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)

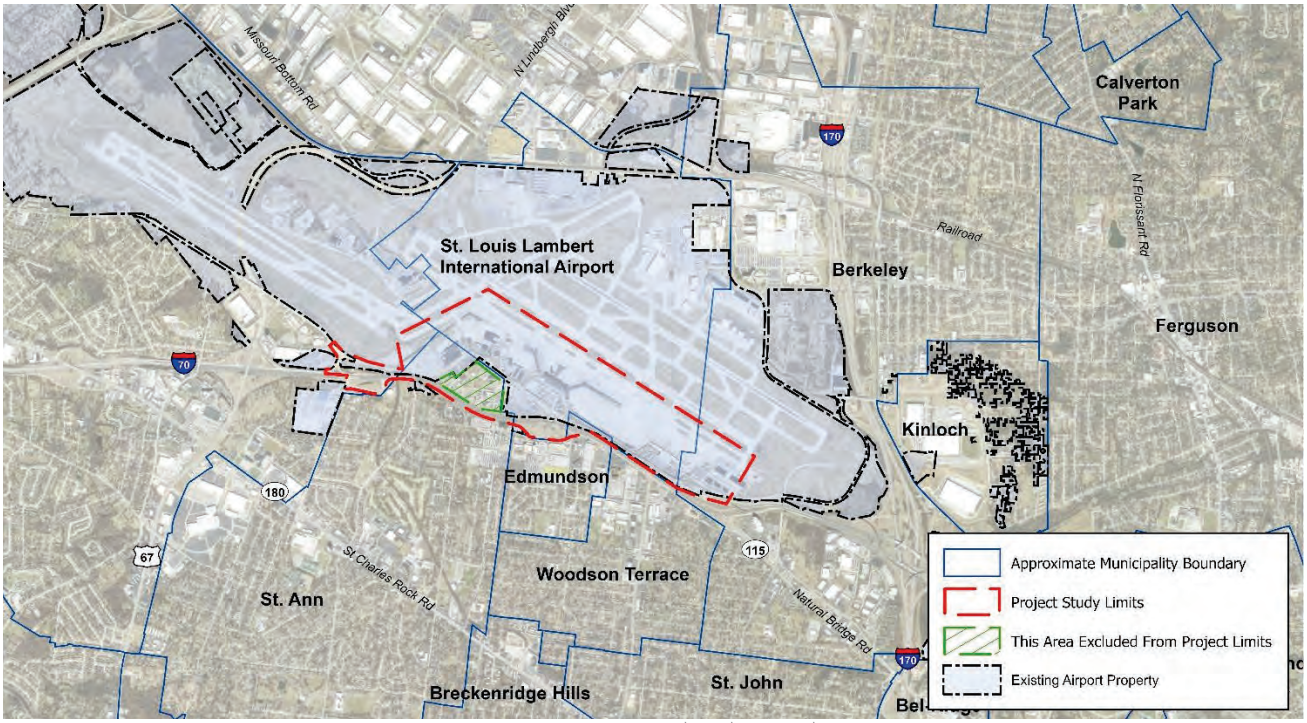
[21] Department of the Interior, 2023, National Wild and Scenic Rivers System. Available online at: https://www.rivers.gov/missouri.php, Accessed March 5, 2024.

- 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)

[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.

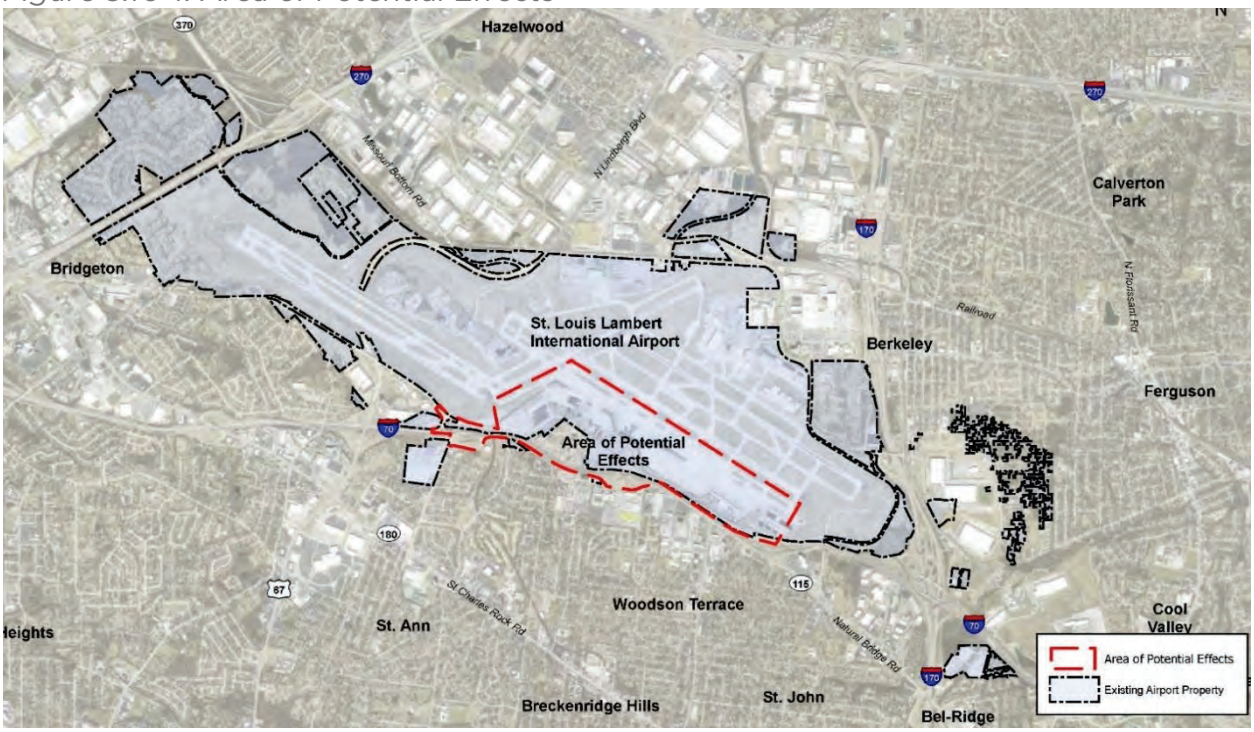
Pursuant to 36 C.F.R. § 800.4(a), FAA submitted the APE to the SHPO for review and comment on November 11, 2022. SHPO responded on December 13, 2022, and concurred with the proposed APE (See Appendix G).

