
ENVIRONMENTAL OVERVIEW

Appendix C

ENVIRONMENTAL OVERVIEW

A review of the potential environmental impacts associated with proposed airport projects is an essential consideration in the Airport Master Plan process. The primary purpose of this section is to review the proposed improvement program at Cox Field Airport to determine whether the proposed developments identified in the Master Plan could, individually or collectively, have the potential to significantly affect the quality of the environment. The information contained in this section was obtained from previous studies, various internet websites, and analysis by the consultant.

Construction of any and all improvements depicted on the Airport Layout Plan (ALP) will require compliance with the *National Environmental Policy Act (NEPA) of 1969*, as amended. This includes privately funded projects in addition to those projects receiving federal funding. For projects not “categorically excluded” under FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, compliance with NEPA is generally satisfied through the preparation of an Environmental Assessment (EA). In instances where significant environmental impacts are expected, an Environmental Impact Statement (EIS) may be required.

While this portion of the Master Plan is not designed to satisfy the NEPA requirements, it is intended to supply a preliminary review of environmental issues that would need to be analyzed in more detail within the environmental review processes. This evaluation considers all environmental categories required as

outlined within FAA Order 1050.1E and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementation Instructions for Airport Actions*.

The following sections provide a description of the environmental resources which could be impacted by the proposed ultimate airport development depicted on **Exhibit C1**. Through a review of previous environmental studies and resource agency websites, it was determined that the following resources are not present within the airport environs:

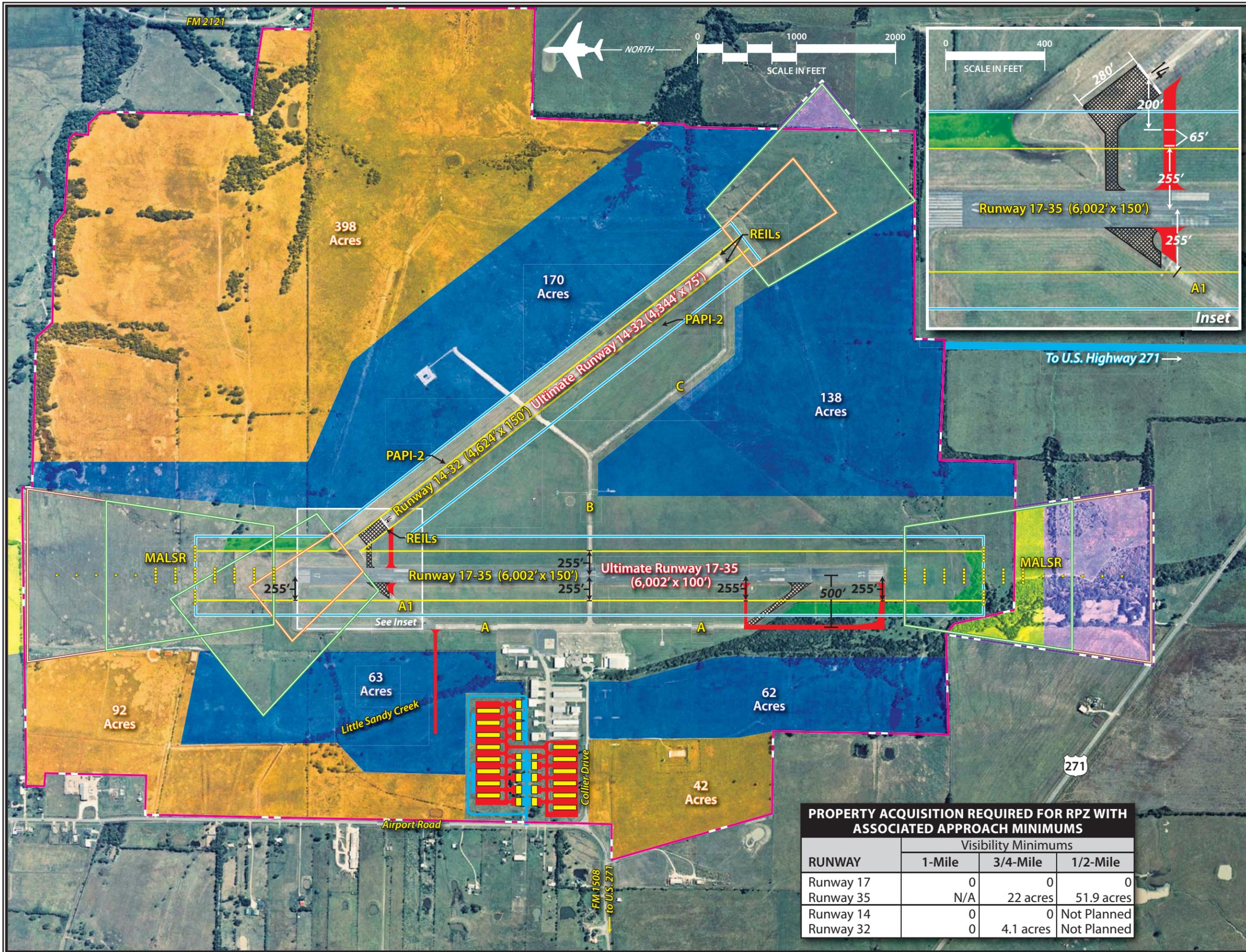
- Coastal Barriers
- Coastal Zone Management Areas
- Wild and Scenic Rivers

