APPENDIX A

ENVIRONMENTAL OVERVIEW

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.1 INTRODUCTION

The purpose of considering environmental factors in airport master planning is to assist in evaluating future airport development, as well as provide information that will help expedite subsequent environmental processing. Federal Aviation Administration (FAA) Order 1050.1F, *Environmental Impacts: Policies and Procedures*, is the FAA's environmental guidance for aviation projects/actions to comply with NEPA. However, it is important to note that while the environmental analysis is included in this Master Plan Update, it is not in and of itself a National Environmental Policy Act (NEPA) document. Recent FAA guidance requires all planning processes to be completed prior to the start of NEPA documentation.

1.2 ENVIRONMENTAL ANALYSIS OVERVIEW

This section describes Section 743 of the FAA Reauthorization Act of 2024, NEPA, FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, FAA 1050.1F Desk Reference, and 2024 Council on Environmental Quality (CEQ) NEPA Implementing Regulations (40 CFR Parts 1500 – 1508).

1.2.1 Section 743 of the FAA Reauthorization Act of 2024

This section provides a brief overview of Section 743 of the FAA Reauthorization Act of 2024.

1.2.1.1 Section 743 Project Description and Materials

Section 743 narrows the scope of the FAA's authority to regulate activities that: (1) "materially impact the safe and efficient operation of aircraft at, to, or from the airport," (2) "adversely affect the safety of people or property on the ground as a result of aircraft operations", or (3) "adversely affect the value of prior Federal investments to a significant extent." The FAA has land use authority over aeronautical portions of a project, whether or not those portions lie on regulated or non-regulated land. The FAA may not have jurisdictional authority over non-aeronautical portions of a project. The FAA retains jurisdiction over any property that was acquired with Federal assistance.

For projects where the FAA has approval authority, the City of Manassas (City) would complete a pen and ink change to the ALP, only if the Proposed Project was not already on the ALP, along with a detailed description of the Proposed Project. The revised ALP would be submitted to the FAA Washington ADO. The FAA will then review each project and provide input to the City where applicable. The FAA Eastern Region, including the Washington ADO, reviews an airport's Section 743 coordination process and may request supporting information from the City if they do not already have what is need to make a jurisdictional authority decision. For projects not subject to FAA approval, the City would notify the FAA of the project before proceeding. According to Section 743, the FAA has 45 days to assert jurisdiction or lose jurisdiction of that project.

Airport Materials Needed for FAA Review under Section 743

Below are the items that the City may need to provide to the FAA Washington ADO Program Manager if the FAA does not already have in their files.

1. A copy of the current ALP or draft ALP change that clearly identifies all the project components being included in the project and their respective locations at the airport. Be sure to use a call out on the exhibit to clearly show each project component.
2. A copy of the current on-Airport land use map.
3. A copy of the Exhibit A Property Map that compliant with FAA Airports (ARP) Standard Operating Procedure 3.0. This will show the funding source for each parcel or property on which the project components are planned to be constructed.
4. A copy of deeds or other conveyance documentation that shows the ownership of the land that each of the project components is planned to be constructed on.
5. Identify the source of funding for the Proposed Project.
6. A description of the Proposed Project in narrative form. Ideally this should be as close as possible to the Proposed Project description that would be used in the NEPA documentation.

The information can be transmitted in an email from the City to the FAA Washington ADO Program Manager. It is recommended that FAA Washington ADO EPS be copied on the transmittal too.

1.2.1.2 FAA Review Process

When an airport development plan (ADP) project is ripe for FAA review, the request for FAA approval should be coordinated with the FAA Washington ADO Program Manager and Environmental Protection Specialist (EPS).

Based on coordination with various FAA ADOs, a more expedited Section 743 review, and a decision whether a NEPA document is needed can be explained in simpler terms.

1. If a project occurs anywhere aircraft move (runways, taxiways, apron, etc.) or associated safety areas (RSA, RPZ, TOFA etc.) or on Federally-obligated land, the FAA has ALP approval authority and NEPA documentation is needed. Project examples include a runway extension or grading improvements in an RSA.
2. If a project is anticipated to be federally funded (AIP, PFC, etc.), then NEPA documentation is needed. A project example would be interior terminal improvements paid for in part by federal funds.