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

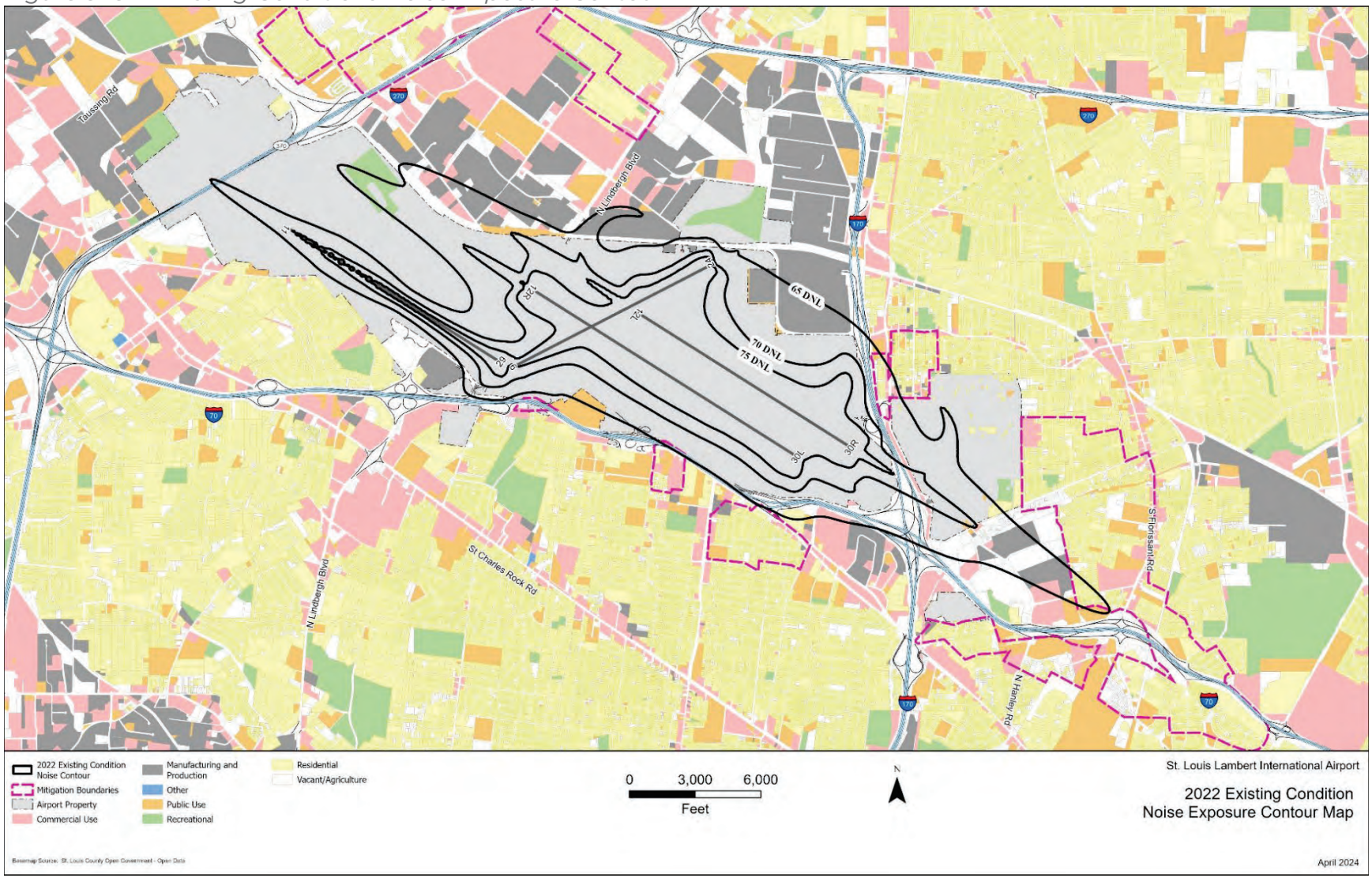
Aircraft Activity Levels and Fleet Mix

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

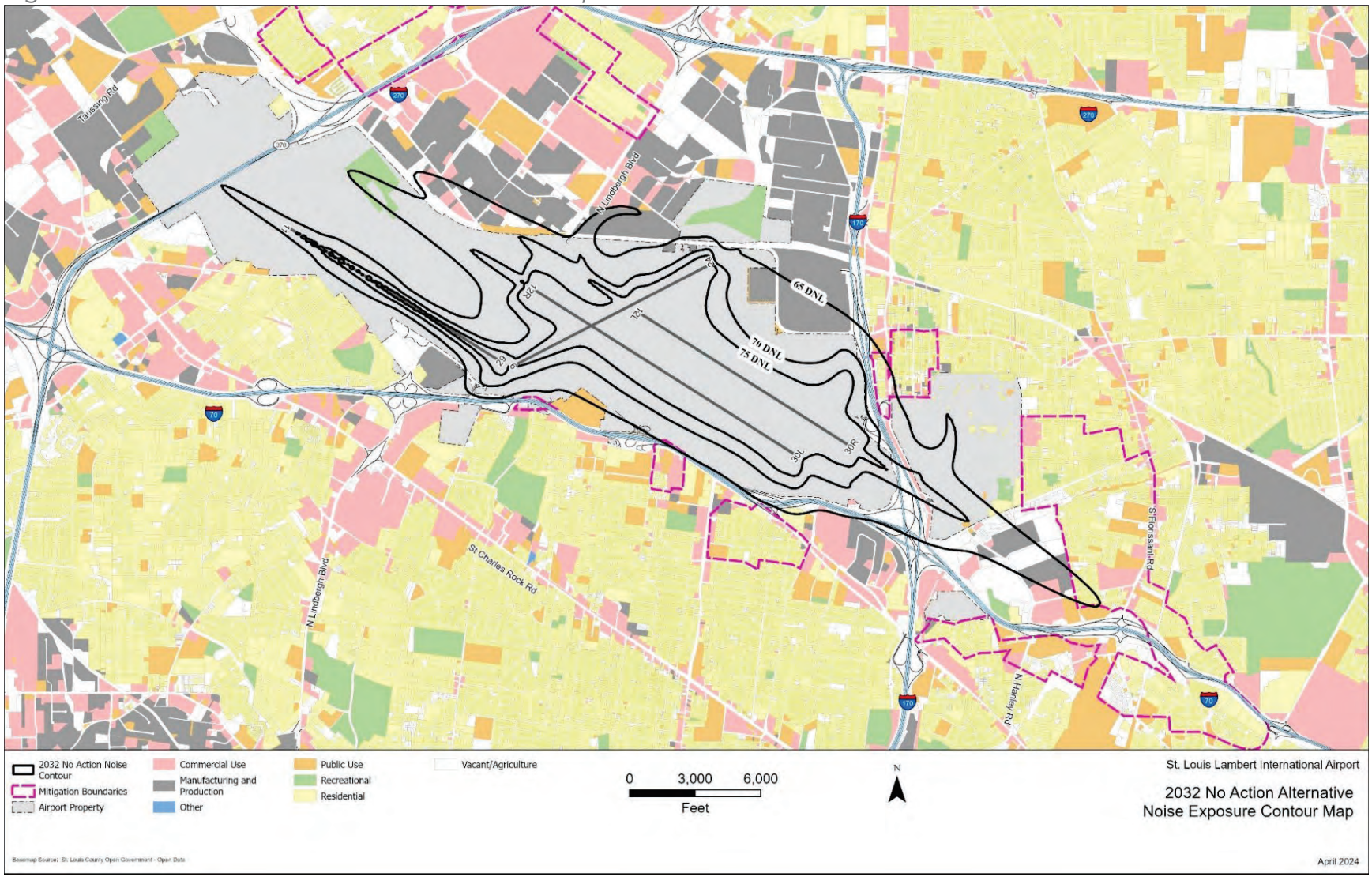
Under the Future 2032 Proposed Action and the Future 2037 Proposed Action, no runway relocation or other airfield changes would occur. Therefore, the runway definition discussed for the existing conditions would remain the same for the 2032 and the 2037 Proposed Action.

