Appendix D:
Aquatic and Ecological Resources

Aquatic and Ecological Resources Report

Aquatic and Ecological Resources Report

St. Louis Lambert International Airport
West Airfield Program Project
St. Louis, St. Louis County, Missouri

CMT Job Number: 22004919.00

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1.0 SUMMARY

This report has been prepared at the request of the St. Louis Lambert International Airport (STL). The purpose of this report is to describe the wetlands and other regulated surface water resources located within the study area for the proposed airport improvements at STL in St. Louis, Missouri.

The Clean Water Act defines wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils." Thus, in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement, for an area to be considered a wetland, it must meet all of the following criteria, under normal circumstances: wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils.

As summarized in the table below, four (4) streams and seven (7) wetlands were identified within the study area. We anticipate that these resources are subject to regulation under the Clean Water Act and therefore, impacts to these resources would require 404 authorization from the US Army Corps of Engineers (USACE) and a 401 water quality certification from the Missouri Department of Natural Resources.

Suitable habitat for the federally-listed Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) are present within the project area. Any proposed work on-site should avoid impacts to these species or their habitat. The project is anticipated to result in up to 3.6 acres of tree clearing. Consultation with USFWS under Section 7 of the Endangered Species Act will be required if impacts to these species or their habitats occur.

WATER RESOURCES				
RESOURCE	TYPE	EXISTING CONDITION	PRELIMINARY JURISDICTIONAL STATUS*	WITHIN STUDY AREA
UNT 1 - Upstream	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	1097.6 linear feet, 0.13 acre
UNT 1 - Downstream	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	3125.9 linear feet, 0.75 acre
UNT 2	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	15.9 linear feet, 0.002 acre
UNT 3	Perennial	Functionally Impaired	Federally Jurisdictional (a)(3)(i)	23.8 linear feet, 0.004 acre
Coldwater Creek	Perennial	Moderately Functional	Federally Jurisdictional (a)(3)(i)	2151.4 linear feet, 2.27 acre
Wetland A	Forested	Slightly Impaired	Isolated	0.024 acre
Wetland B	Forested	Slightly Impaired	Isolated	0.015 acre
Wetland C	Emergent	Impaired	Possibly exempt	0.042 acre
Wetland D	Emergent	Impaired	Possibly exempt	0.003 acre
Wetland E	Emergent	Impaired	Possibly exempt	0.531 acre
Wetland F	Emergent	Impaired	Possibly exempt	0.054 acre
Wetland G	Emergent	Impaired	Isolated	0.045 acre

*based on the revised definition of “Waters of the United States” (40 CFR 230.3(s))

2.0 METHODOLOGY

2.1 STREAMS

The on-site evaluation of the study area was conducted during a site visit on May 23 and 24, 2023. Streams were evaluated for their jurisdictional status based on the revised definition of waters of the United States (40 CFR 230.3(s)), which requires the presence of an ordinary high water mark (OHWM) and the stream to be a perennial, intermittent or ephemeral tributary with ultimate connection to downstream Section 10 Traditional Navigable Waters (TNW).

The following USACE definitions for the three stream types were used:

> **Ephemeral streams** have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
>
> **Intermittent streams** have flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
>
> **Perennial Streams** have flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

The determination of stream designation is based on an evaluation of the size of the watershed for each stream, the presence of flow during the on-site evaluation and the evidence observed of the frequency of flow, and the presence of aquatic life. In addition to flow regime, streams were also classified according to existing conditions and rated either fully functional, moderately functional, or functionally impaired, based on the definitions in the State of Missouri Stream Mitigation Method (MSMM).

2.2 WETLANDS

When evaluating for the presence of wetlands, CMT personnel used the routine method presented in the 1987 Corps of Engineers Wetlands Delineation Manual and the Midwest Regional Supplement. In order for an area to be classified as a jurisdictional wetland, the area has to have a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology and be an adjacent wetland as defined by the revised definition of waters of the United States (40 CFR 230.3(s)). The specific indicators used for each of the three parameters are noted in the following paragraphs.

2.2.1 HYDROPHYTIC VEGETATION

According to Tiner (2012), a hydrophyte is a vascular plant that grows in water or on a substrate that is saturated at a frequency and duration during the growing period sufficient to affect plant occurrence. Using this definition, the U.S. Fish and Wildlife Service released the National Wetland Plant List. This list categorizes species according to their probability of occurrence in

wetlands based on the ecological region. The list identifies five general plant indicator status categories:

- Obligate (OBL): almost always is a hydrophyte, rarely in uplands
- Facultative Wetland (FACW): Usually is a hydrophyte but occasionally found in uplands
- Facultative (FAC): Commonly occurs as either a hydrophyte or non-hydrophyte
- Facultative Upland (FACU): Occasionally is a hydrophyte but usually occurs in uplands
- Obligate Upland (UPL): Rarely is a hydrophyte, almost always in uplands

In order to satisfy the hydrophytic vegetation criteria required for a jurisdictional wetland, the area had to be dominated (over 50 percent) by obligate wetland plants, facultative wetland plants and facultative plants.

The method used during this survey for determining vegetation dominance was the 50/20 method. Using this method, plant species in each stratum are ranked according to their percent aerial cover and then cumulatively summed until 50 percent of the total dominance measure is exceeded. All species contributing to that cumulative total plus any additional species that have at least 20 percent of the total dominance measure are considered dominants in their respective stratum.

2.2.2 HYDRIC SOIL

Hydric soil is soil formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. The concept of hydric soils includes soils developed under sufficiently wet conditions to support the growth and regeneration of hydrophytic vegetation. Hydric soil indicators include the presence of histosols, histic epipedons, reducing conditions, gleyed or low chroma soil colors and high organic content or organic streaking in sandy soil. An additional hydric soil indicator was used if the mapped and confirmed soil type appears on the local or national hydric soils list.

2.2.3 WETLAND HYDROLOGY

Wetland hydrology is defined as an area that is inundated or saturated at or near the surface for at least five percent of the growing season in most years. This can include areas that are ponded, flooded or those areas that have a water table at or near the surface. Indications of wetland hydrology included surface water, saturation, evidence of drift deposits, iron deposits or drainage patterns, and inundation. Water-stained leaves, oxidized root channels within 12 inches below ground surface on living plants, the FAC neutral test and local soil survey data were also used to indicate wetland hydrology.

2.2.4 WETLAND LOCATION

The wetland boundaries were surveyed using a handheld GPS device with sub-meter accuracy. The wetland boundaries with the wetland and upland data point locations are found on the Water Resource Maps in Appendix A.

2.2.5 WETLAND QUALITATIVE ASSESSMENT

The wetland plant community was evaluated using the Floristic Quality Index (FQI).

The FQI is an index derived from floristic inventory data and is calculated from the number of species that occur in the plant community, as well as the species coefficient of conservatism (C) values. C-values are assigned to individual plant species. The higher the C-value is, the more likely a plant is from a minimally altered landscape. Low C-values are assigned to weeds, or species that can exist in a wide range of conditions. An area of high natural quality would include conservative native plants that are adapted to a specialized community context and would have a mean C-value of 5 or greater. The aggregate conservatism of all the plants inhabiting a site is used to determine its FQI.

The general classifications of the vegetative communities are made based on the FQI scores.

FQI	Classification
0-5	severely degraded
5-10	degraded
10-20	moderately degraded
20 +	high quality

The wetlands were also classified according to existing conditions and rated either fully functional, functional, moderately functional, or functionally impaired, based on the definitions in the State of Missouri Wetland Mitigation Method (MWMM).

2.3 OTHER SURFACE WATER RESOURCES

Other surface water resources include features such as lakes/ponds, drainage swales, and ditches. Evaluation of other surface water resources was based on the presence of an ordinary high-water mark (OHWM), flow regime, and/or on their jurisdictional status.

2.4 THREATENED AND ENDANGERED SPECIES

The project study area was observed for suitable threatened and endangered species habitat. The habitats present were searched for suitability and the presence of species. The known or historic range of federally endangered or threatened species within the study area was determined by reviewing the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list and the Missouri Department of Conservation (MDC) Natural Heritage Review generated for the project study area.

3.0 BACKGROUND INFORMATION

3.1 PROJECT DESCRIPTION

The proposed project is intended to improve airfield maintenance operations, enhance safety by reducing the probability of runway incursions, and enhance the capacity and improve the efficiency of aircraft deicing at the St. Louis Lambert International Airport (STL). The project will include design and construction of a new west deicing pad and associated utilities and access roads to the new deicing pad. The project also includes the demolition of the existing airfield maintenance (AFM) campus, and the construction of a new AFM campus. The project includes the design and construction of deice support facilities, stormwater detention basins as needed, and the construction of a taxiway system. Construction is anticipated to begin in 2025 and be completed by the end of 2027.

FIGURE 1 – STUDY AREA

3.2 PROJECT LOCATION

The proposed project is located approximately 13 miles northwest of downtown St. Louis in unincorporated St. Louis County, Missouri. Per the USGS Saint Charles, Florissant, Creve Coeur, and Clayton Quadrangle Maps, the study area is situated within Sections 5 and 7, Township 46 North, and Range 6 East. Per the Missouri public land survey system, the study area is also situated within Land Grant 1196, Land Grant 2625, Land Grant 1993, Land Grant 2524, and Land Grant 1250 associated with the Marais des Liards Common Field land grant. The land use around the project area is primarily airport facilities and infrastructure, commercial, and residential.

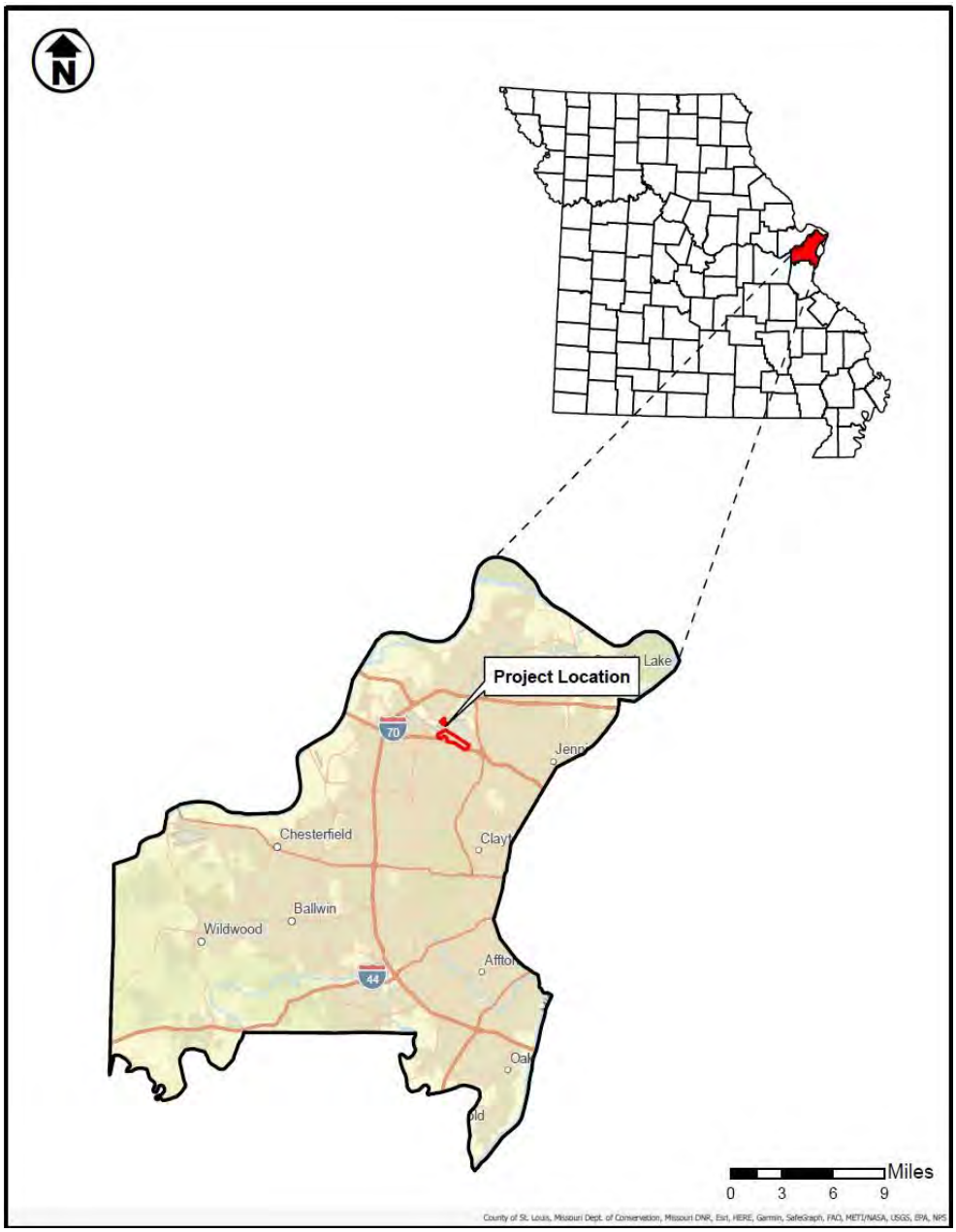

FIGURE 2 – COUNTY LOCATION MAP

3.3 HISTORICAL OR PUBLISHED INFORMATION

The project is located within the Headwaters Coldwater Creek watershed (12-digit hydrologic unit code 103002000802).