Section 743 review is coordinated by the FAA Washington ADO Program Manager and EPS.

Projects that are proposed to occur within non-aeronautical, not Federally-obligated land at the Airport are not under Federal jurisdiction and do not need FAA approval (or NEPA review). To help the Airport make this determination, it needs to know how the land where the project would occur acquired? Was there any federal (FAA, Department of Defense (DOD), etc. funds involved? Deed information?). If so, the FAA has authority over land use. If not, the Airport notifies the FAA of a proposed project prior to commencement. As discussed earlier, the FAA has 45 days to respond, asserting jurisdiction or lose jurisdiction of that project.

Coordination with the FAA Washington ADO regarding the applicability of Section 743 on a project-by-project basis is highly recommended.

1.2.2 National Environmental Policy Act (NEPA)

NEPA was signed into law on January 1, 1970. NEPA ensures that federal agencies evaluate the potential environmental impacts of proposed projects. NEPA serves many valuable purposes, including:

- Evaluating how proposed projects will be developed;
- Understanding the environmental consequences of the proposed actions and their effect on local communities;
- Evaluating reasonable alternatives to ensure due diligence;
- Assessing measures that can be taken during the development of proposed actions to minimize environmental impacts.

Using the NEPA process, the FAA evaluates the potential environmental and related social and economic effects of a proposed project.

1.2.3 FAA Order 1050.1F, Environmental Impacts: Policies and Procedures

After the FAA informs the City that NEPA is required, the City, in coordination with the FAA Washington ADO, would acquire the FAA's recommendation regarding the type of NEPA documentation the project requires. According to FAA Order 1050.1F, there are three levels of NEPA documentation: Categorical Exclusion (CATEX), Environmental Assessment (EA), or Environmental Impact Statement (EIS).

1.2.3.1 Categorical Exclusion (CATEX)

A CATEX refers to a category of actions that do not individually or cumulatively significantly affect the human environment and for which neither an EA nor an EIS is required. FAA Order 1050.1F paragraphs 5-6.1 through 5-6.6 describe actions that normally do not individually or cumulatively significantly affect the human environment. These actions are described under one of the following categories:

- Administrative/ General (5-6.1): Actions that are administrative or general in nature.
  - Example: 5-6.1(p): Conditional approval of an ALP
- Certification (5-6.2): Actions concerning issuance of certificates or compliance with certification programs.
  - Example: 5-6.2(e): Issuance of certificates and related actions under the Airport Certification Program
- Equipment and Instrumentation (5-6.3): Actions involving installation, repair, or upgrade of equipment or instruments necessary for operations and safety.
  - Example: 5-6.3(f): Installation or replacement of engine generators used in emergencies.
- Facility Siting, Construction, and Maintenance (5-6.4): Actions involving acquisition, repair, replacement, maintenance, or upgrading of grounds, infrastructure, buildings, structures, or facilities that generally are minor in nature.
  - Example: 5-6.4(a): Access road construction, and construction, relocation, or repair of entrance and service roadways that do not reduce the level of service on local traffic systems below acceptable levels.
- Procedural (5-6.5): Actions involving establishment, modification, or application of airspace and air traffic procedures.

- Example: 5-6.5(j): Implementation of procedures to respond to emergency air or ground safety needs, accidents, or natural events with no reasonably foreseeable long-term adverse impacts.

» Regulatory (5-6.6): Actions involving establishment of, compliance with, or exemptions to, regulatory programs or requirements.
  - Example: 5-6.6(a): All FAA actions to ensure compliance with Environmental Protection Agency aircraft emissions standards.