Figure 3.13-1: Existing Conditions Noise Exposure Contour



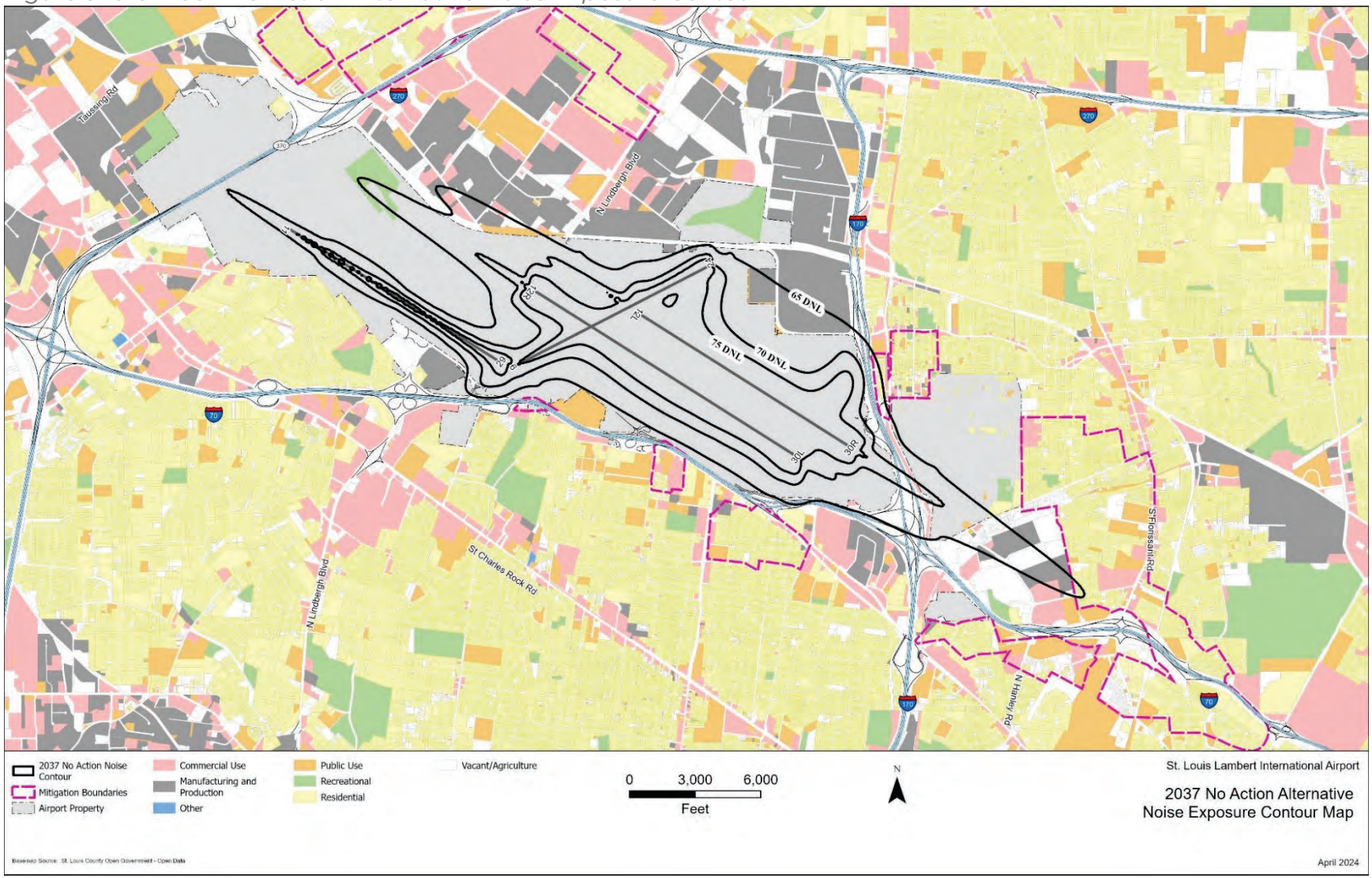
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