AIR QUALITY

Air quality in a given location is described by the concentrations of various pollutants in the atmosphere. The significance of a pollution concentration is determined by comparing it to the state and federal air quality standards. In 1971, the U.S. Environmental Protection Agency (EPA) established standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O₃), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Oxide (NO), Particulate matter (PM₁₀ and PM_{2.5}), and Lead (Pb).

Based on both federal and state air quality standards, a specific geographic area can be classified as either an “attainment,” “maintenance,” or “non-attainment” area for each pollutant. The threshold for non-attainment designation varies by pollutant. According to the EPA’s Greenbook, Lamar County is classified as an attainment area for all criteria pollutants.

A number of planned projects at the airport could result in impacts to air quality. Temporary impacts would result during the construction of improvements such as the removal of Runway 3-21 and the construction of new taxiways and taxilanes. Emissions from the operation of construction vehicles and fugitive dust from pavement removal are common air pollutants during construction. During evaluation of these specific projects, an emissions inventory, prepared with the use of the FAA’s Emission and Dispersion Modeling System, may be required. The results of the inventory would be compared to established thresholds to determine if implementation of the proposed projects would result in an air quality impact. More permanent air quality impacts will result from the forecasted increase in operations at the airport. As the number of operations increase, these potential impacts may need to be evaluated as part of any required environmental documentation for planned projects.



LEGEND

LAND USE

- Existing Avigation Easement
- Acquire Property Interests
- Aviation Reserve / Open
- Industrial, Commercial, or Release
- Improvements to Safety Areas

DESIGN

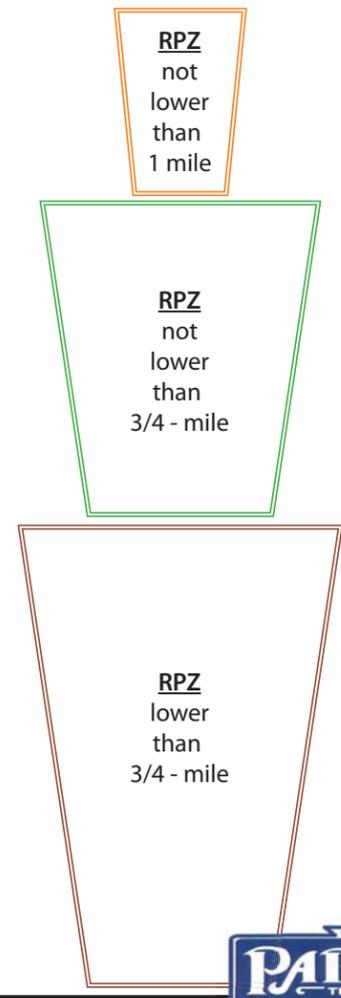
- Existing Airport Property Line
- Ultimate Airport Property Line
- Runway Safety Area (RSA)
- Object Free Area (OFA)
- Ultimate Airport Road
- Ultimate Airport Pavement
- Ultimate Airport Building
- Pavement to be Removed

RPZ Runway Protection Zone

MALSR Medium Intensity Approach Lighting System w/ Runway Alignment Indicator Lights

PAPI Precision Approach Path Indicator

REIL Runway End Identification Light



PROPERTY ACQUISITION REQUIRED FOR RPZ WITH ASSOCIATED APPROACH MINIMUMS

RUNWAY	Visibility Minimums		
	1-Mile	3/4-Mile	1/2-Mile
Runway 17	0	0	0
Runway 35	N/A	22 acres	51.9 acres
Runway 14	0	0	Not Planned
Runway 32	0	4.1 acres	Not Planned



COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is typically associated with the extent of the airport's noise impacts. Noise impacts are generally evaluated by comparing the extent of an airport's noise exposure contours to the land uses within the immediate vicinity of the airport. The existing and future noise contours for Cox Field Airport do not affect any noise-sensitive land uses.