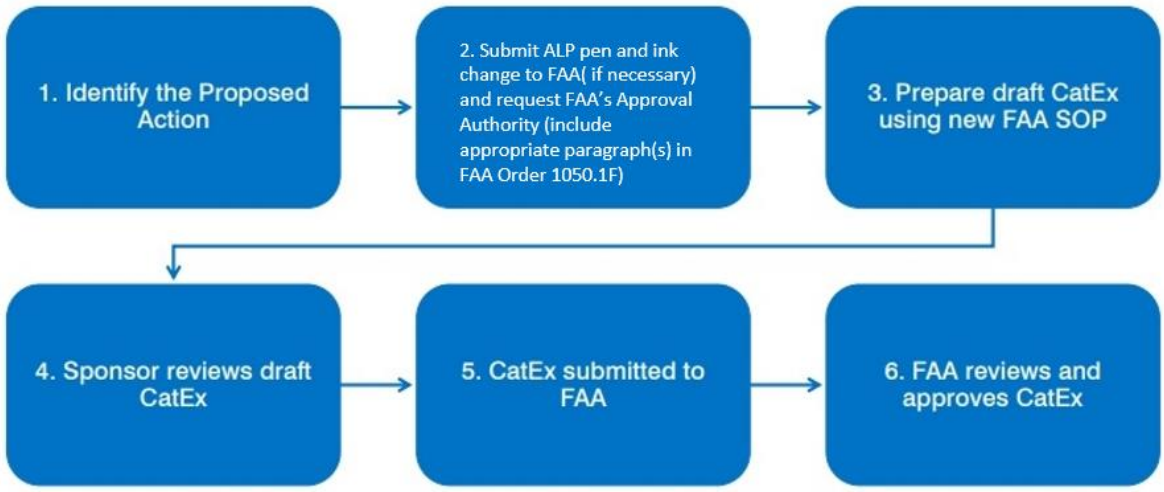
FAA Airport Standard Operating Procedure (SOP) 5.1, effective June 2, 2017,[1] describes two levels of information and documentation required for projects eligible for a CATEX:

» Simple Written Record CATEX

» Documented CATEX

For a simple written record CATEX, the project should meet the definition of a CATEX as described in FAA Order 1050.1F, paragraphs 5-6.1 through 5-6.6 and should not involve extraordinary circumstances, as described in FAA Order 1050.1F, paragraph 5-2. For a documented CATEX, the project would have actions where there is a greater potential for extraordinary circumstances or other reasons that warrant additional CATEX documentation in accordance with Order 1050.1F, paragraph 5-3b. As part of a documented CATEX, agency coordination may occur depending on a project's potential impacts on environmental categories. A public involvement process does not typically occur as part of a CATEX. **Figure 1** shows the Steps for Completing a CATEX.

FIGURE 1 STEPS FOR COMPLETING A CATEX



Note: According to 2024 CEQ Regulations and FAA Order 1050.1F.

[1] https://www.faa.gov/airports/resources/sops/media/arp-SOP-510-catex.pdf

1.2.3.2 Environmental Assessment (EA)

An EA is conducted to determine whether a proposed action has the potential to significantly affect the human environment. An EA must be prepared when the proposed action does not normally require an Environmental Impact Statement (EIS) and:

- Does not fall within the scope of a CATEX (see FAA Order 1050.1F Paragraph 5-6, the FAA's Categorical Exclusions); or
- Does fall within the scope of a CATEX, but there are one or more extraordinary circumstances (see FAA Order 1050.1F Paragraph 5-2, Extraordinary Circumstances).
    - Example: the proposed project impacts properties protected under the DOT Act, Section 4(f) (e.g., Airport project results in noise or land use impacts to publicly owned park).

An EA may be required if an action involves extraordinary circumstances. An extraordinary circumstance occurs when an action has the potential to have a significant environmental impact that requires further analysis. New CEQ guidance requires an EA to be no longer than 75 pages, not including pages with graphics or tables, projects will have 1 year to be completed once it has been placed on the Department of Transportation (DOT) Permitting Dashboard. The FAA lists proposed actions where extraordinary circumstances may exist, which include, but are not limited to: an adverse effect on cultural resources protected under the National Historic Preservation Act of 1966, as amended, 45 U.S.C. §300101 et seq; an impact on properties protected under Section 4(f); and an impact on natural, ecological, or scenic resources of federal, state, tribal, or local significance (e.g., federally listed or proposed endangered, threatened, or candidate species, or designated or proposed critical habitat under the Endangered Species Act, 16 U.S.C. §§ 1531-1544).