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

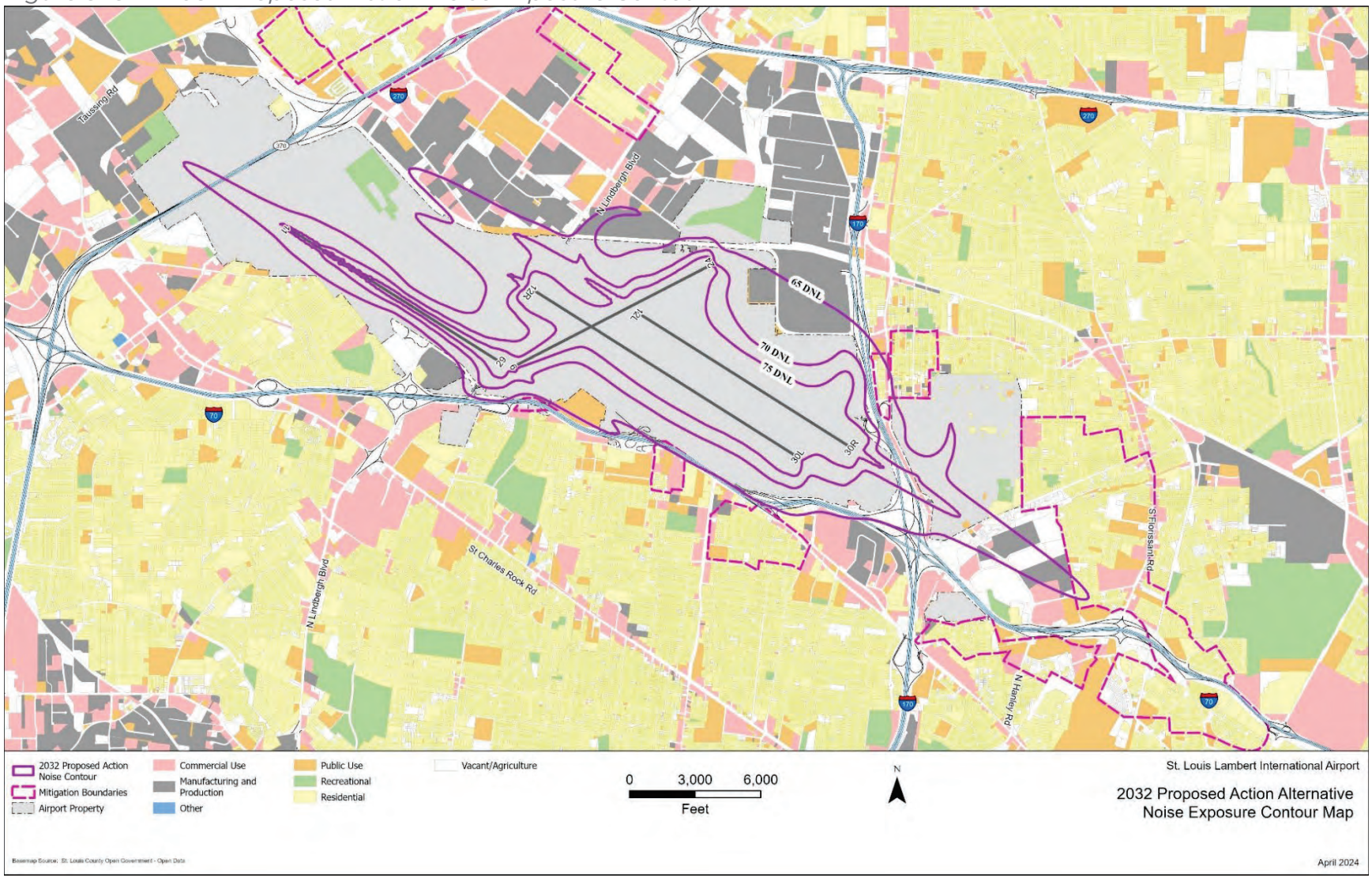
There are no new unmitigated residences, public schools, nursing homes, hospitals, libraries, or religious institutions within the Future 2032 and 2037 Proposed Action contours. Therefore, there are no new non-compatible land uses due to the Proposed Action.

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

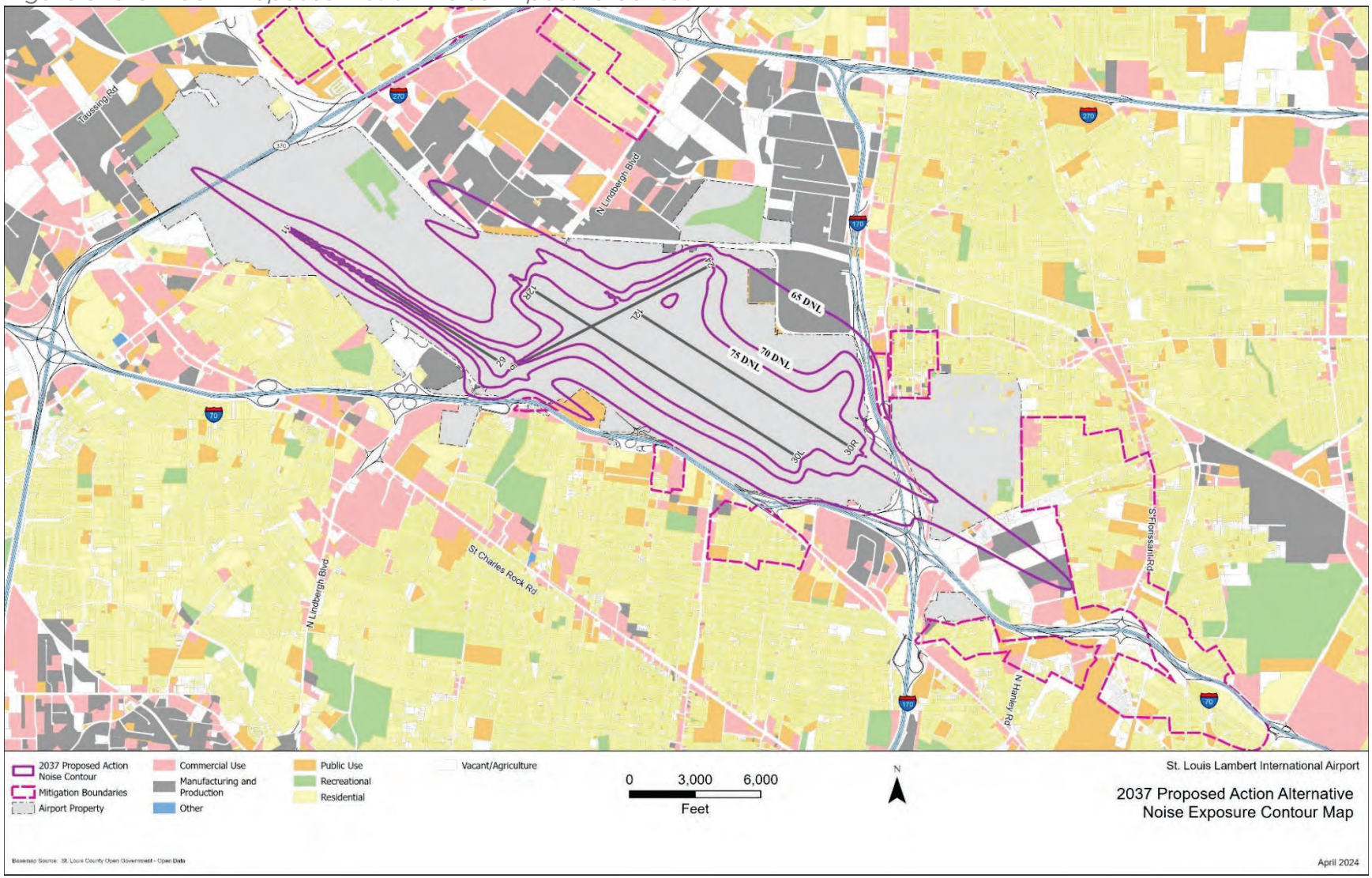
No mitigation is required.

