. Blair, P.E.
District Engineer, St. Louis District

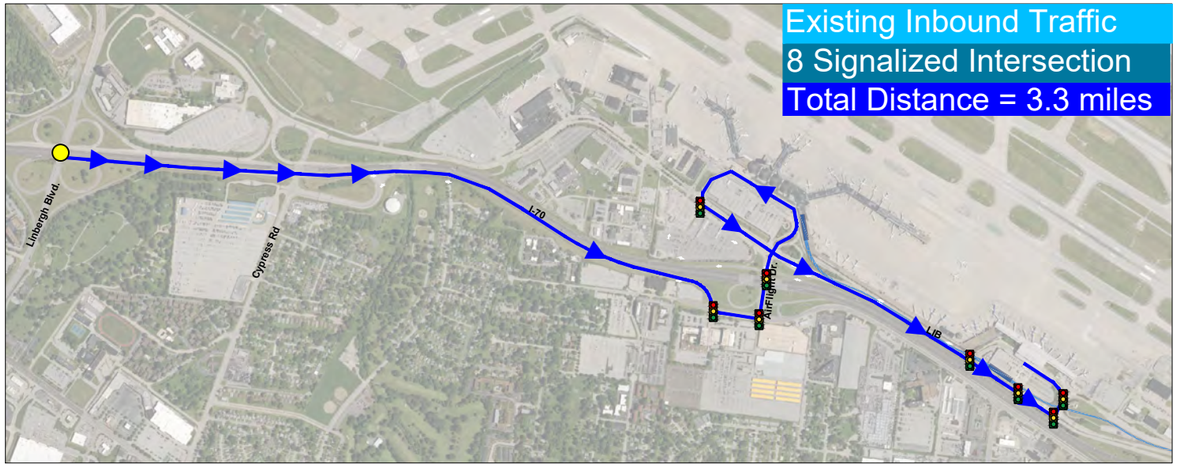
Cc: Lisa Kuntz – MoDOT
Gerry Beckman – STL Airport

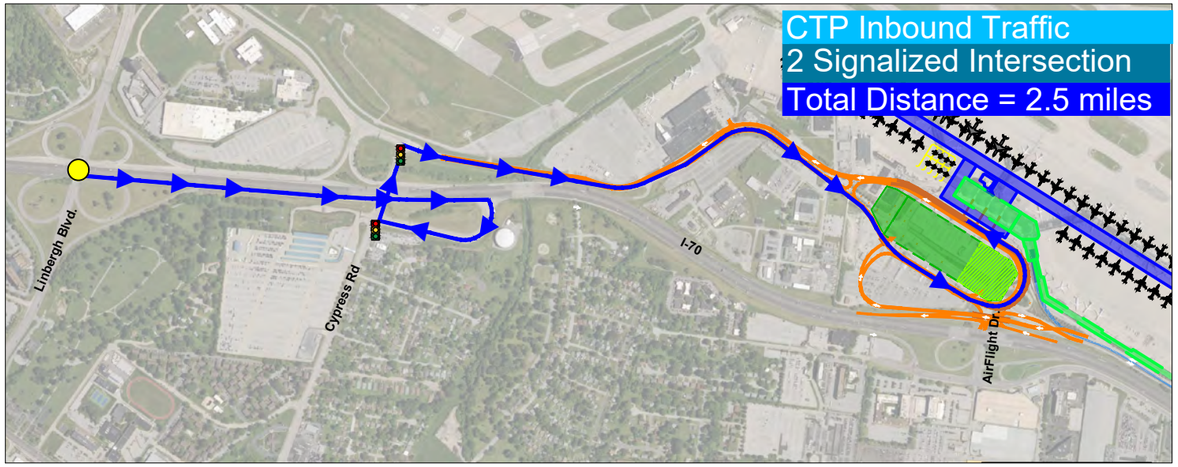
Roadway Access Exhibits

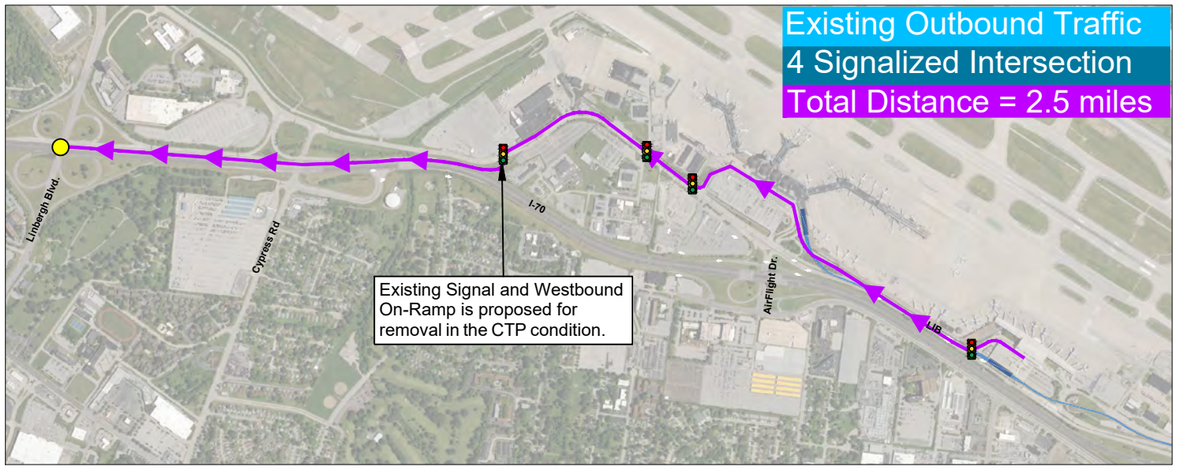
ST. LOUIS LAMBERT INTERNATIONAL AIRPORT
Terminal Program Advanced Planning
August 2024

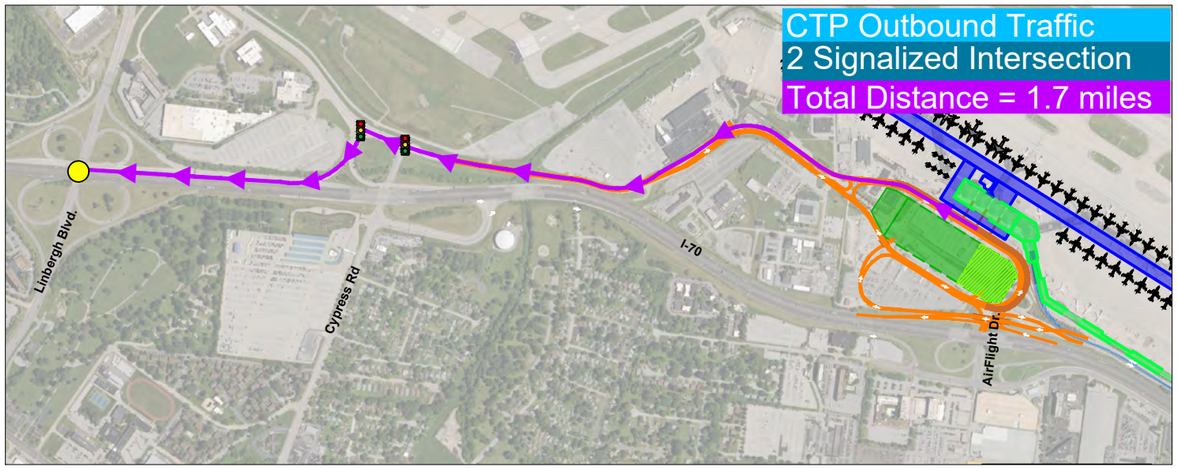
FIGURE 1

Traffic To and From I-70 and Lindbergh Blvd. Interchange









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	3.3 miles	2.5 miles
Number of Signalized Intersections	8	2

Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	2.5 miles	1.7 miles
Number of Signalized Intersections	4	2

The proposed access roadways between I-70 and Lindbergh Blvd Interchange and the new Consolidated Terminal results in less disrupted travel, safer free flow movement and a shorter length in travel distance and duration.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

Drawing: C:\Users\USBT677608\WSP O365\STL ALP Update - Documents\40-Advanced Planning\Task C - Advanced Planning\6-Landside\Roadway Access Options\CAD\STL_Roads_20240828.dwgLayout: Point A Plotted: Aug 30, 2024, 10:35AM

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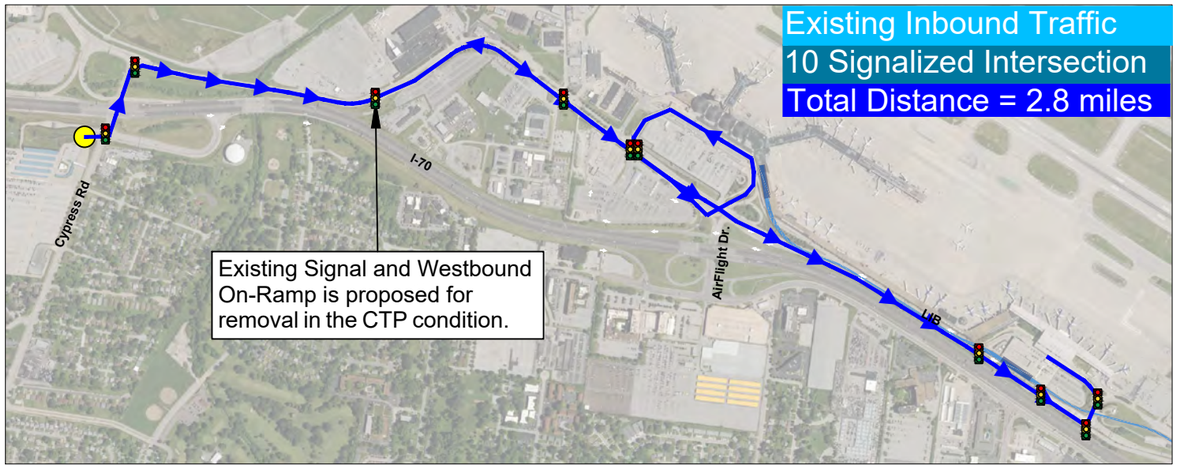
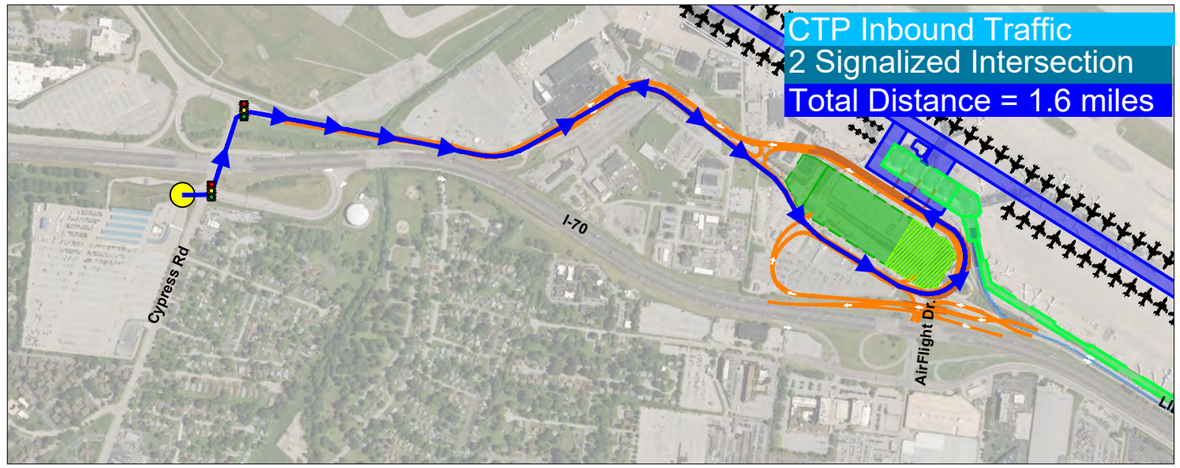
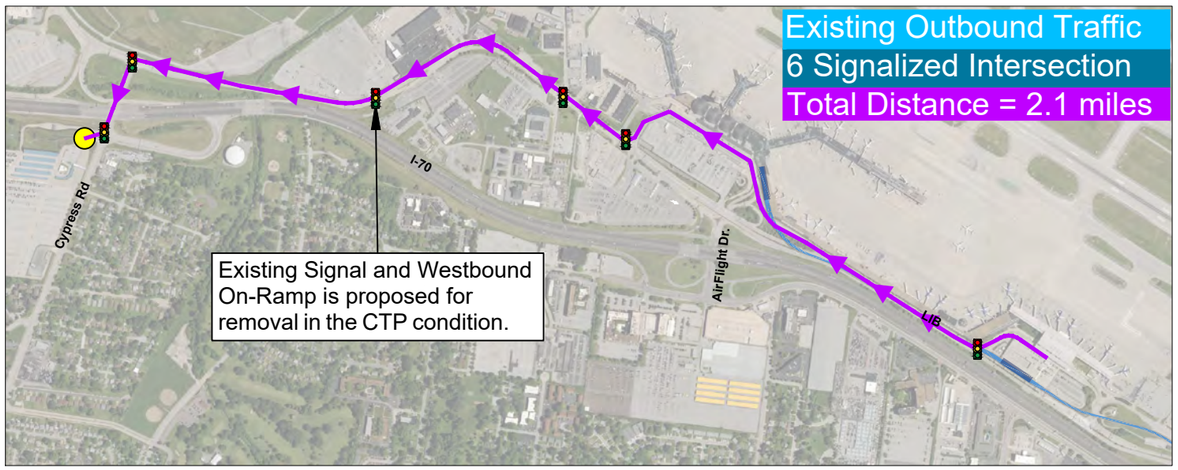
August 2024

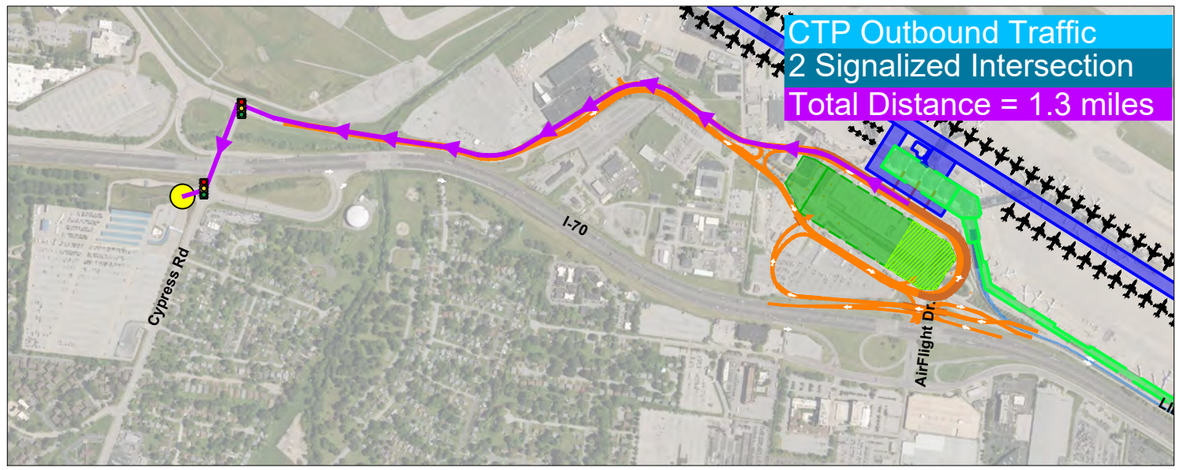
FIGURE 2

Traffic To and From Cypress Road









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	2.8 miles	1.6 miles
Number of Signalized Intersections	10	2

Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	2.1 miles	1.3 miles
Number of Signalized Intersections	6	2

The proposed access roadways between Cypress Road and the new Consolidated Terminal results in less disrupted travel, safer free flow movement and a shorter length in travel distance and duration.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

