ST. LOUIS LAMBERT INTERNATIONAL AIRPORT®

AIRPORT MASTER PLAN

CHAPTER 7 - ENVIRONMENTAL OVERVIEW

FEBRUARY 2023 - FINAL DRAFT

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7 ENVIRONMENTAL OVERVIEW

This chapter provides a preliminary review of the environmental conditions surrounding the St. Louis Lambert International Airport (STL or the Airport or Sponsor) to identify potential environmental impacts associated with the recommended development projects from the Airport Layout Plan Update and Master Plan (ALPU/MP). This information serves to inform future environmental documentation and approvals.

7.1 ENVIRONMENTAL REQUIREMENTS

The National Environmental Policy Act (NEPA)[1] significantly affects airport planning by requiring that environmental impacts of proposed airport development be considered early and throughout the planning process. Environmental feasibility is as important as economic or engineering feasibility in determining how an airport will be developed. This Environmental Overview identifies the potential impacts that may occur with the implementation of the recommended ALPU/MP projects. This information serves to support the decision-making process and to aid future NEPA reviews. While this report is an environmental overview and not a detailed NEPA report, the analysis of environmental impacts is prepared following the guidance of Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*;[2] and FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions.*[3]

FAA Order 1050.1F states that proposed actions and decisions by FAA officials are subject to NEPA review, except if applicable federal law expressly prohibits or makes compliance with NEPA impossible. Specific FAA actions subject to NEPA review can include grants, loans, contracts, leases, construction and installation actions, procedural actions, research activities, rulemaking and regulatory actions, certifications, licensing, permits, plans submitted to the FAA which require FAA approval, and legislation proposed by the FAA.[4] It is expected that the development projects in this ALPU/MP would be required to undergo an environmental review in accordance with NEPA.

Federal regulations outline three major levels of NEPA review relevant to airport development.

- Categorical Exclusion (CATEX) – applies to those actions that have been found (under normal circumstances) to have no potential for significant environmental impact.
- Environmental Assessment (EA) – applies to those actions that have been found by experience to sometimes have significant environmental impacts. The list of actions normally requiring an EA can be found in Chapter 4 of FAA Order 1050.1F. The purpose of an EA is to determine whether the proposed project will have significant impacts. Upon review of the EA findings, the FAA either

[1] 42 U.S.C. 4321-4347.

[2] Federal Aviation Administration, *Order 1050.1F, Environmental Impacts: Policies and Procedures*, July 16, 2015.

[3] Federal Aviation Administration, *Order 5050.4b, NEPA Implementing Instructions for Airport Actions*, April 28, 2006.

[4] Federal Aviation Administration, *Order 1050.1F Environmental Impacts: Policies and Procedures,* Chapter 2 National Environmental Policy Act Planning and Integration, July 16, 2015.

issues project approval in the form of a Finding of No Significant Impact (FONSI) or directs the preparation of an Environmental Impact Statement (EIS) to further investigate potential environmental impacts before project approval can be granted.

- Environmental Impact Statement (EIS) – applies to those actions that have been found by experience to usually have significant environmental impacts. The FAA may issue a Record of Decision (ROD) after the Final EIS has been released.

7.2 PROPOSED PROJECTS

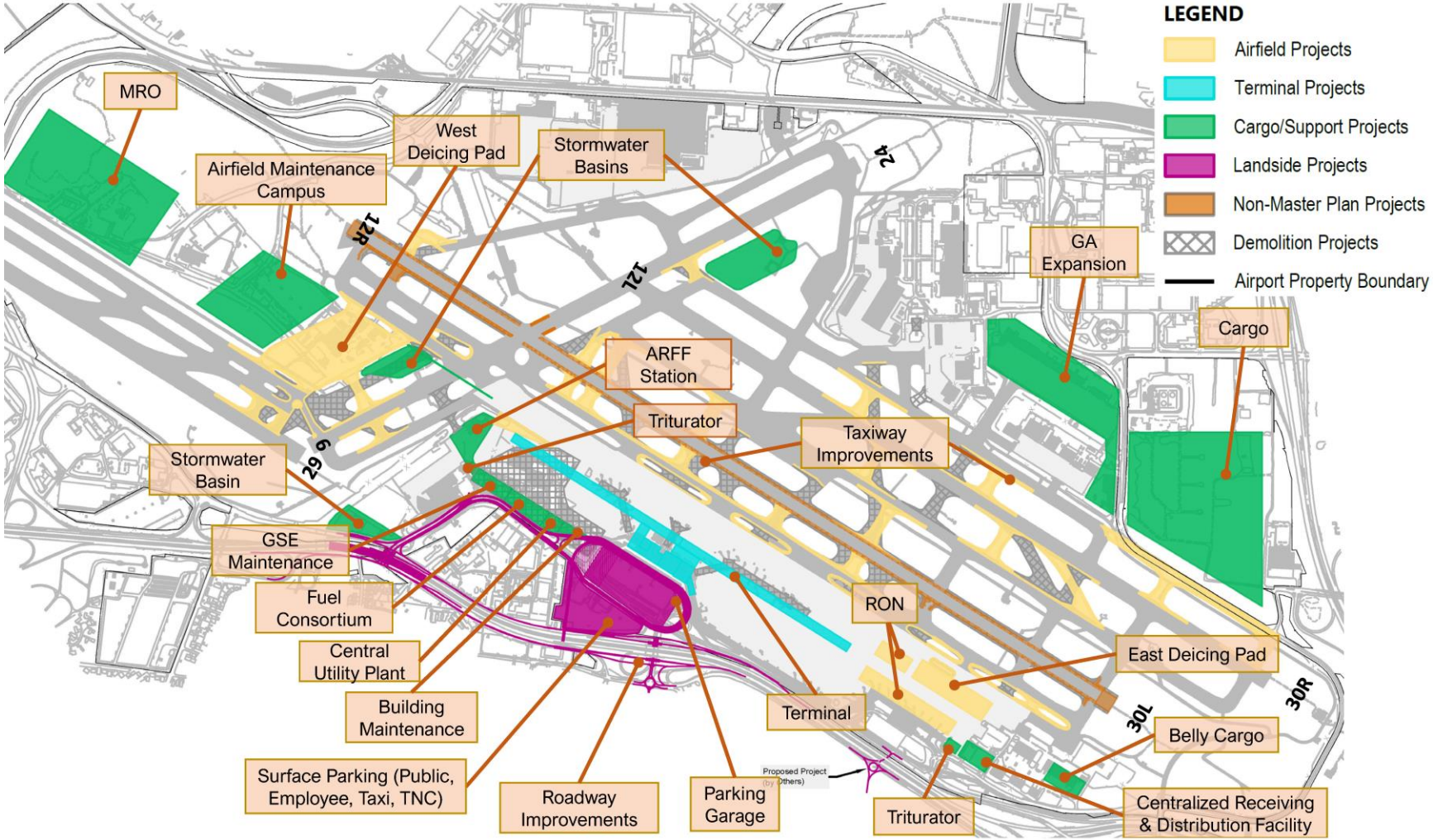
Figure 7.2-1 depicts the recommended development projects from the ALPU/MP.

7.3 ENVIRONMENTAL CATEGORIES

This preliminary review identifies potential environmental impacts associated with the development projects recommended in this ALPU/MP. The FAA examines the NEPA environmental impact categories to determine applicability for its actions. As identified in FAA Order 1050.1F, the affected NEPA environmental impact categories are:

- Air quality
- Biological resources (including fish, wildlife, and plants)
- Climate
- Coastal Resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archeological, 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
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

Figure 7.2-1: Recommended Projects for Airport Layout Plan Update and Master Plan



Source: WSP USA, 2022.

An Area of Investigation[5] was identified for each of the applicable environmental categories listed above. The Area of Investigation provides a geographic area within which the environmental features that potentially could be impacted by airport actions are identified. The Area of Investigation does not confirm that impacts will occur to an environmental resource, but rather that the potential for impacts from airport actions exists. In some cases, the Areas of Investigation differed, as noted, for each environmental category. For most environmental resources, the Area of Investigation was restricted to Airport property. For those resources in which the potential for indirect impacts exists, the Area of Investigation was expanded to sufficiently assess the resource.

7.3.1 RESOURCES NOT EXPECTED TO BE AFFECTED

- Climate
- Coastal barriers, coastal zone: not present in area of investigation
- Wild and scenic rivers

7.3.2 RESOURCES POTENTIALLY AFFECTED

AIR QUALITY

Two primary laws apply to air quality: NEPA and the Clean Air Act (CAA),[6] including the 1990 Amendments. An air quality assessment prepared in support of a NEPA environmental document should include an analysis and conclusions of a proposed action's impacts on air quality.

EXISTING CONDITIONS

The Airport is located in St. Louis County, Missouri, which the U.S. Environmental Protection Agency (USEPA) has designated as a marginal non-attainment area for the average eight-hour concentration of ozone.[7] Therefore, the pollutants of concern are the ozone precursor pollutants, nitrogen oxides (NO_x) and volatile organic compounds (VOCs), and in maintenance for carbon monoxide (CO). St. Louis County was determined to be compliant with all other federally regulated air quality standards in effect at the time of the preparation of this document. The standards are referred to as the National Ambient Air Quality Standards (NAAQS) and were established to define the maximum healthful concentrations of the criteria pollutants:

5 Federal Aviation Administration, Advisory Circular 150 5070-6b, Change 2, Airport Master Plans, Appendix D Consideration of Environmental Factors in Airport Master Planning, 3.b Overview of Environmental Features, p.128. January 27, 2015.

6 42 U.S.C. §7401 et seq.

7 U.S. Environmental Protection Agency, Current Nonattainment Counties for All Criteria Pollutants, http://www3.epa.gov/airquality/greenbook/ancl.html, (website accessed in September 2022).

carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), coarse particulate matter (PM_{10})[8], fine particulate matter ($PM_{2.5}$), and lead (Pb)[9] in the ambient air.

SUMMARY OF CONSIDERATIONS

To determine the net emissions resulting from construction and operation of proposed ALPU/MP development projects, an emissions inventory would need to be prepared for each proposed project. A General Conformity evaluation would be required to determine net emissions from construction and implementation. The emissions inventory would be compared to the relevant *de minimis* thresholds for the pollutants of concern. Dispersion analysis may be required for the air quality assessment of any of the ALPU/MP proposed projects at the Airport. Additional coordination with the State of Missouri and the FAA would be required.

Any assessment of air quality associated with a federal action would need to be prepared in accordance with the guidelines provided in the FAA's *Aviation Emissions and Air Quality Handbook,*[10] and pursuant to FAA Order 5050.4B and FAA Order 1050.1F. An air quality assessment prepared pursuant to these orders and guidelines would be compliant with all the relevant provisions of NEPA, the CAA, and the Missouri State Implementation Plan (SIP). The Missouri SIP contains air quality standards and air pollution control regulations for the St. Louis Metropolitan Area, including, among other issues, the storage, loading, and transfer of petroleum.