CONSTRUCTION IMPACTS

Construction impacts typically relate to the effects on specific impact categories, such as air quality or noise, during construction. The use of best management practices during construction is typically a requirement of construction-related permits such as the Texas Pollutant Discharge Elimination System (TPDES) permit. Use of these measures typically alleviates potential resource impacts.

Short term construction-related noise impacts could occur with implementation of the proposed development concept. However, the majority of the immediate surrounding land is vacant or sparsely populated; as a result, these noise impacts would be minimal. Additionally, noise impacts typically do not arise unless construction is being undertaken during early morning, evening, or nighttime hours.

Construction-related air quality impacts can be expected. Air emissions related to construction activities will be short term in nature and will be included in the air emission inventory, as required for NEPA documentation efforts.

DEPARTMENT OF TRANSPORTATION SECTION 4(f) RESOURCES

Section 4(f) properties include publicly owned land from a public park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance, or any land from a historic site of national, state, or local significance.

Based on a review of local mapping, none of the proposed airport improvements will result in direct impacts to Section 4(f) resources. Lands planned for acquisition are privately owned and not identified as a public park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance, or land from a historic site of national, state, or local significance. Additionally, indirect impacts to Section 4(f) resources are not anticipated due to the distance between the airport and area parks and recreational facilities.

FARMLAND

The *Farmland Protection Policy Act* (FPPA) was enacted to preserve farmland. FPPA guidelines apply to farmland classified as prime or unique, or of state or local importance as determined by the appropriate government agency, with concurrence by the Secretary of Agriculture.

According to information obtained from the United States Department of Agriculture's National Resource Conservation Service (NRCS) website, soils present at the airport are considered important farmland. Land acquisition proposed within the Master Plan may result in the conversion of presently unused prime farmland; however, all remaining projects are contained within existing airport property. Therefore, any farmland impact should be minimal. Further coordination with the NRCS, including completion of Form AD-1006 *Farmland Conversion Impact Rating*, which determines the impact of the project on prime farmland, is required prior to the land acquisition project to determine if it is subject to FPPA requirements.

FISH, WILDLIFE, AND PLANTS

Biotic resources include the various types of plants and animals that are present in a particular area. The term also applies to rivers, lakes, wetlands, forests, and other habitat types that support plants, birds, and/or fish. Typically, development in areas such as previously disturbed airport property, populated places, or farmland would result in minimal impacts to biotic resources.

The Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) are charged with overseeing the requirements contained within Section 7 of the *Endangered Species Act* (ESA). This Act was put into place to protect animal or plant species whose populations are threatened by human activities. Along with the FAA, the FWS and the NMFS review projects to determine if a significant impact to these protected species will result with implementation of a proposed project. Significant impacts occur when the proposed action could jeopardize the continued existence of a protected species or would result in the destruction or adverse modification of federally designated critical habitat in the area.

The *Sikes Act* and various amendments authorize states to prepare statewide wildlife conservation plans, and the Department of Defense (DOD) to prepare similar plans for resources under their jurisdiction. Airport improvement projects should be checked for consistency with the State or DOD Wildlife Conservation Plans where such plans exist.

Table C1 depicts federally and state listed threatened and endangered species for Lamar County. According to the FWS website, there are six species that are listed as threatened, endangered, or candidate species in Lamar County according to the

ESA. In addition, the Texas Department of Wildlife and Parks lists an additional 15 species that are considered by the State of Texas as threatened or endangered and have the potential to occur in Lamar County.