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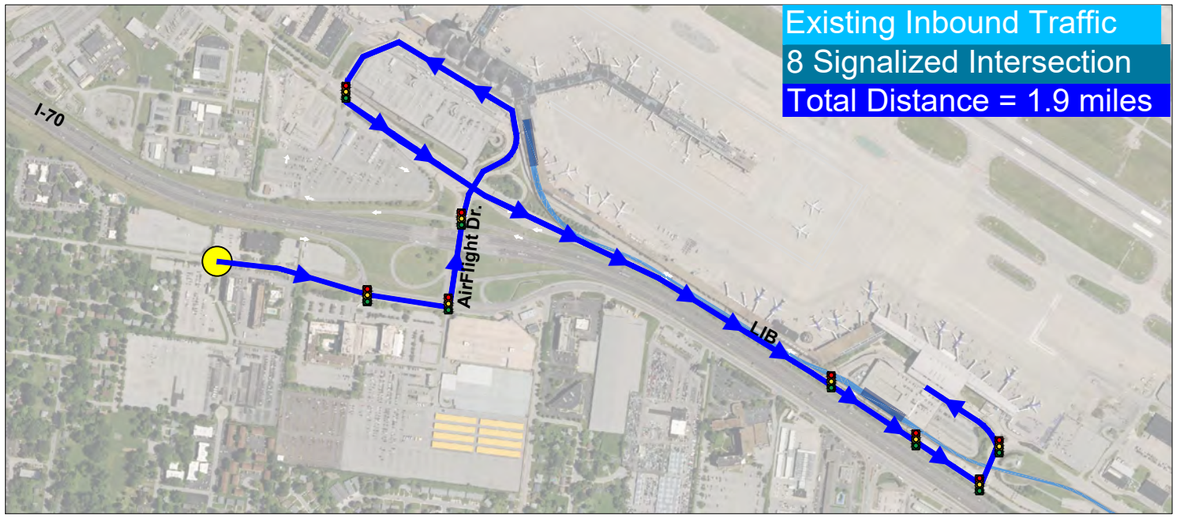
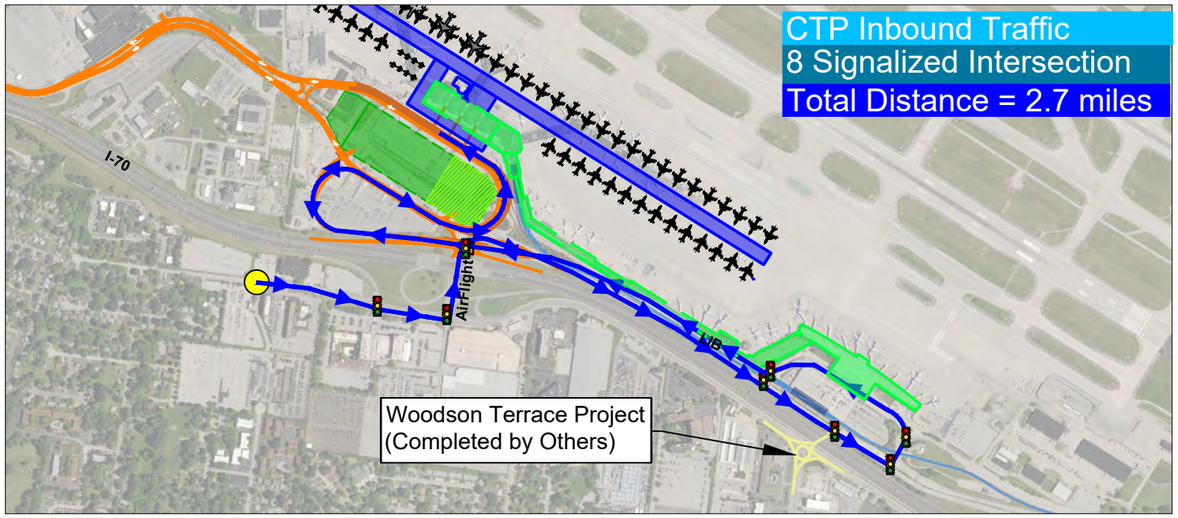
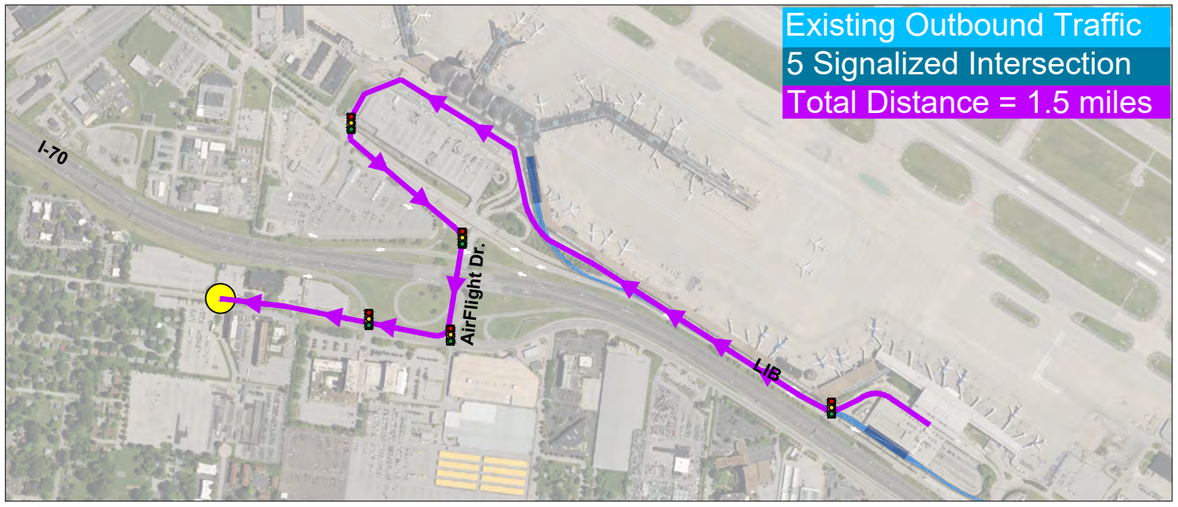
August 2024

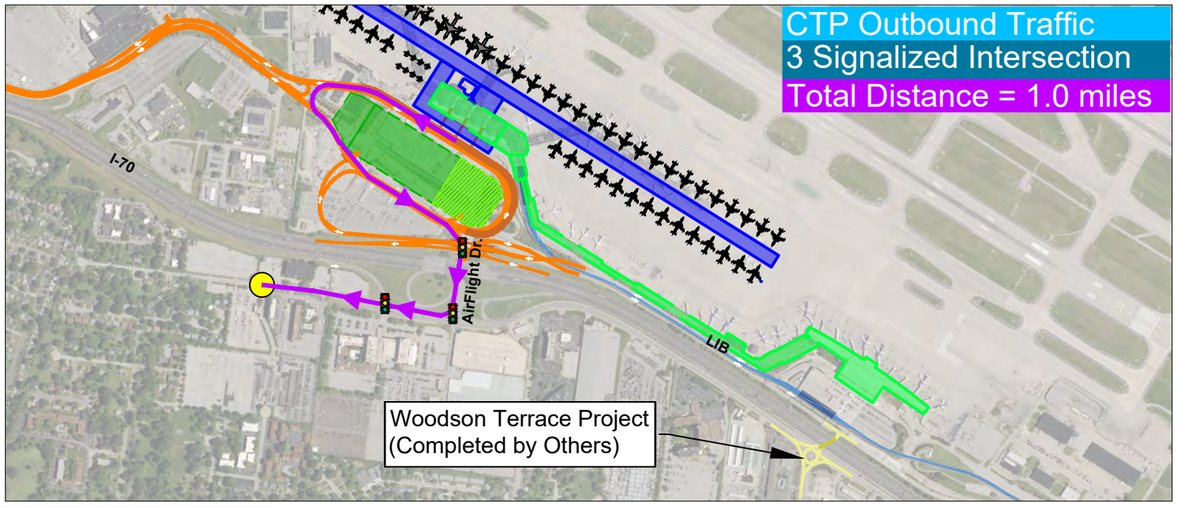
FIGURE 3

Traffic To and From Pear Tree Lane









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.9 miles	2.7 miles
Number of Signalized Intersections	8	8

Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.5 miles	1.0 miles
Number of Signalized Intersections	5	3

The proposed access roadways between Pear Tree Lane and the new Consolidated Terminal results in less disrupted travel, safer free flow movement and a shorter length in travel distance and duration for the outbound traffic. The inbound traffic has a moderately greater travel distance with similar signalized intersections.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

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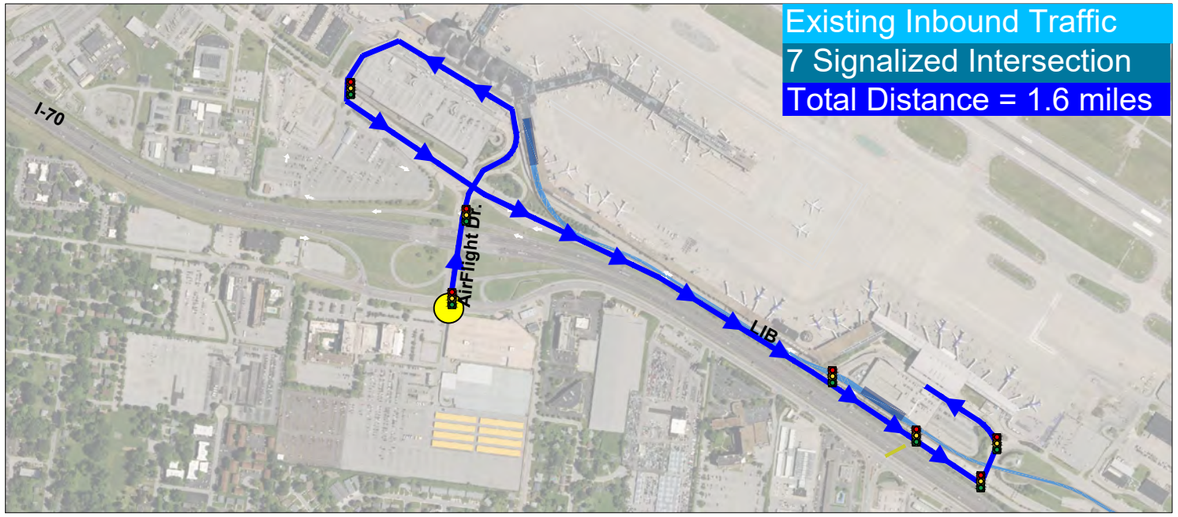
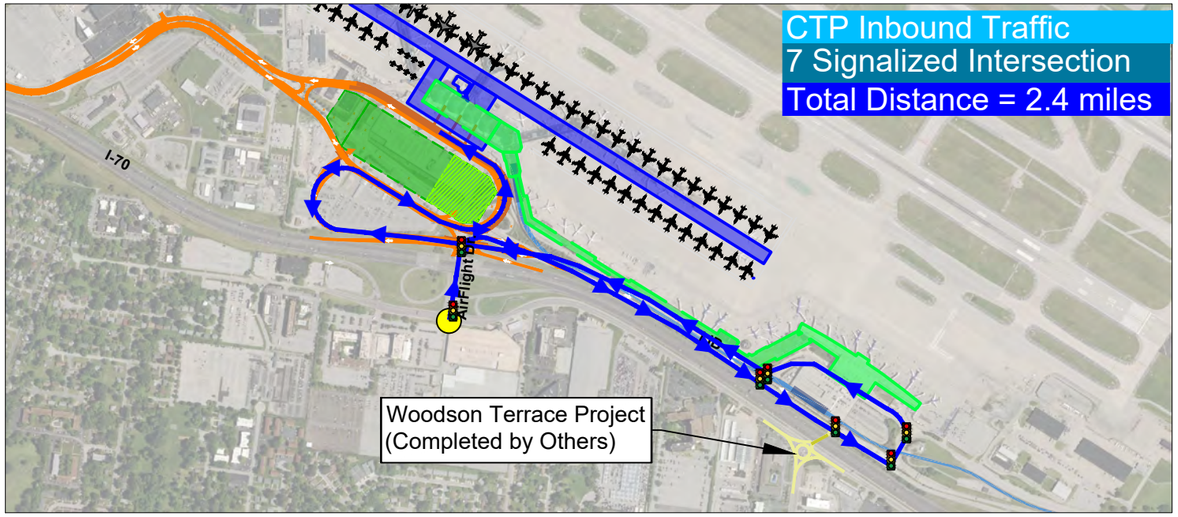
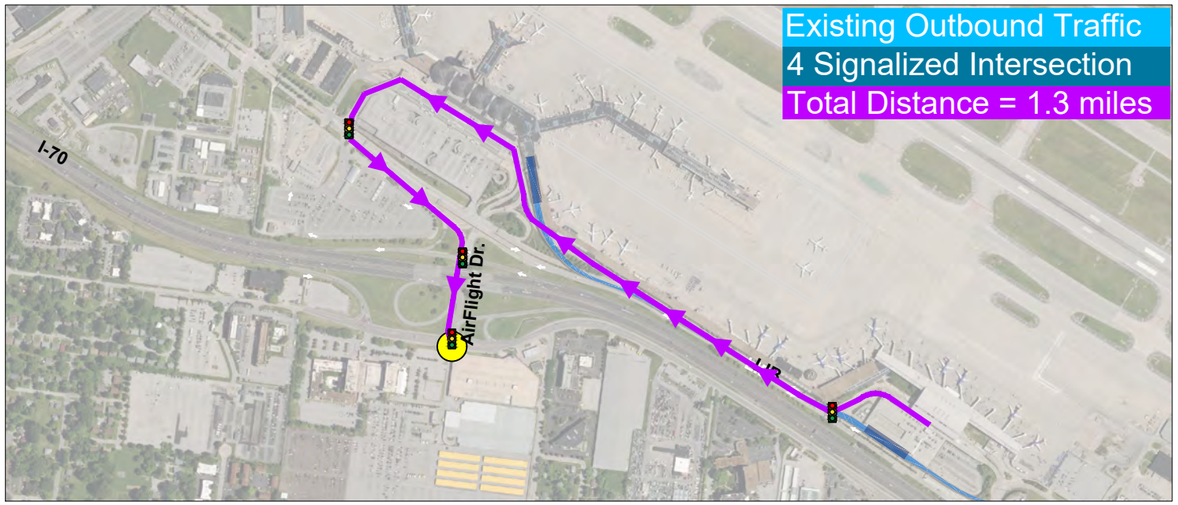
August 2024

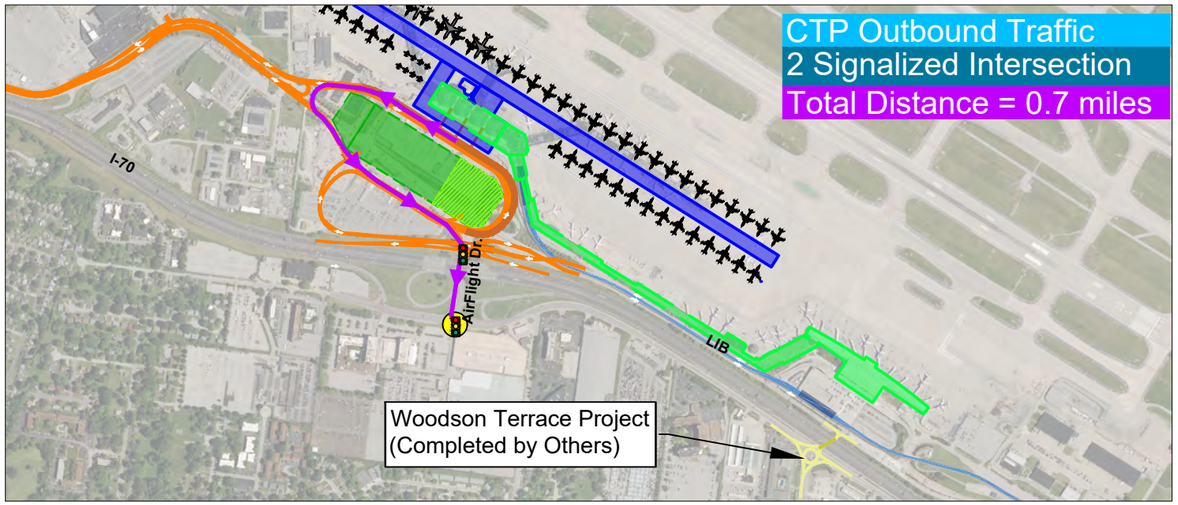
FIGURE 4

Traffic To and From The Parking Spot Off-Airport Locations









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.6 miles	2.4 miles
Number of Signalized Intersections	7	7

Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.3 miles	0.7 miles
Number of Signalized Intersections	4	2

The proposed access roadways between The Parking Spot Off-Airport Locations and the new Consolidated Terminal results in less disrupted travel, safer free flow movement and a shorter length in travel distance and duration for the outbound traffic. The inbound traffic has a moderately greater travel distance with similar signalized intersections.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

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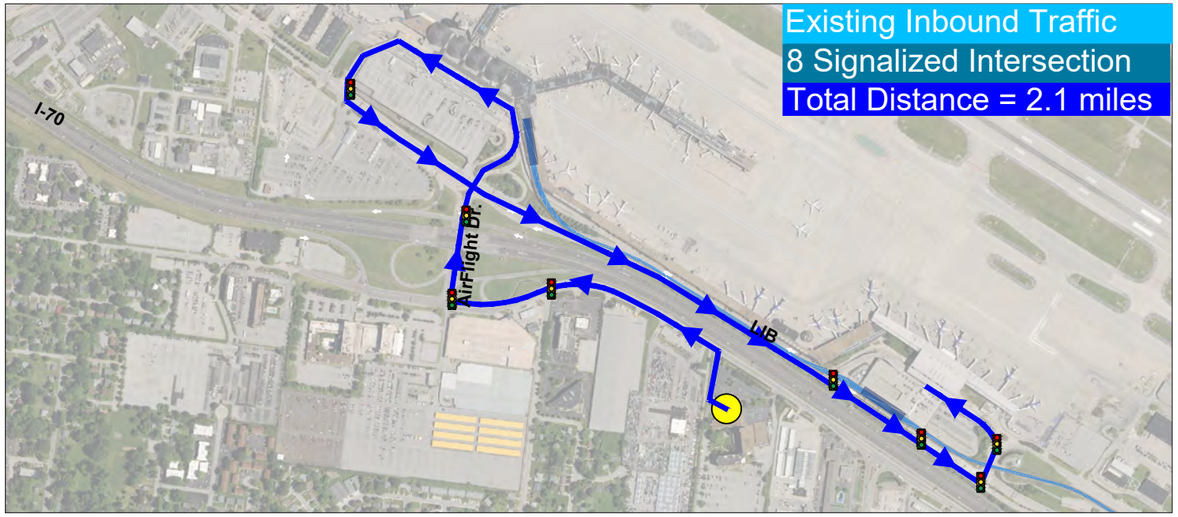
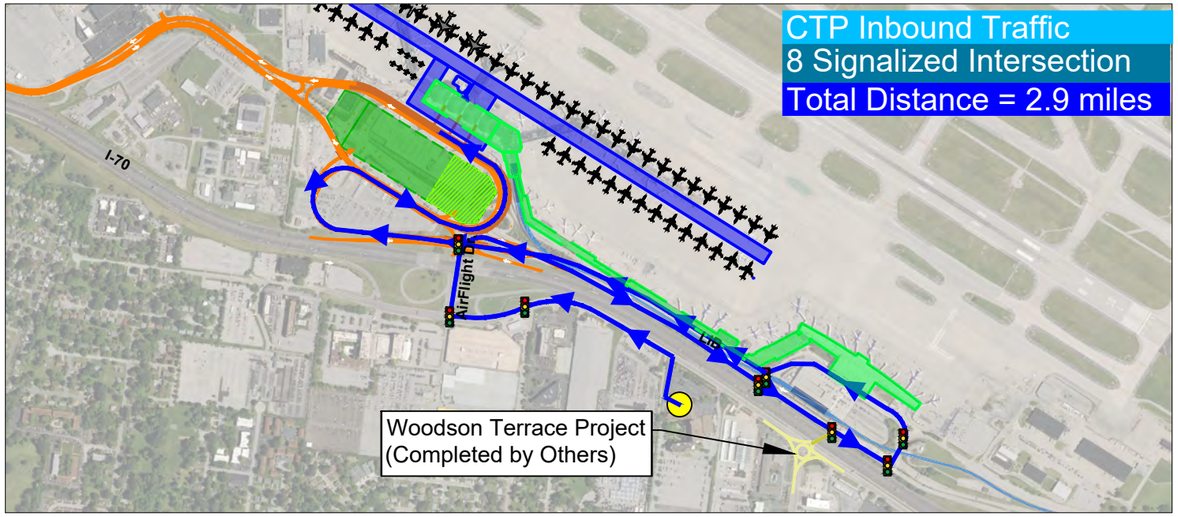
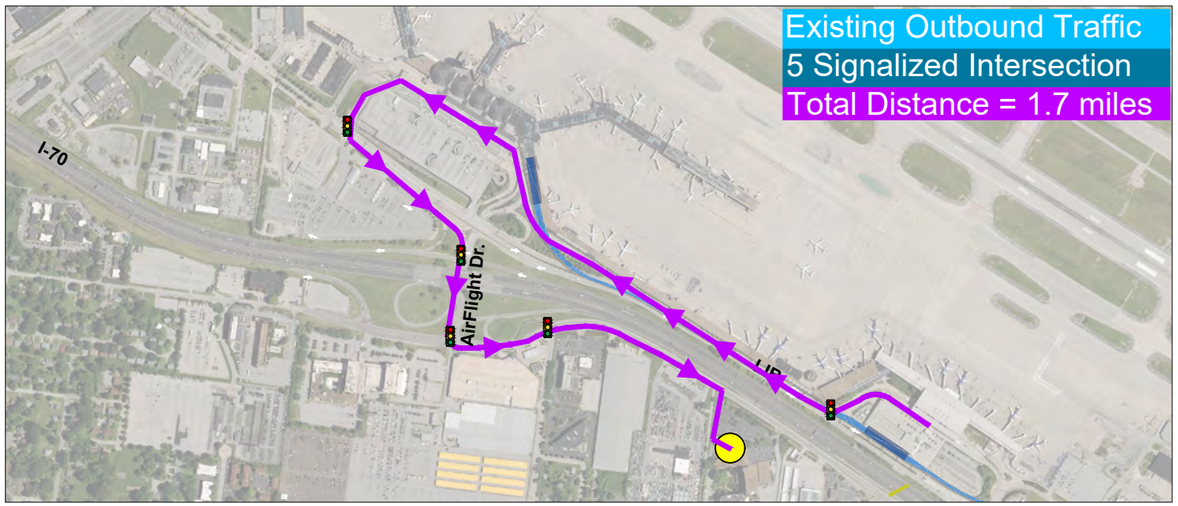
August 2024