BIOLOGICAL RESOURCES

This category describes the potential impacts to biological resources (fish, wildlife, and plants) including destruction or alteration of habitat and disturbance or elimination of biotic communities due to the ALPU/MP proposed projects. A biotic community is an assemblage of living things residing together, including both plants and animals. The Endangered Species Act of 1973 (ESA),[11] as amended, provides for the protection of certain plants and animals, as well as the habitats in which they are found. In compliance with the ESA, agencies overseeing federally funded projects are required to obtain from the U.S. Fish and Wildlife Service (USFWS) information concerning any species listed, or proposed to be listed, which may be present in the area of the proposed projects. A significant impact to federally listed threatened and endangered species would occur when the USFWS or National Marine Fisheries Service (NMFS) determines that the proposed action would be likely to jeopardize the continued existence of the species of concern, or would result in the destruction or adverse modification of federally designated critical habitat in the affected area.

[8] Particulate matter emissions are categorized by size. Coarse particles are defined as having a diameter of 10 micrometers or less and are referred to as PM10; fine particles are defined as having a diameter of 2.5 micrometers or less and are referred to as PM2.5.

[9] Airborne lead in urban areas is primarily emitted by vehicles using leaded fuels. The chief source of lead emissions at airports would be the combustion of leaded aviation gasoline in small piston- engine general aviation aircraft.

[10] Federal Aviation Administration, *Aviation Emissions and Air Quality Handbook*, Version 3, Update 1, January 2015.

[11] U.S.C. §1531 et seq. (1973).

EXISTING CONDITIONS

According to the USFWS,[12] there are 4 listed species of plants and animals found in the Airport area as shown in **Table 7.3-1**. The Missouri Fish and Wildlife Information System does not allow for a defined area. **Table 7.3-2** shows listed species in St. Louis County. It should be noted that the bald eagle is no longer protected under the ESA; however, the species remains protected under the Bald and Golden Eagle Protection Act, which prohibits the disturbance of a bald or golden eagle or its nest. Information collected for the 2012 Master Plan Update[13] indicated that no designated critical habitats for threatened/endangered species were known to exist in the Airport area, and there was no record of listed species occurring in the vicinity of the Airport and none were sighted during field reviews. This was also confirmed in the Environmental Assessment findings for the STL Bulk Fuel Storage Facility. Although there are no designated critical habitats, wherever habitat exist, designate or not, the species may be present.

Table 7.3-1: Federal List of Threatened, Endangered and Candidate Species (Airport Area)

SPECIES	CLASSIFICATION	HABITAT
Gray Bat (Myotis grisescens)	FE	Caves
Indiana Bat (Myotis sodalis)	FE	Hibernacula: caves and mines; maternity and foraging habitat: small stream corridors with well-developed riparian woods; upland forests
Northern Long-eared Bat (Myotis septentrionalis)	FT	No critical habitat has been designated for this species. Preferred habitat includes hibernacula: caves and mines; roosts including trees or structures: forest, dense growth of trees and underbrush covering large tract; cave or carst.
Decurrent False Aster (Boltonia decurrens)	FT	No critical habitat has been designated for this species. Preferred habitat includes riverbanks, old fields, roadsides, mudflats, and lake shores.

Notes:

FE = Federal Endangered

FT = Federal Threatened

Sources: U.S. Fish & Wildlife Service Website, *Missouri - Federally-Listed Threatened, Endangered, Proposed, and Candidate Species*, http://www.fws.gov/midwest/endangered/lists/missouri-spp.html. Data revised May 2019 (website accessed in May 2020); Lion CSG, 2022.

[12] U.S. Fish & Wildlife Service Website. *Missouri - Federally-Listed Threatened, Endangered, Proposed, and Candidate Species,* http://www.fws.gov/midwest/endangered/lists/missouri-spp.html. Data revised May 2019 (website accessed in May 2020).

[13] Landrum and Brown, *Lambert St. Louis International Airport Master Plan Update*, November 2012.

Table 7.3-2: State List of Endangered Species (St. Louis County)

SPECIES	CLASSIFICATION	HABITAT
American Bittern (Botaurus Lentiginosus)	SE	Occurs in marshes, wet meadows and sloughs with emergent vegetation and permanent water 8-13 inches deep.
Bachman's Sparrow (Aimophila Aestivalis Illinoensis)	SE	Inhabits glades, open pinewoods, early successional stage of old fields and oak-hickory or shortleaf pine regeneration with canopy cover less than 30 percent. Bare ground and well-developed herbaceous layer are important.
Crystal Darter (Crystallaria Asprella)	SE	Occurs in streams and ditches with slow current, clear water, and sand or pebble bottom.
Eastern Hellbender (Cryptobranchus Alleganiensis)	SE	Inhabits riffles in streams with gravel or rubble bottoms. Usually in water less than 1.3 m deep. Lays eggs under large flat rocks.
Ebonyshell (Fusconaia Ebena)	SE	Usually found in rivers with swift current and a substrate of fine gravel to cobble.
Elephantear (Elliptio Crassidens)	SE	Found in creeks to large rivers in substrates of fine gravel to cobble/boulder.
Flathead Chub (Platygobio Gracilis)	SE	Occurs in diverse habitats. May be found in pools of small creeks with moderately clear water over gravel and bedrock bottom, or in large, turbid rivers with swift current and bottom of fine sand and gravel.
Interior Least Tern (Sternula Antillarum Athalassos)	SE	Occurs on sand or gravel bars of streams, ponds, lakes or reservoirs. Nests in areas where vegetation is sparse or absent.
Lake Sturgeon (Acipenser Fulvescens)	SE	In Missouri, occurs in large rivers over firm sand, gravel, or rocky bottom.
Northern Harrier (Circus Cyaneus)	SE	Inhabits open fields, prairies, native grass plantings and shallow marshes. Herbaceous vegetation should be dense with nearly 100 percent canopy cover and reach height of 10 feet by mid-May.
Peregrine Falcon (Falco Peregrinus Tundrius)	SE	Requires open country for hunting. Uses open woodlands. Historically, nested on cliffs. Tall buildings with nest sites free of human disturbance are also suitable.
Pink mucket (Lampsilis abrupta)	SE	Usually found in rivers with cobble-gravel bottom in water 1-10 feet deep.
Plains Skunk Spotted (Spilogale Putorius)	SE	Inhabits fencerows, vegetated gullies and brushy borders with logs, brush piles, snags, rocky outcrops, open prairies, and riparian woodland areas.

Scaleshell (Leptodea leptodon)	SE	Occurs in clear, nonpolluted riffles with moderate current and firm gravel, cobble, or sand substrates.
Sheepnose (Plethobasus cyphyus)	SE	Found in medium to large rivers with gravel or mixed sand and gravel substrate.
Snowy Egret (Egretta Thula Thula)	SE	Inhabits marshes, swamps and lowland forests with shrubs and robust emergent vegetation. Prefers vegetation average 3.92 m tall and nest trees averaging 6.77 cm diameter at breast height.
Snuffbox (Epioblasma Triquetra)	SE	Occurs in medium to large rivers with clear water and gravel riffles.
Swainson's Warbler (Limnothlypis Swainsonii)	SE	Inhabits bottomland forests with a dense understory of giant cane. Will use sapling to mature forest size classes where overstory tree height is greater than 25 feet.

Notes:

SE = State Endangered.

m = meters

cm = centimeters

Sources: Missouri Fish and Wildlife Information System, available online at: https://mdc12.mdc.mo.gov/applications/mofwis/Mofwis_Search1.aspx (website accessed in May 2020); Lion CSG, 2022.

Pursuant to 14 CFR Part 139.337(e), the Airport developed a Wildlife Hazard Management Plan (WHMP) in cooperation with the USDA Wildlife Services program. The WHMP was updated in April 2022 and is awaiting approval by the FAA.[14]

The WHMP establishes the responsibilities, policies, resources, and procedures to reduce wildlife hazards at the Airport. Implementation of the WHMP can be effectively accomplished only with the collective efforts of many individuals and several agencies. The Airport Operations Supervisor is responsible for all wildlife management activities at the Airport. Two full-time USDA Wildlife Services Specialists are also under contract with the Airport on an annual basis. The specialists could assist with wildlife issues, as needed, for the implementation of the ALP proposed projects.

Wildlife hazards are identified to minimize risks of aircraft-wildlife collisions and save lives of both humans and animals. The WHMP mentions birds (specifically pigeons and starlings) and waterfowl. The WHMP provides habitat management plans, which are the most effective long-term remedial measures for reducing wildlife hazards on, or near, airports. Habitat management includes, but is not limited to, the removal of food sources attractive to birds or wildlife; the removal of brush, woodlands, and undergrowth where possible; and even physical removal of birds and waterfowl from the airfield and terminal areas. The goal is to make the environment fairly uniform and unattractive to the species that are considered the greatest hazards to aviation. Airport planning plays an important role in bird strike and other wildlife hazard reduction. Proper planning of an airport can help recognize land uses on or near the airport site that can potentially attract wildlife. By controlling these land uses, wildlife hazards can be reduced.

[14] St. Louis Airport Authority, *Airport Certification Manual, Wildlife Hazard Management Plan Section 139.337*, revision date April 2022.

SUMMARY OF CONSIDERATIONS

Impacts to endangered species are unlikely, since all ALPU/MP proposed projects will occur on previously disturbed land with very little, if any, suitable habitat. However, pockets of suitable habitat may exist, such as small stands of trees that have connectivity to larger stands of trees, or streams with connectivity to larger streams. Efforts will be employed to limit stormwater runoff during construction that could impact aquatic species.

Site visits and coordination with the USFWS and the Missouri Department of Conservation should be initiated upon the commencement of any environmental review to confirm that no rare or endangered species or their habitat occur within the boundaries of the ALPU/MP proposed projects.[15]

In addition, the ALPU/MP proposed projects are not expected to create permanent standing water or any new attractive wildlife habitat. Therefore, it is expected that all the ALPU/MP proposed projects would conform to the existing WHMP and FAA guidelines, including FAA AC 150-5200-33C, *Hazardous Wildlife Attractants on or Near Airports.*[16]

DEPARTMENT OF TRANSPORTATION ACT SECTION 4(F)

The federal statute that governs impacts in this category is commonly known as the Department of Transportation (DOT) Act of 1966, Section 4(f) provisions. Section 4(f) of the DOT Act was recodified and renumbered as Section 303(c) of U.S. Code Title 49 (49 USC). FAA Orders 5050.4B and 1050.1F continue to refer to this statute as Section 4(f) to avoid confusion. Section 4(f) provides that the "Secretary of Transportation will not approve any program or project that requires the use of any publicly-owned land such as a public park, recreation area, or wildlife/waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."[17] A direct taking of land occurs when land from a Section 4(f) site is permanently incorporated into a transportation facility. A constructive taking occurs when proximity impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property or resources for protection under Section 4(f) are substantially impaired.

Section 6(f) of the Land and Water Conservation Act (LWCA) is also pertinent to Section 4(f) lands. Section 6(f) prohibits recreational facilities funded under the LWCA from being converted to non-recreational use unless approval is received from the director of the grantor agency.