TABLE C1			
Threatened or Endangered Species in Lamar County, Texas			
Common Name	Species	Federal Status	State Status
INSECTS			
American burying beetle	<i>Nicrophorus americanus</i>	Endangered	NL
BIRDS			
Least tern	<i>Sterna antillarum</i>	Endangered	Endangered
Texas prairie dawn-flower	<i>Hymenoxys texana</i>	Endangered	NL
American peregrine falcon	<i>Falco peregrinus anatum</i>	De-listed	Threatened
Bachman's Sparrow	<i>Aimophila aestivalis</i>	NL	Threatened
Bald eagle	<i>Haliaeetus leucocephalus</i>	De-listed	Threatened
Eskimo Curlew	<i>Numenius borealis</i>	NL	Endangered
Piping Plover	<i>Charadrius melodus</i>	NL	Threatened
Whooping Crane	<i>Grus americana</i>	NL	Endangered
Wood stork	<i>Mycteria americana</i>	NL	Threatened
FISHES			
Blackside darter	<i>Percina maculata</i>	NL	Threatened
Blue sucker	<i>Cycleptus</i>	NL	Threatened
Creek chubsucker	<i>Erimyzon</i>	NL	Threatened
Paddlefish	<i>Polyodon</i>	NL	Threatened
Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>	NL	Threatened
MAMMALS			
Louisiana black bear	<i>Ursus americanus luteolus</i>	Threatened	Threatened
Red wolf	<i>Canis rufus</i>	NL	Endangered
REPTILES			
Alligator snapping turtle	<i>Macrochelys temminckii</i>	NL	Threatened
Texas horned lizard	<i>Phrynosoma cornutum</i>	NL	Threatened
Timber/Canebrake rattlesnake	<i>Crotalus horridus</i>	NL	Threatened
NL – Not Listed			
Source: USFWS online listed species database, http://www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm , accessed November 2010			
Texas Department of Wildlife and Parks' <i>Rare, Endangered and Threatened Species of Texas</i> , http://gis2.tpwd.state.tx.us/ReportServer\$GIS_EPASDE_SQL/Pages/ReportViewer.aspx?/Report+Project2/Report5&rs:Command=Render&county=Lamar , accessed December 2010.			

Several of these species, including the turtle and fish species, are typically found in major rivers or tributaries, but can also be found in creeks such as the Little Sandy Creek which flows through airport property. Additional field investigations may be required to determine the presence of threatened or endangered species at the airport.

Planned airport development projects that would require the development of relatively undisturbed land include the extension of parallel Taxiway A to the Runway 35 threshold, the construction of a taxilane to the west across Little Sandy Creek, the installation of an approach lighting system (ALS) to both ends of Runway 17-35, and extensive landside developments including taxilane and hangar construction. Field surveys will be required to determine the potential for the presence of protected species for these projects. Additionally, coordination with the FWS and/or the Texas Department of Wildlife and Parks may be necessary to determine the extent, if any, of field investigations prior to undertaking any of the planned improvements. Projects such as the closure and removal of Runway 3-21, the removal of 280 feet of Runway 14-32 pavement, and the construction of a new connector taxiway to the ultimate Runway 14 threshold are occurring in an area that is relatively disturbed and regularly maintained; therefore, it is not anticipated species impacts would occur with these projects.

FLOODPLAINS

As defined in FAA Order 1050.1E, floodplains consist of “lowland and relatively flat areas adjoining inland and coastal water including flood prone areas of offshore islands, including at a minimum, that area subject to one percent or greater chance of flooding in any given year.” Federal agencies are directed to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Floodplains have natural and beneficial values, such as providing ground water recharge, water quality maintenance, fish, wildlife, plants, open space, natural beauty, outdoor recreation, agriculture, and forestry. FAA Order 1050.1E (12) (c) indicates that “if the proposed action and reasonable alternatives are not within the limits of a base floodplain (100-year flood area),” that it may be assumed that there are no floodplain impacts. The limits of base floodplains are determined by Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA).

A review of FIRM panel 4808910009A indicates that the airport is not located within the vicinity of a 100-year floodplain. The proposed developments identified in the Master Plan will not occur within any designated 100-year floodplain.

HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Federal, state, and local laws regulate hazardous materials use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous ma-

terials or contaminants may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources.

The EPA's *EnviroMapper for Envirofacts*¹ was consulted regarding the presence of impaired waters or regulated hazardous sites. No impaired waters are located on or in the vicinity of the airport. According to the site, there are no SUPERFUND hazardous waste sites located within the vicinity of the airport.