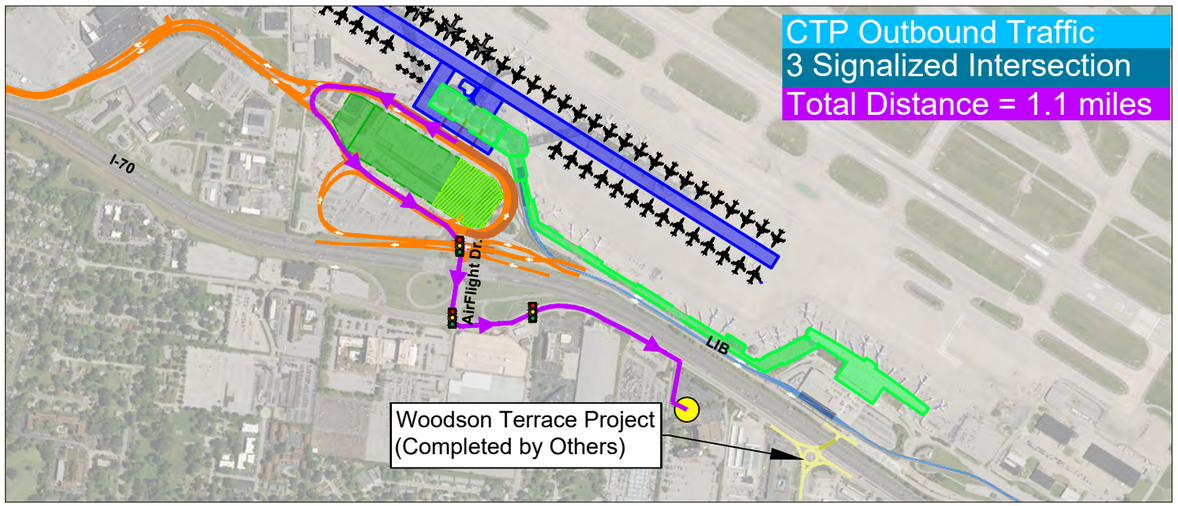
FIGURE 5

Traffic To and From Hilton Hotel









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	2.1 miles	2.9 miles
Number of Signalized Intersections	8	8

Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.7 miles	1.1 miles
Number of Signalized Intersections	5	3

The proposed access roadways between the Hilton Hotel and the new Consolidated Terminal results in less disrupted travel, safer free flow movement and a shorter length in travel distance and duration for the outbound traffic. The inbound traffic has a moderately greater travel distance with similar signalized intersections.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

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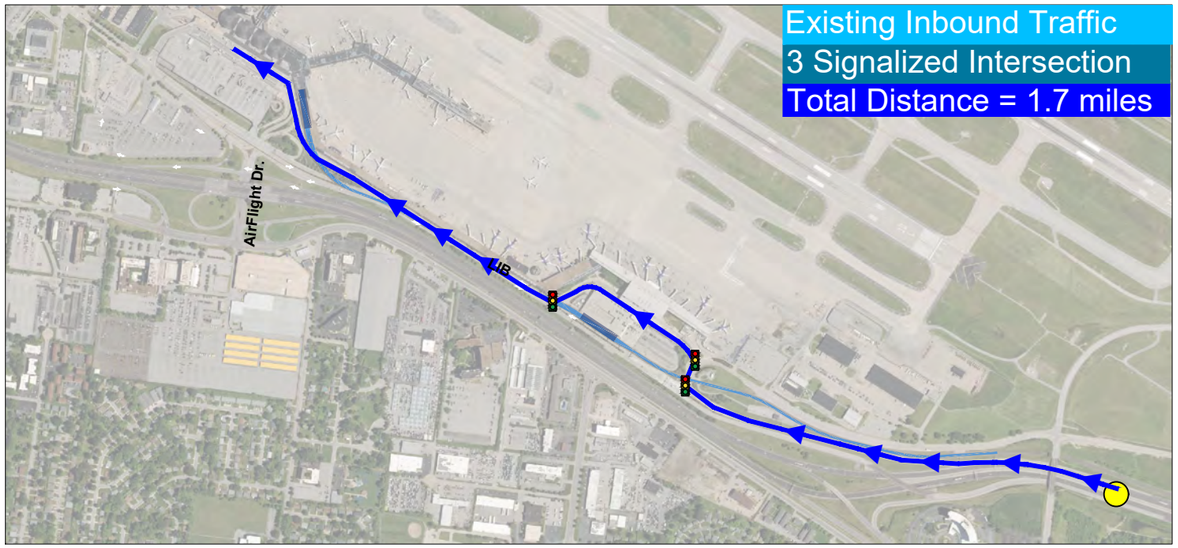
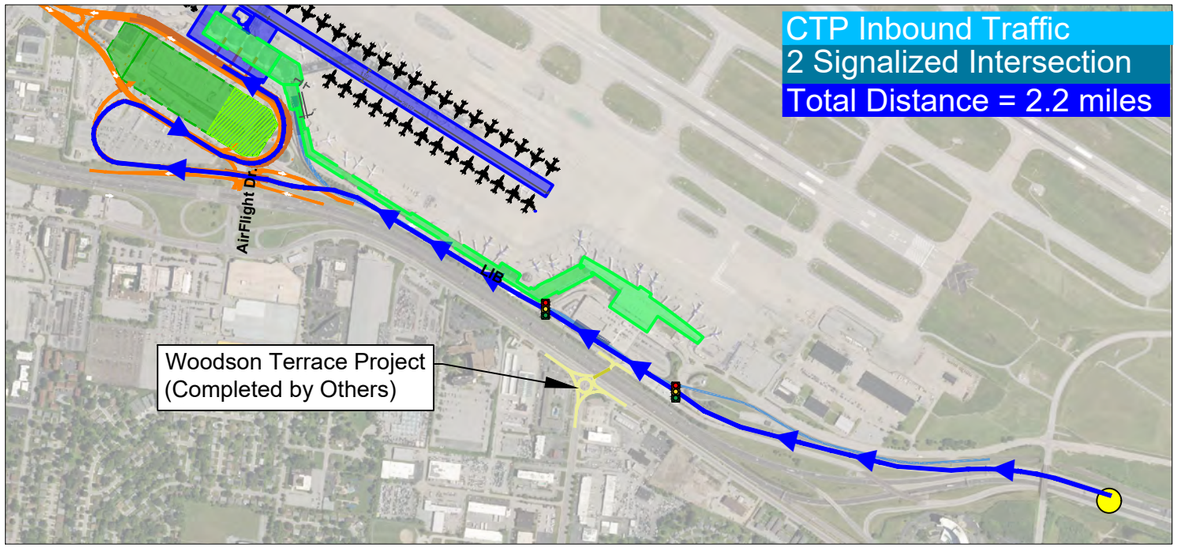
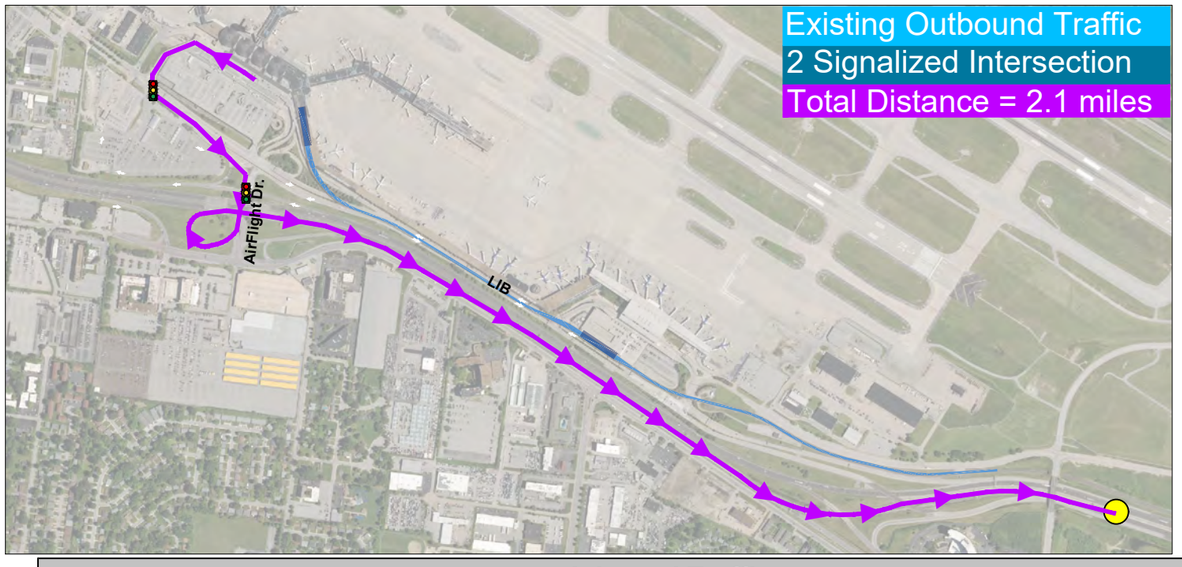
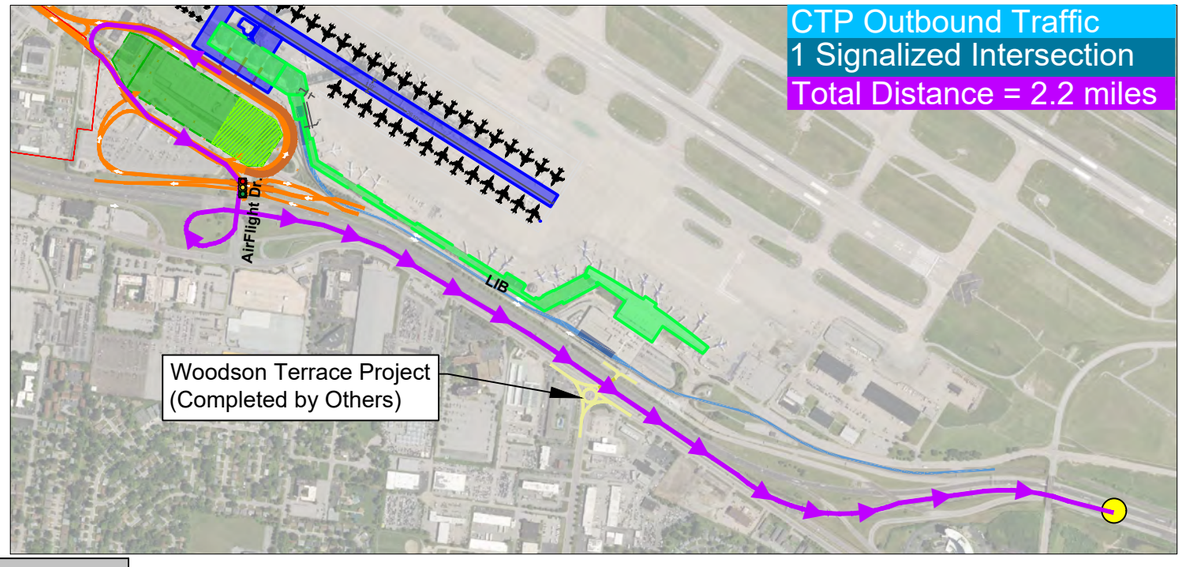
FIGURE 6

To and From East I-70 Interchange









Inbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	1.7 miles	2.2 miles
Number of Signalized Intersections	3	2
Outbound Traffic		
	Existing	**Proposed CTP**
Total Travel Distance	2.1 miles	2.2 miles
Number of Signalized Intersections	2	1

The proposed access roadways between East I-70 Interchange and the new Consolidated Terminal are similar to existing conditions. The proposed condition may results in slightly less disrupted travel, safer free flow but the length will be slightly more resulting in about the same travel time.

SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

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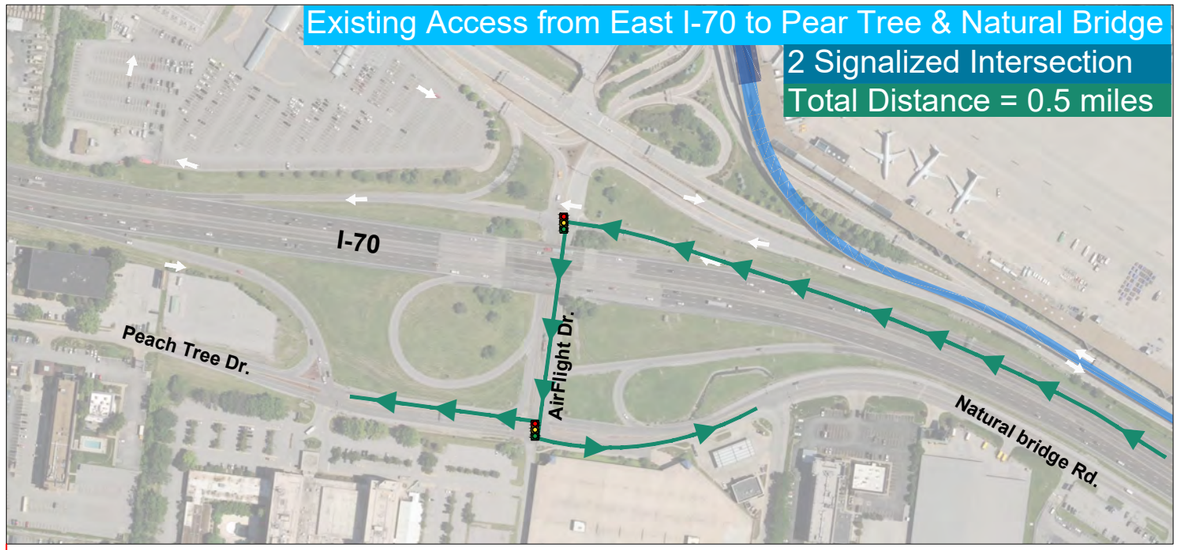
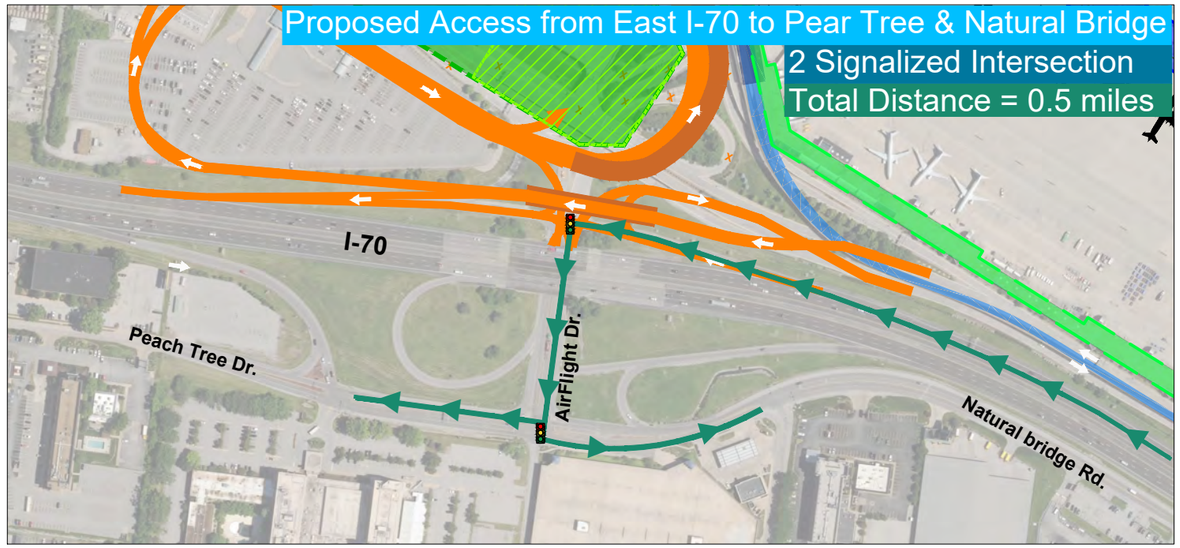
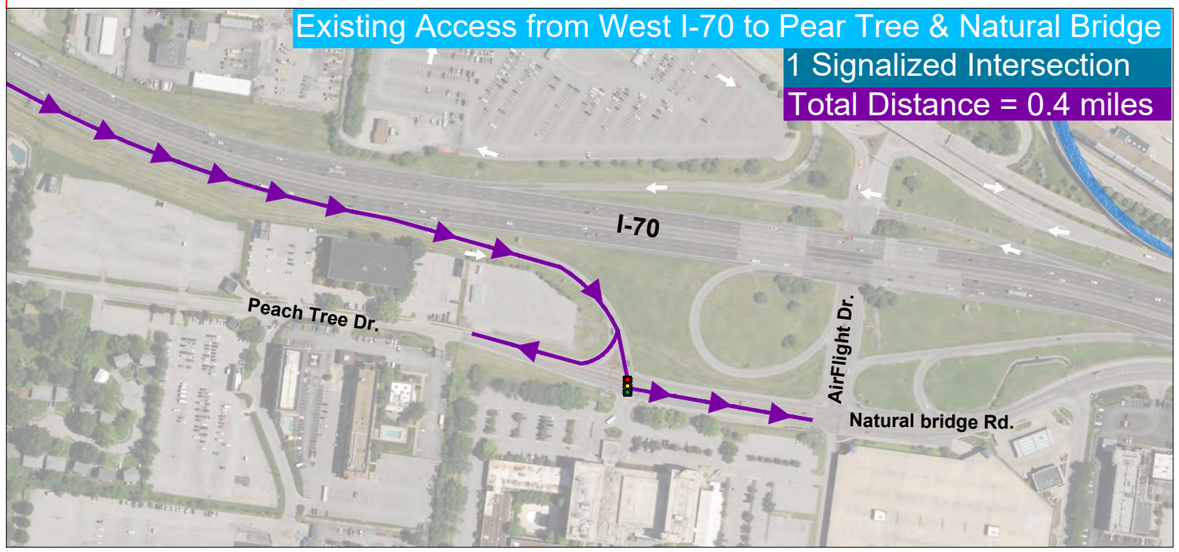
August 2024