According to the National Hydrography Dataset (NHD), National Wetlands Inventory (NWI) map, and USGS topographic maps, three streams are located within the study area. The NWI map indicates three riverine features within the study area.

According to the Missouri Department of Natural Resources 2020 Section 303 (d) Listed Waters, Coldwater Creek has been listed as impaired for chloride from urban runoff and storm sewers. Coldwater Creek is a tributary of Mill Creek, which is a tributary to Missouri River, a TNW.

The St. Louis County Soil Survey indicates the following soils are present within the study area.

- 99023 – Urban land, upland, 0 to 5 percent slopes
- 60025 – Urban land-Harvester complex, 2 to 9 percent slopes

According to the St. Louis County Hydric Soils List, neither of these soils are hydric.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), the study area is located within the FEMA Flood Zone X, which corresponds to areas of minimal flood risk.

Copies of the NWI map, flood zone map, Traditional Navigable Water connection map, Natural Resources Conservation Service (NRCS) soils map, NHD map, and the relevant portions of the St. Louis County Soil Survey are included in Appendix A.

4.0 RESULTS

Four (4) streams and seven (7) wetlands were identified in the study area during the onsite investigation on May 23 and 24, 2023. The Water Resources Map, provided in Appendix A, depicts the location of the resources on an aerial photograph. Data forms and Floristic Quality Index (FQI) results are provided in Appendix B. Representative photographs are provided in Appendix C.

4.1 STREAMS

A total of four (4) streams were identified within the study area. A summary of these streams is provided in the table below.

STREAM SUMMARY

Stream Name	Receiving Waters	Preliminary USACE Jurisdictional Status	Stream Type	Drainage Area[1] (Sq.Mile)	MSMM[2] Assessment		Linear Feet within Study Area	Acres within Study Area
					Priority Waters	Existing Condition		
UNT 1 - Upstream	UNT 1> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.69	Tertiary Priority	Functionally Impaired	1097.6	0.131
UNT 1 - Downstream	UNT 1 > Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	1.1	Tertiary Priority	Functionally Impaired	3125.9	0.754
UNT 2	UNT 2> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.065	Tertiary Priority	Functionally Impaired	15.9	0.002
UNT 3	UNT 3> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.065	Tertiary Priority	Functionally Impaired	23.8	0.004
Coldwater Creek	Coldwater Creek> Mill Creek> Missouri River	Federally Jurisdictional (a)(3)(i)	Perennial	8.5	Secondary Priority	Moderately Functional	2151.4	2.267
						Total	6414.6	3.16

[1]As calculated by USGS Stream Stats at most downstream location within the study area
[2]MSMM - Missouri Stream Mitigation Method

As indicated in the table above, UNT 1 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. UNT 1 was evaluated in two sections, UNT 1-Upstream and UNT 1-Downstream, due to differing geomorphology characteristics and drainage basin size in these sections. Within the study area,

UNT 1-Upstream has predominantly silt substrate. There are narrowleaf cattails in the stream with flowing water observed during the site visit. The riparian buffer is mowed grass on the west side of the stream, and scrub-shrub vegetation on the east side of the stream. UNT 1-Downstream has predominantly gravel and sand substrate with moderate flowing water within the study area. The UNT 1-Downstream riparian buffer consists of scrub-shrub vegetation on both sides of the stream. Nuisance odors and oil sheens were observed in both sections of the stream. Approximately 160.1 linear feet of UNT 1-Upstream and 1,834.4 linear feet of UNT 2-Downstream are captured by culverts through the project area.

UNT 2 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, UNT 2 is predominantly artificial concrete substrate with flowing water observed during the site visit. UNT 2 originates from a concrete culvert and has nuisance algae throughout. There is no riparian buffer on either side of UNT 2.

UNT 3 is a perennial tributary, which flows to Coldwater Creek and ultimately the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, UNT 3 is predominantly artificial concrete and boulder substrate with water observed during the site visit. UNT 3 originates from a concrete culvert and has nuisance algae throughout. There is no riparian buffer on either side of UNT 3.

Coldwater Creek is a perennial tributary of the Missouri River, a TNW, and is likely federally jurisdictional as defined by (a)(3)(i) of the 2023 Revised Definition of "Waters of the United States" Rule. Within the study area, Coldwater Creek is predominantly cobble and hardpan substrate. There are narrowleaf cattails in the stream with flowing water observed during the site visit. The riparian buffer is scrub-shrub vegetation with broken concrete on both sides of the stream. The STL airfield is located beyond the riparian buffer on both sides of the stream. Approximately 241.9 linear feet of Coldwater Creek are captured by culverts through the project area.

The Water Resources Maps in Appendix A show the location of the streams in the study area. Representative photographs are provided in Appendix C, and the Stream Stats reports for UNT 1 and Coldwater Creek are provided in Appendix B. The remaining streams drainage areas were estimated based on inferred watershed areas using the USGS topographic map.

4.2 WETLANDS

Seven (7) wetlands were identified in the study area. A summary of the wetland data is provided in the table below. Details on the soil, hydrology and dominant vegetation for each wetland are provided on the Routine Wetland Determination Data Forms included in Appendix B, along with the floristic quality assessment data. Representative photographs of each wetland are provided in Appendix C.

Additional areas exhibiting wetland characteristics were identified in the study area, but were completely confined to the limits of the ordinary high water mark of the streams and therefore were not evaluated as wetlands.

WETLAND SUMMARY									
Wetland ID	Location	Connection to Downstream TNW	Preliminary USACE Jurisdictional Status	Wetland Type	MWMM		Floristic Quality Assessment		Acres within Study Area
					Aquatic Resource Type	Existing Condition	FQI / Mean C Value	Functional Classification	
Wetland A	Located in western portion of the project area	Isolated	Likely not jurisdictional	Forested	Type B	Slightly Impaired	8.5 / 3.8	Severely degraded	0.024
Wetland B	Located in western portion of the project area	Isolated	Likely not jurisdictional	Forested	Type B	Slightly Impaired	6 / 3	Severely degraded	0.015
Wetland C	Located in northwestern portion of project area	Wetland C> Drainage swale> UNT 1> Coldwater Creek	Possibly exempt	Emergent	Type C	Impaired	4 / 2.3	Severely degraded	0.042
Wetland D	Located in northwestern portion of project area	Wetland D> Vegetated drainage swale> pipe> UNT 1> Coldwater Creek	Possibly exempt	Emergent	Type C	Impaired	7.1 / 5	Severely degraded	0.003
Wetland E	Located in northeastern portion of project area in constructed stormwater basin	Wetland E> Concrete ditch> UNT 1> Coldwater Creek	Possibly exempt	Emergent	Type C	Impaired	6.1 / 2.8	Severely degraded	0.531
Wetland F	Located in southern portion of the project area	Wetland F> Riprap ditch> pipe> Coldwater Creek	Possibly exempt	Emergent	Type C	Impaired	6.7 / 3	Severely degraded	0.054
Wetland G	Located in southern portion of the project area	Isolated	Likely not jurisdictional	Emergent	Type C	Impaired	7 / 3.5	Severely degraded	0.045
								TOTAL	0.714

MWMM - Missouri Wetland Mitigation Method

WETLAND A

Wetland A is a forested wetland located in the western portion of the project area. This wetland is located in an isolated depression and has no apparent outlet to any other surface water features. Due to the lack of connection to a TNW, the wetland is likely isolated and is not federally jurisdictional.

A Floristic Quality Index (FQI) was completed for Wetland A. The native mean C-value for Wetland A is 3.8, indicating that the plant community is considered severely degraded. The native FQI for Wetland A is 8.5, indicating that the plant community is degraded.

WETLAND B

Wetland B is a forested wetland in the western portion of the project area. This wetland is located in an isolated depression and has no apparent outlet to any other surface water features. Due to the lack of connection to a TNW, the wetland is likely isolated and is not federally jurisdictional.

A Floristic Quality Index (FQI) was completed for Wetland B. The native mean C-value for Wetland B is 3, indicating that the plant community is considered severely degraded. The native FQI for Wetland B is 6, indicating that the plant community is degraded.

WETLAND C

Wetland C is an incidental emergent wetland featured located within a constructed roadside ditch in the northwestern portion of the project area. The roadside ditch appears to have been constructed in upland area in non-hydric soils. The wetland boundary is confined to the original constructed ditch configuration. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. This wetland drained southwest to a swale that flows into UNT 1 which eventually flows into Coldwater Creek, indicating the wetland has an ultimate connection to the Missouri River, a TNW. Although Wetland C has an ultimate connection to a TNW, it is possibly exempt from federal regulation because it is an incidental feature in a constructed roadside ditch. The final determination of jurisdictional waters is ultimately made by the USACE.

A Floristic Quality Index (FQI) was completed for Wetland C. The native mean C-value for Wetland C is 2.3, indicating that the plant community is considered severely degraded. The native FQI for Wetland C is 4, indicating that the plant community is severely degraded.

WETLAND D

Wetland D is an incidental emergent wetland feature located within a constructed stormwater basin. The basin, located in the northwestern portion of the project area, was constructed in the late 1970s-early 1980s in what appears to have been upland area in non-hydric soils. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. This wetland drained northeast into a vegetated drainage swale that flows into UNT 1 which eventually flows into Coldwater Creek, indicating the wetland has an ultimate connection to the Missouri River, a TNW. Although Wetland D has an

ultimate connection to a TNW, it is possibly exempt from federal regulation because it is an incidental feature in a constructed stormwater basin. The final determination of jurisdictional waters is ultimately made by the USACE.

A Floristic Quality Index (FQI) was completed for Wetland D. The native mean C-value for Wetland D is 5, indicating that the plant community is considered severely degraded. The native FQI for Wetland D is 7.1, indicating that the plant community is degraded.

WETLAND E

Wetland E is an incidental emergent wetland feature located within a constructed stormwater basin. The basin, located in the northeastern portion of the project area, was constructed around 2003 in what appears to have been upland area in non-hydric soils. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. The location has been developed for airport use since at least 1924. This wetland drained into UNT 1 which eventually flows into Coldwater Creek, indicating the wetland has an ultimate connection to the Missouri River, a TNW. Although Wetland E has an ultimate connection to a TNW, it is possibly exempt from federal regulation because it is an incidental feature in a constructed stormwater basin. The final determination of jurisdictional waters is ultimately made by the USACE.

A Floristic Quality Index (FQI) was completed for Wetland E. The native mean C-value for Wetland E is 5, indicating that the plant community is considered severely degraded. The native FQI for Wetland A is 6.1, indicating that the plant community is degraded.