An environmental due diligence audit (EDDA) may be required for the area identified for acquisition to determine the presence of any recognized environmental conditions (RECs). An REC is defined by the American Society for Testing and Materials as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances, or petroleum products into the ground, groundwater, or surface water of a property.

A construction-related TPDES permit may be required prior to on-airport construction projects. The permit requires a Notice of Intent for all construction activities disturbing one or more acre of land. In conjunction with the TPDES, a Storm Water Pollution Prevention Plan (SWPPP) may be required to outline the best management practices to be used to minimize impacts to storm water conveyance systems.

HISTORICAL AND CULTURAL RESOURCES

Determination of a project's impact to historical and cultural resources is made in compliance with the *National Historic Preservation Act (NHPA) of 1966*, as amended for federal undertakings. A historic property is defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Properties or sites having traditional religious or cultural importance to Native American Tribes may also qualify.

Planned airport development projects that would require the development of relatively undisturbed land include the construction of a taxiway to the Runway 35 threshold, the installation of a medium intensity approach lighting system with runway alignment lights (MALSR) on each end of Runway 17-35, the construction of a new access taxiway to the ultimate Runway 14 threshold, the construction of a taxilane extending west from Taxiway A, and the construction of taxilanes and hangar facilities. Field surveys may be required to determine the potential for historic properties in the airport environs. Additionally, coordination with the Texas Historical Commission may be necessary to determine the extent, if any, of field investigations prior to undertaking any of the planned improvements.

¹ <http://www.epa.gov/enviro/emef/>, Accessed March 2010.

LIGHT EMISSIONS AND VISUAL IMPACTS

Airport lighting is characterized as either airfield lighting (i.e., runway, taxiway, approach and landing lights) or landside lighting (i.e., security lights, building interior lighting, parking lights, and signage). Generally, airport lighting does not result in significant impacts unless a high intensity strobe light, such as a runway end identifier light (REIL) or MALSR, would produce glare on any adjoining site, particularly residential uses.

Visual impacts relate to the extent that the proposed development contrasts with the existing environment and whether a jurisdictional agency considers this contrast objectionable. The visual sight of aircraft, aircraft contrails, or aircraft lights at night, particularly at a distance that is not normally intrusive, should not be assumed to constitute an adverse impact.

Additional security lighting may be constructed as part of planned hangar development. These lights would be shielded and focused on the taxilanes and hangars to minimize increases in off-airport illumination.

The planned MALSR units will change lighting in areas north and south of Runway 17-35. Presently, land immediately north, south, and east of the airport consists of undeveloped cropland and pasture land with no light-sensitive land uses, such as residences. Land immediately west of the airport is sparsely developed and limited to low density residential and agricultural support land uses. The installation of the MALSR at each end of Runway 17-35 are not anticipated to impact these sparse developments west of the airport; however, if impacts are experienced, methods of shielding the light emissions from the residential developments can be employed to mitigate the impact.

NATURAL RESOURCES AND ENERGY SUPPLY

In instances of proposed actions, such as the expansion of utilities, power companies or other suppliers of energy will need to be contacted to determine if the proposed project demands can be met by existing or planned facilities.

Increased use of energy and natural resources are anticipated as the operations at the airport grow. None of the planned development projects are anticipated to result in significant increases in energy consumption.

NOISE

Per federal regulation, the Yearly Day-Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the FAA, EPA, and Department of Housing and Urban Development (HUD) as an ap-

appropriate measure of cumulative noise exposure. These three agencies have each identified the 65 DNL noise contour as the threshold of incompatibility. Noise exposure contours are overlaid on maps of existing and planned land uses to determine areas that may be affected by aircraft noise at or above 65 DNL. The noise exposure contours are developed using the FAA-approved Integrated Noise Model (INM) which accepts inputs for several airport characteristics, including aircraft type, operations, flight tracks, time of day, and topography.

Exhibit C2 depicts the existing condition noise exposure contours for Cox Field Airport. As shown on the exhibit, the 65 DNL noise contour remains on airport property. The existing 65 DNL noise contour does not encompass any noise-sensitive land uses based on a review of aerial photography for the area.

Exhibit C3 depicts the future condition noise contours. Like the existing condition, the 65 DNL noise contour remains entirely on airport property. The future noise contours do not affect any noise-sensitive land uses.

SECONDARY (INDUCED) IMPACTS

These impacts address those secondary impacts to surrounding communities resulting from the proposed development, including shifts in patterns of population growth, public service demands, and changes in business and economic activity to the extent influenced by airport development.