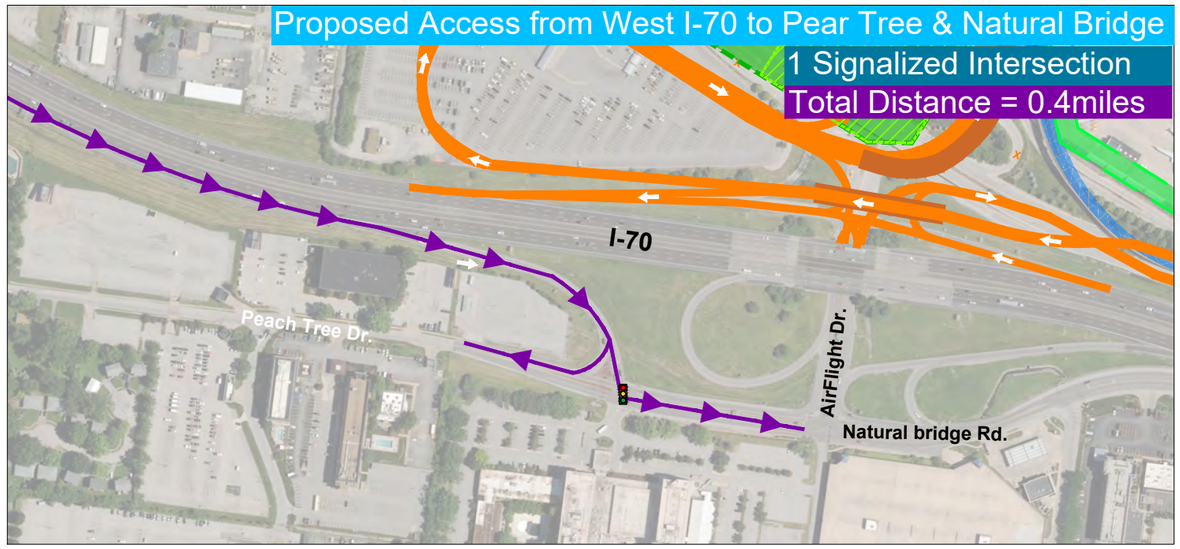
FIGURE 7

Access from I-70 to Pear Tree and Natural Bridge









East I-70 to Pear Tree & Natural Bridge		
	Existing	**Proposed CTP**
Total Travel Distance	0.5 miles	0.5 miles
Number of Signalized Intersections	2	2
West I-70 to Pear Tree & Natural Bridge		
	Existing	**Proposed CTP**
Total Travel Distance	0.4 miles	0.4 miles
Number of Signalized Intersections	1	1

The proposed access roadways from I-70 to Pear Tree Drive and Natural Bridge Road results in similar length in travel distance and signalized intersections.

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SOURCES: Quantum, 2020 (Aerial); WSP USA, 2024.

Appendix L:
CTP Stormwater Technical Memo

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

ADVANCED PLANNING TECHNICAL MEMO #24

STORMWATER IMPACTS OF THE CONSOLIDATED TERMINAL PROGRAM

1 INTRODUCTION

The purpose of this technical memorandum is to analyze the stormwater impacts of the proposed Consolidated Terminal Program (CTP) and provide conceptual alternatives to mitigate these impacts. Analyses include evaluation of the CTP impacts on runoff flow rates, pipe and culvert capacities, water quality, and the utility conflicts associated with the proposed alternatives.

As shown in **Figure 1**, the proposed CTP area includes construction of the new Consolidated Terminal, expanded Parking Garage, new Airfield Apron, enclosure of a portion of Coldwater Creek upstream of Taxiway C, Landside Infrastructure Improvements to roads and bridges, and modifications to pavement connecting Taxiway C and Taxiway D.

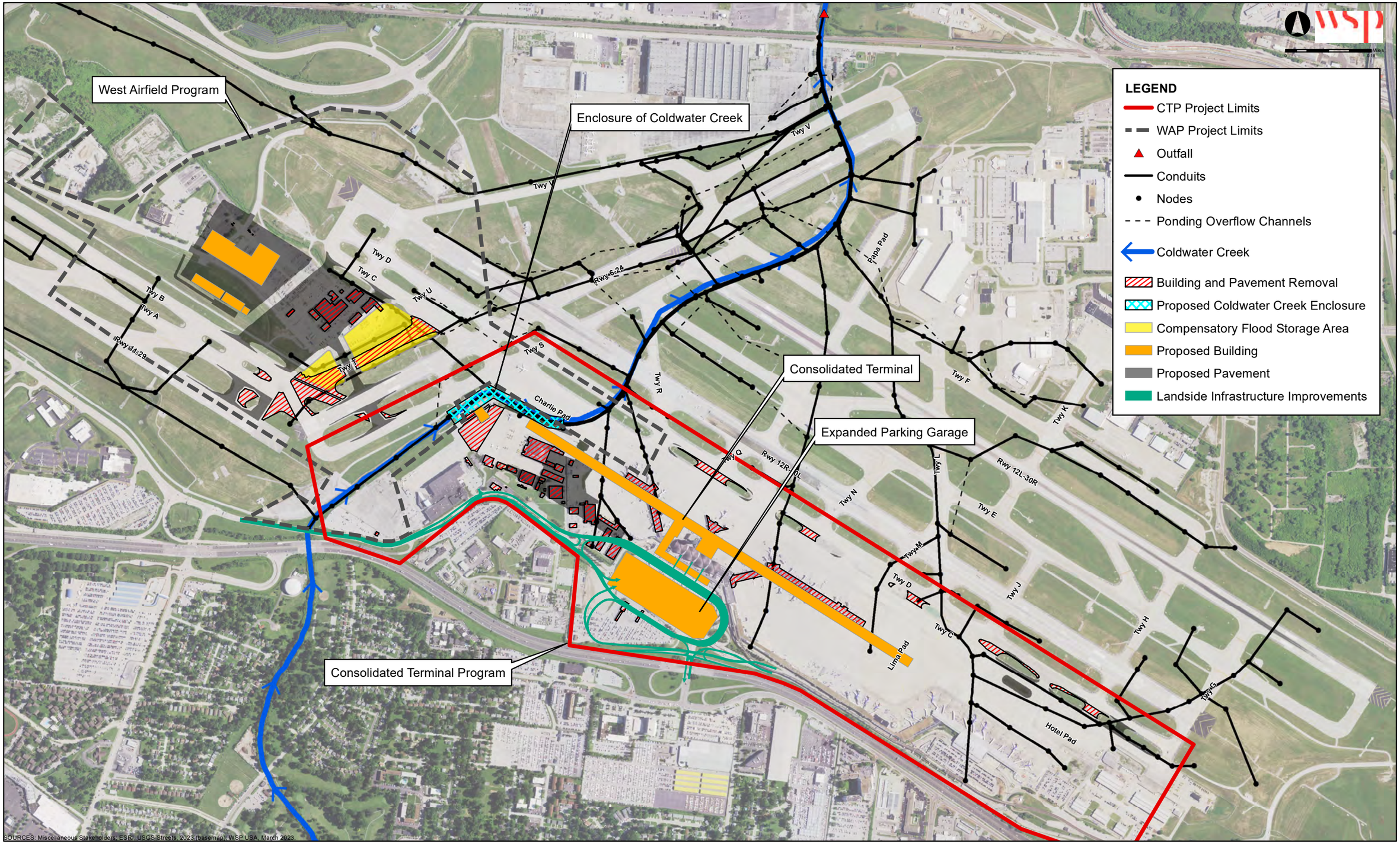
2 STORMWATER IMPACTS

2.1 IMPERVIOUS AREA

The total difference in impervious area was calculated to account for the new surfaces added for the new Consolidated Terminal, expanded Parking Garage, new Airfield Apron, the enclosure of a portion of Coldwater Creek upstream of Taxiway C, Landside Infrastructure Improvements to roads and bridges, and the impervious areas removed as part of the demolition of the pavement in select connections between Taxiway C and Taxiway D.

- The total existing impervious area in the CTP area is 1790.5 acres.
- The proposed impervious area in the CTP area is 1796.0 acres.
- The result of these proposed changes is a net increase of 5.5 acres of impervious area.

Figure 1
Consolidated Terminal Program - Site Map



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (baseman); WSP USA, March 2023.

2.2 STORMWATER RUNOFF

The changes in impervious area resulted in the following total runoff values from the area impacted by the CTP during a 15-year, 3-hour cloudburst storm event.

- The total existing runoff from the CTP area is 9770.9 cfs.
- The total proposed runoff from the CTP area is 9796.2 cfs.
- These changes result in a net increase of 25.3 cfs in peak stormwater runoff rate.

3 REGULATORY REQUIREMENTS

3.1 METROPOLITAN ST. LOUIS SEWER DISTRICT

Metropolitan St. Louis Sewer District's (MSD) *Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities* states that stormwater quality compliance is required for all new development and redevelopment projects that disturb an area greater than or equal to one acre, including smaller projects that are part of a larger common parcel or project that is greater than one acre. In order to comply, projects must include water quality best management practices (BMPs). No existing detention basin is known to serve the tributary area of the CTP, and space is limited for providing a basin for this purpose.

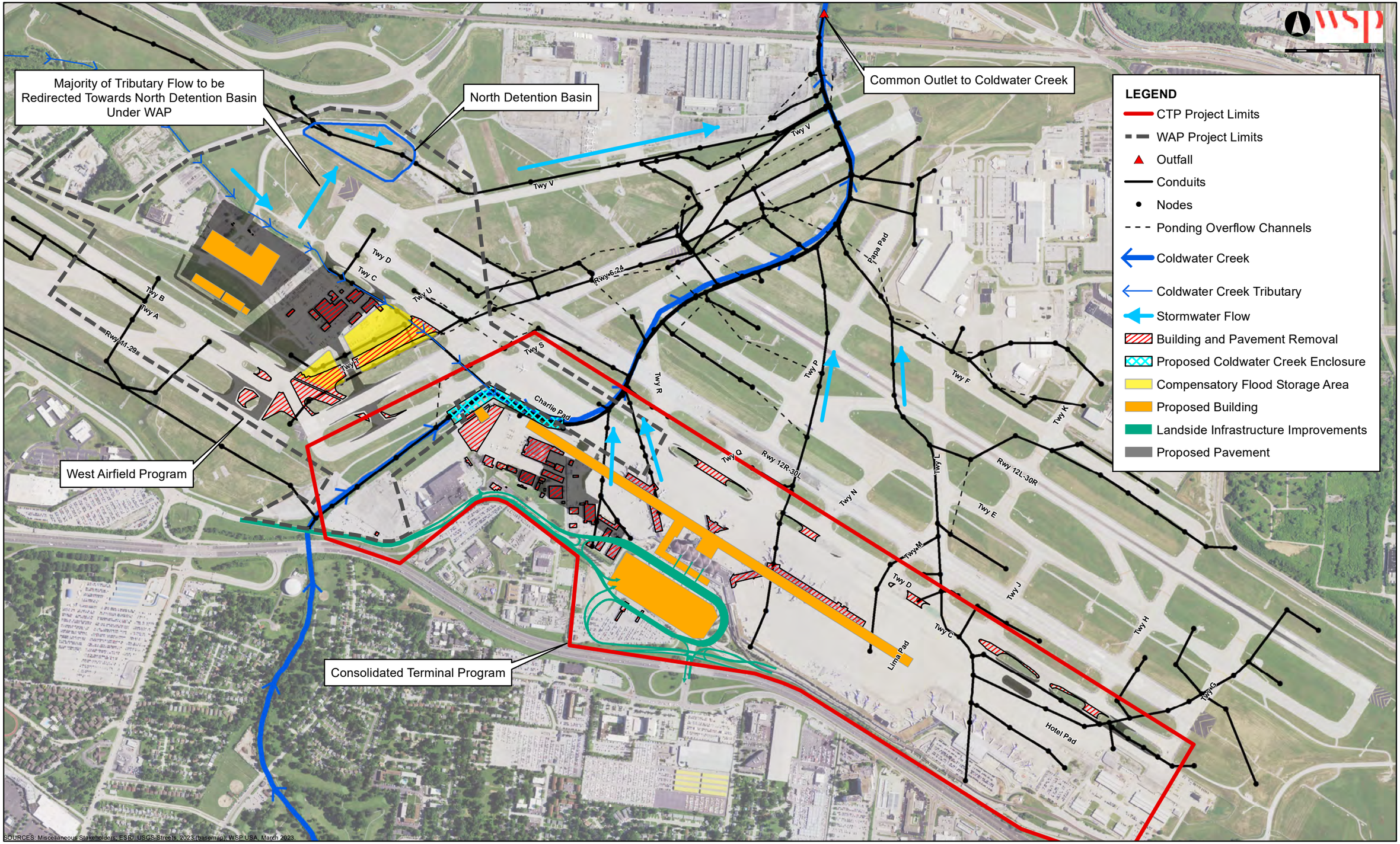
3.1.1 WATER QUALITY

Water Quality BMPs were evaluated for the CTP redevelopment since it exceeds the 1-acre threshold. MSD established a water quality volume (WQv) to be stored in BMPs based on the storage needed to capture and treat runoff from 90% of recorded daily rainfall events. MSD's formula for calculating WQv is:

WQv (in acre-feet) = [(P)(Rv)(A)]/12
Where P = rainfall depth of 1.14 inches
Rv = 0.05 + 0.009 (I) where I is the percent impervious cover for the tributary area
A = tributary drainage area to the water quality BMP in acres

The MSD water quality volume (WQv) was calculated as 39.3 acre-feet of retention volume for the proposed tributary area of the CTP. No available areas for a water quality basin are known unless the proposed area north of the Cell Phone Lot and east of Coldwater Creek can be utilized. Providing WQv within the existing North Detention Basin is proposed as a means to provide water quality for the CTP and WAP development projects. Providing WQv as part of the WAP project is expected to be acceptable to MSD given the CTP and WAP developments are both within the airport property and drain to the same Coldwater Creek outlet point leaving the property as shown in **Figure 2**.

Figure 2
Consolidated Terminal Program - Drainage Map



SOURCES: Miscellaneous Stakeholders, ESRI, USGS Streets, 2023.(baseman); WSP USA, March 2023.

3.1.2 WATER QUANTITY

Rerouting flow to the North Detention Basin improvements as part of the WAP is proposed to account for development of the CTP in order to meet MSD water quantity requirements. MSD stormwater quantity compliance requires detention storage when the proposed development causes an increase in peak runoff of 2 cfs or greater. As previously stated and shown in Figure 2, the WAP and CTP contribute to a common Coldwater Creek outfall point before exiting the Airport property. Therefore, detaining flows from the WAP mitigates the increase in impervious area and runoff associated with the CTP improvements. The existing North Detention Basin was originally designed to receive runoff from a midfield terminal that was never constructed. Utilizing PCSWMM software, the basin was modeled and determined to have the capacity to receive and detain additional flow. The basin has a total capacity of about 118 acre-feet of volume, and about 40% of this is currently utilized during the 100-year 24-hour storm event. Water quantity requirements include detaining a Channel Protection Volume (CPv) and Flood Protection Volume (FPv). The CPv is the 24-hour extended detention of the post-developed one-year, 24-hour storm event. The FPv is the required storage volume to achieve a post-developed peak flow that does not exceed the existing routed peak flow. A 5' wide x 2' high orifice was modeled to pass the CPv and FPv. The hydraulic results of the combined development of the CTP and WAP are summarized in **Table 1**. The summary shows a net decrease in flow leaving the Airport property through Coldwater Creek for both the 2-year and 100-year storm.