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[15] Field Supervisor, U.S. Fish and Wildlife Service, 101 Park De Ville Drive, Suite A Columbia, Missouri, 65203 and Missouri Department of Conservation, Policy Coordination Unit, 2901 W. Truman Boulevard Jefferson City, Missouri, 65102.

[16] Federal Aviation Administration, *Advisory Circular 150/5200-33C Hazardous Wildlife Attractants on or Near Airports*, February 21, 2020.

[17] Federal Aviation Administration, Order 1050.1F Desk Reference, Chapter 5 – Department of Transportation Act, Section 4(f) – (Section July 2015), February 2020.

EXISTING CONDITIONS

A review of past environmental studies, including the 2012 Master Plan Update,[18] the 1997 Final Environmental Impact Statement (1997 FEIS) and local government websites, was conducted to identify potential Section 4(f) and 6(f) properties within the vicinity of the Airport. Within the ALPU/MP Area of Investigation for Section 4(f)/6(f) resources, a total of 31 properties were identified. These sites are shown on **Figure 7.3-1** and are listed in **Table 7.3-3**. Additionally, the Air National Property Historic District (ANG Historic District) and the terminal domes are eligible for listing on the National Register of Historic Places (NRHP). The domes and terminal were designed by architect Minoru Yamasaki, who later became the chief architect of New York's World Trade Center. The terminal domes are historically important, and the Airport is committed to preserving them.

Historic properties, which are also protected under Section 4(f), are discussed later in this chapter in Section 8.3-9, *Historical, Architectural, Archeological, and Cultural Resources*.

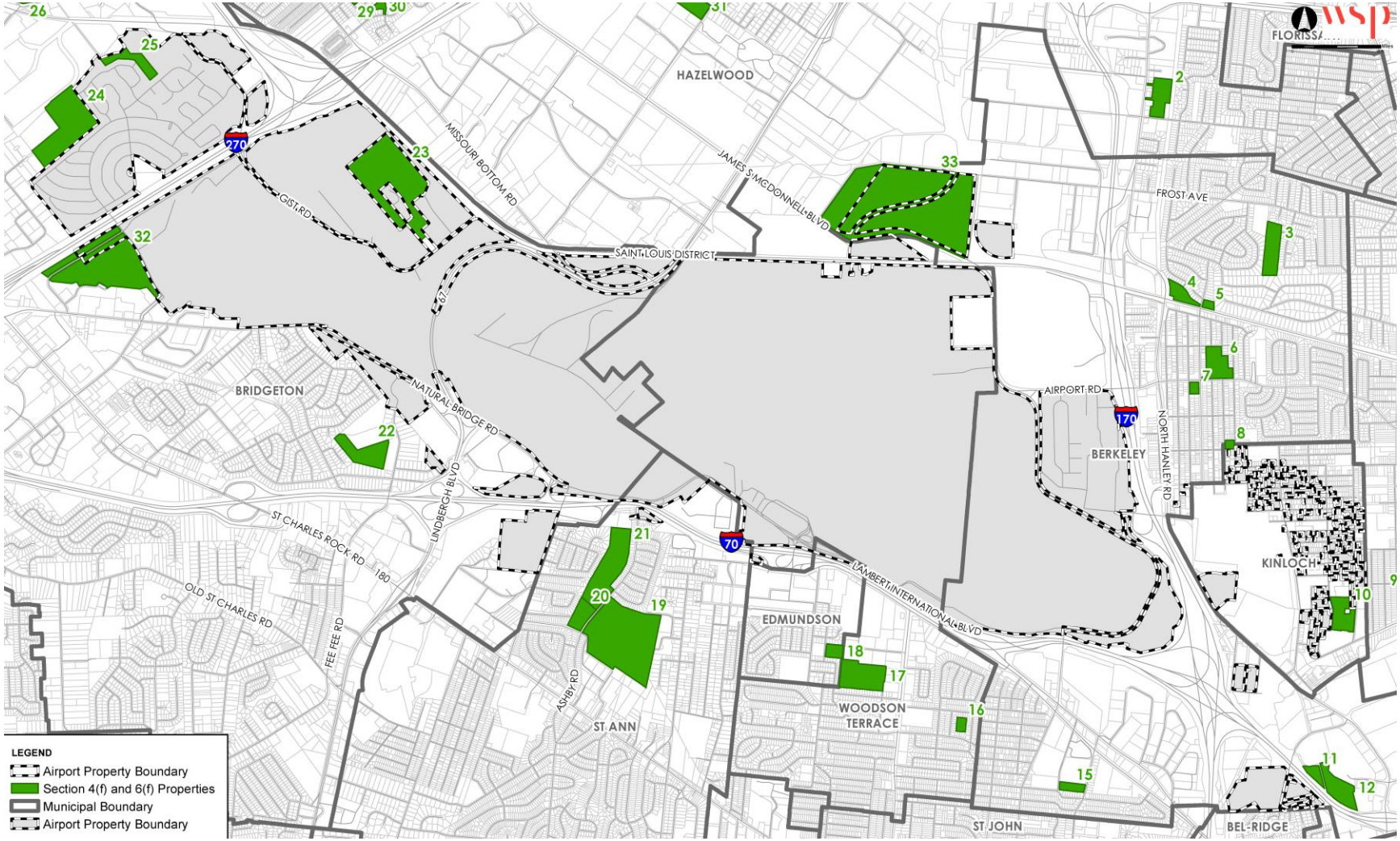
SUMMARY OF CONSIDERATIONS

With the proposed consolidated terminal project, there will be use of the NRHP eligible ANG Historic District and Terminal 1. A section 4(f) evaluation will need to be completed and coordinated with the Department of Interior. It is anticipated that no direct use or taking of land from any 6(f) resources would occur with the implementation of the ALPU/MP proposed projects. Noise contours accessible on the Airport website were referenced to evaluate noise exposure patterns.[19] No parks or outdoor sports facilities, which are compatible with noise levels of up to 75 DNL, were identified within the 75 DNL noise contours. No outdoor nature exhibits or zoos, which are compatible with noise levels up to 70 DNL, were identified within the 70 DNL noise contours. No outdoor music shells or amphitheaters, which are compatible with noise levels up to 65 DNL, were identified within the 65 DNL noise contour. Therefore, it is anticipated that no constructive use of any or 6(f) resources would result from any of the ALPU/MP proposed projects. It is anticipated that a section 4(f) evaluation will need to be completed and coordinated with the Department of Interior.

[18] Landrum and Brown, *Lambert St. Louis International Airport Master Plan Update*, November 2012.

[19] St. Louis Airport Authority website, https://www.flystl.com/uploads/documents/noise-program/2015-STL-Noise-Contours-Map.pdf, accessed September 2022.

Figure 7.3-1: Section 4(f) and 6(f) Properties



Note: Numbers correspond to Map ID in Table 7.3-3.

Sources: Federal Aviation Administration,*1997 Final Environmental Impact Statement (FEIS)*, Table 4.5 and Figure 4.9 (CAD file 6_Parks.dwg), 1997. Data from the FEIS was verified through County GIS data, aerial imagery, and data from local jurisdictions websites; Lion CSG, 2022.

Table 7.3-3: List of Section 4(f) and 6(f) Properties

MAP ID	SITE
1	Brookes Park
2	Musick Park
3	Independence Park (William Miller City Park)
4	Forestwood Park
5	Berkeley Municipal Pool
6	Jackson Park (Lee Etta Hoskins Community Park)
7	Tabernacle of Faith & Deliverance
8	Park at Corner of Jefferson & 4th
9	Dade Park
10	Kinloch County Park
11	Springdale Park (Louvenia Mathison Community Lake Park)
12	Ramona Lake
13	Gutknecht-Arrowhead Park
14	Endicott Park
15	Edgewood Park (Montgomery Park)
16	Guthrie Avenue Playground
17	John L. Brown Park
18	Edmundson City Park
19	St. Ann Golf Course
20	Vatterott Fields
21	St. Ann Park
22	Gentry Park
23	Berry Hill Golf Course
24	O'Connor Park
25	Carrollton Buffer Zone
26	Bridgeton Municipal Athletic Complex
27	Red Bud Park
28	Wildlife Park
29	Friendship Park
30	Rock Pointe Park
31	Pershall Park
32	Carrollton Park Disc Golf Course
33	Khoury Park ("The Ballfields") (informal park) (see note)

Notes:

Map ID numbers are referenced in Figure 7.3-1.

Khoury Park: Use discontinued in 1985. Area is now part of USACE FUSRAP project and is undergoing remediation for radioactive contamination.

Sources: Federal Aviation Administration,*1997 Final Environmental Impact Statement (FEIS)*, Table 4.5 and Figure 4.9 (CAD file 6_Parks.dwg), 1997. Data the FEIS was verified through County GIS data, aerial imagery, and data from local jurisdictions websites; Lion CSG, 2022.

FARMLANDS

The Farmland Protection Policy Act of 1981 (FPPA)[20] was enacted to minimize the extent to which federal actions and programs contribute to unnecessary and irreversible conversion of farmland to non-agricultural uses. As defined in the FPPA, land is not considered prime farmland if it has been committed to urban development.

EXISTING CONDITIONS

The Airport is located within a highly urbanized area. There are no areas on Airport property currently being used for agriculture, and the land making up the airfield and terminal areas has been highly disturbed by past development activity. Some of the soils in and around the Airport have been characterized as prime or of statewide importance.[21]

SUMMARY OF CONSIDERATIONS

Since the Airport is within a highly urbanized area and no Airport property is currently being used as farmland, no impacts to prime or unique farmland are expected to occur under any of the ALPU/MP proposed projects. The 1993 Lambert Environmental Assessment of Proposed Master Plan Development stated that "for any proposed projects that include development on unpaved surfaces, in particular the former Brownleigh Subdivision, the FAA may require coordination with the U.S. Department of Agriculture (USDA) National Resources Conservation Service (NRCS)."[22] However, an area including the Brownleigh Subdivision is presently under development for the new fuel farm. An environmental assessment for the development found no land requiring USDA coordination.[23]

HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

The potential impacts resulting from hazardous materials, solid waste collection, control, and disposal due to airport projects must be assessed. The following four primary laws govern the handling and disposal of hazardous materials, chemicals, substances, and wastes:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), (as amended by the Superfund Amendments and Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992);[24]
- Pollution Prevention Act of 1990;[25]

[20] *Public Law 97-98*, 7 U.S. Code Section 4201.

[21] Lambert-St. Louis International Airport, *Environmental Assessment of Proposed Master Plan Development*, January 1993.

[22] District Conservationist, Natural Resource Conservation Service, Platte County Field Office, 1209 Branch Street, Platte City, Missouri, 64079-1220.

[23] St. Louis Lambert, Environmental Assessment for Construct Replacement Bulk Fuel Storage Facility/Decommission Existing Bulk Fuel Storage Facility, June 2019.

[24] 42 U.S.C. 9601-9675.

[25] 42 U.S.C. 1310-1319.