Significant shifts in patterns of population movement or growth or public service demands are not anticipated as a result of the proposed airport developments. It could be expected, however, that the proposed development would potentially induce positive socioeconomic impacts for the community over a period of years. The airport, with expanded facilities and services, would be expected to attract additional users. It is also expected to encourage industry and trade, and to enhance the future growth and expansion of the community's economic base. Future socioeconomic impacts resulting from the proposed development are anticipated to be primarily positive in nature.

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

Socioeconomic impacts known to result from airport improvements are often associated with relocation activities or other community disruptions, including alterations to surface transportation patterns, division or disruption of existing communities, interferences with orderly planned development, or an appreciable change in employment related to the project.

The acquisition of real property or displacing people or businesses is required to conform to the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* (URARPAPA). These regulations mandate that certain relocation assistance services be made available to owners/tenants of the properties. The recommended Master Plan Concept calls for the acquisition of property encompassed by the ultimate Runway 35 and 32 runway protection zones (RPZs). These planned acquisition areas do not include any residences or businesses. Acquisition of these parcels will require conformance with the regulations outlined in URARPAPA.

Executive Order 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompanying Presidential Memorandum, and Order DOT 5610.2, *Environmental Justice*, require FAA to provide for meaningful public involvement by minority and low-income populations, as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse.

According to the U.S. Census Bureau, the block group² that includes the airport environs does not contain high percentages (above 50 percent) of minority populations or high percentages of residents below the poverty level.

Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed to identify and assess environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products to which they may be exposed.

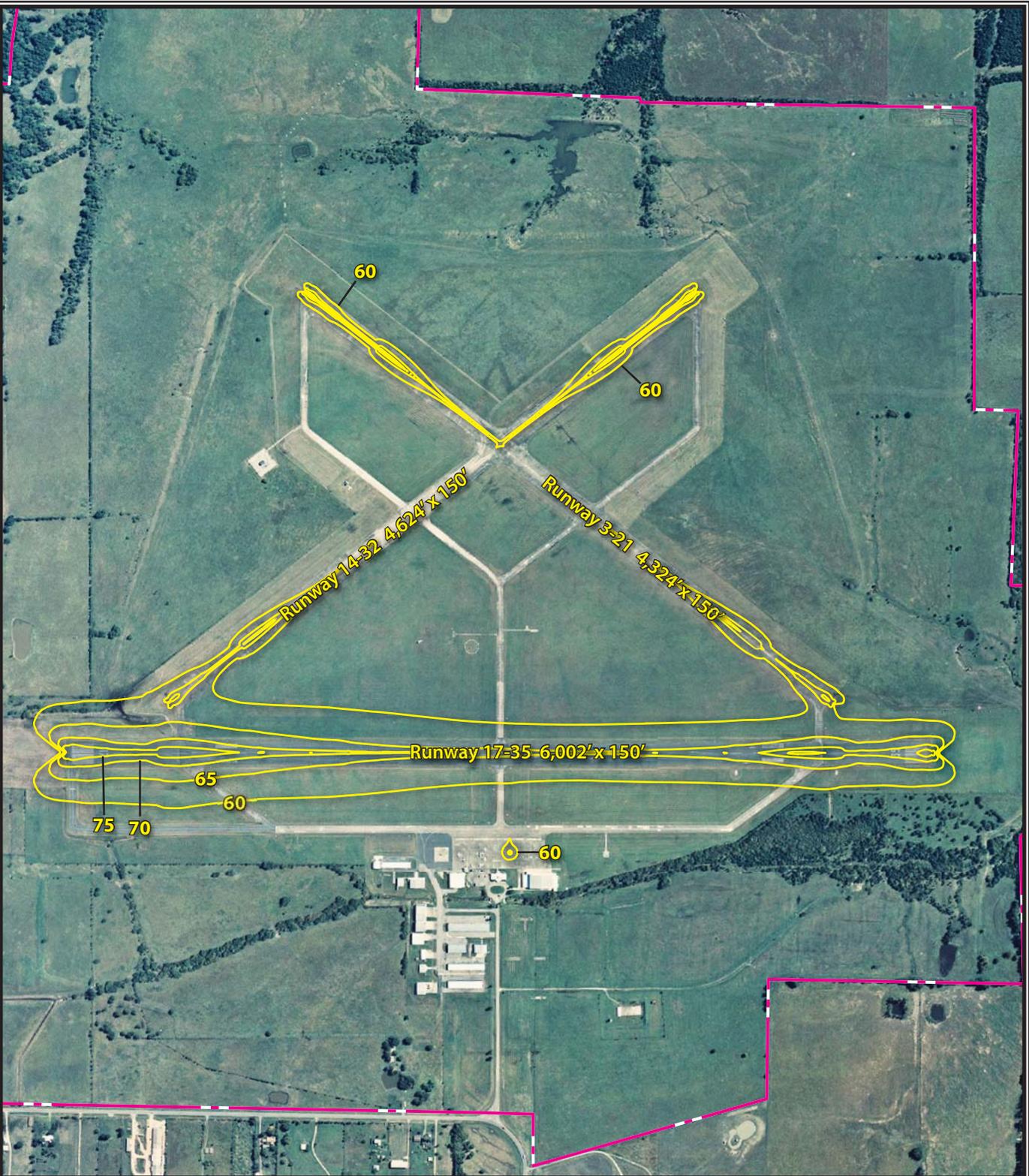
During construction of the projects outlined within the Master Plan, appropriate measures should be taken to prevent access by unauthorized persons to construction project areas. Additionally, best management practices should be implemented to decrease environmental health risks to children.