Table 1: CTP Stormwater Quantity Summary

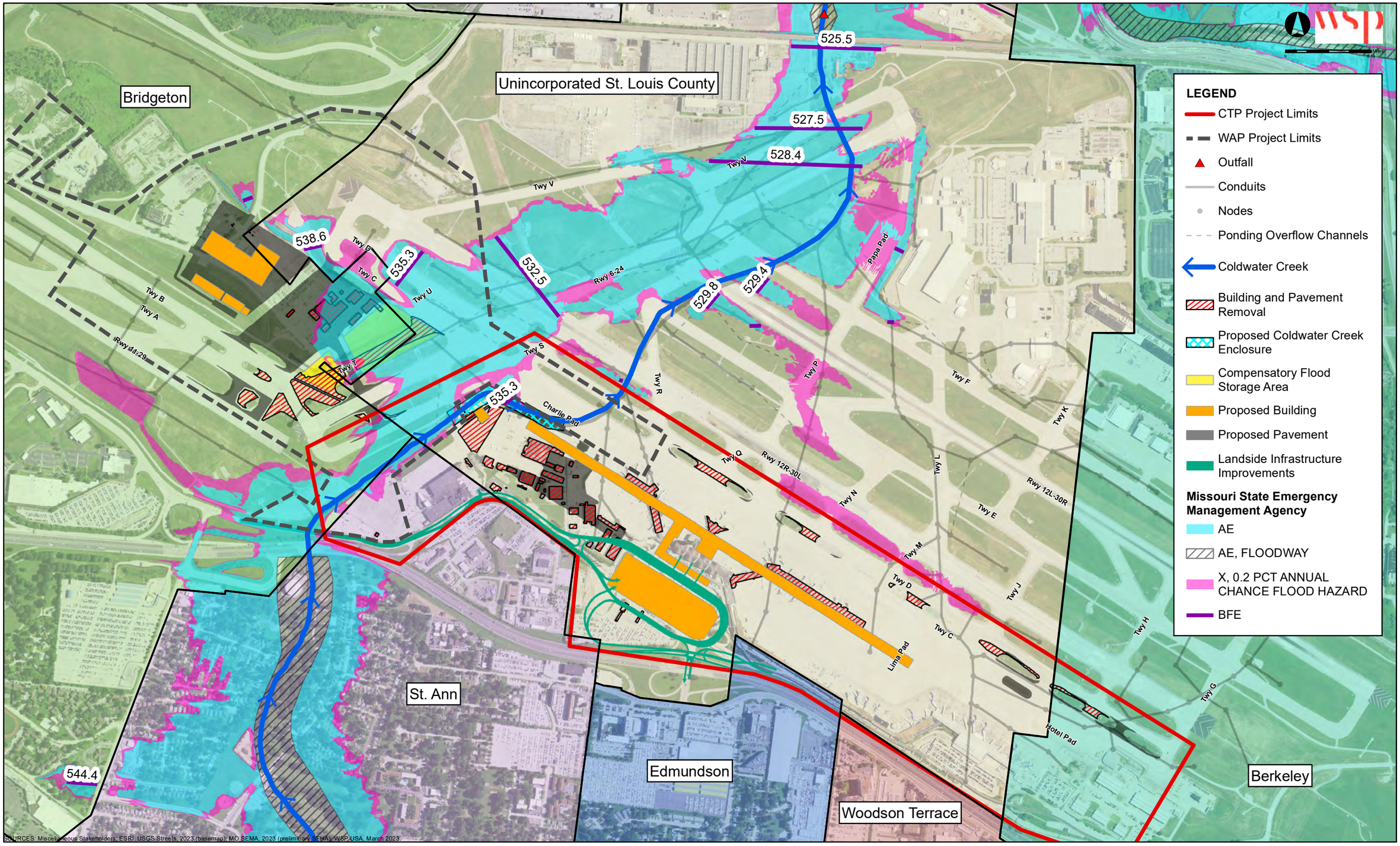
	HYDRAULIC MODEL RESULTS		
Model Scenario	**Stormwater Storage in Basin (acre-feet)**	**Peak Release Rate at Detention Basin Outlet (cfs)**	**Peak Coldwater Creek Flow Rate at Airfield Outlet (Near Banshee Rd) (cfs)**
Existing Conditions: 2-year 24-hour Storm (FPv)	5.08	76.5	4768.0
Proposed Conditions: 2-year 24-hour Storm (FPv)	13.27	99.6	4611.1
Existing Conditions: 100-year 24-hour Storm (FPv)	37.3	156.1	6174.6
Proposed Conditions: 100-year 24-hour Storm (FPv)	76.9	218.4	6093.2

Source: M3 Engineering Group, 2023.

3.2 FEDERAL EMEGENCY MANAGEMENT AGENCY

A flood study will be required to determine the impacts of the CTP on the base flood elevations for Coldwater Creek. **Figure 3** shows the revised FIRM boundaries in the CTP area which falls in the floodplain, but not the regulatory floodway. The expectation is that the proposed section of Coldwater Creek to be enclosed and any proposed fill in the floodplain proposed as part of the CTP will require compensatory excavation within the floodplain to avoid a rise in the base flood elevation. The WAP will also provide benefits to the CTP through compensatory storage and flow diversion to the existing North Detention Basin. This flood study will be completed as a future task of this project.

Figure 3
Consolidated Terminal Program - Preliminary FIRM and Muncipal Boundaries



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (basemap); MO SEMA, 2023 (preliminary SFHA); WSP USA, March 2023

4 PROPOSED ALTERNATIVES

4.1 ALTERNATIVE 1 - REROUTE CTP CULVERT 1 AND REUSE EXISTING CTP CULVERT 2

The purpose of Alternative 1 is to provide routes for existing drainage to continue to flow to Coldwater Creek while working with the footprint of the new Consolidated Terminal. As shown in **Figure 4**, Alternative 1 consists of installing 1,644 feet of 54-inch to 60-inch storm sewer (CTP Culvert 1) around the west end of the proposed terminal, while using the existing 4'9" x 6' arch sewer in place. Storm sewer inspections from 2021 indicate the existing arch sewer to be in good condition. To accommodate CTP Culvert 2 remaining within the footprint of the new terminal, a 66-foot-wide opening in the apron level building will be provided to retain the ability to maintain or reconstruct the existing sewer in the future without impacts to the new terminal.

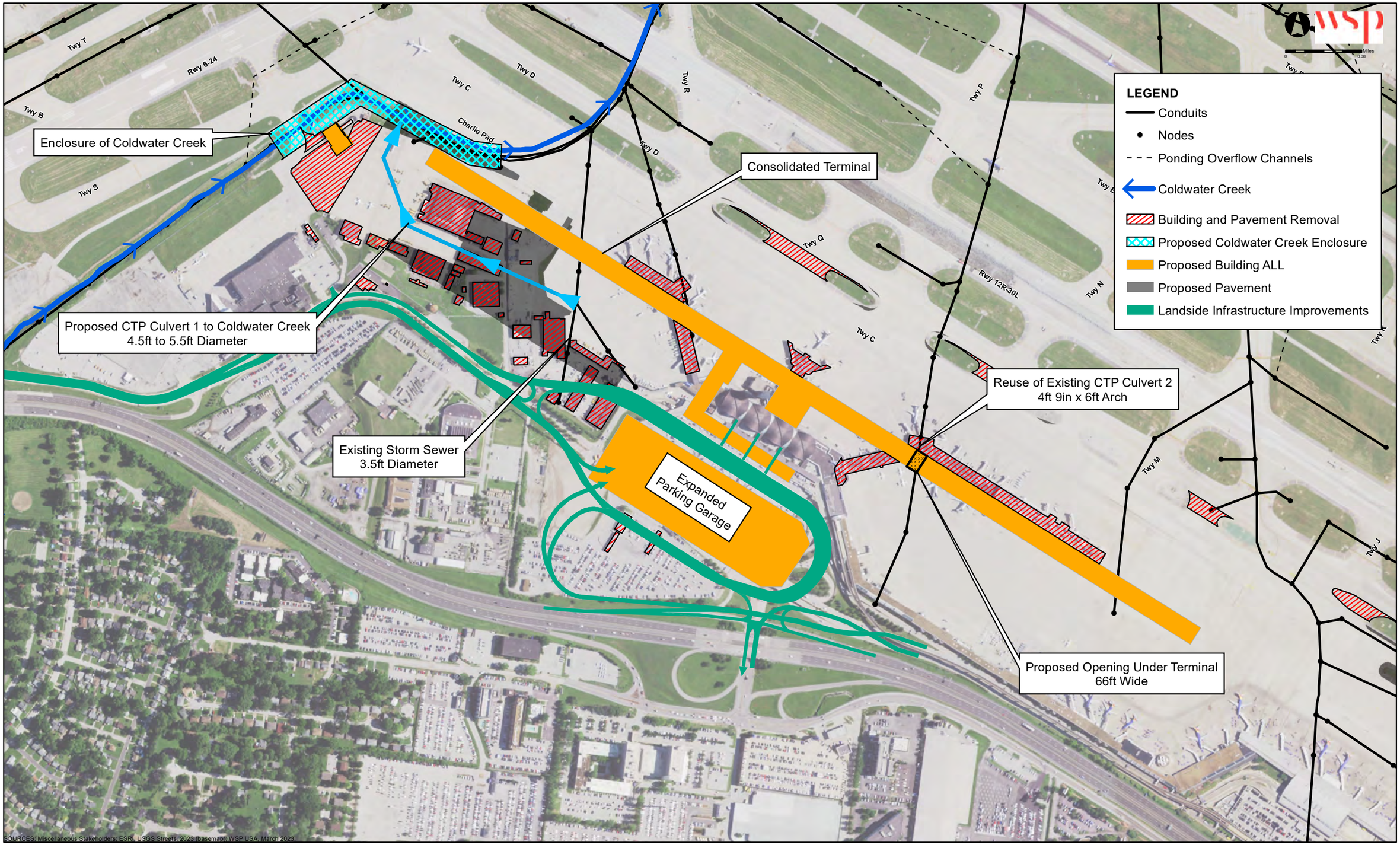
4.1.1 UTILITY CONFLICTS

Plan profile drawings were developed to illustrate risks for utility conflicts for the CTP project. A key map is provided as **Figure 5** to illustrate where each plan and profile figure is located within the CTP area. **Figures 6** and **7** provide the plan and profile of proposed CTP Culvert 1 with no known utility conflicts. **Figure 8** illustrates the plan and profile for using the existing culvert in place under the consolidated terminal. An opening is proposed under the proposed terminal for future maintenance of the culvert.

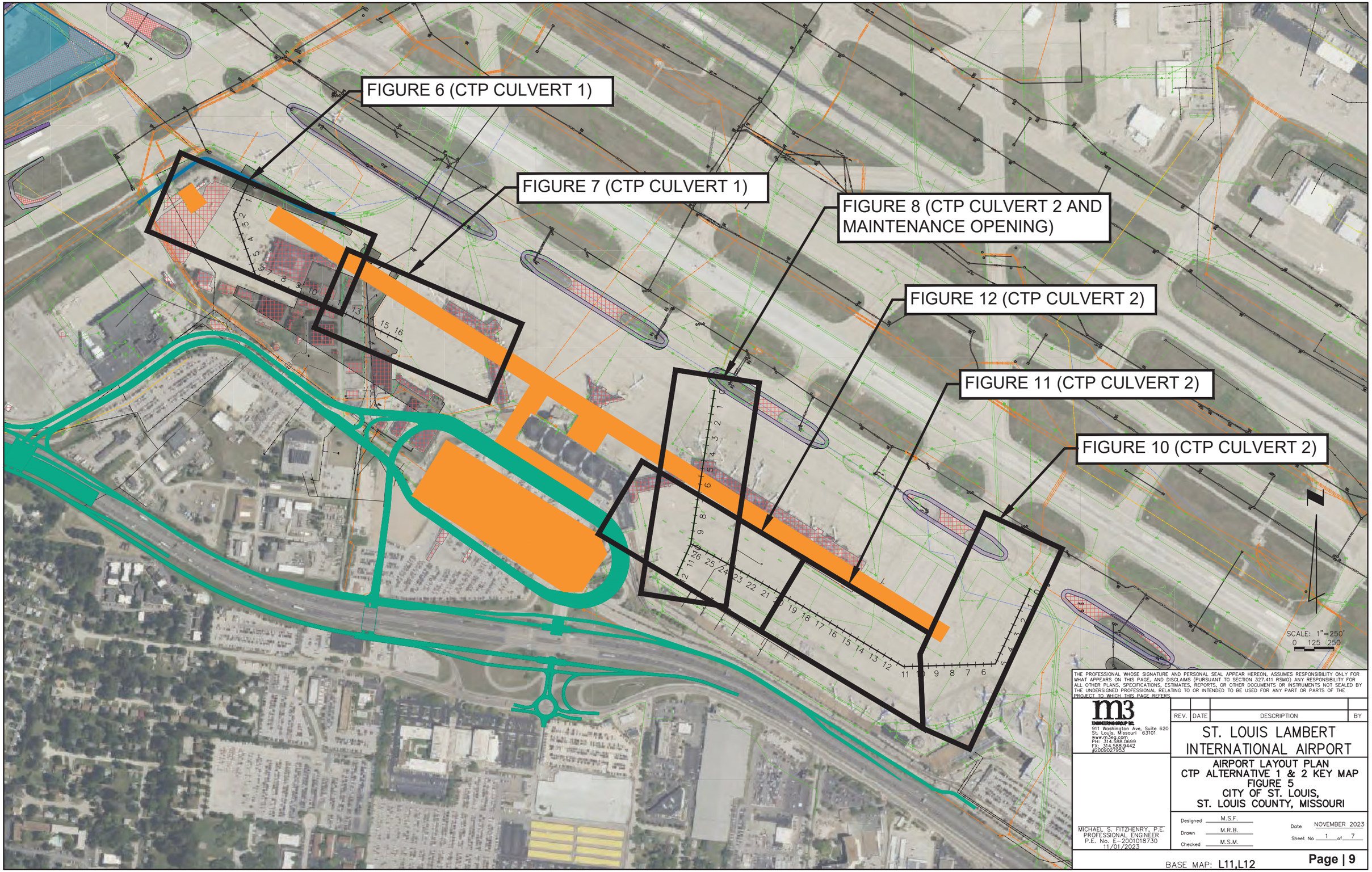
4.1.2 CONSTRUCTION COSTS

The construction costs for Alternative 1 include the cost to construct a new section of 5-foot diameter CTP Culvert 1, an extension of the Coldwater Creek 12-foot x 12-foot double box culvert, and a water quality storage basin at a location to be determined. The total cost is estimated at $17.1 million, including a 30% contingency and accounts for uncertainties in potential utility conflicts that may be encountered during design and construction. **Table 2** below provides a summary of costs for Alternative 1. A breakdown of the costs is provided in more detail in **Appendix A**.

Figure 4
Consolidated Terminal Program - Proposed Improvements
Alternative 1



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (basemap); WSP USA, March 2023.



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ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 1 & 2 KEY MAP
FIGURE 5
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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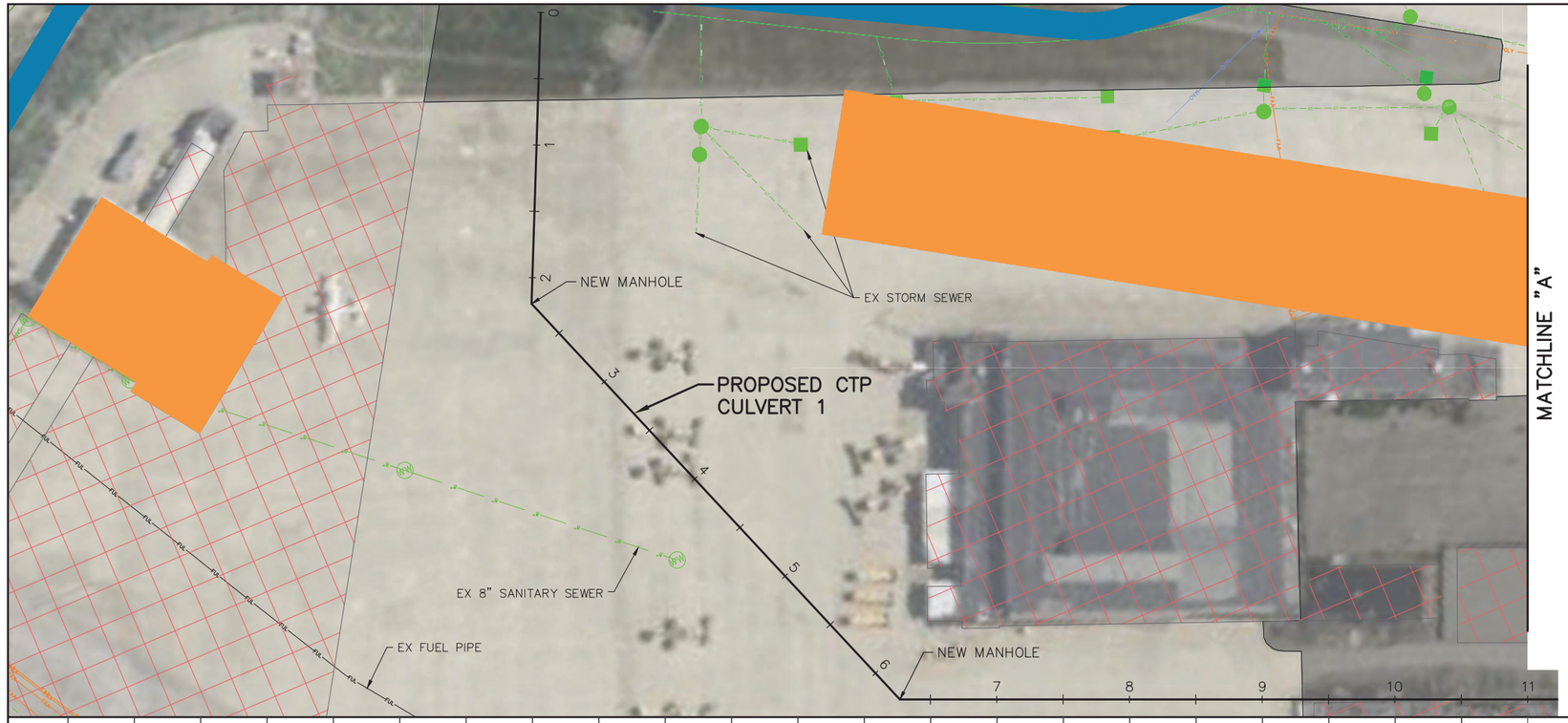
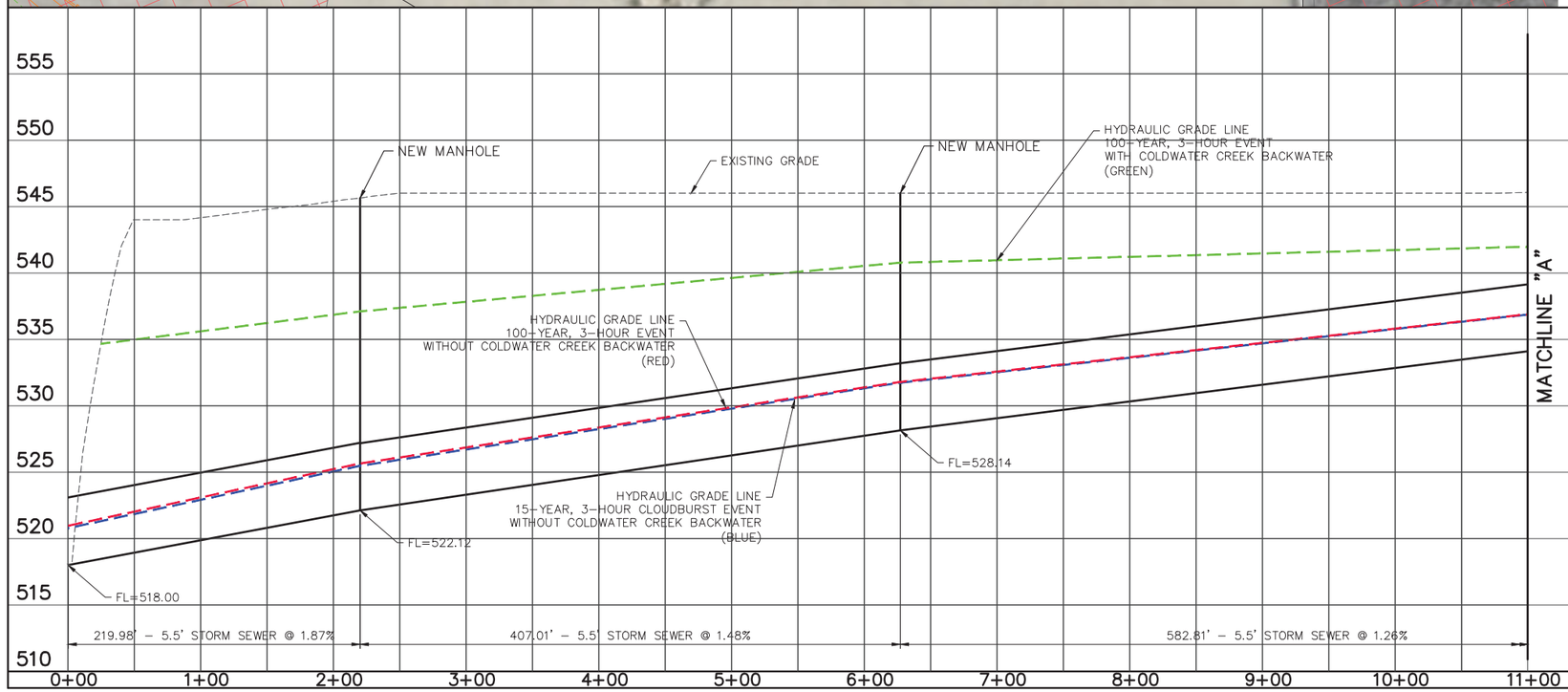
Checked M.S.M.