WETLAND F

Wetland F is an incidental emergent wetland feature located in a constructed stormwater ditch along an airfield service road in the southern portion of the project area. The ditch appears to have been constructed in upland area in non-hydric soils. The wetland boundary is confined to the original constructed ditch configuration. Based on historic aerial imagery and topographic maps, there is no evidence of historic drainage or wetland features at this location. This wetland drained northwest to a ditch that flows into a pipe under the airfield which likely drains into Coldwater Creek, indicating the wetland has an ultimate connection to the Missouri River, a TNW. Although Wetland F has an ultimate connection to a TNW, it is possibly exempt from federal regulation because it is an incidental feature in a constructed stormwater ditch. The final determination of jurisdictional waters is ultimately made by the USACE.

A Floristic Quality Index (FQI) was completed for Wetland F. The native mean C-value for Wetland F is 3, indicating that the plant community is considered severely degraded. The native FQI for Wetland F is 6.7, indicating that the plant community is degraded.

WETLAND G

Wetland G is an emergent wetland located in the southern portion of the project area. This wetland is located in an isolated depression within the airfield and has no apparent outlet to any other surface water features. Due to the lack of connection to a TNW, the wetland is likely isolated and is not federally jurisdictional.

A Floristic Quality Index (FQI) was completed for Wetland G. The native mean C-value for Wetland G is 3.5, indicating that the plant community is considered severely degraded. The native FQI for Wetland G is 7, indicating that the plant community is degraded.

4.3 OTHER SURFACE WATER RESOURCES

Twenty (20) other surface water features (SFs) were identified in the study area. SFs 1-2 are partially vegetated, ephemeral swale features. SFs 3-15 are constructed, cement-lined stormwater features, and are likely not federally jurisdictional. SFs 16 and 17 are partially vegetated ditch features. SFs 18-20 are constructed, riprap-lined stormwater features that have since started to grow vegetation through cracks. All of the other surface water features are likely not federally jurisdictional since they did not exhibit a continuous, defined OHWM and only carry or hold water during or for a short duration after storm events or are constructed stormwater features.

SURFACE FEATURES SUMMARY			
Feature Name	Substrate	Preliminary USACE Jurisdictional Status	Linear Feet within Study Area
SF 1	Vegetation	Likely not jurisdictional	19.8
SF 2	Vegetation	Likely not jurisdictional	73.4
SF 3	Cement	Likely not jurisdictional	98.9
SF 4	Cement	Likely not jurisdictional	990.7
SF 5	Cement	Likely not jurisdictional	97.8
SF 6	Cement	Likely not jurisdictional	140.8
SF 7	Cement	Likely not jurisdictional	36.2
SF 8	Cement	Likely not jurisdictional	35.4
SF 9	Cement	Likely not jurisdictional	33.9
SF 10	Cement	Likely not jurisdictional	26.9
SF 11	Cement	Likely not jurisdictional	23.2
SF 12	Cement	Likely not jurisdictional	49.6
SF 13	Cement	Likely not jurisdictional	7.6
SF 14	Cement	Likely not jurisdictional	139.3

SURFACE FEATURES SUMMARY			
Feature Name	Substrate	Preliminary USACE Jurisdictional Status	Linear Feet within Study Area
SF 15	Cement	Likely not jurisdictional	99.1
SF 16	Vegetation	Likely not jurisdictional	57.3
SF 17	Vegetation	Likely not jurisdictional	163.7
SF 18	Rip rap w/ vegetation	Likely not jurisdictional	325.2
SF 19	Rip rap w/ vegetation	Likely not jurisdictional	15.7
SF 20	Rip rap w/ vegetation	Likely not jurisdictional	36.8
		Total	2471.3

4.4 THREATENED & ENDANGERED SPECIES

The MDC Natural Heritage Review of the project on June 20, 2023 returned a Level Three Report, provided in Appendix D, indicating that there are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the project area. After contacting MDC for additional information, the report indicates there are records of the following federally-listed species near the project site:

- Indiana bat (*Myotis sodalis*), endangered
- Northern long-eared bat (*Myotis septentrionalis*), endangered
- Gray bat (*Myotis grisescens*), endangered
- Decurrent false aster (*Boltonia decurrens*), endangered
- Pallid sturgeon (*Scaphirhynchus albus*), endangered
- Bald eagle (*Haliaeetus leucocephalus*), protected

Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees (photolog #73-77) for the Indiana bat and northern long-eared bat. The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, this project is expected to may affect, but is not likely to adversely affect the Indiana and northern long-eared bats.

No large rivers or suitable habitat for the gray bat, decurrent false aster, pallid sturgeon, or bald eagle are within the project area; therefore, the project is expected to have no impact on these state-listed species near the project site.

According to the USFWS IPaC Official Species list generated June 20, 2023 (Consultation Code: 2023-0082675; Appendix D), the project is located within the known or historic range of the following federally endangered or threatened species:

- Gray bat (*Myotis grisescens*), endangered
- Indiana bat (*Myotis sodalis*), endangered
- Northern long-eared bat (*Myotis septentrionalis*), threatened
- Tricolored bat (*Perimyotis subflavus)*, proposed endangered
- Decurrent false aster (*Boltonia decurrens*), threatened

The project is not located within any designated critical habitat areas.

Gray bat (*Myotis grisescens*): No caves are known to be present in the project area, so suitable habitat is not expected to be available in the project area. Therefore, this project is expected to have no effect on the gray bat.

Indiana bat (*Myotis sodalis*), and Northern long-eared bat (*Myotis septentrionalis*): Suitable habitat for these species was identified as any tree over 3 inches DBH with peeling bark or cavities that would provide shelter and allow the bat to move around the tree for thermoregulation. Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees (photolog #73-77). The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, this project is expected to may affect, but is not likely to adversely affect the Indiana and northern long-eared bats.

Tricolored bat (*Perimyotis subflavus)*: Suitable habitat for this species was identified as live and dead leaf clusters of live or recently dead deciduous hardwood trees. Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees (photolog #73-77). The project sponsor commits to clear the identified suitable bat roost trees during the non-breeding season, between November 1 and March 31. Therefore, this project is expected to may affect, but is not likely to adversely affect the tricolored bat.

Decurrent false aster (*Boltonia decurrens*): Suitable habitat for this species was identified as moist, sandy floodplains or prairie wetland areas. The project is within a highly developed area, consisting of upland, mowed lawn, and commercial areas. The identified wetlands do not contain the appropriate wet-prairie habitat and are of degraded, poor quality. Therefore, this project is expected to have no effect on decurrent false aster.

Migratory Bird Treaty Act

No bridges will be demolished or impacted during this project; therefore, no swallows or other bird species protected by the Migratory Bird Treaty Act (MBTA) are expected to be impacted by this project.

5.0 CONCLUSIONS

A total of four (4) streams were identified within the study area and are likely considered jurisdictional waters of the U.S. due to their hydrologic connectivity to the Missouri River, a TNW. Three (3) isolated, severely degraded wetlands totaling 0.08 acre were identified within the study area. These wetlands are not known to connect to any other surface waters and are likely not considered a jurisdictional water of the U.S. due to the lack of apparent hydrologic connectivity to known waters of the U.S. Four (4) possibly exempt, severely degraded wetlands totaling 0.63 acre were identified within the study area. Two (2) swales totaling 93.2 linear feet, and eighteen (18) ditches totaling 2,378 linear feet were identified within the study area. The swales and ditches did not exhibit a continuous, defined OHWM and only carry or hold water during or for a short duration after storm events or are constructed stormwater features and are likely not considered jurisdictional waters of the U.S.

Wetlands and other surface water resources that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers.

Suitable habitat for the federally-listed Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) are present within the project area. Any proposed work on-site should avoid impacts to these species or their habitat. The project is anticipated to result in up to 3.6 acres of tree clearing. Consultation with USFWS under Section 7 of the Endangered Species Act will be required if impacts to these species or their habitats occur.

6.0 REFERENCES

The following references were consulted during the investigation:

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- Crow, Garrett E. and Barre Hellquist. Aquatic and Wetland Plants of Northeastern North America, Volume 2 Angiosperms: Monocotyledons. The University of Wisconsin Press. Madison, Wisconsin, 2000.
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- U.S. Army Corps of Engineers. 2018. National Wetland Plant List, version 3.4. http://wetland-plants.usace.army.mil/. U.S. Army Engineer Research and Development Center. Cold Regions Research and Engineering Laboratory, Hanover, NH.
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers. 2013. State of Missouri Stream Mitigation Method.
- U.S. Army Corps of Engineers. 2016. State of Missouri Wetland Mitigation Method (MWAM).
- United States Department of Agriculture (USDA), NRCS. 2020. The PLANTS Database (http://plants.usda.gov, 6/1/2023). National Plant Data Team, Greensboro, NC 27401-4901 USA.
- United States Department of Agriculture (USDA) Midwestern wetland flora: Field office guide to plant species. USDA Soil Conservation Service, Midwest National Technical Center, Lincoln, Nebraska. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page. http://www.npwrc.usgs.gov/resource/othrdata/plntguid/plntguid.htm (Version 16JUL97).
- United States Geological Survey (USGS): The National Map. (available online at http://nationalmap.usgs.gov/index.html). Reston, VA 20192 USA.
- 10 CSR 20-7.031 Tables D and E: Outstanding State and National Resource Waters
- Priority Watershed Listing at: https://www.nwk.usace.army.mil/Portals/29/docs/regulatory/NWP/2021/MO/MORC4PriorityWaters.pdf

USFWS IPaC Consistency Letter

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: August 09, 2023
Project code: 2023-0082675
Project Name: St. Louis Lambert International Airport – West Airfield Program

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Aviation Administration

Subject: Technical assistance for 'St. Louis Lambert International Airport – West Airfield Program'

Dear Stephanie Spence:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on August 09, 2023, for 'St. Louis Lambert International Airport – West Airfield Program' (here forward, Project). This project has been assigned Project Code 2023-0082675 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15

days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Decurrent False Aster *Boltonia decurrens* Threatened
- Gray Bat *Myotis grisescens* Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Step

Consultation with the Service is necessary. The project has a federal nexus (e.g., Federal funds, permit, etc.), but you are not the federal action agency or its designated (in writing) non-federal representative. Therefore, the ESA consultation status is incomplete and no project activities should occur until consultation between the Service and the Federal action agency (or designated non-federal representative), is completed.

As the federal agency or designated non-federal representative deems appropriate, they should submit their determination of effects to the Service by doing the following.

1. Log into IPaC using an agency email account and click on My Projects, click "Search by record locator" to find this Project using **041-130128699**. (Alternatively, the originator of the project in IPaC can add the agency representative to the project by using the Add Member button on the project home page.)
2. Review the answers to the Northern Long-eared Bat Range-wide Determination Key to ensure that they are accurate.
3. Click on Review/Finalize to convert the 'not likely to adversely affect' consistency letter to a concurrence letter. Download the concurrence letter for your files if needed.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the

Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Missouri Ecological Services Field Office and reference Project Code 2023-0082675 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

St. Louis Lambert International Airport – West Airfield Program

2. Description

The following description was provided for the project 'St. Louis Lambert International Airport – West Airfield Program':

> This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton USGS Quadrangles.
>
> The proposed project consists of airport improvements at the St. Louis Lambert International Airport (STL). The proposed project involves relocating the airfield maintenance (AFM) campus, constructing a new west deicing pad, the addition of utilities and access roads to the new deicing pad, and airfield/taxiway improvements. Construction is anticipated to begin in 2025 and be completed by the end of 2027.
>
> Land use in the vicinity of the project is commercial and residential. Coldwater Creek runs through the project area. Bridgeton Parks and Recreation, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area.
>
> Suitable summer habitat is located within and adjacent to the project area. Suitable summer habitat will be impacted for the construction of the project. Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. The project activities will not include the use of percussives. The project does include installing new permanent lighting. Although temporary lighting is not expected to be required for the construction of the project, it is possible some night work will be performed. Mitigation is not anticipated.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.7501213,-90.38188118488578,14z


Bulk Mail
Business Park
Berry Hill Golf Club
St. Mary's Cemetery
Banshee Rd
ridgeton
Natural Bridge Rd
St Louis-Lambert Intl Airport
Lambert-International Blvd
70
Northwest Plaza
St Ann Golf Course

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   No

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer "No" below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project's action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a "no effect" determination for the northern long-eared bat.

   Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer "No" and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   No

10. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered

    No

11. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

13. Will the action cause effects to a bridge?

    No

14. Will the action result in effects to a culvert or tunnel?

    Yes

15. Do the interior dimensions of the culvert or tunnel equal or exceed 4.0 feet (1.3 meters) in height and 130 feet (40 meters) in length? Answer "No" if the affected culvert(s) or tunnel is smaller in either of these two dimensions.

    Yes

16. Has a site-specific bridge/structure (e.g., culvert) assessment following USFWS guidelines been completed?

    Note: For information on conducting a bridge/structure assessment see Appendix D of the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat and the associated Bridge/Structure Bat Assessment Form?

    No

17. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

    Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

    Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

3.6

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

3.6

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

0.02

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Crawford, Murphy and Tilly Inc.
Name: Stephanie Spence
Address: 1 Memorial Drive
Address Line 2: Suite 500
City: St. Louis
State: MO
Zip: 63102
Email sspence@cmtengr.com
Phone: 5134278169

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Missouri Department of Conservation
Natural Heritage Review Reports

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: St. Louis Lambert International Airport – West Airfield Program #12781
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri at 38.7419996 latitude -90.3751886 longitude. The proposed work is 0.06 mile north of North Supersaber Road, 0.16 mile north of Lambert International Boulevard and 0.15 mile northeast of Natural Bridge Road. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton USGS Quadrangles. Construction is anticipated to begin in 2025 and be completed by the end of 2028. Land use in the vicinity of the project is predominantly developed commercial and residential areas, with some sparse wooded areas. Coldwater Creek runs northwest to southeast through the central portion of the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area. The current airfield maintenance (AFM) facilities are in poor condition or functionally obsolete and are prone to extensive flooding. The airport's existing deicing capabilities are reduced due to location and age of facilities, and the airport's west airfield taxiway system does not currently meet the FAA's design standards and has existing safety deficiencies. The STL is therefore proposing to conduct airfield improvements to improve airfield maintenance operations, enhance the capacity and efficiency of aircraft deicing, and to address safety concerns. This will require relocating the airfield maintenance (AFM) campus, constructing a new west deicing pad, the addition of utilities and access roads to the new deicing pad, and airfield/taxiway improvements. The total project area is approximately 367 acres.
Project Type: Transportation, Airports (runways, taxiways, terminals, control towers, beacons, fuel depots), Construction of new runways, terminals/concourses, other facilities
Contact Person: Stephanie Spence
Contact Information: sspence@cmtengr.com or 5134278169

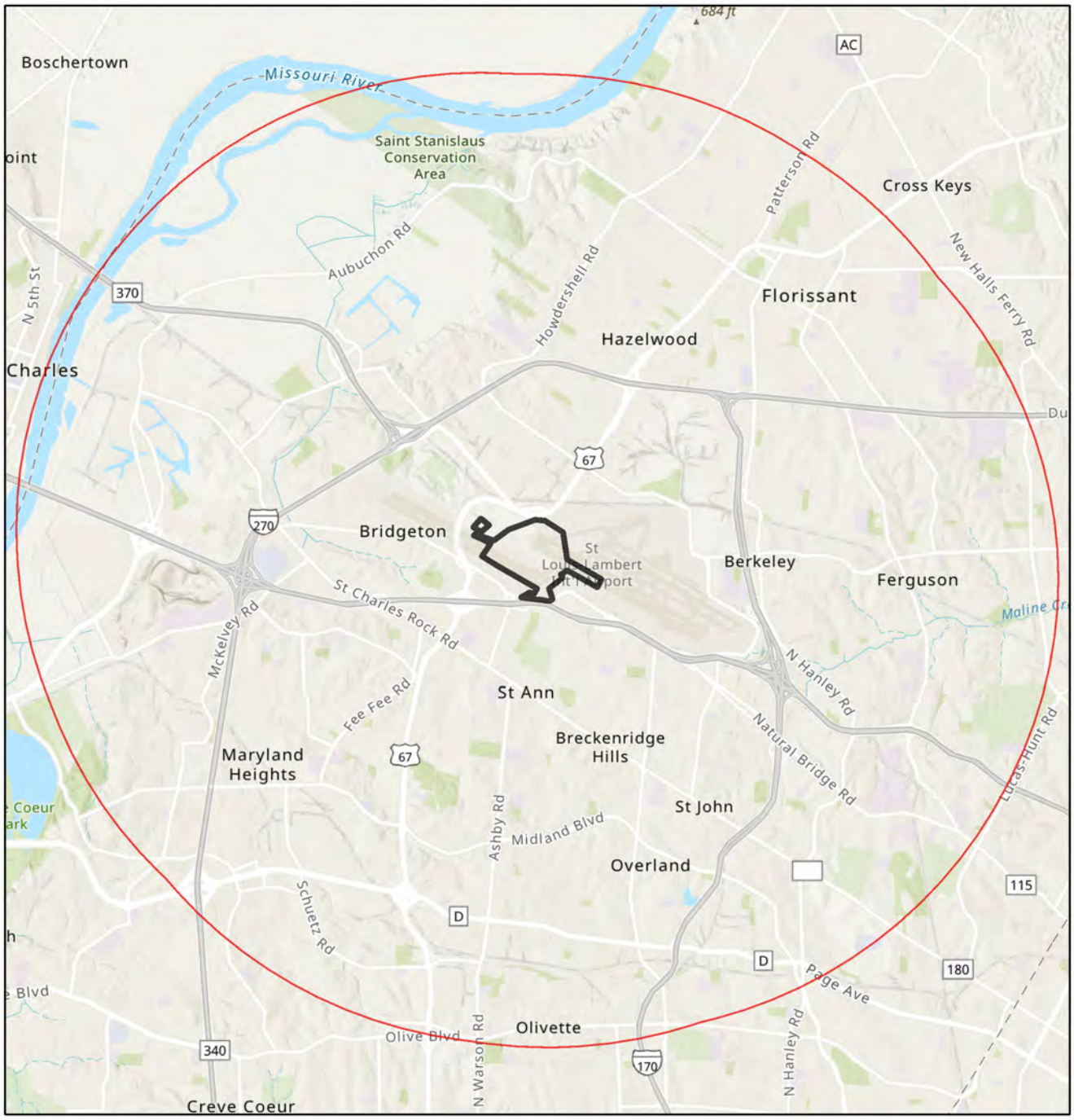
Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

St. Louis Lambert International Airport – West Airfield Program



June 20, 2023

1:98,424

0 0.75 1.5 3 mi

0 1.25 2.5 5 km

Buffered Project Boundary

Project Boundary

Esri, NASA, NGA, USGS, County of St. Louis, Missouri Dept. of Conservation, Missouri DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, Bridgeton Armory, Bryan Island, Ferguson (January-Wabash Park Lake), Hickory Woods CA, Overland (Wild Acres Park Lake), STL Lambert, Saint Stanislaus CA, please contact MOARNG, COE, MDC.

Project Type Recommendations:
Transportation -Airports: New and Maintenance should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions. Project design should include stormwater management elements that assure storm discharge rates to streams for heavy rain events will not increase from present levels. Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

Decurrent False Aster (Boltonia decurrens, federal-listed threatened and state-listed endangered) may occur in this area. Decurrent False Aster is a head floodplain species that grows in wetlands and on the borders of marshes, lakes, oxbows, and sloughs. It also may be found in old fields, roadsides, agricultural fields, and on levees. It favors sites characterized by moist soil and regular disturbance, preferably periodic flooding, which maintains open areas with high light levels. Today it is found in areas where succession is prevented, and sunlight is allowed to reach the seedlings. It is a perennial plant that blooms from August through October. Please see Best Management Practices for Construction and Development Projects Decurrent False Aster (mo.gov).

Gray Bat: The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

Karst: This county has known karst geologic features (e.g., caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are Species of Conservation Concern) are influenced by changes to water quality; please check your project site for any karst features and make every effort to protect groundwater in the project area. Additional information and specific recommendations are available at Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

Pallid Sturgeon: The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See Pallid Sturgeon Best Management Practices (mo.gov) for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

Missouri Department of Conservation
Science Branch
P. O. Box 180
Jefferson City, MO 65102
Prepared by: Shelly Colatskie
NaturalHeritageReview@mdc.mo.gov
(573) 522 - 4115 ext. 3182

Natural Heritage Review Report

November 15, 2023

Lana Sumner
Crawford, Murphy, and Tilly
lsumner@cmtengr.com

NHR ERT ID:	12781	NHR ERT Level:	3
Project type:	Transportation/Construction		
Location/Scope:	Landgrant01196, Landgrant02625, T46NR06ES07, Landgrant01993, Landgrant01250, Landgrant02524		
County:	St. Louis		
Project Title:	St. Louis Lambert International Airport-West Airfield Program		
Query received:	7/20/2023		

This NATURAL HERITAGE REVIEW is not a site clearance letter. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. These records serve as one reference and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Look for additional information about the biological and habitat needs of records listed to avoid or minimize impacts. More information is at Natural Areas | Missouri Department of Conservation (mo.gov) and Missouri Fish and Wildlife Information System (MOFWIS).

Level 3: Records of federal-listed (also state-listed) species or critical habitats near the project site:

Natural Heritage records identify no wildlife preserves, no designated wilderness areas or critical habitats, and no federal-listed species records within the project area, or in the public land survey section or sections adjacent.

FEDERAL LIST species/habitats are protected under the Federal Endangered Species Act. Contact U.S. Fish & Wildlife Service (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; 573-234-2132) for Endangered Species Act coordination and concurrence information).

Level 2: Records of state-listed (not federal-listed) endangered species AND / OR state-ranked (not state-listed endangered) species and natural communities of conservation concern. The Department tracks these species and natural communities due to population declines and/or apparent vulnerability.

Natural Heritage records identify no state-listed endangered species within the project area.

Natural Heritage records indicate the following state-ranked species near the project area:

Scientific Name	Common Name	State Rank	Proximity (miles)	Primary Habitat
Taxidea taxus	American Badger	S3	<2	Grassland matrix, Savanna pasture/orchard, Row/close grown crops

State Rank Definitions:

- S1: Critically imperiled in the state because of extreme rarity of or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically, 5 or fewer occurrences or very few remaining individuals (<1,000).
- S2: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state (6 to 20 occurrences or few remaining individuals).
- S3: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
- S4: Uncommon but not rare, and usually widespread in the nation or state. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
- S#S#: Range Rank: A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status.
- ?: Denotes inexact or uncertain numeric rank.
- SU: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

There are no regulatory requirements associated with this status, however we encourage voluntary stewardship to minimize the risk of further decline that could lead to listing.

STATE ENDANGERED species are protected under the Wildlife Code of Missouri (3CSR10-4.111).
See the Missouri Species And Communities Of Conservation Concern Checklist (mo.gov) for a complete list.

General recommendations related to this project or site, or based on information about the historic range of species (unrelated to any specific Natural Heritage records):

- **Transportation:** Transportation related projects typically change the plants and animals that live on the right-of-way or in the vicinity. Minimize erosion and sedimentation/runoff to nearby streams and lakes by carefully adhering to any Clean Water Act permit conditions (Missouri DNR or US Army Corps of Engineers); and include design elements to manage stormwater so that present water discharge rates from the site to streams during heavy rain events are not increased. Revegetation of disturbed areas is recommended to minimize erosion, as is restoration with native plant species compatible with the local landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.

- **Construction:** The project should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions (Missouri DNR or US Army Corps of Engineers). Revegetate areas in which the natural cover is disturbed to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza. Pollutants, including sediment, can have significant impacts far downstream. Use silt fences and/or vegetative filter strips to buffer streams and drainages and monitor those after rain events and until a well-rooted ground cover is reestablished. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

- **Contact Area Manager:** This project is near Hickory Woods Conservation Area. Please contact area manager, Erin Shank (314-301-1500) if project activities will impact this CA.