WATER QUALITY

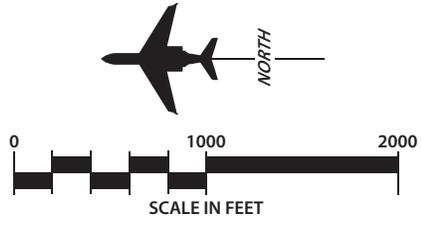
The *Clean Water Act* provides the authority to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, and regulate other issues concerning water quality. Water quality concerns related to airport development most often relate to the potential for surface runoff and soil erosion, as well as the storage and handling of fuel, petroleum products, solvents, etc.

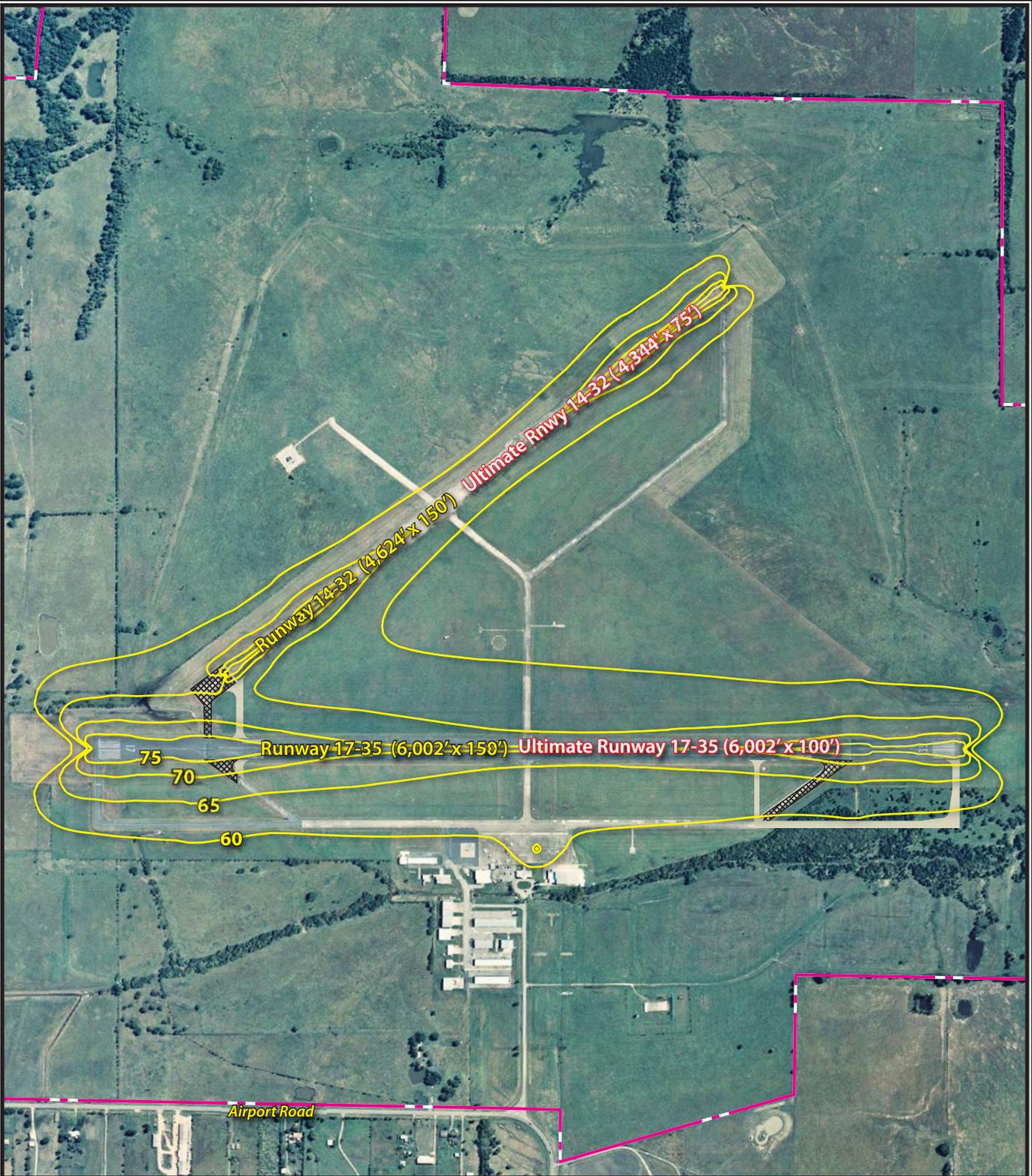
As noted on **Exhibit C1**, the Little Sandy Creek is located on airport property and flows through the terminal area. The project to construct a new taxiway extend-