Date NOVEMBER 2023
Sheet No 1 of 7

BASE MAP: L11,L12





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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 1
FIGURE 6
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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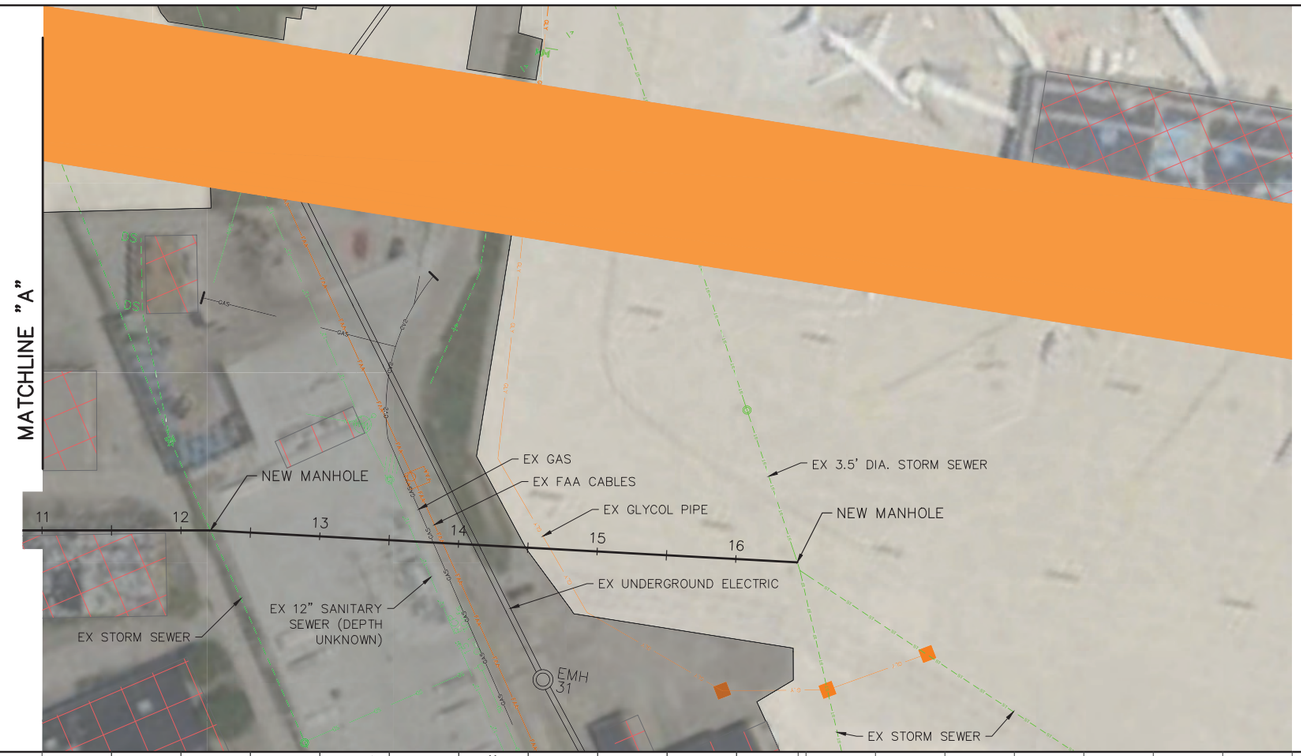
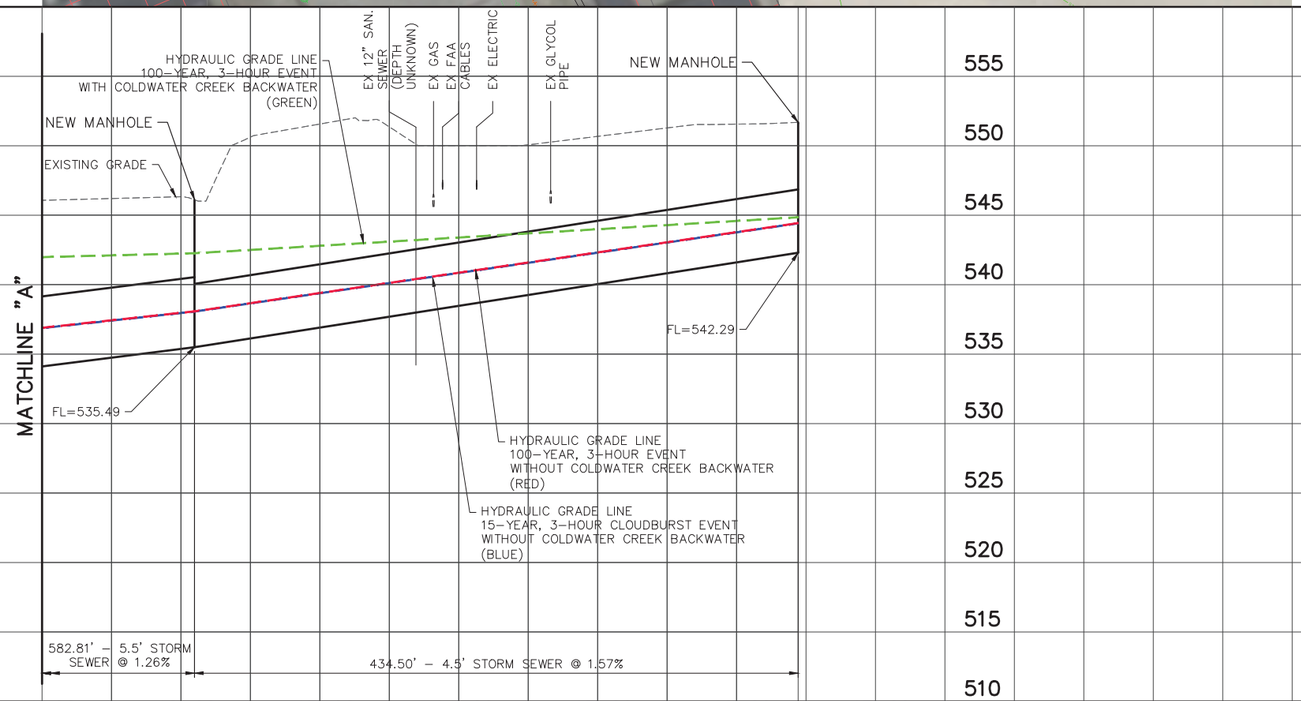
Sheet No 2 of 7

BASE MAP: L11,L12





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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 1
FIGURE 7
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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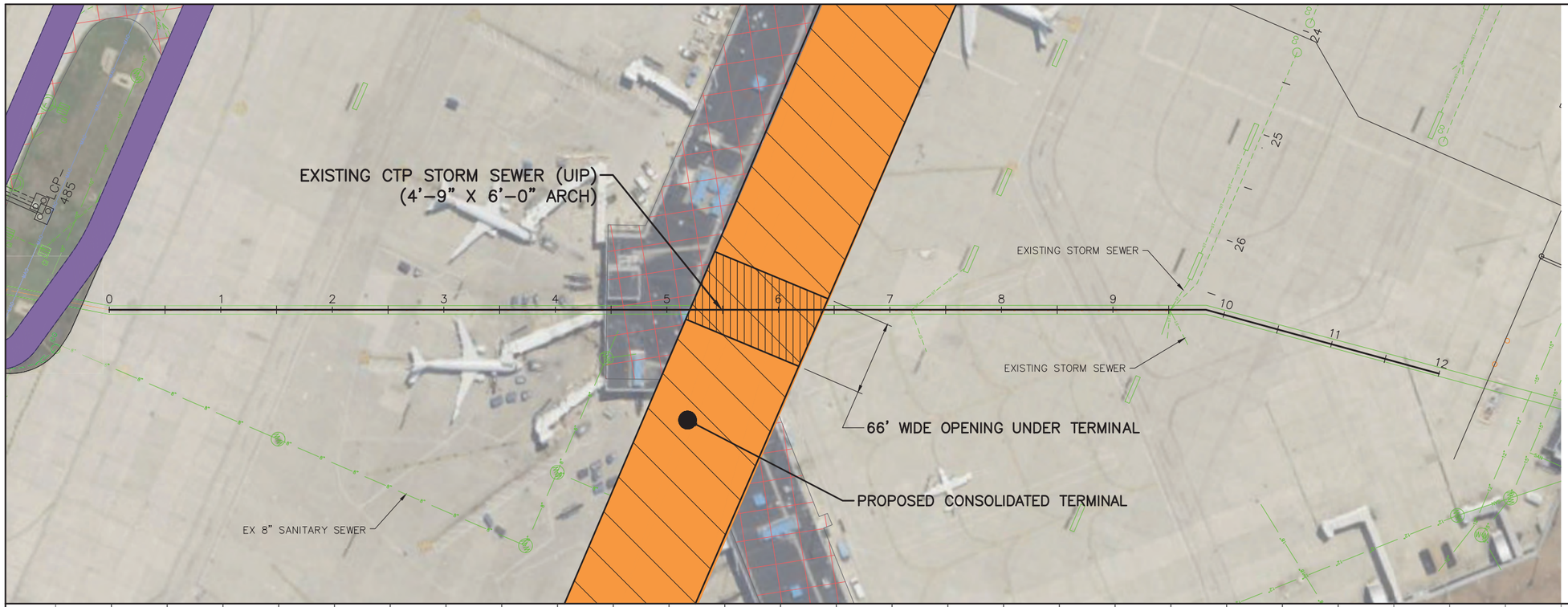
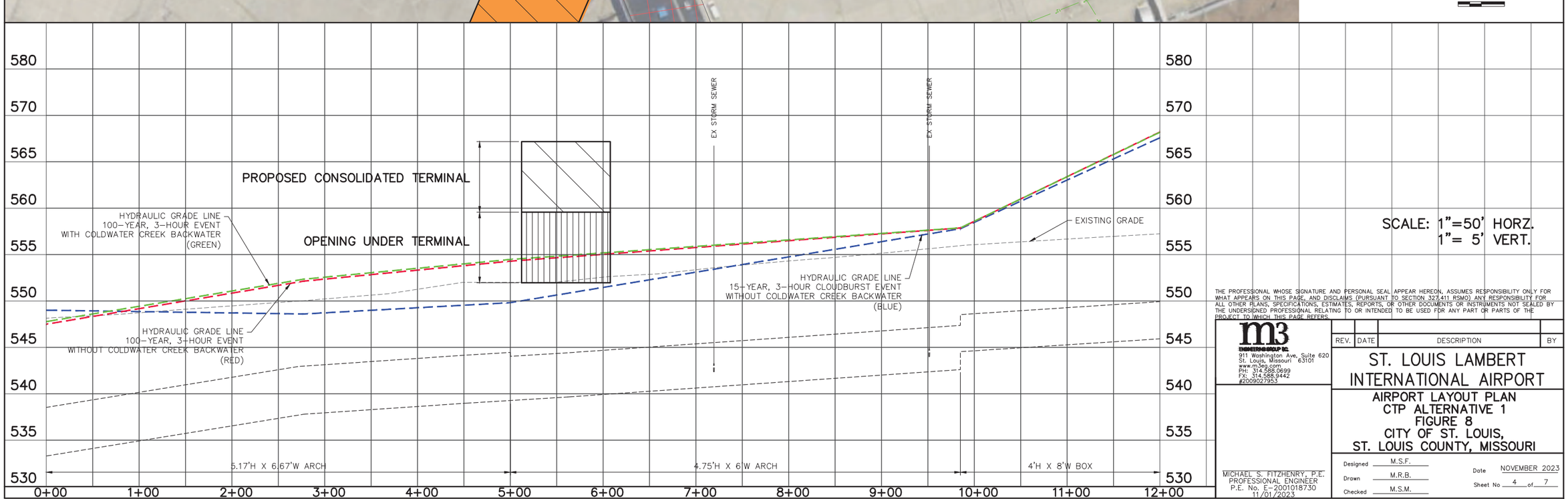
Sheet No 3 of 7

BASE MAP: L11,L12





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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 1
FIGURE 8
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

Designed M.S.F.
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Checked M.S.M.

Date NOVEMBER 2023
Sheet No 4 of 7

BASE MAP: L11,L12

Table 2: CTP Alternative 1 Construction Cost Summary

	COST ESTIMATE (CURRENT DOLLARS)	
Construction Costs	$	6,000,000
Contingency	$	1,800,000
General Contractor Markups	$	560,000
Owner's Soft Costs	$	1,450,000
Total Including Soft Costs	**$**	**9,810,000**
Environmental Assessment	$	390,000
ROM TOTAL COST ESTIMATE	**$**	**10,300,000**

Note: A cost for constructing a WQv basin is included in the construction costs for Alternative 1.

Source: M3 Engineering Group, 2023.