- ***Bald Eagles:*** Bald Eagles (Haliaeetus leucocephalus) nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

- **Gray Bats:** Gray Bats (*Myotis grisescens*, federal and state-listed endangered) occur in St. Louis County and could occur in the project area, as they forage over streams, rivers, and reservoirs. Avoid entry or disturbance of any cave inhabited by gray bats and when possible retain forest vegetation along the stream and from the gray bat cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

- **Karst:** St. Louis County has known karst geologic features (e.g. caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are species of conservation concern) are influenced by changes to water quality, so check your project site for any karst features and make every effort to protect groundwater in the project area. Please see Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

- ***Tri-colored Bats:*** Tri-colored bats (Perimyotis subflavus, federally proposed endangered) are known to occur in St. Louis County. In Missouri, most tri-colored bats hibernate in winter in the most humid and warm parts of caves. In summer, they roost in trees, in crannies about cliffs or buildings, in barns, or sometimes in high domes of caves. Tri-colored bats have been significantly impacted by White-nose syndrome. Please contact U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.

- **Indiana Bats and Northern Long-eared Bats: If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

  Though Indiana and Northern Long-eared bats are not known to occur in the project area, these species should be assumed present wherever habitat exists because they occur in St. Louis County and could occur in the project area. Indiana Bats *(Myotis sodalis*, federal and state-listed endangered) and Northern Long-eared Bats (*Myotis septentrionalis,* federal-listed endangered) hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana Bats and/or Northern Long-eared Bats, especially from September to April.

- Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, larvae, and aquatic plant material may be moved to new sites on boats or construction equipment, so inspect and clean equipment thoroughly before moving between project sites.
  - Remove any mud, soil, trash, plants (or plant material) or animals from equipment before leaving any water body or work area.
  - Drain water from boats and machinery that has operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
  - When possible, wash and rinse equipment thoroughly with hard spray or HOT water (≥140° F, typically available at do-it-yourself carwash sites), and dry in the hot sun before using again.

These recommendations are ones project managers might prudently consider based on a general understanding of species needs and landscape conditions. Natural Heritage records largely reflect sites visited by specialists in the last 30 years. Many privately owned tracts have not been surveyed and could host remnants of species once but no longer common.

Revised Definition of Waters of the United States

Fact Sheet for the Final Rule: Amendments to the Revised Definition of "Waters of the United States"

August 2023

Overview

On August 29, 2023, the U.S. Environmental Protection Agency (EPA) and Department of the Army (the agencies) announced a final rule amending the 2023 definition of "waters of the United States."[1] The amendments conform with the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency.* While EPA's and Army's 2023 rule defining "waters of the United States" was not directly before the Supreme Court, the decision in *Sackett* made clear that certain aspects of the 2023 rule are invalid. Therefore, the agencies have amended key components of the regulatory text to conform it to the Supreme Court decision. The final rule provides clarity for protecting our nation's waters consistent with the Supreme Court's decision while advancing infrastructure projects, economic opportunities, and agricultural activities.

Changes to the "Waters of the United States" Categories and Definitions [2]

The agencies' amendments change the parts of the 2023 definition of "waters of the United States" that are invalid under the *Sackett* decision. For example, the rule removes the significant nexus test from consideration when identifying tributaries and other waters as federally protected. It also revises the adjacency test when identifying federally jurisdictional wetlands, clarifies that interstate wetlands do not fall within the interstate waters category, and clarifies the types of features that can be considered under the "additional waters" category.

Changes that the agencies have made to the January 2023 Rule categories:

Jurisdictional Category	Key Changes to the January 2023 Rule Regulation Text	Regulatory Text Paragraph
Traditional Navigable Waters	No changes	(a)(1)
Territorial Seas	No changes	(a)(1)
Interstate Waters	Removing interstate wetlands from the text of the interstate waters provision	(a)(1)
Impoundments	No changes	(a)(2)
Tributaries	Removing the significant nexus standard	(a)(3)
Adjacent Wetlands	Removing the significant nexus standard	(a)(4)
Additional Waters	Removing the significant nexus standard; removing wetlands and streams from the text of the provision	(a)(5)

[1] The "Revised Definition of 'Waters of the United States'" rule published in the Federal Register on January 18, 2023.

[2] These tables are provided for informational purposes; the rule establishes the requirements defining "waters of the United States."

Changes that the agencies have made to the January 2023 Rule definitions:

Definition	Key Changes to the January 2023 Rule Regulation Text	Regulatory Text Paragraph
Wetlands	No changes	(c)(1)
Adjacent	Revised definition to mean "having a continuous surface connection."	(c)(2)
High tide line	No changes	(c)(3)
Ordinary high water mark	No changes	(c)(4)
Tidal waters	No changes	(c)(5)
Significantly affect	Deleted definition	(c)(6)

No Changes to the Exclusions from "Waters of the United States"

The amendments to the January 2023 Rule do not change the eight exclusions from the definition of "waters of the United States" that provide clarity, consistency, and certainty. **The exclusions are:**

- **Prior converted cropland**, adopting USDA's definition and generally excluding wetlands that were converted to cropland prior to December 23, 1985.
- **Waste treatment systems**, including treatment ponds or lagoons that are designed to meet the requirements of the Clean Water Act.
- **Ditches** (including roadside ditches), excavated wholly in and draining only dry land, and that do not carry a relatively permanent flow of water.
- **Artificially irrigated areas,** that would revert to dry land if the irrigation ceased.
- **Artificial lakes or ponds,** created by excavating or diking dry land that are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing.
- **Artificial reflecting pools or swimming pools,** and other small ornamental bodies of water created by excavating or diking dry land.
- **Waterfilled depressions,** created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction operation is abandoned and the resulting body of water meets the definition of "waters of the United States."
- **Swales and erosional features** (*e.g.*, gullies, small washes), that are characterized by low volume, infrequent, or short duration flow.

Additionally, the agencies' amended definition of "waters of the United States" does not affect the longstanding activity-based permitting exemptions provided to the agricultural community by the Clean Water Act.

For More Information

Additional information is available on EPA's Waters of the United States website.

E-mail to USACE

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Thursday, August 24, 2023 11:04 AM
To: mvs-regulatory@usace.army.mil
Cc: Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Laura Sakach <lsakach@cmtengr.com>; Douglas Gregory <dgregory@cmtengr.com>; Tener, Scott (FAA) <scott.tener@faa.gov>; Alexandra Zelles <azelles@cmtengr.com>
Subject: St. Louis Lambert International Airport West Airfield Program: Request for Concurrence with Waters Delineation

Regulatory Branch Chief,
The St. Louis Airport Authority, as the Sponsor of the St. Louis Lambert International Airport (STL), is proposing to construct improvements in the western portion of the Airport to enhance safety, improve airfield maintenance operations and improve the operational efficiency of the aircraft deicing process. The Proposed Action requires approval from the Federal Aviation Administration (FAA) of the changes to the STL Airport Layout Plan (ALP) and for Federal financial assistance under the Airport Improvement Program and is therefore subject to the requirements of the National Environmental Policy Act (NEPA). CMT and WSP are currently preparing the NEPA documentation for the Proposed Action for FAA and STL.

Attached is a draft summary (tables and exhibits) showing the surface water resources identified within the STL West Airfield Program (WAP) project area. We understand that preliminary jurisdictional determinations are not possible at this time since we have some wetlands that we believe are isolated, but we would like to get a general concurrence with our delineation so we can proceed with our environmental documentation under NEPA.

A full copy of our delineation report with all data forms and background information can be downloaded at this link: STL WAP

Please let us know if you have any questions or if you need any additional information.

HEATHER LACEY | Environmental Group Manager

CMT

Crawford, Murphy & Tilly | **Engineers & Consultants**
One Memorial Drive, Suite 500 | St. Louis, MO 63102
w 314.436.5500 | m 937.307.0744 | hlacey@cmtengr.com

Centered in Value

2023 Best Firms To Work For

Four (4) streams and seven (7) wetlands were identified in the Lambert West Airfield Program (WAP) study area during the onsite investigation on May 23 and 24, 2023.

STREAM SUMMARY								
Stream Name	Receiving Waters	Preliminary USACE Jurisdictional Status	Stream Type	Drainage Area[1] (Sq.Mile)	MSMM[2] Assessment		Linear Feet within Study Area	Acres within Study Area
					Priority Waters	Existing Condition		
UNT 1 - Upstream	UNT 1> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.69	Tertiary Priority	Functionally Impaired	1097.6	0.131
UNT 1 - Downstream	UNT 1 > Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	1.1	Tertiary Priority	Functionally Impaired	3125.9	0.754
UNT 2	UNT 2> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.065	Tertiary Priority	Functionally Impaired	15.9	0.002
UNT 3	UNT 3> Coldwater Creek	Federally Jurisdictional (a)(3)(i)	Perennial	0.065	Tertiary Priority	Functionally Impaired	23.8	0.004
Coldwater Creek	Coldwater Creek> Mill Creek> Missouri River	Federally Jurisdictional (a)(3)(i)	Perennial	8.5	Secondary Priority	Moderately Functional	2151.4	2.267
						Total	6414.6	3.16

[1]As calculated by USGS Stream Stats at most downstream location within the study area
[2]MSMM - Missouri Stream Mitigation Method

WETLAND SUMMARY									
Wetland ID	Location	Connection to Downstream TNW	Preliminary USACE Jurisdictional Status	Wetland Type	MWMM		Floristic Quality Assessment		Acres within Study Area
					Aquatic Resource Type	Existing Condition	FQI / Mean C Value	Functional Classification	
Wetland A	Located in western portion of the project area	Isolated	Likely not jurisdictional; no connections to TNW	Forested	Type B	Slightly Impaired	8.5 / 3.8	Severely degraded	0.024
Wetland B	Located in western portion of the project area	Isolated	Likely not jurisdictional; no connections to TNW	Forested	Type B	Slightly Impaired	6 / 3	Severely degraded	0.015

WETLAND SUMMARY									
Wetland ID	Location	Connection to Downstream TNW	Preliminary USACE Jurisdictional Status	Wetland Type	MWMM		Floristic Quality Assessment		Acres within Study Area
					Aquatic Resource Type	Existing Condition	FQI / Mean C Value	Functional Classification	
Wetland C	Located in northwestern portion of project area	Wetland C> Drainage swale> UNT 1> Coldwater Creek	Exempt (incidental feature in constructed stormwater structure; in mapped non hydric soils)	Emergent	Type C	Impaired	4 / 2.3	Severely degraded	0.042
Wetland D	Located in northwestern portion of project area	Wetland D> Vegetated drainage swale> pipe> UNT 1> Coldwater Creek	Exempt (incidental feature in constructed stormwater structure; in mapped non hydric soils)	Emergent	Type C	Impaired	7.1 / 5	Severely degraded	0.003
Wetland E	Located in northeastern portion of project area in constructed stormwater basin	Wetland E> Concrete ditch> UNT 1> Coldwater Creek	Exempt (incidental feature in constructed stormwater structure; in mapped non hydric soils)	Emergent	Type C	Impaired	6.1 / 2.8	Severely degraded	0.531
Wetland F	Located in southern portion of the project area	Wetland F> Riprap ditch> pipe> Coldwater Creek	Exempt (incidental feature in constructed stormwater structure; in mapped non hydric soils)	Emergent	Type C	Impaired	6.7 / 3	Severely degraded	0.054
Wetland G	Located in southern portion of the project area	Isolated	Likely not jurisdictional; no connections to TNW	Emergent	Type C	Impaired	7 / 3.5	Severely degraded	0.045
								TOTAL	0.714