Depending on the potential environmental effects of a proposed action, there can be varying levels of EA documentation. For the Washington ADO and Eastern Region, these documents are:

- Eastern Region Condensed EA, and
- Full EA

A Condensed EA Form is disseminated by the FAA Washington Region to address a proposed action that may not be included within the designated CATEX categories but is not likely to involve extraordinary circumstances. A Full EA is NEPA documentation for a proposed action that has the potential to have extraordinary circumstances that can be mitigated. The FAA Washington ADO will determine which type of EA is the proper NEPA documentation for a proposed project at the Airport. **Figure 2** shows the EA Process.

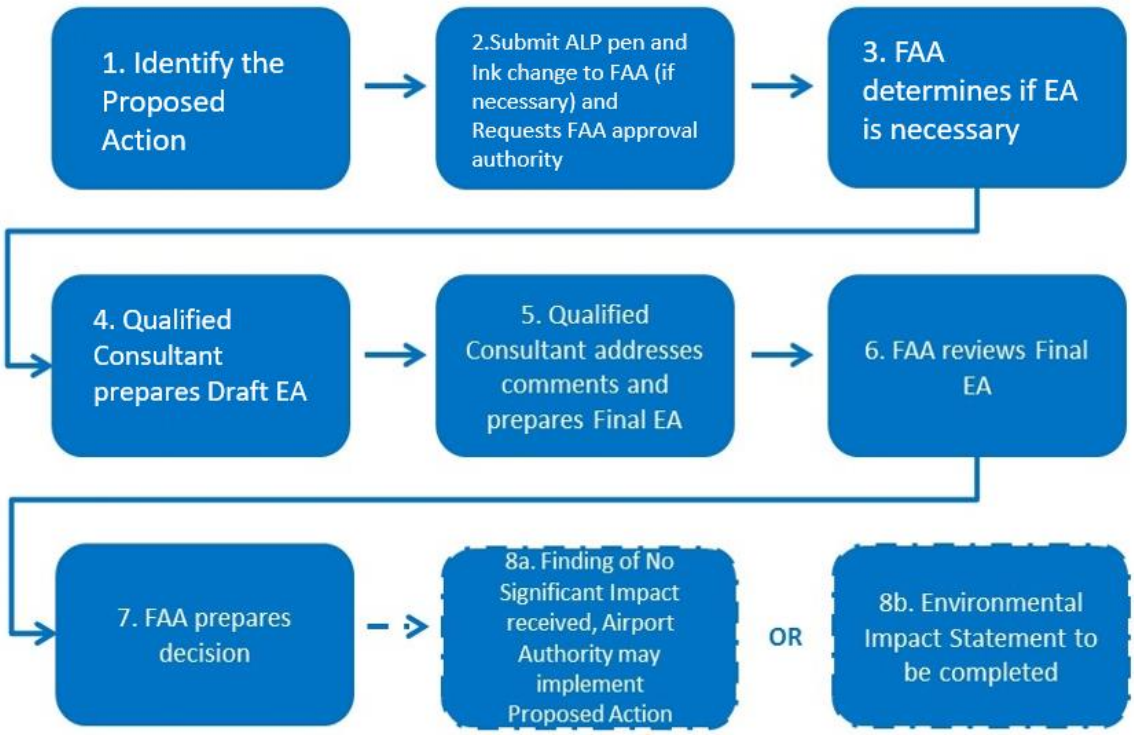
Some EA documents require technical studies and surveys to be completed in order to obtain an in-depth understanding of the project study area beyond what is available on web-based searches and historical information. Examples include but are not limited to wetlands delineations, Phase I ESA's, Biological species surveys, threatened and endangered species surveys, visual surveys, and simulations.

Agency coordination and public involvement are required as part of the EA process. According to FAA Order 1050.1F, paragraph 6-2.2b, "the FAA or applicant must involve the public, to the extent practicable, in preparing EAs. The appropriate level of public involvement for an EA is determined on a case-by-case basis and will vary based on the proposed action and the potential impacts." Coordination and consulting

with appropriate federal, state, tribal, and local officials must occur throughout the EA process to obtain information regarding potential environmental impacts.