4.2 ALTERNATIVE 2 - REROUTE CTP CULVERT 1 AND CTP CULVERT 2

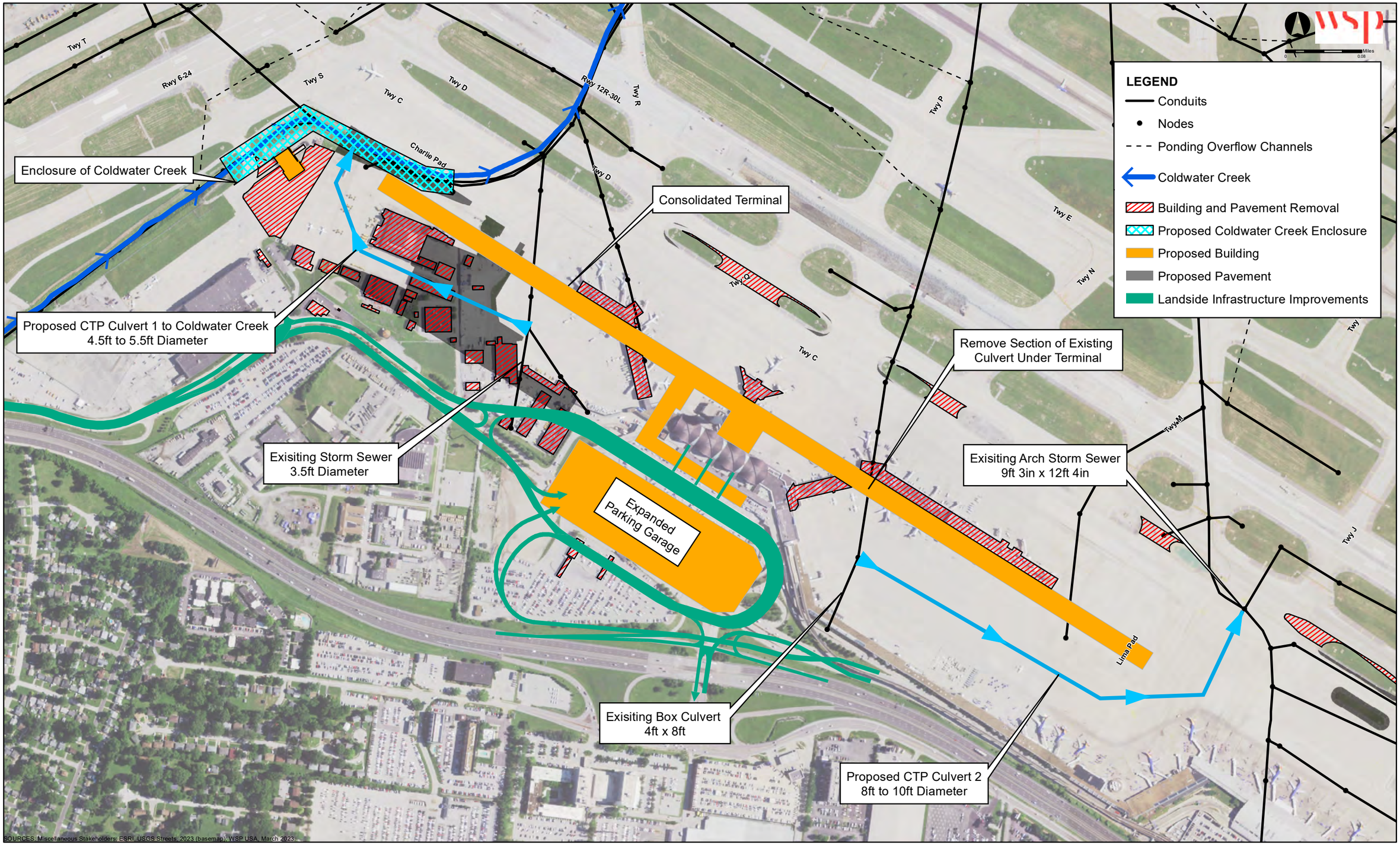
The purpose of Alternative 2 is to evaluate rerouting all existing culverts around the footprint of the new Consolidated Terminal. Alternative 2 consists of installing the same 1,644 feet of 54-inch to 60-inch storm sewer (CTP Culvert 1) around the west end of the terminal as in Alternative 1. In Alternative 2, the existing 4' x 8' arch sewer (CTP Culvert 2) would be rerouted around the east end of the new terminal. CTP Culvert 2 alignment consists of 2,665 feet of 96-inch to 120-inch diameter pipe culvert. Refer to **Figure 9** for the general location of proposed CTP Culvert 1 and 2. A key map is provided as **Figure 5** to illustrate where each plan and profile figure is located within the CTP area. The plan and profile of CTP Culvert 1 is the same for Alternative 2 as Alternative 1 and is shown in **Figures 6 and 7**. The plan and profile of CTP Culvert 2 is shown in **Figures 10** through **12**. For overland flow evaluation of the 100-year storm event, a v-shaped apron with 0.5% v-channel side slopes centered over the proposed culvert was assumed.

During a meeting on April 6, 2023, MSD stated this alternative would be closely reviewed as it reroutes flow from one tributary area to another. MSD indicated the 100-year storm needs to be evaluated with and without Coldwater Creek 100-year backwater conditions. Given the sewers are larger than 36-inch diameter, a blocked culvert condition does not need to be evaluated, but the overland flow path needs to be evaluated to ensure no buildings are flooded by the overland flow. Overland flow from this proposed alternative must be evaluated relative to FAA guidelines for airfield flooding of runways and taxiways.

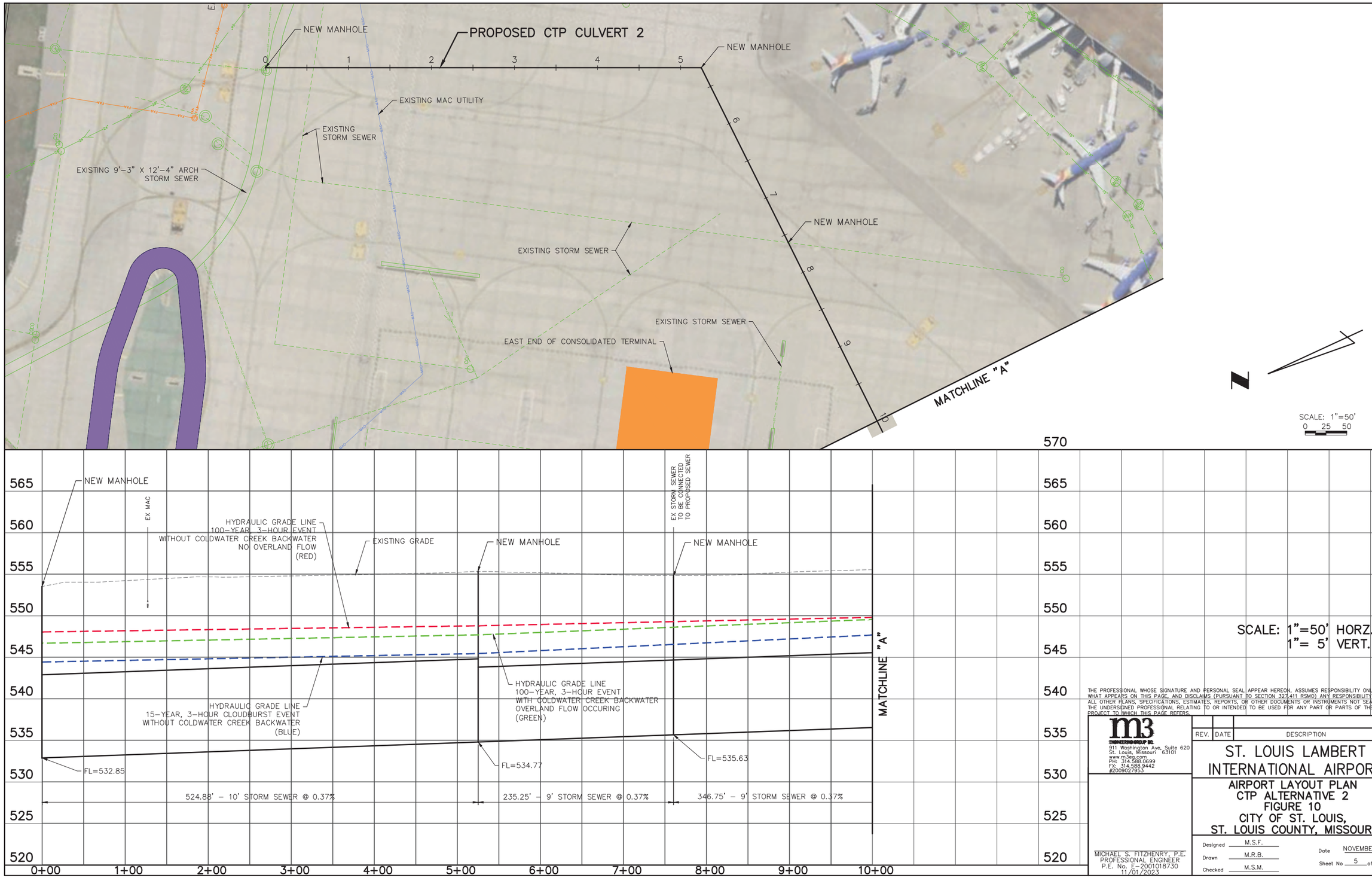
4.2.1 UTILITY CONFLICTS

Alternative 2 has multiple crossing of existing storm culverts and one electrical and water service duct bank. The crossing storm sewers are proposed to be connected to the CTP Culvert 2, and the duct bank is assumed to have a depth of cover of 4 feet which will not conflict with the proposed culvert. CTP Culvert 1, which is also part of Alternative 2, has no known utility conflicts.

Figure 9
Consolidated Terminal Program - Proposed Improvements
Alternative 2



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (basemap); WSP USA, March 2023.



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BASE MAP: L11,L12

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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 2
FIGURE 10
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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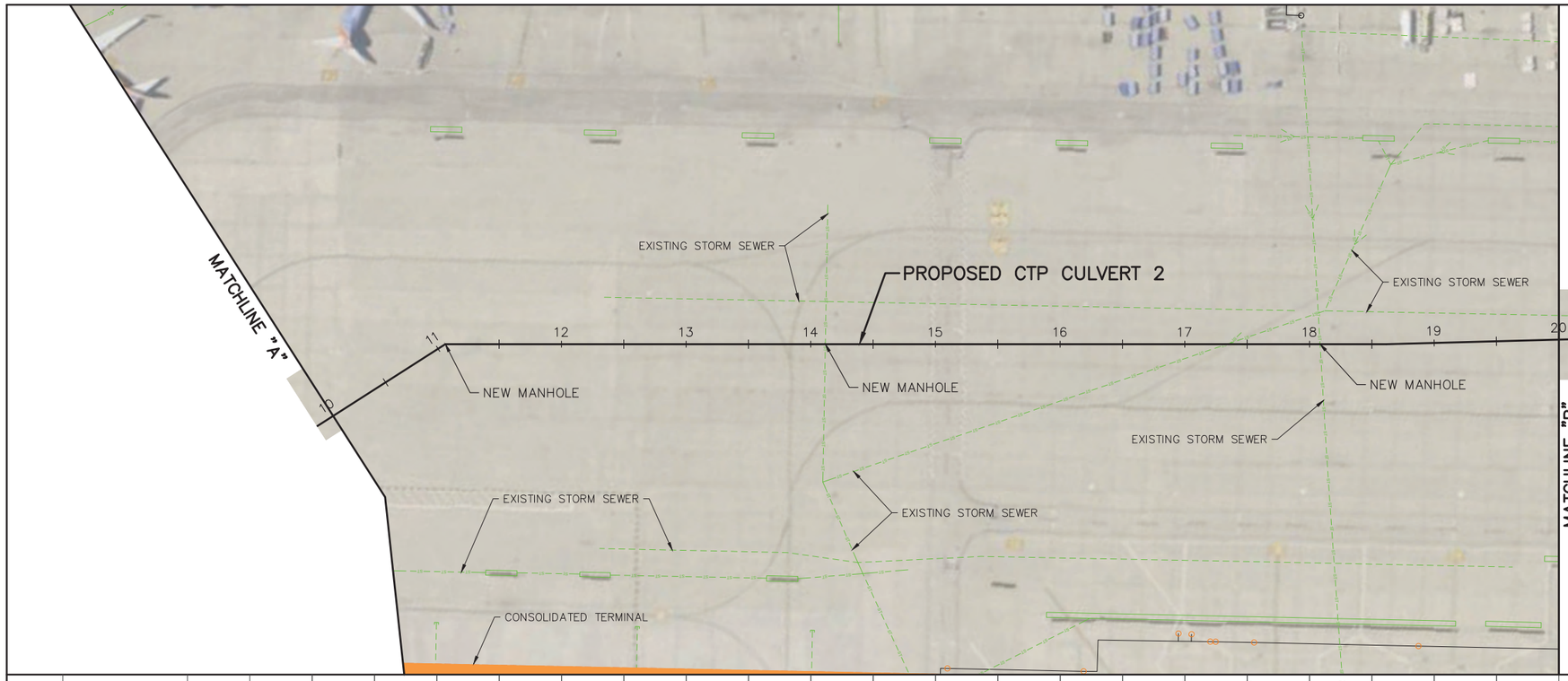

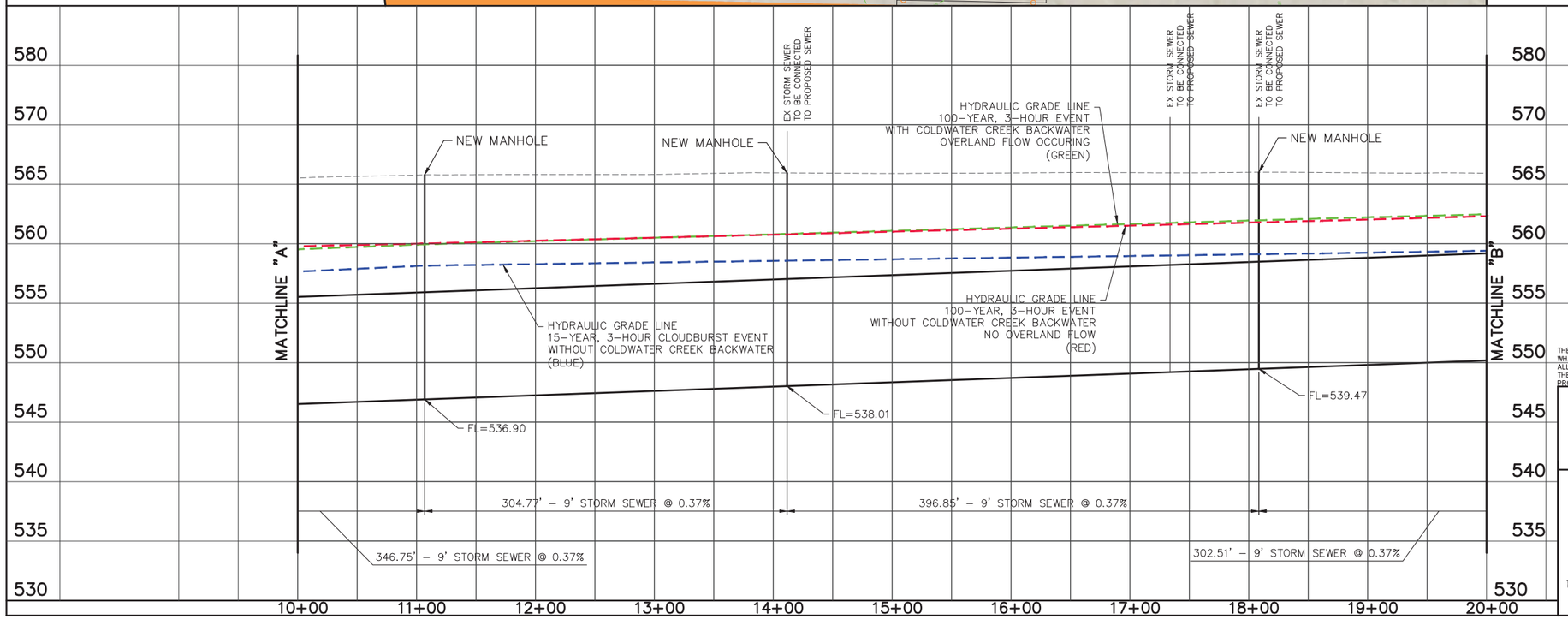

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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 2
FIGURE 11
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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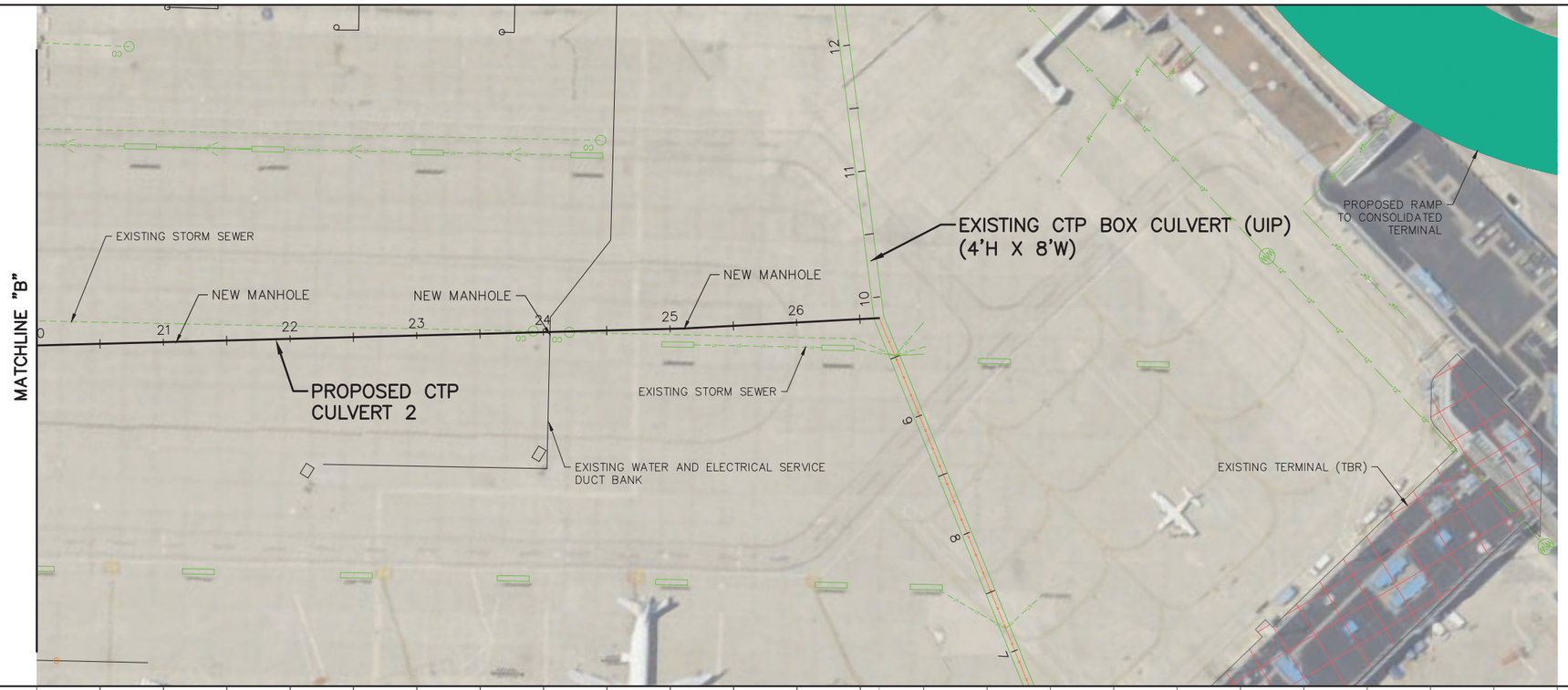
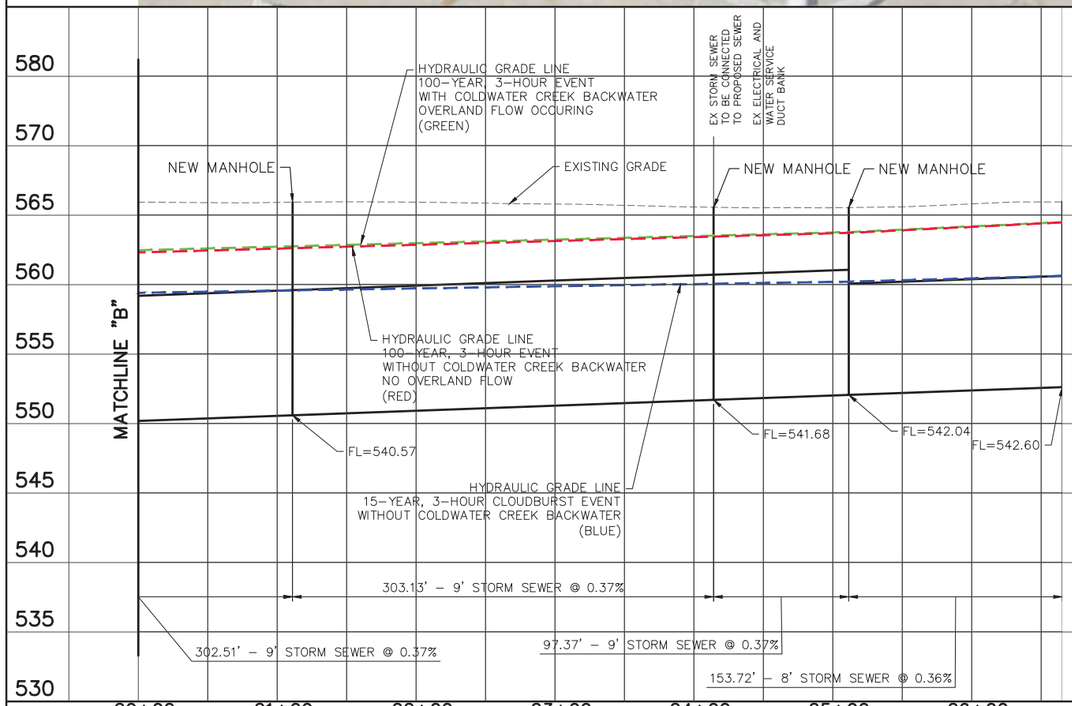
Sheet No 6 of 7