Study Area

Ecological Resources Map 1

Ecological Resources Map 2

Ecological Resources Map 3

Ecological Resources Map 4

Ecological Resources Map 5

Wetland A

Wetland B

Wetland C

Wetland D

Wetland E

Wetland F

Wetland G

UNT 1 Upstream

UNT 1 Downstream

UNT 1 Downstream

UNT 1

UNT 1

UNT 2

UNT 3

Coldwater Creek

Banshee Rd

Navaid Rd

Runway 6/24

Runway 12R/30L

Runway 11/29

70

Miles

0 0.1 0.2

Basemap: NRCS Geospatial Data Gateway; NAIP Imagery - MO 189, 2016

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources Overall Map

CMT
Crawford, Murphy & Tilly

Basemap: NRCS Geospatial Data Gateway; NAIP Imagery - MO 189, 2016

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources (1 of 5)

CMT
Crawford, Murphy & Tilly

Study Area
Potential Bat Roost Tree
Wetland
Wetland Data Points
Upland
Wetland
Streams
Drainage Ditch
Swales
Culverts
Culvert Inlet/Outlet
Inlet
Outlet

Wetland C
C1
C2
SF 2
SF 17
UNT 1 Upstream
UNT 1 Downstream
SF 1
SF 3
D1
D2
Wetland D
Banshee Rd

Miles
0
0.04
0.08

Basemap: NRCS Geospatial Data Gateway; NAIP Imagery - MO 189, 2016

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources (2 of 5)

CMT
Crawford, Murphy & Tilly

Study Area
Potential Bat Roost Tree
Wetland
Wetland Data Points
Upland
Wetland
Streams
Drainage Ditch
Swales
Culverts
Culvert Inlet/Outlet
Inlet
Outlet

SF 5
SF 4
SF 14
SF 6
SF 15
Wetland E
E1
E2
Runway 12R/30L
Banshee Rd
Wetland C
UNT 1 Upstream
SF 1
SF 3
D1
D2
Wetland D
UNT 1 Downstream
UNT 1 Downstream
UNT 1
UNT 1
Runway 6/24
Coldwater Creek
Miles
0
0.04
0.08
Basemap: NRCS Geospatial Data Gateway; NAIP Imagery - MO 189, 2016

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources (3 of 5)

CMT
Crawford, Murphy & Tilly

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources (4 of 5)

Crawford, Murphy & Tilly

St. Louis Lambert International Airport - West Airfield Program - St. Louis Co., Mo

Ecological Resources (5 of 5)

CMT
Crawford, Murphy & Tilly

USFWS Coordination Documentation

September 11, 2023

John Weber, Field Supervisor
U.S. Fish & Wildlife Service
Ecological Services
101 Park Deville Drive
Columbia, Missouri 65203-0057
Sent via email: John_S_Weber@fws.gov

RE: ST. LOUIS LAMBERT INTERNATIONAL AIRPORT - WEST AIRFIELD PROGRAM
ST. LOUIS, ST. LOUIS COUNTY, MISSOURI
SECTION 7 INFORMAL CONSULTATION
IPAC PROJECT CODE: 2023-0082675

Dear Mr. Weber:

The Federal Aviation Administration (FAA) is considering a proposal by St. Louis Lambert International Airport (STL), referred to as the West Airfield Program, to replace the existing airfield maintenance (AFM) campus and construct a new west deicing pad (WDP) (Project). As the designated federal representative in making Section 7 determinations, FAA has determined that this project may affect, but is not likely to adversely affect (NLAA) the Indiana, Northern long-eared and tricolored bats and will have no effect on the gray bat, decurrent false aster, pallid sturgeon and bald eagle. We are requesting that the Service review the proposed activities, as described below, for concurrence with these NLAA determinations.

Location

The proposed project is located approximately 13 miles northwest of downtown St. Louis in unincorporated St. Louis County, Missouri. Per the USGS Saint Charles, Florissant, Creve Coeur, and Clayton Quadrangle Maps, the study area is situated within Sections 5 and 7, Township 46 North, and Range 6 East. See Attachment 1: Project Location Map.

Project Description

Consistent with the Airport Layout Plan Update and Master Plan, STL proposes to construct a replacement AFM campus on a site immediately northwest of its current location. The current AFM campus, which was constructed beginning in the 1960s and continuously altered since that time, is situated in a flood-prone area that puts the existing facilities and equipment at great damage risk. Further, the existing campus buildings cannot accommodate modern airport equipment, such as large snow removal equipment. As a result, most of the equipment is repaired and stored outside, subjecting the equipment to weathering and negatively impacting function and useful life.

Once the replacement AFM campus is commissioned, the existing buildings would be demolished, and the site redeveloped as the West Deicing Pad. Existing deicing facilities are located in several areas across the airport, causing inefficiencies and safety hazards on the airfield, as well as making it difficult to collect used

aircraft deicing fluid. The Project's WDP would allow for greater operational safety and efficiency by moving deicing operations closer to departure runway ends with connections to adjacent runways and taxiways. When completed, the WDP would appear as concrete pavement and would be used during times of the year when deicing is required, or as overflow aircraft parking as needed.

Additional Project design considerations include improvements to non-standard taxiways in the vicinity of the proposed WDP, which would require pavement removal and reconfiguration of the taxiways to enhance safety and facilitate access to the WDP. Because the area is prone to flooding from Coldwater Creek, potential stormwater storage basins (depths to be determined) would be constructed in areas east and south of the proposed WDP, and the existing stormwater basin north of the WDP would be utilized. Connections to these stormwater areas and to the existing deicer force main system would be made through a series of buried pipes. Haul routes and construction staging would occur to the west of the Project area. A conceptual plan of the proposed Project is included as **Attachment 2: Project Layout.**

Effects on Threatened & Endangered Species

The project study area was observed for suitable threatened and endangered species habitat during an on-site evaluation conducted on May 23 and 24, 2023. See **Attachment 3: Ecological Overview Map** *and* **Attachment 4: Site Visit Photos**.

*According to the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list (***Attachment 5***) and the Missouri Department of Conservation (MDC) Natural Heritage Review (***Attachment 6***), the project is within the known or historic range of the following protected species:*

- *Gray bat (Myotis grisescens), federally endangered*
- *Indiana bat (Myotis sodalis), federally and state endangered*
- *Northern long-eared bat (Myotis septentrionalis), federally endangered*
- *Tricolored bat (Perimyotis subflavu), proposed federally endangered*
- *Decurrent false aster (Boltonia decurrens), federally threatened, state endangered*
- *Pallid sturgeon (Scaphirhynchus albus), federally and state endangered*
- *Bald eagle (Haliaeetus leucocephalus), protected*

Gray bat (Myotis grisescens): No caves are known to be present in the project area, so suitable habitat is not expected to be available in the project area. **Therefore, this project is expected to have no effect on the gray bat.**

Indiana bat (Myotis sodalis), and Northern long-eared bat (Myotis septentrionalis): Suitable habitat for these species was identified as any tree over 3 inches DBH with peeling bark or cavities that would provide shelter and allow the bat to move around the tree for thermoregulation. Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. **Therefore, this project may affect, but is not likely to adversely affect the Indiana and Northern long-eared bats.**

Tricolored bat (Perimyotis subflavus): Suitable habitat for this species was identified as live and dead leaf clusters of live or recently dead deciduous hardwood trees. Up to 3.6 acres of trees may be removed for

the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. **Therefore, this project may affect, but is not likely to adversely affect the tricolored bat.**

Decurrent false aster (Boltonia decurrens): Suitable habitat for this species was identified as moist, sandy floodplains or prairie wetland areas. The project is within a highly developed area, consisting of upland, mowed lawn, and commercial areas. The identified wetlands do not contain the appropriate wet-prairie habitat and are of degraded, poor quality. **Therefore, this project is expected to have no effect on decurrent false aster.**

Pallid sturgeon (Scaphirhynchus albus): No rivers large enough to support the pallid sturgeon are located on the project site. **Therefore, this project is expected to have no effect on the pallid sturgeon.**

Bald eagle (Haliaeetus leucocephalus): No bald eagle nests were reported by MDC or observed during the on site investigation on May 23 and 24, 2023. **Therefore, this project is expected to have no effect on the bald eagle.**

The project is not located within any designated critical habitat areas.

Following your review of this information, **FAA is requesting concurrence on the NLAA determinations for the Indiana, Northern long-eared, and tricolored bats**.

We look forward to your review of this request. If there are questions or if any additional information is needed, please contact me at hlacey@cmtengr.com or (314) 436-5500 or Scott Tener at scott.tener@faa.gov or (816) 329-2639.

Sincerely,
CRAWFORD, MURPHY & TILLY, INC.

Heather Lacey

Heather Lacey
Senior Environmental Scientist

Enc: ***Attachment 1: Project Location Map***
Attachment 2: Project Layout
Attachment 3: Ecological Resources Overall Map
Attachment 4: Site Visit Photographs (#73-#77)
Attachment 5: IPaC Official Species List
Attachment 6: MDC Natural Heritage Review

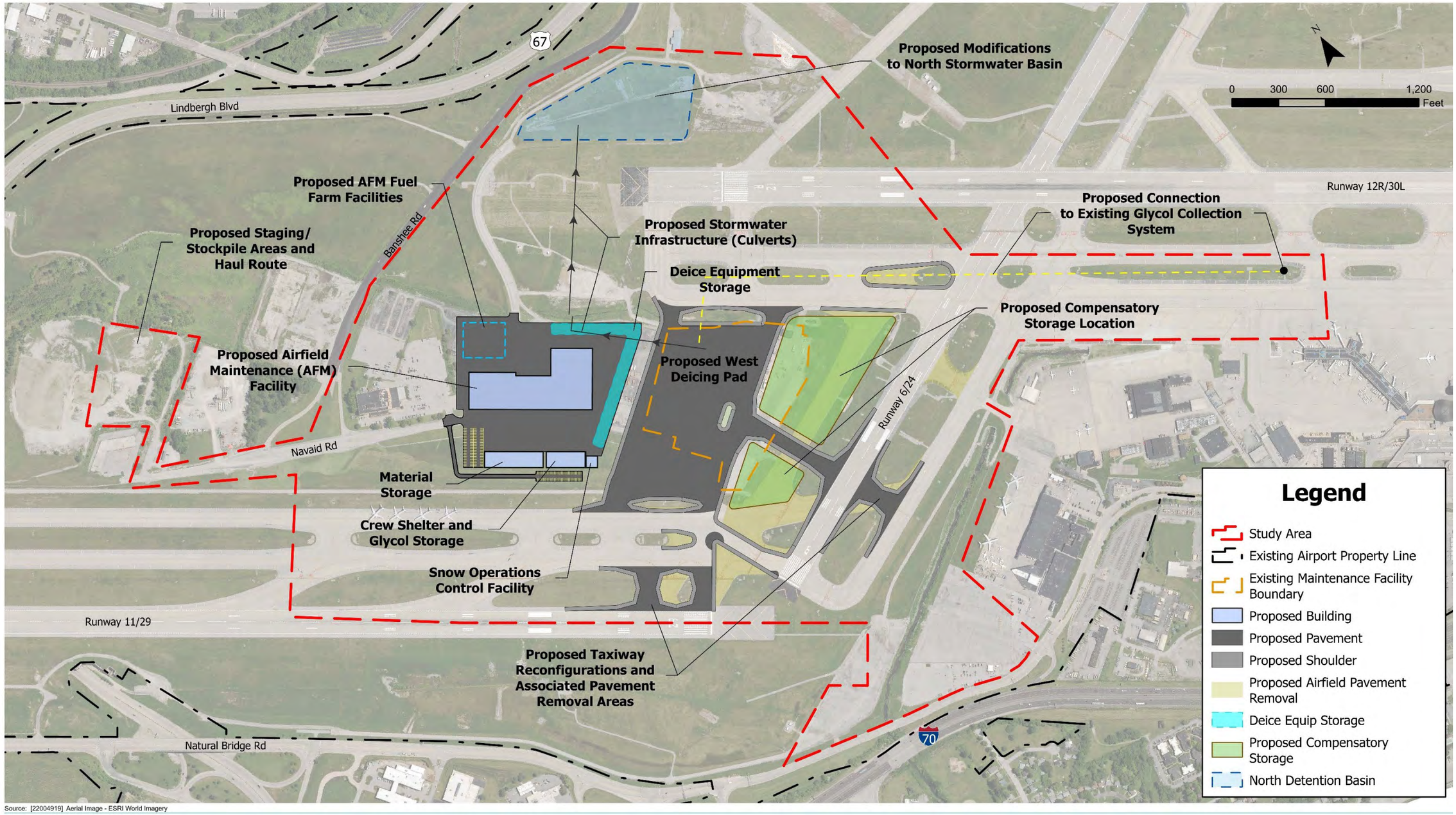
Cc: *Scott Tener, Federal Aviation Administration*
Jerry Beckmann, St. Louis Airport Authority
Jennifer Kuchinski, WSP
Laura Sakach, CMT