- Toxic Substances Control Act of 1976(TSCA), as amended;[26] and;
- Resource Conservation and Recovery Act of 1976 (RCRA), (as amended by the Superfund Amendments and Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992).[27]

The two statutes of most importance to the FAA for actions to construct and operate airport facilities and navigational aids are RCRA and CERCLA. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources' trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

EXISTING CONDITIONS

Due to past hazardous waste generating activities at and around the Airport, it is necessary to evaluate the potentially hazardous waste impacts from any of the proposed ALPU/MP proposed projects, including the potential to disturb contaminated soil or existing underground storage tanks (USTs). Active hazardous waste sites and operating USTs with no known releases at the Airport are shown on **Figure 7.3-2** and listed in **Table 7.3-4** and **Table 7.3-5**. The area of investigation for hazardous waste sites/USTs was restricted to airport property or sites immediately adjacent. A number of the project sites for the proposed ALPU/MP have recognized environmental conditions related to hazardous waste and underground storage tanks. Additionally, it is noted that there is documentation of fill material that may have been contaminated by radioactive residue located under the Terminal 1 parking garage in a limited area around the east helix. Projects which may disturb fill under the Terminal 1 parking garage will require coordination with MoDNR and USACE.

[26] 15 U.S.C. 2601-2692.

[27] 42 U.S.C. 6901-6992(k).

Figure 7.3-2: Hazardous Materials

Note: Numbers correspond to Map ID in Tables 7.3-4 and 7.3-5.

Sources: Missouri Department of Natural Resources, *eStart System*, https://dnr.mo.gov/ESTART/, accessed May 2020; Environmental Protection Agency, *Cleanups in My Community System*, https://www.epa.gov/cleanups/cleanups-my-community#map, accessed May 2020; Lion CSG, 2022.

Table 7.3-4: Hazardous Waste Sites

MAP ID	SITE NAME	DESCRIPTION	STATUS
M-1	Lambert FLD St. Louis Naval Air ST – Area 1	Site in MoDNR database	Active
M-2	St. Louis Air National Guard Base	Site in MoDNR database	Preliminary Assessment/Site Inspection (PA/SI) found sufficient contamination to conduct a Remedial Investigation (RI). Contamination primarily from Oil Water Separators (OWS), battery neutralization pits and petroleum distribution systems are being investigated. A work plan to investigate for potential perfluocarbon (PFC) contamination will be developed.
M-3	Bulk Fuel Storage Facility St. Louis Airport	Site in MoDNR database	A petroleum or hazardous substance release is currently being addressed under the Missouri Risk-Based Corrective. Action Guidance for Petroleum Storage Tanks.
M-4	Equilon Pipeline Release/St. Louis Airport	Site in MoDNR database	In 2001, a release of jet fuel was discovered. The release was tracked through the storm water sewer to the vicinity of the Intermediate Parking Lot. Response teams were mobilized, and absorbent booms were placed in the sewer catch basins. Sampling of the groundwater and soil detected petroleum and benzene, toluene, ethylbenzene and xylenes (BTEX) contamination. Free product was recovered from five recovery wells. STLAA staff states this site is in process of close out.
M-5	Airport East Terminal Expansion	Site in MoDNR database	A petroleum or hazardous substance storage tank closure or regulated release was addressed under the Missouri Risk- Based Corrective Action Guidance for Petroleum Storage Tanks. Evaluation of environmental media found that concentrations of any remaining contaminants, if present, do not pose an unacceptable risk to human health or the environment provided that Activity & Use Limitations applied to this property remain in place. STLAA staff states this site has an environmental covenant.
F-1	Air Force (EX) Plant #84	Site in EPA database	No further remedial action planned. Site does not qualify for national priorities list (NPL).
F-2	St. Louis Airport/Hazelwood Interim Storage/Futura Coatings Co.	Site in EPA database	Removal and investigation activities continue at the site. The remedy is expected to be protective of human health and the environment upon completion. In the interim, exposure pathways that could result in unacceptable risks are being controlled.
F-3	Byassee Drive Drum Site	Site in EPA database	Emergency response for disposal of drums and pallets of buckets.
F-4	Missouri Air National Guard	Site in EPA database	No further remedial action planned. Site does not qualify for NPL. STLAA staff states this site is located adjacent to M-1.
F-5	US Marine Corps	Site in EPA database	No further remedial action planned. Site does not qualify for NPL. STLAA staff states this site located adjacent to UST-3.
F-6	McDonnell Douglas Corp (Northern Tract)	Site in EPA database	Solution for the cleanup has been selected. Human exposure and groundwater mitigation are both controlled. STLAA staff states this site is located adjacent and south of UST-10.

Note: MoDNR - Missouri Department of Natural Resources

Sources: Missouri Department of Natural Resources, *eStart System*, https://dnr.mo.gov/ESTART/, accessed May 2020; Environmental Protection Agency, *Cleanups in My Community System*, https://www.epa.gov/cleanups/cleanups-my-community#map, accessed May 2020; Lion CSG, 2022.

Table 7.3-5: Known Underground Storage Tanks

MAP ID	SITE NAME	LOCATION
UST-1	Allied Aviation	10922 Natural Bridge Road
UST-2	Allied Aviation	10922 Natural Bridge Road
UST-3	Missouri Air National Guard	10800 Lambert International Boulevard
UST-4	Airport Field Maintenance	4800 St. Thomas Lane
UST-5	The Boeing Corp	McDonnell Boulevard, Bldg 28
UST-6	Federal Aviation Administration	10789 Lambert International Boulevard
UST-7	Signature Flight Support (Airport staff states the UST farm associated with this site has been removed and the site is closed.)	5995 N McDonnell Boulevard
UST-8	Federal Aviation Administration	10789 Lambert International Boulevard
UST-9	Federal Aviation Administration	10789 Lambert International Boulevard
UST-10	The Boeing Corp	153 McDonnell Boulevard

Sources: Missouri Department of Natural Resources, *eStart System*, https://dnr.mo.gov/ESTART/, accessed May 2020; Lion CSG, 2022.

SUMMARY OF CONSIDERATIONS

The potential impacts from hazardous materials would be evaluated as part of the environmental documentation preparation process for each of the specific development projects. Additional analysis for the proposed development areas such as environmental due diligence audits or environmental site assessments may need to be performed due to the potential to disturb any possible soil contaminants from past uses. Coordination with the Missouri Department of Natural Resources (MoDNR) and other agencies may be necessary prior to design of the ALPU/MP proposed projects.

Some of the ALPU/MP proposed projects also include demolition activities. Demolition activities will likely require coordination with the MoDNR[28] and St. Louis County to ensure proper assessments are conducted and abatement practices are followed, if necessary, prior to demolition.

It is not anticipated that the ALPU/MP proposed projects would generate an unmanageable volume of solid waste or affect the Airport's existing solid waste management program.

[28] Hazardous Waste Program Director, P.O. Box 176, Jefferson City, MO 65102.

HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

The *National Historic Preservation Act* of 1966 (NHPA)[29] and the *Archeological and Historic Preservation Act* of 1974[30] are primary federal laws governing the preservation of historic and prehistoric resources, encompassing art, architecture, archaeological, and other cultural resources. Section 106 of the NHPA requires that, prior to approval of a federal or federally-assisted project, or before the issuance of a license, permit, or other similar approval, federal agencies take into account the effect of the project on properties that are on or eligible for listing on the NRHP.

EXISTING CONDITIONS

A review of NRHP records maintained by the National Park Service, past Airport environmental studies, including the 2012 Master Plan Update, the 1997 Final Environmental Impact Statement (1997 FEIS), the 2011 Draft EA for Implementation of Base Realignment and Closure (BRAC) Commission Recommendations, Redistribution of F-15 Aircraft and Relocation of the 157th Air Operations Group and the 218th Engineering Installation Squadron (2011 Draft BRAC EA), and local government websites was conducted to identify historic properties. Properties that are currently included on or eligible for inclusion on the NRHP are shown on **Figure 7.3-3** and listed in **Table 7.3-6.**

The 2011 Draft BRAC EA identified eight buildings on the north parcel and the pedestrian tunnel as collectively eligible to be nominated to the NRHP for designation as a historic district. To date, none of these locations had been nominated for listing on the NRHP, nor were efforts underway to nominate these locations. Additional properties may be eligible for inclusion on the NRHP within the vicinity of the Airport that are not shown on Figure 7.3-3 or listed in Table 7.3-6. The cities of Bridgeton and Ferguson, and St. Louis County each maintain listings of historic properties within their jurisdictions that are updated periodically as properties are nominated. These lists should be reviewed when conducting environmental analysis for any of the recommended ALPU/MP development projects.

SUMMARY OF CONSIDERATIONS

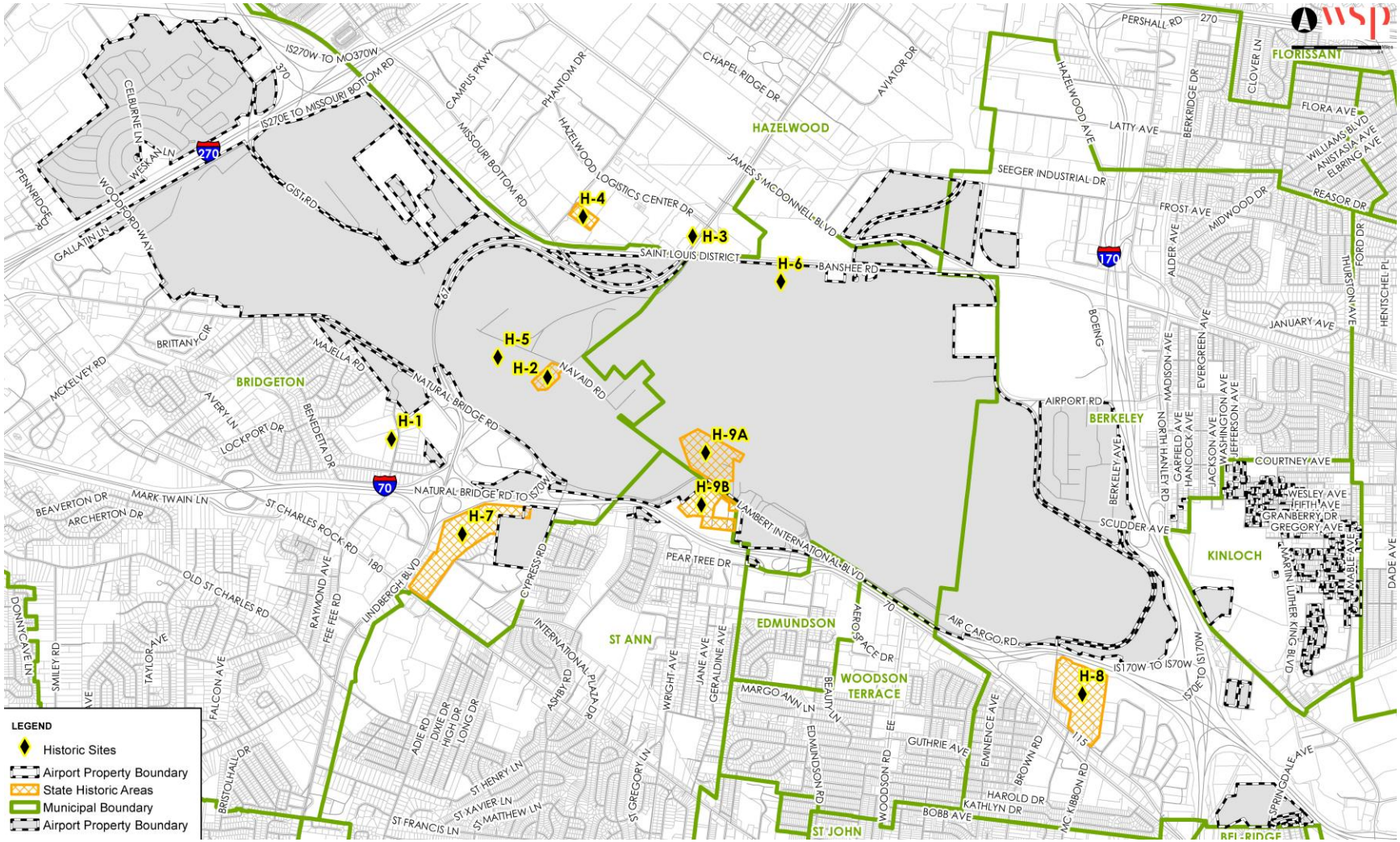
There are no known archaeological resources that would be directly impacted by any of the ALPU/MP proposed projects. However, cemeteries were relocated as part of the Runway 11-29 construction, and there is a remote possibility that graves or other archeological resources could be discovered within or near the boundaries of these former cemeteries. Furthermore, none of the ALPU/MP proposed projects would directly or indirectly impact any structures already listed on the NRHP. However, it will be necessary to make a determination of NRHP eligibility for any structures that would be impacted that are greater than 45 years old, in addition to the ANG Historic District and the Airport's Terminal One building. Further studies and coordination with the State Historic Preservation Officer (SHPO) would be required to confirm NRHP eligible properties and any effect findings.[31]