Once a project has gone through the EA process and has been determined to have no potential for significant environmental impacts, the FAA issues a Finding of No Significant Impact (FONSI) or requires the completion of an Environmental Impact Statement (EIS).

FIGURE 2 EA PROCESS



Note: According to 2024 CEQ Regulations and FAA Order 1050.1F.

1.2.3.3 Environmental Impact Statement (EIS)

Under NEPA, the FAA must prepare an EIS for actions significantly affecting the quality of the human environment. An EIS is a detailed written statement required under Section 102(2)C of NEPA when one or more environmental impacts would be significant, and mitigation measures cannot reduce the impact(s) below significant levels. Direct, indirect, and cumulative impacts must be considered when determining significance. According to FAA Order 1050.1F, the following are actions that normally require an EIS:

- Location of a new commercial service airport in a Magnuson-Stevens Fishery Conservation and Management Act (MSA);;
- A new runway to accommodate air carrier aircraft at a commercial service airport in an MSA; and
- Major runway extension.

1.2.4 2024 CEQ NEPA Implementing Regulations (40 CFR Parts 1500 – 1508)

The Council on Environmental Quality (CEQ) is a division of the Executive Office of the President of the United States.[2] CEQ is responsible for developing procedures for federal agency implementation of NEPA. These procedures were initially promulgated in 1971 as guidelines and issued as regulations in 1978. In May 2024, CEQ comprehensively updated its NEPA regulations. These CEQ regulations became effective on July 1, 2024. Federal agencies, such as the FAA, are in the process of revising their NEPA implementing instructions to meet the requirements of the new regulations.

The complete 2024 CEQ update to the existing NEPA regulatory framework can be found on the Federal Register.[3] These changes substantially alter how the FAA implements NEPA; therefore, it is important that the City or its consultant review the updated guidance before beginning formal NEPA documentation.

1.3 ENVIRONMENTAL CONDITIONS

The purpose of considering environmental factors in airport master planning is to help the Airport Sponsor thoroughly evaluate airport development alternatives and to provide information that will help expedite subsequent environmental processing. For a comprehensive description of the existing environmental conditions at the Airport, environmental resource categories outlined in FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures,* and *FAA 1050.1F Desk Reference* were used as a guide that helped identify potential environmental effects during the planning process.

The FAA 1050.1F Desk Reference is a guidance document that provides explanatory guidance for environmental impact analysis performed to comply with the CEQ regulations set forth in CEQ 40 CFR. It is designed to complement the FAA Order 1050.1F and defines basic terms used throughout the Order. FAA anticipates an update to this desk reference will be completed in 2024. FAA Order 1050.1F requires the evaluation of airport development projects as they relate to specific environmental resource categories by outlining impacts and thresholds at which the impacts are considered significant. For some environmental resource categories, this determination can be made through calculations, measurements, or observations. However, other environmental resource categories require that the determination be established through correspondence with appropriate federal, state, and/or local agencies. A complete evaluation of the environmental resource categories identified in FAA Order 1050.1F is required during a categorical exclusion, environmental assessment, or environmental impact statement.

Future development plans at the Airport take into consideration environmental resources that are known to exist in the vicinity of the Airport. Early identification of these environmental resources helps avoid impeding development plans in the future.

This section provides an overview of resource categories defined in FAA Order 1050.1F, Chapter 4, and the 1050.1F Desk Reference as it applies to the environs at and surrounding the Airport. **Table 1** shows the potential environmental resource categories affected by each MPU identified project. **Table 2** summarizes