Attachment 1: Project Location Map

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

Attachment 2: Project Layout

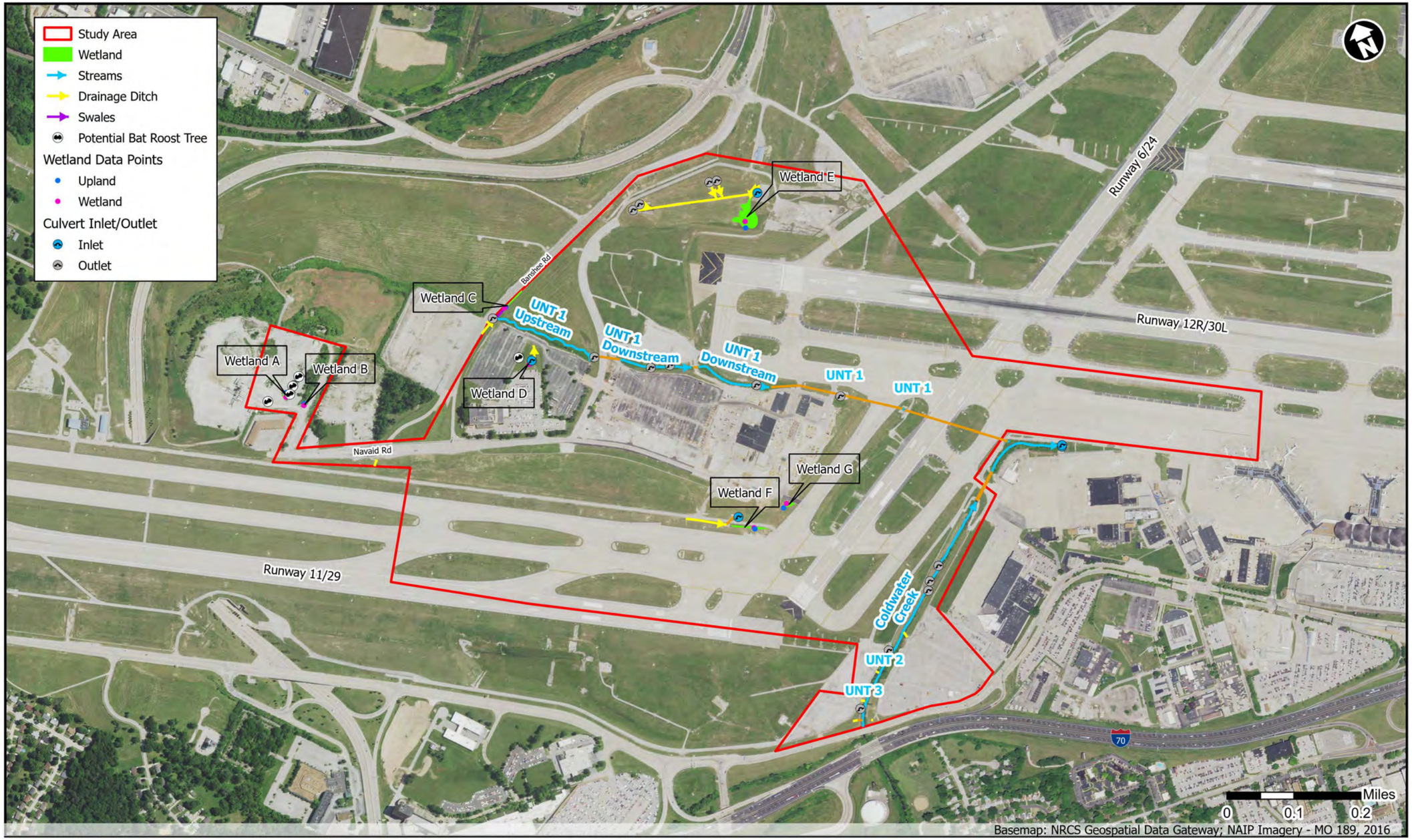
West Airfield Program – Project Layout



Source: [22004919] Aerial Image - ESRI World Imagery

Attachment 3: Ecological Resources Overall Map

West Airfield Program – Ecological Resources Overall Map



Attachment 4: Site Visit Photographs #73-77

(Additional photos available in the Aquatic and Ecological Resources Report – to be provided upon request)

73. View of potential roost tree exhibiting cavities that will likely be removed by project. 5/24/2023

74. View of potential roost tree exhibiting cavities & peeling bark that will likely be removed by project. 5/24/2023

75. View of potential roost tree exhibiting cavities that will likely be removed by project. 5/24/2023

76. View of potential roost tree exhibiting cavities & peeling bark that will likely be removed by project. 5/24/2023

77. View of potential roost tree exhibiting cavities that will likely be removed by project. 5/24/2023

Attachment 5: IPaC Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181

In Reply Refer To: August 09, 2023
Project Code: 2023-0082675
Project Name: St. Louis Lambert International Airport – West Airfield Program

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).
New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region S7 Technical Assistance website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.
Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥5 inches diameter at breast height (dbh) for Indiana bat, and ≥3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.
Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain Life History Information for Listed and Candidate Species through the Species website.
3. If IPac returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
    a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
    b. Any activity in or near the entrance to a cave or mine;
    c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
    d. Construction of one or more wind turbines; or
    e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example "No Effect" document also can be found on the S7 Technical Assistance website.
If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the Range-wide Indiana Bat Summer Survey Guidelines.

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed voluntary guidelines for minimizing impacts.

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to guidelines developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's Wind Energy Guidelines. In addition, please refer to the Service's Eagle Conservation Plan Guidance, which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.
We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

John Weber

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether

any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
(573) 234-2132

PROJECT SUMMARY

Project Code: 2023-0082675
Project Name: St. Louis Lambert International Airport – West Airfield Program
Project Type: Airport - New Construction
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton USGS Quadrangles.

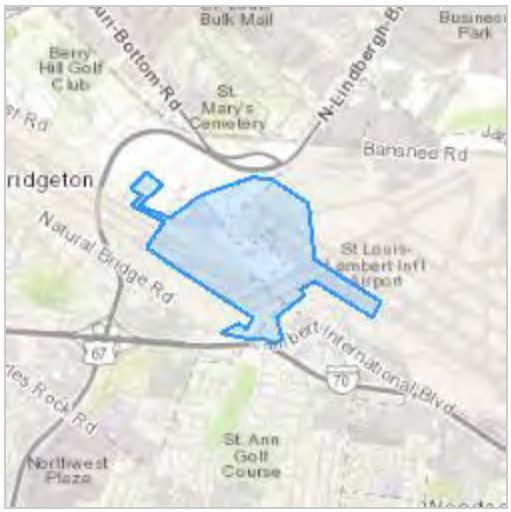
The proposed project consists of airport improvements at the St. Louis Lambert International Airport (STL). The proposed project involves relocating the airfield maintenance (AFM) campus, constructing a new west deicing pad, the addition of utilities and access roads to the new deicing pad, and airfield/taxiway improvements. Construction is anticipated to begin in 2025 and be completed by the end of 2027.

Land use in the vicinity of the project is commercial and residential. Coldwater Creek runs through the project area. Bridgeton Parks and Recreation, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area.

Suitable summer habitat is located within and adjacent to the project area. Suitable summer habitat will be impacted for the construction of the project. Up to 3.6 acres of trees may be removed for the project. All of the trees to be removed are located within 100 feet of existing pavement, scattered throughout a disturbed area on airport property, and the majority of trees are saplings. Five (5) trees were identified as suitable bat roost trees. The project sponsor commits to clear the identified suitable bat roost trees during the bat inactive season, between November 1 and March 31. The project activities will not include the use of percussives. The project does include installing new permanent lighting. Although temporary lighting is not expected to be required for the construction of the project, it is possible some night work will be performed. Mitigation is not anticipated.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.7501213,-90.38188118488578,14z



Counties: St. Louis County, Missouri

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/F5WY4NZ2NBA4JAR5QOEEI5U7VA/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/F5WY4NZ2NBA4JAR5QOEEI5U7VA/documents/generated/6868.pdf	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

FLOWERING PLANTS

NAME	STATUS
Decurrent False Aster *Boltonia decurrens*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7705

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Crawford, Murphy and Tilly Inc.
Name: Stephanie Spence
Address: 1 Memorial Drive
Address Line 2: Suite 500
City: St. Louis
State: MO
Zip: 63102
Email sspence@cmtengr.com
Phone: 5134278169

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Aviation Administration

Attachment 6: MDC Natural Heritage Review

Missouri Department of Conservation

Missouri Department of Conservation's Mission is to
protect and manage the forest, fish, and
wildlife resources of the state and to
facilitate and provide opportunities for all citizens to
use, enjoy and learn about these resources.

Natural Heritage Review Level Three Report: Species Listed Under the Federal Endangered Species Act

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this report is to provide information to federal, state and local agencies, organizations, municipalities, corporations, and consultants regarding sensitive fish, wildlife, plants, natural communities, and habitats to assist in planning, designing, and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: St. Louis Lambert International Airport – West Airfield Program #12781
Project Description: This project is located at the St. Louis Lambert International Airport (STL) in St. Louis County, Missouri at 38.7419996 latitude -90.3751886 longitude. The proposed work is 0.06 mile north of North Supersaber Road, 0.16 mile north of Lambert International Boulevard and 0.15 mile northeast of Natural Bridge Road. This project is located in Section 5, Township 46 North, and Range 6 East on the Saint Charles, Florissant, Creve Coeur, and Clayton USGS Quadrangles. Construction is anticipated to begin in 2025 and be completed by the end of 2028. Land use in the vicinity of the project is predominantly developed commercial and residential areas, with some sparse wooded areas. Coldwater Creek runs northwest to southeast through the central portion of the project area. Bridgeton Parks and Recreation, Washington Park cemetery, Berry hill golf course, Edmundson Park, John L. Brown Park, and St. Ann Park are all near the project area. The current airfield maintenance (AFM) facilities are in poor condition or functionally obsolete and are prone to extensive flooding. The airport's existing deicing capabilities are reduced due to location and age of facilities, and the airport's west airfield taxiway system does not currently meet the FAA's design standards and has existing safety deficiencies. The STL is therefore proposing to conduct airfield improvements to improve airfield maintenance operations, enhance the capacity and efficiency of aircraft deicing, and to address safety concerns. This will require relocating the airfield maintenance (AFM) campus, constructing a new west deicing pad, the addition of utilities and access roads to the new deicing pad, and airfield/taxiway improvements. The total project area is approximately 367 acres.
Project Type: Transportation, Airports (runways, taxiways, terminals, control towers, beacons, fuel depots), Construction of new runways, terminals/concourses, other facilities
Contact Person: Stephanie Spence
Contact Information: sspence@cmtengr.com or 5134278169