[29] Public Law 89-665; 16 U.S.C. 470 et seq.

[30] Public Law 86-523, 16 U.S.C. 469-469c-2.

[31] State Historic Preservation Officer, State of Missouri, 1101 Riverside Drive Jefferson City, Missouri, 65102.

Figure 7.3-3: Historical, Architectural, Archeological, and Cultural Resources within the ALP Update Area of Investigation



Sources: U.S. National Park Service, *National Register of Historic Places (NRHP)*, Available online at: https://www.nps.gov/subjects/nationalregister/index.htm (website accessed in May 2020); Missouri Department of Natural Resources, Division of State Parks, *State Historic Preservation Program*, https://dnr.mo.gov/shpo/ (website accessed in May 2020); Lion CSG, 2022.

Table 7.3-6: Historical, Architectural, Archeological, and Cultural Resources within the Area of Investigation

MAP ID	NAME
H-1	Payne-Gentry House
H-2	St. Louis County Cemeteries Phases I & II
H-3	Route 66 Survey Phase I
H-4	St. Louis County Cemeteries Phases I & II
H-5	Route 66 Survey Phase I
H-6	Curtiss-Wright Aeroplane Factory
H-7	St. Louis County Cemeteries Phases I & II
H-8	St. Louis County Cemeteries Phases I & II
H-9A	Missouri Air National Guard – North Side*
H-9B	Missouri Air National Guard – South Side*

Note:

*Archaeological Research Center of St. Louis, Inc., Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field, November 2012. Based on this report the North Site includes seven contributing buildings and one tunnel to be significant as a district; as standalone structures, none would be significant. The South Site structures were determined to be not eligible at the time of the study. Additional study and coordination are needed with the State Historic Preservation Office for this site.

Sources: U.S. National Park Service, *National Register of Historic Places (NRHP)*, Available online at: https://www.nps.gov/subjects/nationalregister/index.htm (website accessed in May 2020); Missouri Department of Natural Resources, Division of State Parks, *State Historic Preservation Program*, https://dnr.mo.gov/shpo/ (website accessed in May 2020); Archaeological Research Center of St. Louis, Inc., *Final Architectural Survey for the Reevaluation of the Missouri Air National Guard Property Historic District at Lambert Field*, November 2012; Lion CSG, 2022.

LAND USE

Regarding Land Use, *1050.1F Desk Reference* Chapter 9 for Land Use was completed in February 2020.[32] The compatibility of existing and planned land uses within an aerospace proposal is usually associated with noise impacts. In addition to the impacts of noise on land use compatibility, actions may also affect land use (e.g., disruption of communities, relocation, induced socioeconomic impacts, land uses protected under Section 4(f) of the U.S. Department of Transportation Act).

Where necessary, changes to zoning laws should be considered for ALPU/MP actions. To the extent reasonable, zoning laws should restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. The assurance must be related to existing and planned land uses.

[32] Federal Aviation Administration, *Order 1050.1F Desk Reference*, Chapter 9 – Land Use, (Climate last updated February 2020) February 2020.

The FAA may not approve a grant for an airport development project unless it is satisfied that the project is consistent with plans (existing at the time a project is approved) of public agencies authorized by the state in which the airport is located, to plan for the development of the area surrounding the airport.

The 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 for land use. The determination that significant impacts exist in the land use impact category is normally dependent on the significance of other impact categories.

EXISTING CONDITIONS

The Airport is surrounded mostly by commercial, industrial, and residential development. Land uses in the area is shown on **Figure 7.3-4**.

SUMMARY OF CONSIDERATIONS

The proposed consolidated terminal project may require permanent relocation/rerouting of roads and highways, which will affect access to the airport and may affect the surrounding community. Temporary impacts include closing a lane for curb replacement or repaving; however, the project is proposing rerouting of roads. Though the impact may be beneficial, it is still considered a long-term permanent impact. None of the proposed projects for the ALPU/MP are expected to cause permanent adverse impacts to public roadways.

NATURAL RESOURCES AND ENERGY SUPPLY

FAA Order 1050.1F states that the factor to consider for natural resources and energy supply is whether the "action would have the potential to cause demand to exceed available or future supplies of these resources."[33] For most airport actions, changes in energy or other natural resource consumption will not result in significant adverse impacts. Executive Order 13123, *Greening the Government through Efficient Energy Management*,[34] encourages each federal agency to expand the use of renewable energy within its facilities and in its activities. Executive Order 13123 also requires each federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its facilities.

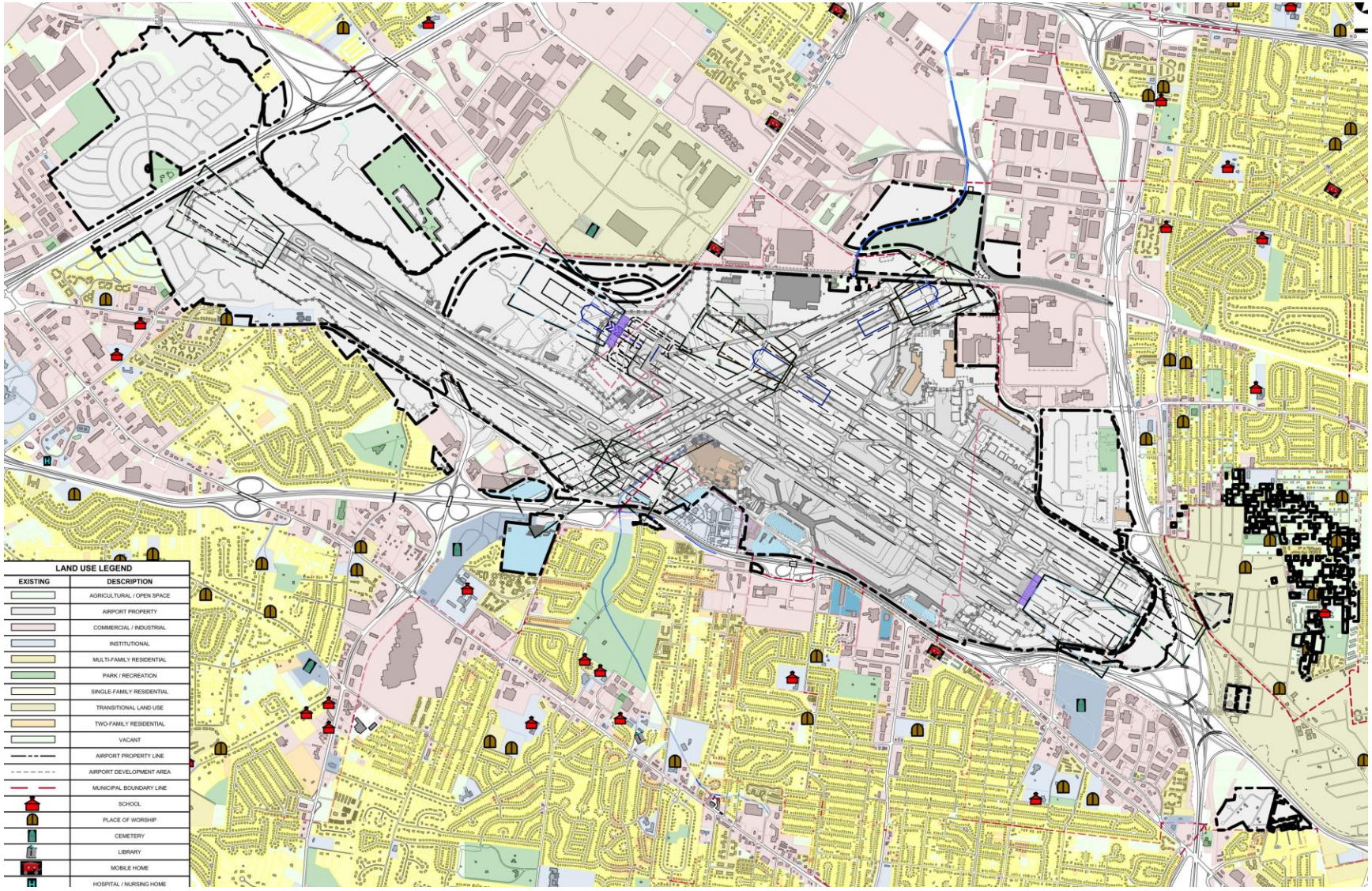
EXISTING CONDITIONS

The Airport is located within a highly urbanized area with adequate access to natural resources and energy for construction projects.

[33] Federal Aviation Administration, *Order 1050.1F Environmental Impacts: Policies and Procedures,* July 16, 2015.

[34] 64 FR 30851, June 8, 1999

Figure 7.3-4: Land Use for Area of Investigation



Sources: STL Airport Layout Plan, Airport Land Use Map, 2012; Lion CSG, 2022.