Figure 3.13-4: 2032 Proposed Action Noise Exposure Contour



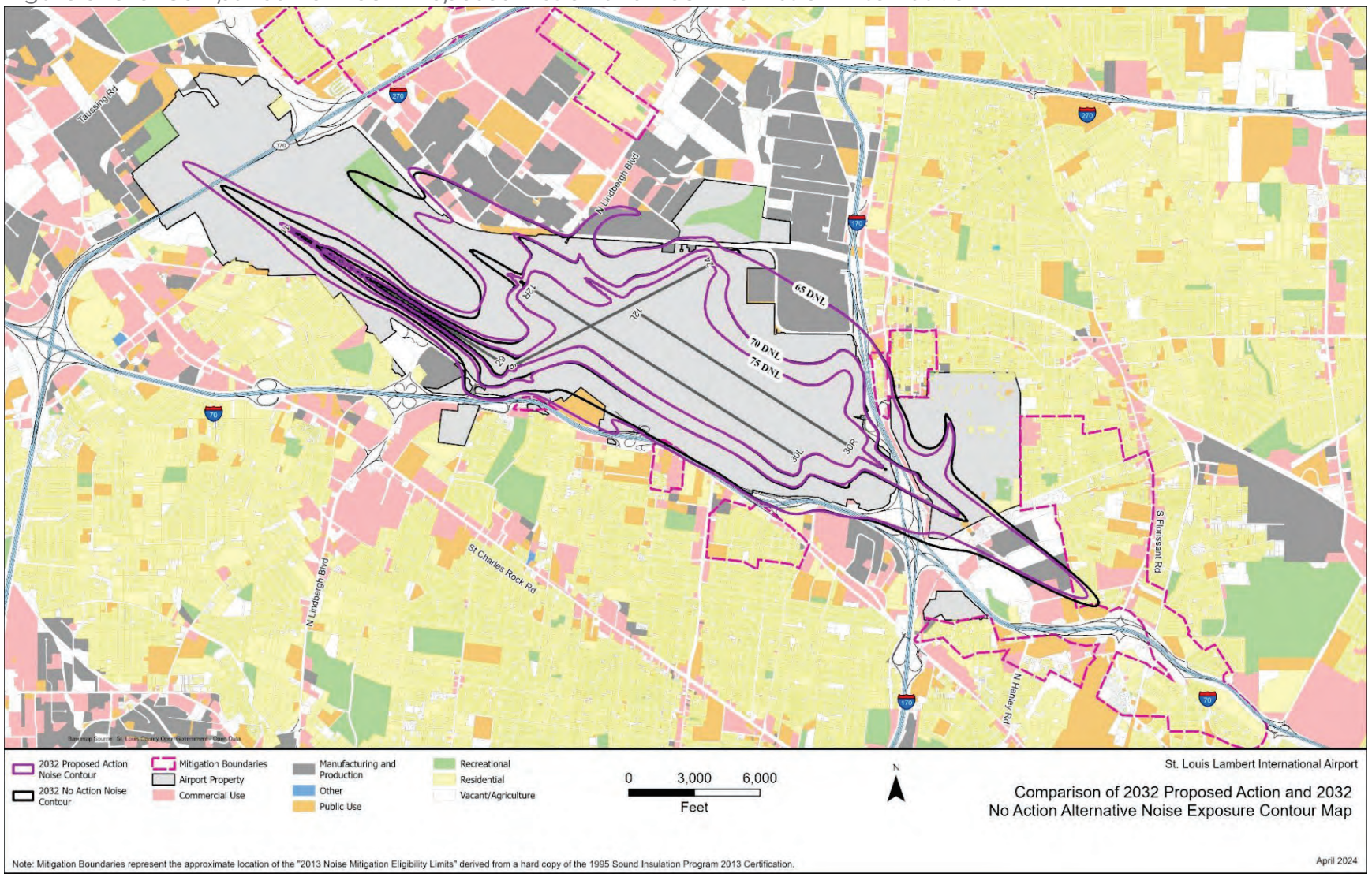
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