² U.S. Census Bureau, <http://www.census.gov/>, accessed December 2010



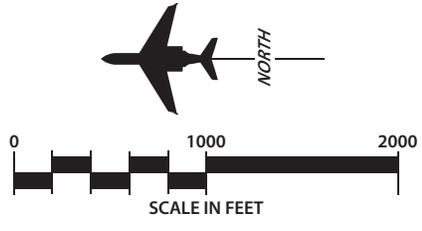
LEGEND
- - - Existing Airport Property Line
— Noise Contours





LEGEND

- - - Existing Airport Property Line
- Noise Contours
- ▨ Pavement to be Removed



ing west from Taxiway A crosses this creek and will likely require a Nationwide Permit from the Army Corps of Engineers (USACE). Water quality impacts related to the development of the creek area will need to be evaluated during the environmental documentation for the airport-related development projects. Presently, the creek has not been determined to be in violation of established water quality standards or classified as impaired.

Cox Field Airport has a current TPDES stormwater discharge multisector general permit for industrial activities (permit number TXR055926, effective November 30, 2005). With regard to construction activities, the airport and all applicable contractors will need to obtain and comply with the requirements and procedures of the construction-related TPDES General Permit number TXR150000, including the preparation of a *Notice of Intent* and a SWPPP, prior to the initiation of product construction activities.

During construction of any of the planned improvements at the airport it is suggested that mitigation measures from FAA Advisory Circular 150/5370-10A, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control*, be incorporated into project design specifications to further mitigate potential water quality impacts. These standards include temporary measures to control water pollution, soil erosion, and siltation through the use of berms, fiber mats, gravels, mulches, slope drains, and other erosion control methods.

Additionally, as development occurs at the airport, the SWPPP will need to be modified to reflect the additional impervious surfaces and any stormwater retention facilities. The addition and removal of impervious surfaces may require modifications to this plan should drainage patterns be modified.

WETLANDS AND WATERS OF THE U.S.

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredge and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the *Clean Water Act*.

Wetlands are defined by Executive Order 11990, *Protection of Wetlands*, as “those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.” Categories of wetlands include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mud flats, natural ponds, estuarine area, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: hydrology, hydrophytes (plants

able to tolerate various degrees of flooding or frequent saturation), and poorly drained soils.

A review of the National Resource Conservation Service's Web Soil Survey indicates that one out of the ten soil types present on the airport is classified as partially hydric. This indicates a possibility for jurisdictional wetlands to be present on airport property. The partially hydric soil area is located in the northeast portion of the airport. Field surveys and coordination with the USACE may be necessary during the environmental documentation process for development in these areas to determine the presence of jurisdictional wetlands within those areas.