SUMMARY OF CONSIDERATIONS

The ALPU/MP proposed projects would increase the demand for energy supply in order to power new facilities. It is unlikely that the ALPU/MP proposed projects would have a significant adverse impact to natural resources and energy supply. The ALPU/MP proposed projects are not likely to cause a substantial demand for natural resources or energy that cannot be met by the local supply. It is not anticipated that scarce or unusual materials would be required to construct any of the ALPU/MP proposed projects.

NOISE AND COMPATIBLE LAND USE

Noise may be defined as unwanted sound. Sound is measured by its pressure, or energy, in terms of decibels (dB). Because of the enormous range of sound pressures to which the human ear is sensitive, the raw sound pressure measurement is converted to the logarithmic dB scale for purposes of description, comparison, and analysis. A 10 dB increase in sound is perceived as a doubling of sound (or twice as loud) by the human ear. Day-Night Average Sound Level (DNL) is a noise measure used to describe the average sound level over a 24-hour period, typically an average day over the course of a year. In computing DNL, an extra weight of 10 dB is assigned to noise occurring at night between the hours of 10:00 p.m. and 7:00 a.m. to account for increased annoyance when ambient noise levels are lower, and people are trying to sleep. DNL may be determined for individual locations or expressed in noise contours shown on a map.

The compatibility of land uses in the vicinity of an airport is associated with the extent of the airport's noise impacts. The FAA has identified land use compatibility guidelines relating types of land use to airport sound levels. These guidelines are codified in 14 Code of Federal Regulations (CFR) Part 150 for compatibility parameters for residential, public (schools, churches, nursing homes, hospitals, and libraries), commercial, manufacturing and production, and recreational land uses. All land uses within areas below 65 Day-Night Average Sound Level (DNL) are considered compatible with airport operations.

EXISTING CONDITIONS

The Airport is located in a highly urbanized area and is immediately surrounded by commercial, industrial, and residential land uses. The land areas proposed for development in the ALPU/MP study are owned by the STLAA and are currently developed or have been previously developed.

SUMMARY OF CONSIDERATIONS

Runway and taxiway use will change as a result of the proposed consolidated terminal project. Noise contours should be evaluated for changes due to the change in airfield use. It is unlikely that the ALPU/MP proposed projects would have a significant adverse impact on compatible land use.

While the STLAA has no jurisdiction over the adoption or enforcement of local zoning regulations, as the Airport sponsor/owner it is required to provide written assurance to the FAA that appropriate action has been or will be taken to the extent reasonable to restrict the use of land adjacent to, or in the immediate vicinity of the Airport, to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.[35] Land use and zoning for land use compatibility is the responsibility of the local jurisdictions around the Airport and the STLAA has undertaken all efforts to ensure that these local

[35] Federal Aviation Administration, Order 1050.1F, Environmental Impacts: Policies and Procedures, July 16, 2015.

jurisdictions will undertake such actions to the extent reasonable, as documented in its 14 CFR Part 150 Noise Compatibility Program for the Airport.

SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Significant thresholds for socioeconomic impacts, environmental justice, and children's environmental health and safety risks are determined by the following:

- Extensive relocation of residents is required, but sufficient replacement housing is unavailable.
- Extensive relocation of community businesses that would create severe economic hardship for the affected communities.
- Disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the Airport and its surrounding communities.
- A substantial loss in community tax base.
- Disproportionate health and safety risks to children may represent a significant impact.

EXISTING CONDITIONS

St. Louis County, Missouri has a diverse population and economy. The airport boundary lies across several municipalities. There may be communities that require consideration for environmental justice near the airport. There are two Metrolink light rail transit stations located at the Airport. The Airport has been, and continues to be, a major factor in attracting businesses and development in the area. As previously stated, large tracts of land available for commercial and/or industrial development are within the vicinity of the Airport. Any new development is likely to produce positive socioeconomic benefits associated with new jobs and increased tax revenues.

SUMMARY OF CONSIDERATIONS

The ALPU/MP proposed projects are not expected to exceed any of the significance thresholds outlined above, specifically:

- No relocation of residents
- No relocation of existing businesses, except those located within the existing terminals
- No substantial disruptions in traffic patterns
- No substantial reduction to the local tax base, and;
- Unlikely that disproportionately high and adverse human health or environmental effects would occur to minority and low-income populations or children.

However, there may be some impacts to surface parking lots revenues. The City of Berkeley receives an annual parking fee from the Airport for the use of Lot E (currently inside Berkeley city limits). The project would remove Lot E to accommodate airport support facilities; however, a new Lot G surface parking lot is being constructed east of Cargo City. Financial impacts to Berkeley will need to be considered.

VISUAL EFFECTS

According to FAA Order 1050.1F, light emissions should consider "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 light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources."[36]

Only in unusual circumstances would the impact of light emissions be considered sufficient to warrant special study and a more detailed examination. Examples of unusual circumstances would be when high-intensity strobe lights would shine directly into residences, or when overhead apron, parking, or streetlights create glare that would affect pilots and air traffic controllers.

As stated in FAA Order 1050.1F, visual resources / visual character should consider "the extent the action would have the potential to:

- affect the nature of the visual character if the area, including the importance, uniqueness, and aesthetic value of the affected resources,
- contrast with the visual resources and/or visual character in the study area, and;
- block or obstruct the views whether these resources would still be viewable from other locations."[37]

When analyzing visual impacts of airport projects public involvement and consultation with appropriate federal, state, and local agencies may help determine the extent of any impacts.

EXISTING CONDITIONS

The Airport is currently illuminated by various types of lighting for airfield and landside facilities. Lighting that emanates from the airfield includes runway, apron, and navigational lighting, such as hold position lights, stop-bar lights, and runway and taxiway lights and signage. Airfield lighting is located along taxiways and ramps for guidance during periods of low visibility, and to assist aircraft movement on the airfield. Aircraft lighting, such as landing lights, position and navigation lights, beacon lights, and vehicle lighting are other types of light sources on the airfield. Lighted landside facilities include buildings, roadways, and parking facilities. The Airport is located in a highly urbanized area, which is comprised of other development that is also lighted and contributes to the overall light emissions in the area.

SUMMARY OF CONSIDERATIONS

Because of the relatively low levels of light intensity compared to background levels associated with most air navigation facilities and other airport development actions, and the lighting from other non-airport development, light emissions impacts are unlikely to have a significant adverse impact on human activity or on the use or characteristics of any protected properties. Due to the density of development surrounding the Airport, the visual impacts of any ALPU/MP proposed projects are also unlikely to be significant.

[36] Federal Aviation Administration, Order 1050.1F Environmental Impacts: Policies and Procedures, July 16, 2015.

[37] Federal Aviation Administration, Order 1050.1F Environmental Impacts: Policies and Procedures, July 16, 2015.

WATER RESOURCES

Water resources are surface waters and groundwater that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Surface water, groundwater, floodplains, and wetlands function as a single integrated natural system. This analysis includes existing conditions and potential disruption of the system, as well as potential impacts to the quality of the water resources.

WETLANDS

The USACE and the USEPA define wetlands as: "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."[38] Executive Order 11990, Order DOT 5660.1A, the Rivers and Harbors Act of 1899, and the CWA address activities in wetlands. Order 11990 requires Federal agencies to ensure their actions minimize the destruction, loss, or degradation of wetlands. It also assures the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, funding, and operation of transportation facilities and projects."

Existing Conditions

As depicted on **Figure 7.3-5**, there are potential jurisdictional wetlands and streams on or adjacent to the Airport property. Wetland data was obtained from the National Wetland Inventory.[39] Wetland and streams are shown for the full extent of the area shown on Figure 7.3-5 to illustrate the continuity of the resources; however, few of the wetlands and streams are located within the boundary of the Airport property. Many of the streams on Airport property have been channeled over time, including Coldwater Creek, which was channeled and flows underneath the central airfield.

Summary of Considerations

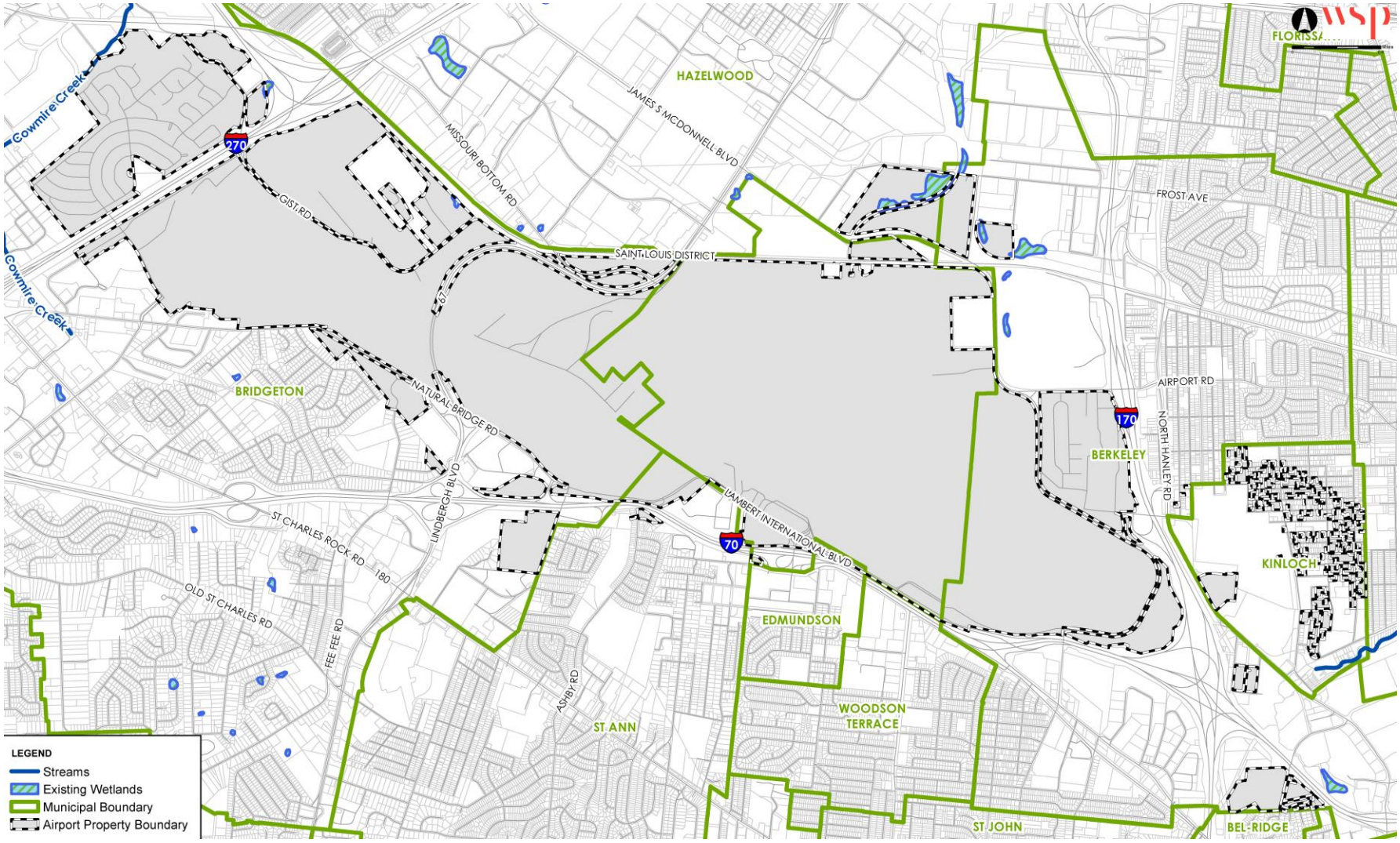
It is unlikely that the ALPU/MP proposed projects would impact any of the known jurisdictional wetlands or streams. In the event that new on-airport development would impact jurisdictional waters, including any modifications to the stormwater channels connected to Coldwater Creek, the specific impacts would need to be delineated and coordinated with the appropriate regulatory agencies, USACE and/or MoDNR.