Figure 3.13-5: 2037 Proposed Action Noise Exposure Contour



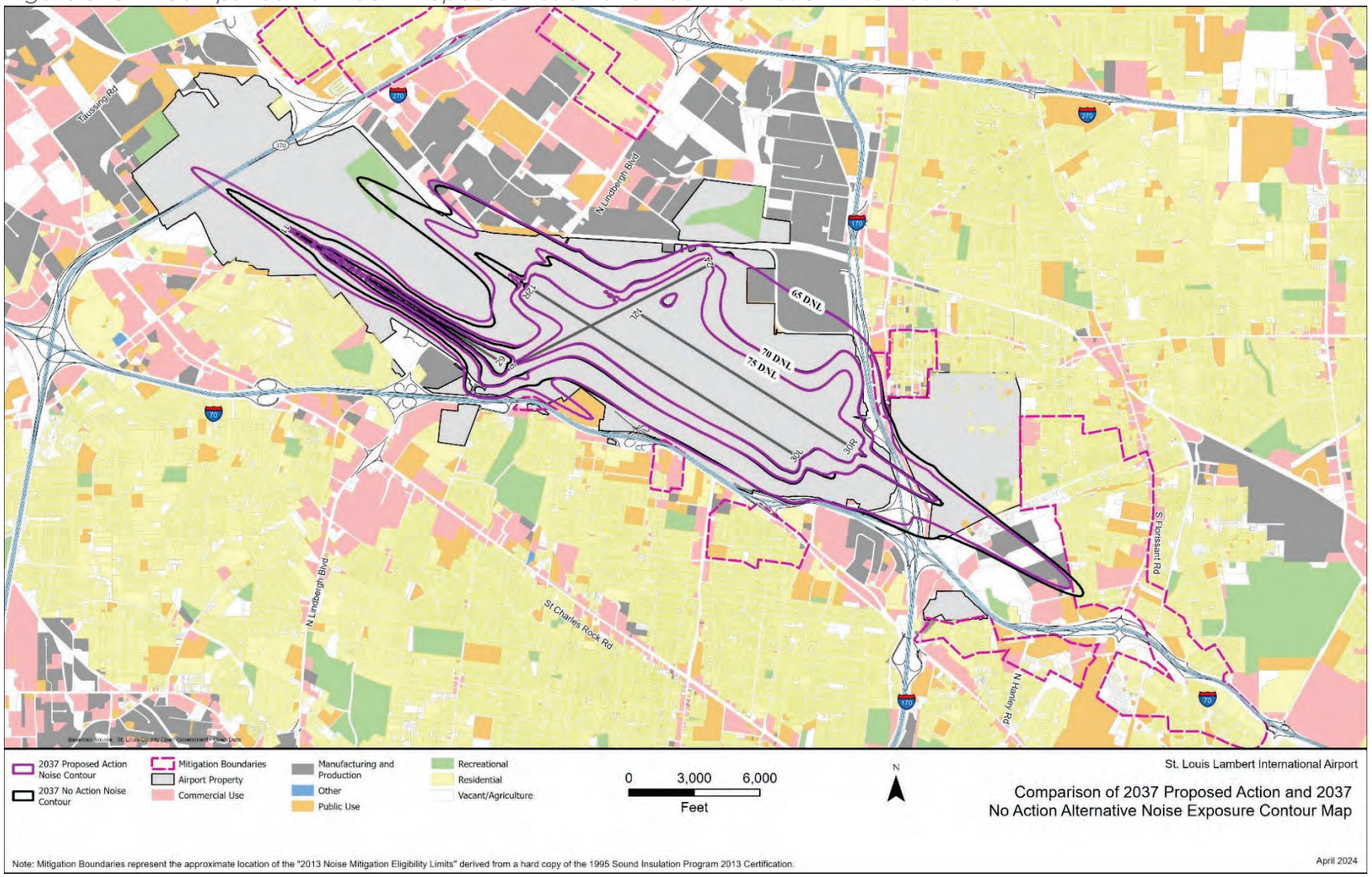
Sources: Basemap-St. Louis County Open Government-Open Data, Data-CMT, 2024.

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**

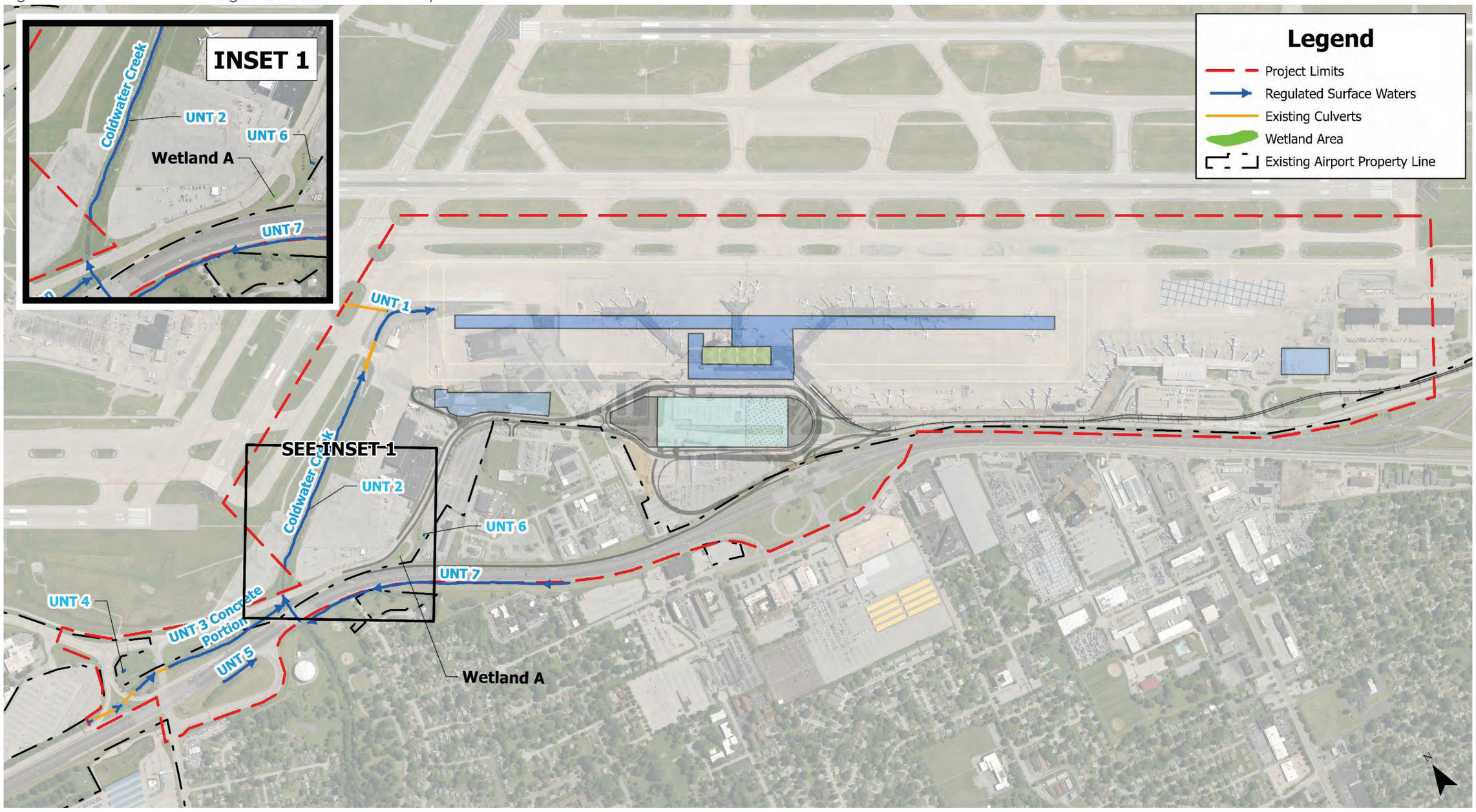
Source: CMT, 2024.