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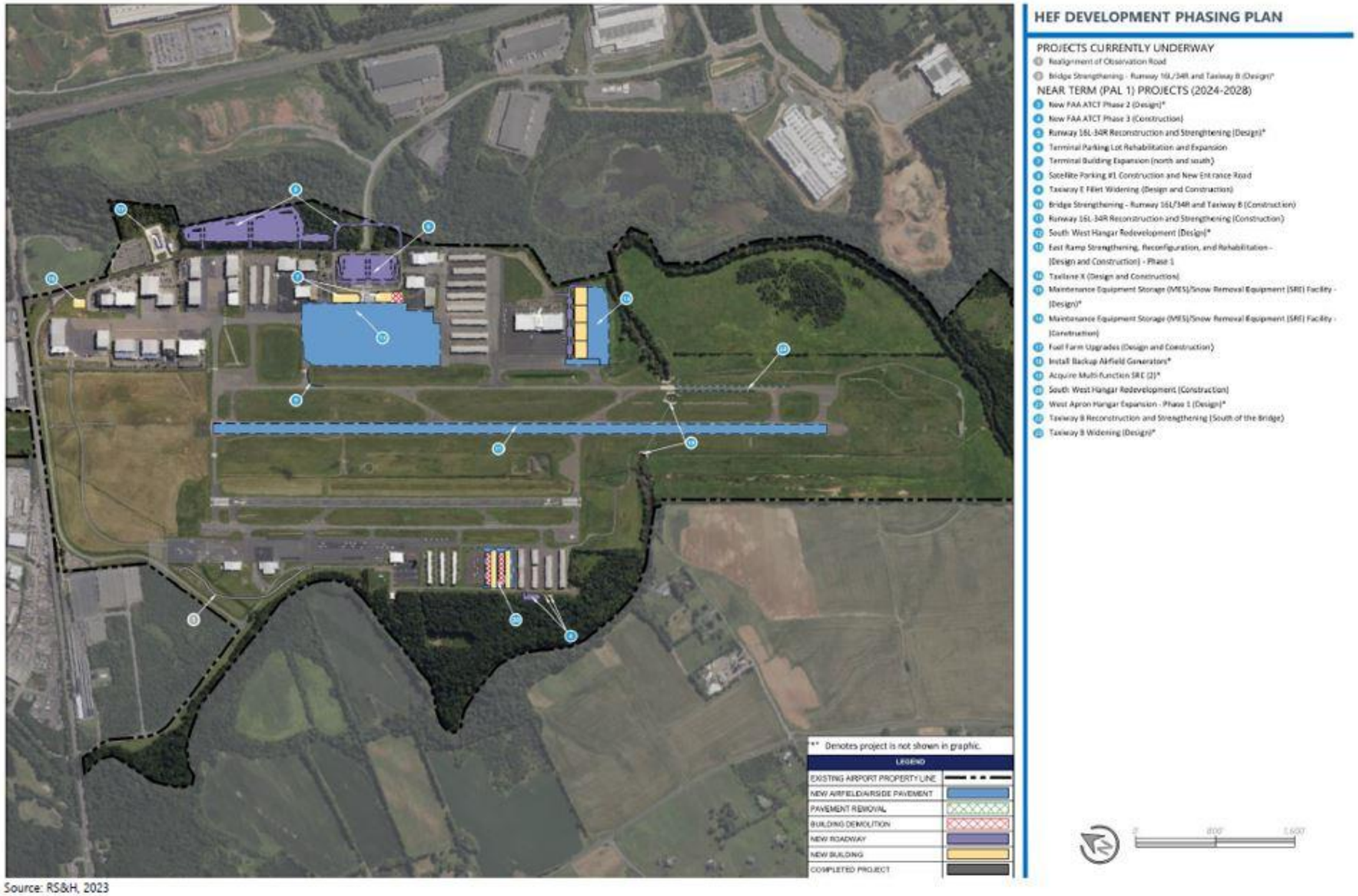
2 White House. (2021). *NEPA Modernization.* Retrieved January 2021 from: https://www.whitehouse.gov/ceq/nepa-modernization/.