Prior to commencing implementation of the ALPU/MP proposed projects, a wetland delineation may need to be performed to specifically identify if any wetlands exist in the area of disturbance and the connection of the run-off drainages to jurisdictional streams (connection to jurisdictional "Waters of the U.S." needs to be determined in the wetland delineation). If wetlands and/or streams are connected to jurisdictional waters, they would be regulated by the USACE. If not, they would likely constitute isolated wetlands and would fall under the regulation of the MoDNR. The USACE will make the ultimate decision as to their status.

[38] U.S. Army Corps of Engineers, *Wetlands Delineation Manual*, January 1987.

[39] U.S. Fish & Wildlife Service, *National Wetlands Inventory*; available online at: https://www.fws.gov/wetlands/data/mapper.html (website accessed in May 2020).

Figure 7.3-5: Existing Wetlands



Sources: St. Louis County Open Government, https://data-stlcogis.opendata.arcgis.com, accessed May 2020; Lion CSG, 2022.

FLOODPLAINS

Floodplains are defined by Executive Order 11988, *Floodplain Management*,[40] as "the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, including at a minimum, that area subject to a one-percent or greater chance of flooding in any given year" (i.e., area inundated by a 100-year flood).[41] U.S. Department of Transportation Order 5650.2 defines the beneficial values served by floodplains to include "natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry." Federal Emergency Management Agency (FEMA) maps are the primary reference for determining the extent of the base floodplain.

Existing Conditions

As shown in **Figure 7.3-6**, areas of 100-year floodplains occur on or adjacent to the Airport property, including to the east of the Airport, along Maline Creek, to the north and south along Coldwater Creek, and to the west along Cowmire Creek.[42]

Summary of Considerations

None of the ALPU/MP proposed projects encroach upon a mapped floodplain. Floodplain impacts would only be considered significant relative to NEPA if a proposed Federal action results in one or more of the following impacts:

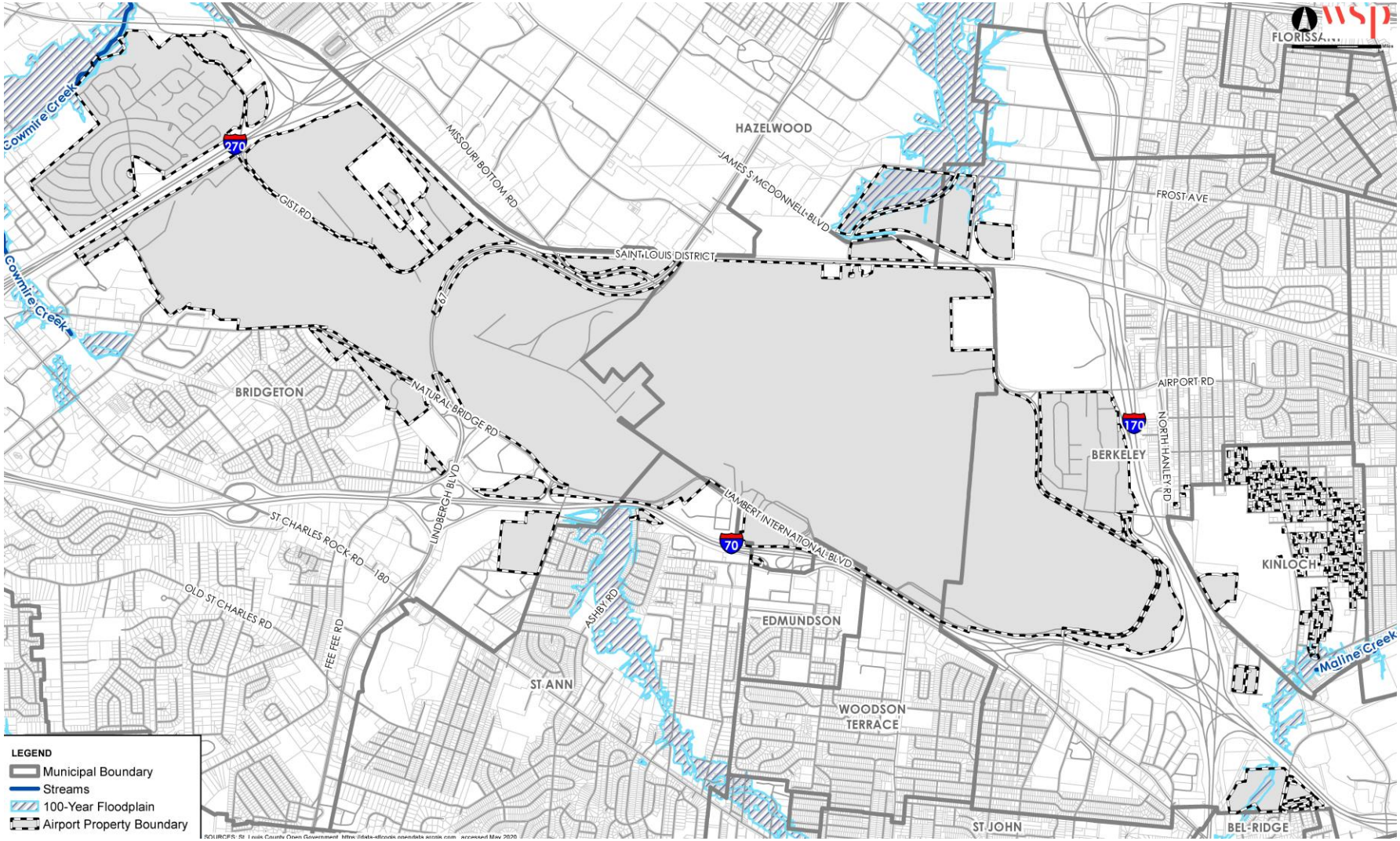
- A high likelihood of loss of human life;
- Substantial encroachment-associated costs or damage, including adversely affecting safe airport operations or interrupting aircraft services (e.g., interrupting runway or taxiway use, placing another facility such as a NAVAID out of service, placing utilities out of service, etc.); or;
- A notable adverse impact on the floodplain's natural and beneficial floodplain values.

[40] Code of Federal Regulations, *Title 43, Part 6030 (43 CFR 6030).*

[41] Federal Aviation Administration, *Order 5050.4B, NEPA Implementing Instructions for Airport Actions*, April 28,2006.

[42] Federal Emergency Management Agency, *Flood Map Service Center* online at: https://msc.fema.gov/portal/home (website accessed in May 2020).

Figure 7.3-6: Floodplains



Sources: St. Louis County Open Government, https://data-stlcogis.opendata.arcgis.com, accessed May 2020; Lion CSG, 2022.

SURFACE WATERS

Surface waters include streams, rivers, lakes, ponds, estuaries, and oceans. The significant threshold for surface waters includes "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." Considerations include if the action would have the potential to:

- Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values,
- Adversely affect surface water such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained, and such impairment cannot be avoided or satisfactorily mitigated, or;
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

Existing Conditions

The Airport is located approximately 12 miles southwest from the confluence of the Missouri and Mississippi Rivers. There are several ponds, creeks, and streams on or in the vicinity of the Airport property, including Cowmire Creek, which is located to the west of the Airport and generally flows south to north into the Missouri River; Coldwater Creek, which is diverted through manmade channels and tunnels across the center of the airfield and generally flows south to north into the Missouri River; and Maline Creek, which is located just east of the Airport and generally flows west to east to the Mississippi River.

Summary of Considerations

Construction and use of the proposed projects for the ALPU/MP are not anticipated to impact surface waters.

GROUNDWATER

Groundwater is subsurface water that occupies the space between sand, clay, and rock formations. The significant threshold for groundwater includes "if the action would exceed groundwater quality standards established by federal, state, local and tribal regulatory agencies; or contaminate public water supply, such that public health may be adversely affected." Considerations include if the action would have the potential to:

- Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values,
- Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained, and such impairment cannot be avoided or satisfactorily mitigated, or;
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

Existing Conditions

The Airport is situated within the physiographic province of the Dissected Till Plains in the Florissant basin. The Dissected Till Plains are generally described as gently undulating plains, with altitudes ranging from 500 to 700 feet. It is believed that this area was glaciated twice during the Pleistocene period, but the till deposits are thin and dissected. The Airport is located in the Post-Maquoketa water-bearing group. This

group contains the Pennsylvanian and Mississippian Units, generally having a water yield of 1 to 10 gallons per minute up to approximately 450 feet deep. At deeper depths, the yield tends to increase; however, mineralized water is usually encountered. Alluvial aquifers in the area are recharged by infiltration of stream water during sustained high-river stage and flooding by direct precipitation and by under flow from underlying and adjacent bedrock.

Summary of Considerations

Construction and use of the proposed projects for the ALPU/MP would not impact groundwater.

WILD AND SCENIC RIVERS

The *Wild and Scenic Rivers Act* of 1968[43] provides protection for certain free-flowing rivers, which have "outstanding or remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values." The 1979 Environmental Message Directive on Wild and Scenic Rivers (August 2, 1979) from the President, directs federal agencies to avoid or mitigate adverse effects on rivers identified in the Nationwide Rivers Inventory (NRI) as having potential for designation under the Wild and Scenic Rivers Act. The NRI is a listing of more than 3,400 free-flowing river segments that are believed to possess one or more natural or cultural values judged to be of more than of local or regional significance.

Existing Conditions

According to the NRI database accessed on the U.S. Department of the Interior National Park Service website, there are no NRI river segments or rivers designated as part of the National Wild and Scenic River System within St. Louis County.[44]

Summary of Considerations

Construction and use of the proposed projects for the ALPU/MP would not impact a Wild and Scenic River, or river segment under study for inclusion in the Wild and Scenic River System, an NRI river segment, or an otherwise eligible river.

SUMMARY OF WATER RESOURCES CONSIDERATIONS

Potential future water quality impacts are associated with the creation of impervious surfaces due to the construction and use of the ALPU/MP proposed projects. Several permits, approvals, or certifications associated with water quality may be required prior to development of the ALPU/MP proposed projects:

National Pollutant Discharge Elimination System (NPDES) Permit – Under the CWA, construction that disturbs one or more acres requires a Section 402 NPDES permit to minimize impacts from stormwater runoff. The ALPU/MP proposed projects have the potential to impact more than one acre due to construction, and therefore would require a NPDES permit. The process includes submittal of a Notice of Intent to be covered under the construction general permit and the development of a stormwater pollution

[43] Public Law 90-542; 16 U.S.C. 1271 et seq.