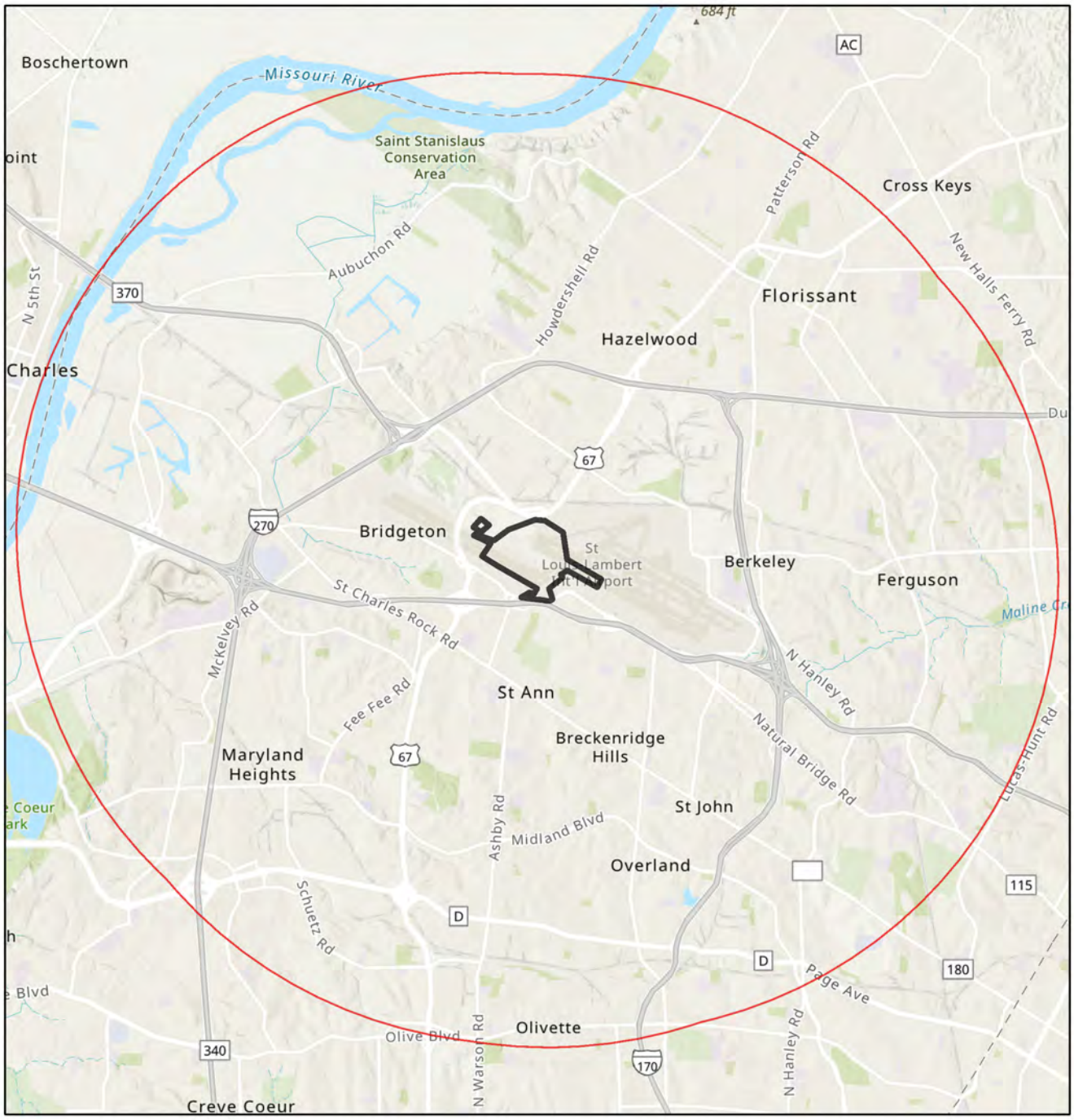
Disclaimer: This NATURAL HERITAGE REVIEW REPORT identifies if a species or natural community tracked by the Natural Heritage Program is known to occur within or near the project area submitted, and shares recommendations to avoid or minimize project impacts to sensitive species or natural habitats. Incorporating information from the Natural Heritage Program into project plans is an important step in reducing impacts to Missouri's sensitive natural resources. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information.

This Natural Heritage Review Report is not a site clearance letter for the project. Rather, it identifies public lands and records of sensitive resources located close to and/or potentially affected by the proposed project. If project plans or location change, this report may no longer be valid. Because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, reports include information about records near but not necessarily on the project site. Lack of an occurrence record does not mean that a sensitive species or natural community is not present on or near the project area. On-site verification is the responsibility of the project. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts and additional information (e.g. wetland or soils maps, on-site inspections or surveys) should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. This report does not fulfill Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit IPaC: Home (fws.gov) to initiate USFWS Information for Planning and Conservation (IPaC) consultation. Contact the Columbia Missouri Ecological Field Services Office (573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203) for more information.

Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit Home Page | Missouri Department of Transportation (modot.org) for additional information on recommendations.

St. Louis Lambert International Airport – West Airfield Program



June 20, 2023

1:98,424

0 0.75 1.5 3 mi

0 1.25 2.5 5 km

Buffered Project Boundary

Project Boundary

Esri, NASA, NGA, USGS, County of St. Louis, Missouri Dept. of Conservation, Missouri DNR, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA

Species or Communities of Conservation Concern within the Area:

There are records of species listed under the Federal Endangered Species Act, and possibly also records for species listed Endangered by the state, or Missouri Species and/or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the U.S. Fish and Wildlife Service and the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Other Special Search Results:

The project occurs on or near public land, Bridgeton Armory, Bryan Island, Ferguson (January-Wabash Park Lake), Hickory Woods CA, Overland (Wild Acres Park Lake), STL Lambert, Saint Stanislaus CA, please contact MOARNG, COE, MDC.

Project Type Recommendations:
Transportation -Airports: New and Maintenance should be managed to minimize erosion and sedimentation/runoff to nearby streams and lakes, including adherence to any Clean Water Act permit conditions. Project design should include stormwater management elements that assure storm discharge rates to streams for heavy rain events will not increase from present levels. Revegetate disturbed areas to minimize erosion using native plant species compatible with the local landscape and wildlife needs. Annual ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crownvetch and sericea lespedeza. Please see Best Management Practices for Construction and Development Projects Affecting Missouri Rivers and Streams (mo.gov).

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - If this project has the potential to alter habitat (e.g. tree removal, projects in karst habitat) or cause direct mortality of bats, please coordinate directly with U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 Ext. 100 for Ecological Services) for further coordination under the Endangered Species Act. Indiana bats *(Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis,* federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April.

Bald Eagle: The project location submitted and evaluated is within the geographic range of nesting Bald Eagles in Missouri. Bald Eagles (*Haliaeetus leucocephalus*) may nest near streams or water bodies in the project area. Nests are large and fairly easy to identify. Adults begin nesting activity in late December and January and young birds leave the nest in late spring to early summer. While no longer listed as endangered, eagles continue to be protected by the federal government under the Bald and Golden Eagle Protection Act. Work managers should be alert for nesting areas within 1500 meters of project activities, and follow federal guidelines at: Do I need an eagle take permit? | U.S. Fish & Wildlife Service (fws.gov) if eagle nests are seen.

Decurrent False Aster (Boltonia decurrens, federal-listed threatened and state-listed endangered) may occur in this area. Decurrent False Aster is a head floodplain species that grows in wetlands and on the borders of marshes, lakes, oxbows, and sloughs. It also may be found in old fields, roadsides, agricultural fields, and on levees. It favors sites characterized by moist soil and regular disturbance, preferably periodic flooding, which maintains open areas with high light levels. Today it is found in areas where succession is prevented, and sunlight is allowed to reach the seedlings. It is a perennial plant that blooms from August through October. Please see Best Management Practices for Construction and Development Projects Decurrent False Aster (mo.gov).

Gray Bat: The submitted project location is within the range of the Gray Myotis (i.e., Gray Bat) in Missouri. Depending on habitat conditions of your project's location, Gray Myotis (*Myotis grisescens*, federal and state-listed endangered) could occur within the project area, as they forage over streams, rivers, lakes, and reservoirs. Avoid entry or disturbance of any cave inhabited by Gray Myotis and when possible retain forest vegetation along the stream and from the cave opening to the stream. Please see Best Management Practices for Construction and Development Projects Gray bat (mo.gov).

Karst: This county has known karst geologic features (e.g., caves, springs, and sinkholes, all characterized by subterranean water movement). Few karst features are recorded in Natural Heritage records, and ones not noted here may be encountered at the project site or affected by the project. Cave fauna (many of which are Species of Conservation Concern) are influenced by changes to water quality; please check your project site for any karst features and make every effort to protect groundwater in the project area. Additional information and specific recommendations are available at Management Recommendations for Construction and Development Projects Affecting Missouri Karst Habitat (mo.gov).

Pallid Sturgeon: The project location submitted and evaluated is located within or adjacent to the Mississippi or Missouri rivers. Pallid Sturgeons (*Scaphirhynchus albus*, federal- and state-listed endangered) are big river fish that range widely in the Mississippi and Missouri River system (including parts of some major tributaries). Any project that modifies big river habitat or impacts water quality should consider the possible impact to pallid sturgeon populations. See Pallid Sturgeon Best Management Practices (mo.gov) for Best Management Practices. Additional coordination with the U.S. Fish and Wildlife Service under the Endangered Species Act may be necessary (U.S. Fish and Wildlife Service, Ecological Services, 101 Park DeVille Drive, Suite A, Columbia, Missouri 65203-0007; phone 573-234-2132.)

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See Managing Invasive Species in Your Community | Missouri Department of Conservation (mo.gov) for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (Kansas City District Regulatory Branch (army.mil)) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (Section 401 Water Quality Certification | Missouri Department of Natural Resources (mo.gov)), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit Wastewater Permits | Missouri Department of Natural Resources (mo.gov) for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 1 0-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See Missouri Species and Communities of Conservation Concern Checklist (mo.gov) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at Mofwis Search Results. Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

From: Hundley, Joshua (Josh) <Joshua_Hundley@fws.gov>
Sent: Thursday, September 28, 2023 4:38 PM
To: Heather Lacey <hlacey@cmtengr.com>
Subject: Re: [EXTERNAL] St. Louis Lambert International Airport West Airfield Program

Dear Ms. Lacey,

The U.S. Fish and Wildlife Service (Service) has reviewed the information you provided regarding the proposed St. Louis Lambert International Airport West Airfield Program in St. Louis County, Missouri. The Service offers the following comments pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1544).

The FAA requested the Service's concurrence with a "may affect, but not likely to adversely affect" (MANLAA) determination for Indiana bat, northern long-eared bat, and tricolored bats. The Service concurs with your not likely to adversely affect determination for Indiana bat and northern long-eared bat. Because tricolor bat is not officially listed yet, the Service does not consult on the species. But, based on the determination of the Indiana bat and NLEB, impacts from the project won't jeopardize the tricolor bat.

Thank you for your interest in the conservation of threatened and endangered species.

Josh Hundley
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Missouri Ecological Services Field Office
101 Park DeVille Drive, Suite A
Columbia, MO 65203-0057
573-540-3829 (cell)

From: Heather Lacey <hlacey@cmtengr.com>
Sent: Monday, September 11, 2023 1:22 PM
To: Weber, John S <John_S_Weber@fws.gov>
Cc: Tener, Scott (FAA) <scott.tener@faa.gov>; Beckmann, Gerald A. <GABeckmann@flystl.com>; Kuchinski, Jennifer <Jennifer.Kuchinski@wsp.com>; Laura Sakach <lsakach@cmtengr.com>; Douglas Gregory <dgregory@cmtengr.com>
Subject: [EXTERNAL] St. Louis Lambert International Airport West Airfield Program

Good afternoon Mr. Weber,
On behalf of the Federal Aviation Administration (FAA), attached is an informal Section 7 consultation and request for concurrence for the referenced project at St. Louis Lambert International Airport. FAA is

requesting concurrence on the NLAA determinations for the Indiana, Northern long-eared, and tricolored bats.

If there are questions or if any additional information is needed, please let me know.

Thank you,

HEATHER LACEY | Senior Environmental Scientist

CMT

Crawford, Murphy & Tilly | **Engineers & Consultants**
One Memorial Drive, Suite 500 | St. Louis, MO 63102
w 314.436.5500 | m 937.307.0744 | hlacey@cmtengr.com

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