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.

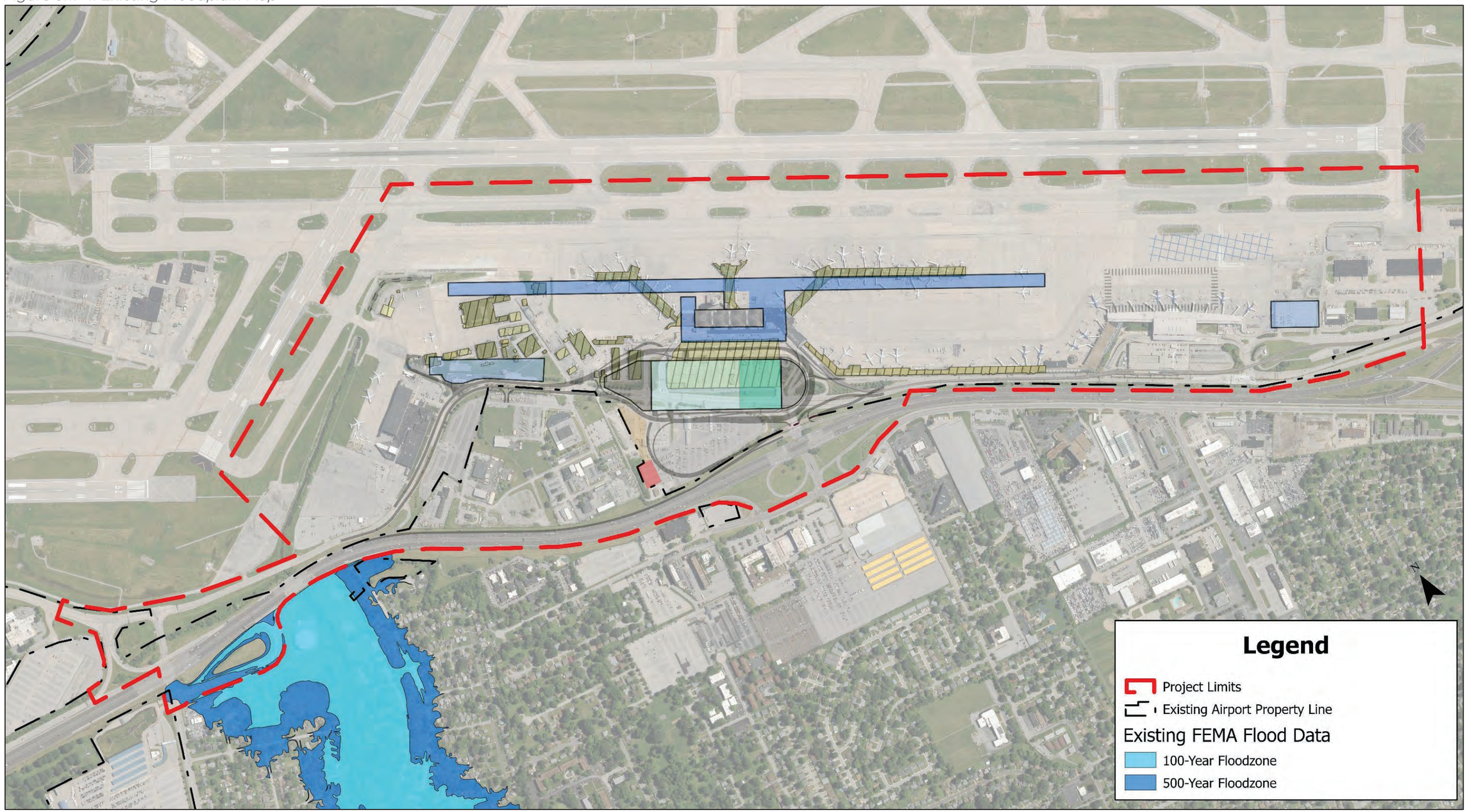
In summary, the basis for a federal floodplain finding is predicated on the fact that the projects included within the Proposed Action have been diligently reviewed and recommended, and that no other practical alternatives exist. (See Chapter 2, Alternatives). Sufficient evidence exists to support that 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.