BASE MAP: L11,L12





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AIRPORT LAYOUT PLAN
CTP ALTERNATIVE 2
FIGURE 12
CITY OF ST. LOUIS, ST. LOUIS COUNTY, MISSOURI

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Sheet No 7 of 7

BASE MAP: L11,L12

4.2.2 CONSTRUCTION COSTS

The construction costs for Alternative 2 include the cost to construct a new section of 5-foot diameter CTP Culvert 1, a new section of 9-foot diameter CTP Culvert 2, an extension of the Coldwater Creek 12-foot x 12-foot double box culvert, and a 39 acre-ft. water quality storage basin at a location to be determined. The total cost is estimated at $13.5 million, including a 30% contingency and accounts for uncertainties in potential utility conflicts that may be encountered during design and construction. **Table 3** below provides a summary of costs for Alternative 2. A breakdown of the costs is provided in more detail in **Appendix B**.

Table 3: CTP Alternative 2 Construction Cost Summary

	COST ESTIMATE (CURRENT DOLLARS)	
Construction Costs	$	8,200,000
Contingency	$	2,460,000
General Contractor Markups	$	760,000
Owner's Soft Costs	$	2,000,000
Total Including Soft Costs	**$**	**13,400,000**
Environmental Assessment	$	540,000
ROM TOTAL COST ESTIMATE	**$**	**14,000,000**

Note: A cost for constructing a WQv basin is included in the construction costs for Alternative 2.

Source: M3 Engineering Group, 2023.

4.2.3 CONSTRUCTION SEQUENCING

Table 4 below displays the necessary order and expected duration of events for the construction of the CTP stormwater improvements for Alternative 2.

Table 4: Sequencing and Approximate Duration of Construction Events

CONSTRUCTION EVENT	APPROXIMATE DURATION
1. Demolition of Existing Structures	–
2. CTP Culvert 1 Construction	6 months
3. Enclosure of Coldwater Creek	6 months
4. Start of Construction on Western Leg of CTP Concourse and New Pavement	–
5. CTP Culvert 2 Construction (can occur simultaneously with construction of CTP Culvert 1)	9 months

Source: M3 Engineering Group, 2023.

4.3 ALTERNATIVE 3 - REROUTE CTP CULVERT 1 AND CTP CULVERT 2

MSD indicated they would review Alternative 2 closely to ensure no negative impacts to flooding and overland flow. Given MSD's input on Alternative 2, Alternative 3 was developed to evaluate the feasibility and effectiveness of rerouting CTP Culvert 2 around the east end of the proposed footprint of the Consolidated Terminal and tying back into the existing CTP Culvert 2 north of the proposed terminal. The CTP Culvert 2 alignment, shown in **Figure 13,** consists of 4,231 feet of 96-inch to 120-inch diameter pipe culvert.

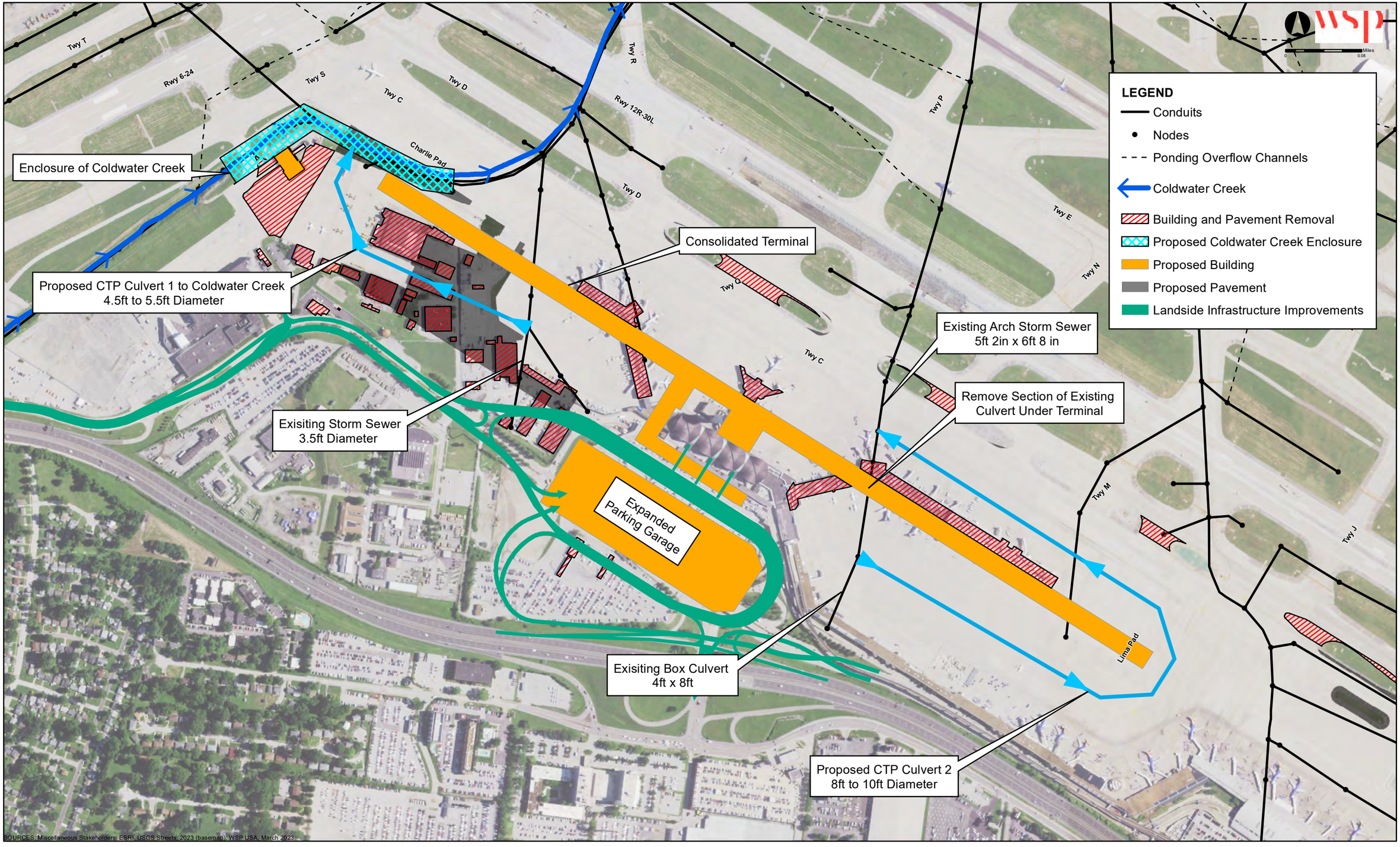
The slope of the proposed culvert had to be reduced due the longer length of this alignment. The reduced slope of 0.1% for the proposed section of CTP Culvert compares to an existing sewer slope of 0.6%. This reduction in slope decreased the capacity of the proposed section of pipe to the point Alternative 3 was not adequate to convey the design flows and was eliminated from further evaluation.

4.4 ALTERNATIVE 4 - REROUTE CTP CULVERT 1 AND CTP CULVERT 2

Alternative 4 reroutes all existing culverts around the footprint of the new Consolidated Terminal as shown in **Figure 14**. Alternative 4 was developed to provide a similar reroute of CTP Culvert 2 in Alternative 3, but with a greater pipe slope and capacity. Alternative 4 consists of installing the same 60-inch storm sewer (CTP Culvert 1) around the west end of the proposed terminal as proposed in Alternative 1 and 2. The existing 4' x 8' arch sewer (CTP Culvert 2) would be rerouted around the east end and north side of the new terminal with 6,802 feet of 120-inch diameter storm sewer before tying into the existing Coldwater Creek double box culvert**.**

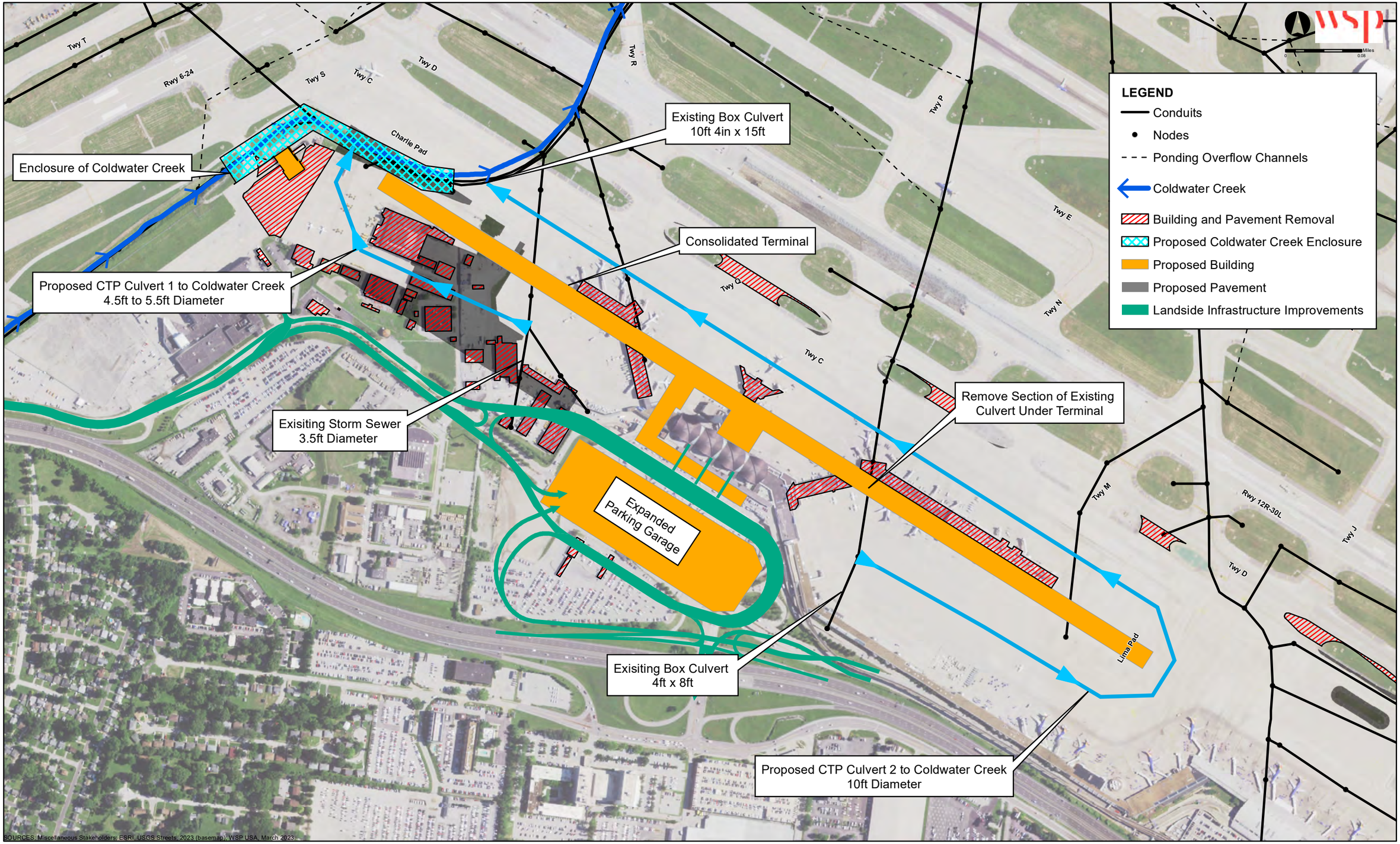
While Alternative 4 adequately conveys the 15-year design storm, construction of this alternative would cause significant disruption to use of the north side of the concourse for an estimated 12 to 15 months. Given the $23.4 million ROM cost of Alternative 4 far exceeds the ROM cost of Alternative 2 and the amount of disruption to Airport operations required by Alternative 4, a plan and profile evaluation of Alternative 4 was not warranted.

Figure 13
Consolidated Terminal Program - Proposed Improvements
Alternative 3



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (basemap); WSP USA, March 2023.

Figure 14
Consolidated Terminal Program - Proposed Improvements
Alternative 4



SOURCES: Miscellaneous Stakeholders; ESRI, USGS Streets, 2023 (basemap); WSP USA, March 2023.

4.4.1 CONSTRUCTION COSTS

The total Alternative 4 ROM cost is estimated at $23.4 million, including a 30% contingency and accounts for uncertainties in potential utility conflicts that may be encountered during design and construction. **Table 5** below provides a summary of costs for Alternative 4. A breakdown of the costs is provided in more detail in **Appendix B**.

Table 5: CTP Alternative 4 Construction Cost Summary

	COST ESTIMATE (CURRENT DOLLARS)
Construction Costs	$ 13,700,000
Contingency	$ 4,110,000
General Contractor Markups	$ 1,280,000
Owner's Soft Costs	$ 3,320,000
Total Including Soft Costs	**$ 22,410,000**
Environmental Assessment	$ 900,000
ROM TOTAL COST ESTIMATE	**$ 23,400,000**

Note: A cost for constructing a WQv basin is included in the construction costs for Alternative 4.

Source: M3 Engineering Group, 2023.

4.4.2 CONSTRUCTION SEQUENCING

Table 6 below displays the necessary order and expected duration of events for the construction of the CTP stormwater improvements for Alternative 4.

Table 6: Sequencing and Approximate Duration of Construction Events

CONSTRUCTION EVENT	APPROXIMATE DURATION
1. Demolition of Existing Structures	–
2. CTP Culvert 1 Construction	6 months
3. Enclosure of Coldwater Creek	6 months
4. Start of Construction on Western Leg of CTP Concourse and New Pavement	–
5. CTP Culvert 2 Construction (Construction may require phasing depending on operation of the existing terminal during construction)	12-15 months

Source: M3 Engineering Group, 2023.

4.5 RECOMMENDATIONS

Evaluation of stormwater alternatives is summarized in **Table 7** with the proposed CTP Culvert 1 being identical in all 4 alternatives.

Table 7: Evaluation of Alternatives

	ADVANTAGES	DISADVANTAGES
ALTERNATIVE 1	1. Proposed CTP Culvert 1 adequately conveys the 15-year Design Storm. 2. Low Cost Alternative due to use of existing CTP Culvert 2 in place	1. Providing a tunnel over the existing CTP Culvert 2 within the Consolidated Terminal will have some impacts on construction and usage of the lower level of new terminal for Airport maintenance and operations. 2. Existing CTP Culvert 2 Capacity is insufficient to convey the 15-year design storm resulting in surcharge above grade on the south side of the concourse.
ALTERNATIVE 2	1. Proposed CTP Culvert 1 adequately conveys the 15-year Design Storm. 2. Proposed CTP Culvert 2 adequately conveys the 15-year Design Storm without surcharge above grade. 3. CTP Culvert 2 sufficiently conveys storm flows for the 100-year event without flooding of the proposed Consolidated Terminal. 4. CTP Culvert 2 sufficiently conveys storm flows to meet FAA requirements for runways and taxiways during the 5-year and 10-year storms.	5. The alternative involves diverting flow from one culvert system to a different culvert which MSD indicated may draw greater scrutiny regarding evaluation of overland flow paths during the 100-year storm with and without Coldwater Creek backwater, but have been evaluated and meet MSD criteria.
ALTERNATIVE 3	1. Proposed CTP Culvert 1 adequately conveys the 15-year Design Storm.	2. Proposed CTP Culvert 2 for this alternative results in surcharge above grade as it does not have adequate capacity to convey the 15-year Design Storm.
ALTERNATIVE 4	1. Proposed CTP Culvert 1 adequately conveys the 15-year Design Storm. 2. Proposed CTP Culvert 2 adequately conveys the 15-year Design Storm.	3. Highest Cost Alternative due to long length of proposed 120-inch diameter CTP Culvert 2. 4. Alternative with the most disruptive construction to Airport operation.

Through evaluation of Alternatives 1, 2, 3, and 4, the recommended alternative is Alternative 2. Alternative 2 and Alternative 4 both are adequate hydraulically, but Alternative 2 avoids impacts to the north side of the main terminal, provides the lowest risks for construction, lower construction cost, and ease of future maintenance of the proposed sewers. CTP Culvert 1 and CTP Culvert 2 in Alternative 2 both adequately convey the 15-year design storm and provide adequate overland flow paths to convey the 100-year storm with 100-year Coldwater Creek backwater conditions.