[44] U.S. Department of the Interior, *National Park Service, Nationwide Rivers Inventory,* https://www.nps.gov/subjects/rivers/nationwide-rivers-inventory.htm (website accessed May 2020).

prevention plan indicating the procedures used to reduce or eliminate the potential impacts on water quality from construction activities.

Section 404 Dredge and Fill Permit – CWA Section 404, under the jurisdiction of the Army Corps of Engineers (USACE), requires a permit be obtained for dredge and fill activities involving Waters of the U.S. Permitting may be accomplished under either a general permit or an individual permit. Decisions on the type of permit required will depend on the ALPU/MP development project and the extent of impact from construction activities on effected waters of the U.S. It is recommended that proposed construction activities be discussed with the USACE to determine actual permit requirements. The need for certification would be determined in the environmental phase.

Water quality regulations and issuance of permits will normally identify the information for the environmental regulatory agencies to make judgments on the significance of water quality impacts. If the environmental documentation and early consultation with the MoDNR[45] show a potential for exceeding water quality standards, identify water quality problems that cannot be avoided or satisfactorily mitigated, or indicate difficulties in obtaining required permits, an EIS may be required.

7.4 FINDINGS AND ENVIRONMENTAL STRATEGY

FAA Advisory Circular 150/5070-6b[46] states, "The purpose of considering environmental factors in airport master planning is to help the sponsor thoroughly evaluate airport proposed projects and to provide information that will help expedite subsequent environmental processing. By using existing maps of the airport area, prior environmental documents, and the Internet, planners and environmental specialists can get an excellent overview of sensitive environmental resources in and around the airport."

Based on this environmental overview, a NEPA environmental review document would be required prior to the implementation of any project in order to identify and quantify the potential adverse environmental impacts. The determination of Purpose and Need and potential environmental impacts will determine the appropriate type of environmental documentation as required by NEPA. The potential mitigation requirements and permitting would be identified through coordination with the appropriate environmental regulatory agencies, i.e., the FAA, USEPA, the USFWS, the USACE, and the MoDNR. Coordination with the SHPO would be required to determine eligible historic properties and any effects on of the project on historic properties.

7.4.1 MAJOR ENVIRONMENTAL PERMITTING REQUIREMENTS

The environmental categories that may require environmental surveys, approvals, and permitting are listed below. Coordination with appropriate environmental regulatory agencies would also need to take place.

[45] Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102

[46] Federal Aviation Administration, Advisory Circular 150 5070-6b, Change 2, *Airport Master Plans*, Chapter 5 Environmental Considerations, 501 General (a). January 27, 2015.

AIR QUALITY

- General Conformity Determination
- Coordination with the USEPA - Region 7 and Missouri SIP
- Appropriate measures recommended to reduce air quality impacts on surrounding communities

FISH, WILDLIFE, AND PLANTS

- Coordination with the USFWS and MoDNR to determine impacts to threatened and endangered species

HAZARDOUS WASTE

- Coordination with the MoDNR to ensure proper assessments are conducted and abatement practices are followed if necessary

STATE HISTORIC PRESERVATION OFFICE

- Coordinate 4(f) resources with SHPO and Department of Interior
- Review project in relation to the National Historic Preservation Act
- Architectural survey
- Archaeological survey

WATER QUALITY

- Update current NPDES Permit.
- Section 404 Dredge and Fill Permit required for activities involving Waters of the U.S.
- Coordination with the USACE and the MoDNR.

WETLANDS

- Wetland Use Permit and mitigation could be required for construction; however, it is unlikely due to the minimal number of wetlands and streams that are located on airport property and the low potential of either being impacted by the implementation of any of the ALPU/MP proposed projects.

Initiating a formal coordination process with the FAA Central Region Office will determine which type of environmental documentation would be required for each ALPU/MP proposed project.[47] Each project would need to demonstrate independent utility according to the regulatory requirements under NEPA prior to processing. It is recommended that Airport staff discuss the individual development projects with the FAA as early as possible to make certain there is sufficient time to obtain the necessary environmental approval(s) and permit(s) before construction needs to begin.

[47] See Federal Aviation Administration Order 5050.4B National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions (April 28, 2006). Paragraph 700. The Environmental Assessment (EA); and Paragraph 903. Airport Actions Normally Requiring an EIS.

7.4.2 EROSION PREVENTION AND SEDIMENT CONTROL

Temporary impacts from dust, noise, and erosion are likely, as a result of constructing the proposed projects. Best Management Practices (BMPs) would need to be implemented in order to avoid and minimize these temporary impacts. Temporary control measures will be specifically identified through the application of an erosion control plan prepared during the project's design stage as identified in FAA AC 150/5370-10H, *Standards for Specifying Construction of Airports*, Item C-102, "*Temporary Air and Water Pollution, Soil Erosion, and Siltation Control.*"[48] Temporary and permanent erosion controls include, but are not limited to: exposing the minimum area of erodible earth; applying temporary mulch with or without seeding; use of temporary crossing protection of watercourses; and temporary slope drains, benches, dikes, dams, sediment basins, and filter fabric/silt fencing.

In addition, the following BMPs should be implemented in an effort to minimize impacts on water quality and surface water, if practicable:

- Silt fencing and/or sediment traps would be used during construction to prevent erosion and storm water run-off.
- The Airport Storm Water Pollution Prevention Plan (SWPPP) would be updated as necessary to identify all potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges from the site, to describe the practices to be used to reduce pollutants in storm water discharges, and to assist with overall compliance with the terms and conditions of the permits obtained for any of the development projects.
- Construction equipment would be in good repair without visible leaks of oil, grease, or hydraulic fluids.
- External vehicle washing would use only water (no detergents).
- Water quality impacts would be controlled during construction by compliance with the NPDES – Construction General Permit requirements. All construction activities would be expected to comply with current BMPs as detailed in the existing SWPPP.
- Any hazardous materials would be handled using approved methods and shipped off-site to approved disposal sites. Sanitary wastes generated during site construction would be handled by portable systems until the domestic sanitary sewage system is available for site use. An adequate number of these portable systems would be provided.

[48] Federal Aviation Administration, A*dvisory Circular 150/5370-10H, Standards for Specifying Construction of Airports,* Item C-102, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, December 21, 2018.

7.4.3 GREEN INITATIVES AND ENVIRONMENTAL STEWARDSHIP

The Airport has established an Environmental Management System (EMS),[49] and has implemented various environmental initiatives. It is the policy of the STLAA and St. Louis Lambert International Airport to comply with all environmental laws and regulations, prevent pollution, and continually improve the Airport's environmental performance. The Airport is also responsive to the *City of St. Louis Sustainability Program*.

The implementation of the ALPU/MP proposed projects offers the opportunity to promote the use of sustainable airport design and construction practices. These practices can save both time and money, while also creating positive environmental impacts. The Airport can enhance their leadership position of environmental stewardship and provide educational opportunities for local and regional stakeholders, as well as strengthen relationships with neighboring communities. The ongoing success of the environmental program at the Airport is outlined in the *St. Louis Lambert International Airport Environmental Report*.[50] The following four categories demonstrate the Airport's existing efforts and potential for further environmental stewardship.

RECYCLING EFFORTS

The Airport has conducted various recycling initiatives, such as the sorting and recycling of all consumer wastes and employee electronic waste, a vehicle tire recycling program, as well as implementation of a construction material recycling plan. Through the implementation of these recycling programs, the Airport has decreased waste disposal and transportation fees and generated cost savings. Any additional opportunities for recycling with the implementation of the ALPU/MP proposed projects would be considered.

AIR QUALITY EMISSION REDUCTIONS

The STLAA has made a commitment to air quality pollution prevention as stated in their environmental policy.[51] The Airport recognizes that establishing targets to further reduce emissions related to diesel engines, smog producing chemicals, and fuel combustion is critical to protecting the overall health of the Airport and the regional community. The Airport has been involved in initiatives to reduce their impact on air quality within the region.[52] The Airport has utilized Voluntary Airport Low Emissions Program (VALE) grants and will continue to look for additional opportunities to participate in VALE.

In addition, measures for controlling fugitive dust on paved roads associated with the construction of any potential ALPU/MP proposed project could focus on either preventing materials from being deposited on the roads, or removal of any material from the lanes of travel. The methods commonly used to prevent the deposit of dust include covering loads in trucks or wetting the material being hauled; cleaning vehicles before they exit the construction site; using bump strips, rumble strips, or grates to shake dust from the

[49] Lambert-St. Louis International Airport Program Management Office, *Environmental Management System (EMS) Manual. Volume I and II.*

[50] Lambert-St. Louis International Airport, *Environmental Report,* 2010.

[51] Lambert-St. Louis International Airport, *Environmental Policy*, Rhonda Hamm-Niebruegge, Director of Airports, August 12, 2010.

[52] Lambert-St. Louis International Airport, *Environmental Report*, 2010.

vehicles; and paving the construction site access roads nearest to the paved roads. Methods to minimize fugitive dust on unpaved roads and inactive portions of the potential construction site include watering or chemically stabilizing inactive areas. Another measure frequently used in the suppression of dust is the placement of seeding and mulching as construction areas are completed. The actual techniques used would be determined based on the type of construction and the conditions present at the time of construction.

ENERGY CONSERVATION

The Airport has implemented proven energy conservation measures, such as installation of energy efficient lighting and solar panels to reduce waste and maximize the efficiency of energy consumption.

To the extent possible and feasible, construction planning for the ALPU/MP proposed projects would meet FAA policy recommendations that facility development includes principles of sustainability in design. The FAA encourages the consideration of energy reduction measures in the planning and design of airport improvement projects. These principles are consistent with FAA policy that requires the use of a "systematic interdisciplinary approach."[53] Potential integration of energy conservation into ALPU/MP proposed projects such as the application of LEED principles would not only help to conserve energy but to also reduce operating costs.

USE OF BEST MANAGEMENT PRACTICES

The Airport will continue to develop and implement best management practices that contribute to sustainable operations while collaborating with airlines, tenants, and the community to identify cost-effective solutions to environmental challenges.

During the construction of any potential ALPU/MP proposed projects, the STLAA would ensure that the construction contractor adheres to the BMP recommendations in FAA Standards for Specifying Construction of Airports, which includes the temporary control measures to prevent temporary air and water pollution, soil erosion, and siltation.[54] *See* Section 6.5.2 *Erosion Prevention and Sediment Control Assessment.*

[53] Federal Aviation Administration, *Order 1050.1F, Environmental Impacts: Policies and Procedures*, Chapter 1, Paragraph 1-7, July 16, 2015.

[54] Federal Aviation Administration, *Advisory Circular 150/5370-10E, Standards for Specifying Construction of Airports,* Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, September 30, 2008.