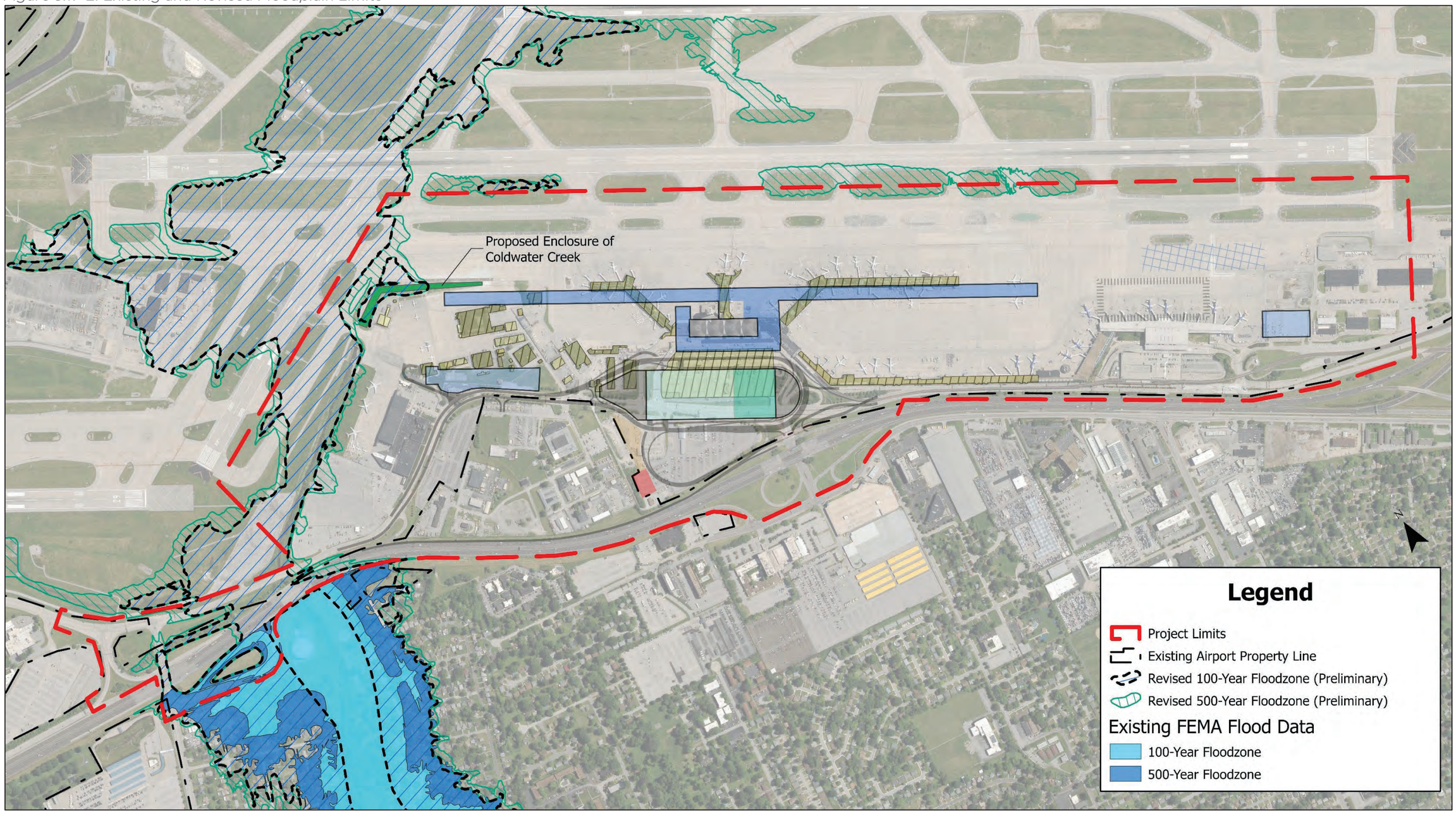
- A floodplain development permit will be secured in coordination with the St. Louis County floodplain administrator and with SEMA, as required.
- Alteration of storm drainage channels, site drainage or floodplain encroachments would be designed and approved in coordination with MSD and in accordance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

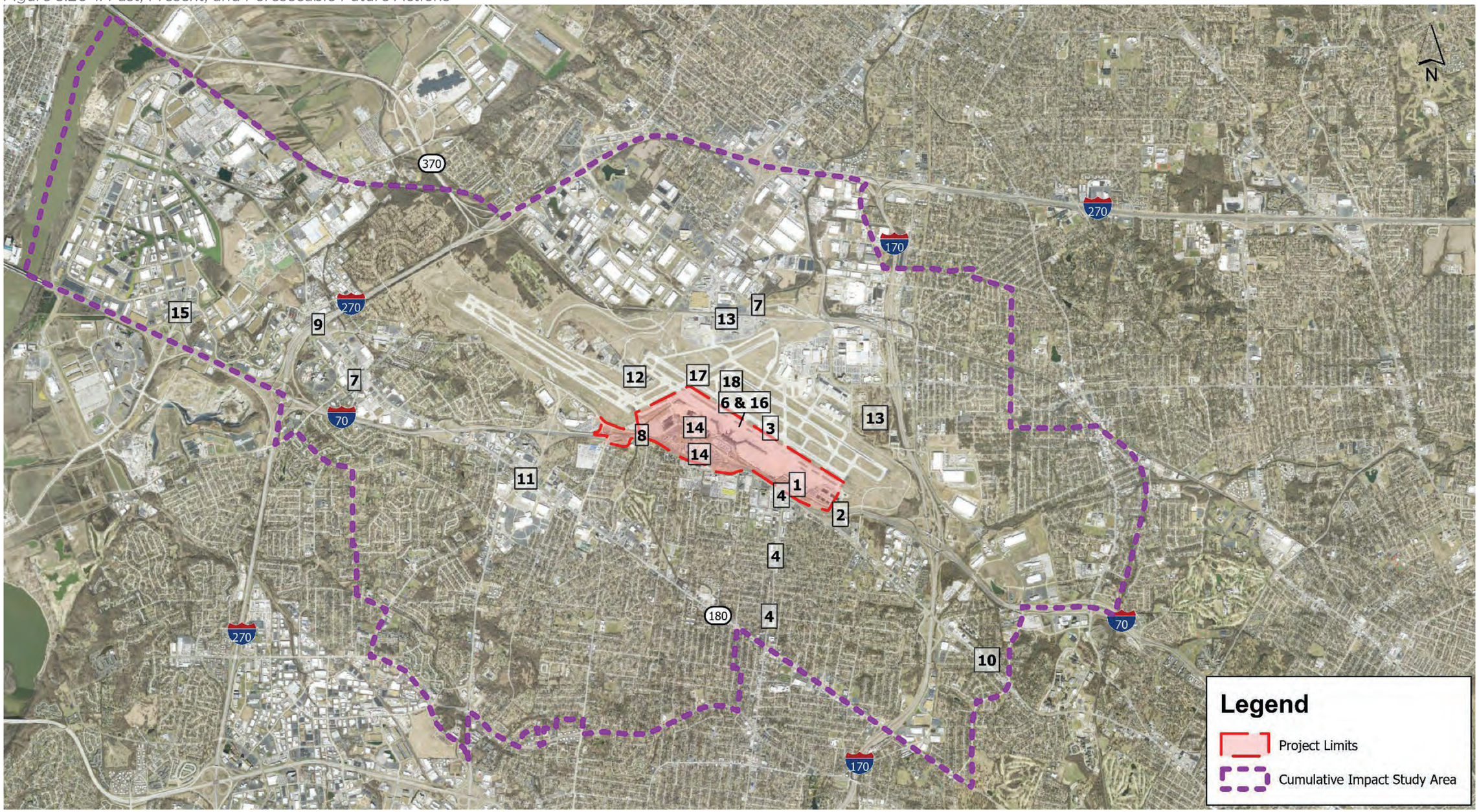
The Proposed Action, in combination with other past, present, and future development projects may encounter hazardous materials, unknown fuel spills and contaminated soil during construction, and have the potential for an incremental increase in generation of hazardous wastes. With proper handling and 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.