3 The May 2024 CEQ update to the existing NEPA regulatory framework can be found here: Federal Register: National Environmental Policy Act Implementing Regulations Revisions Phase 2

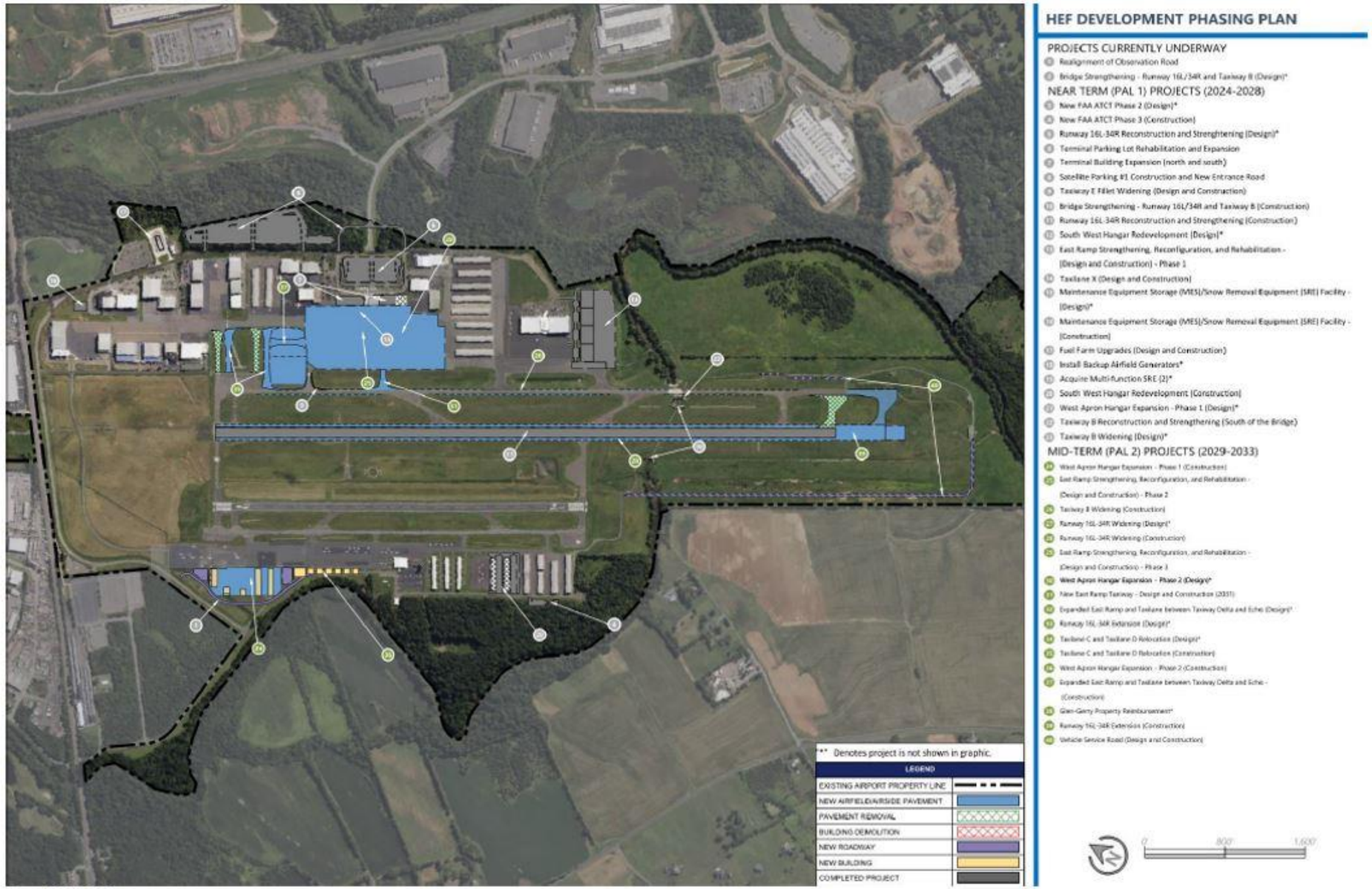
the environmental resource categories studied for the Master Plan Update. It is important to note that while the environmental analysis is included in this Master Plan Update, it is not in and of itself a NEPA document. **Figures 3, 4, and 5** show the Near-term, mid-term, and long-term projects expected at the Airport and identified through the Master Plan Update Process.

FIGURE 3 NEAR TERM PROJECTS



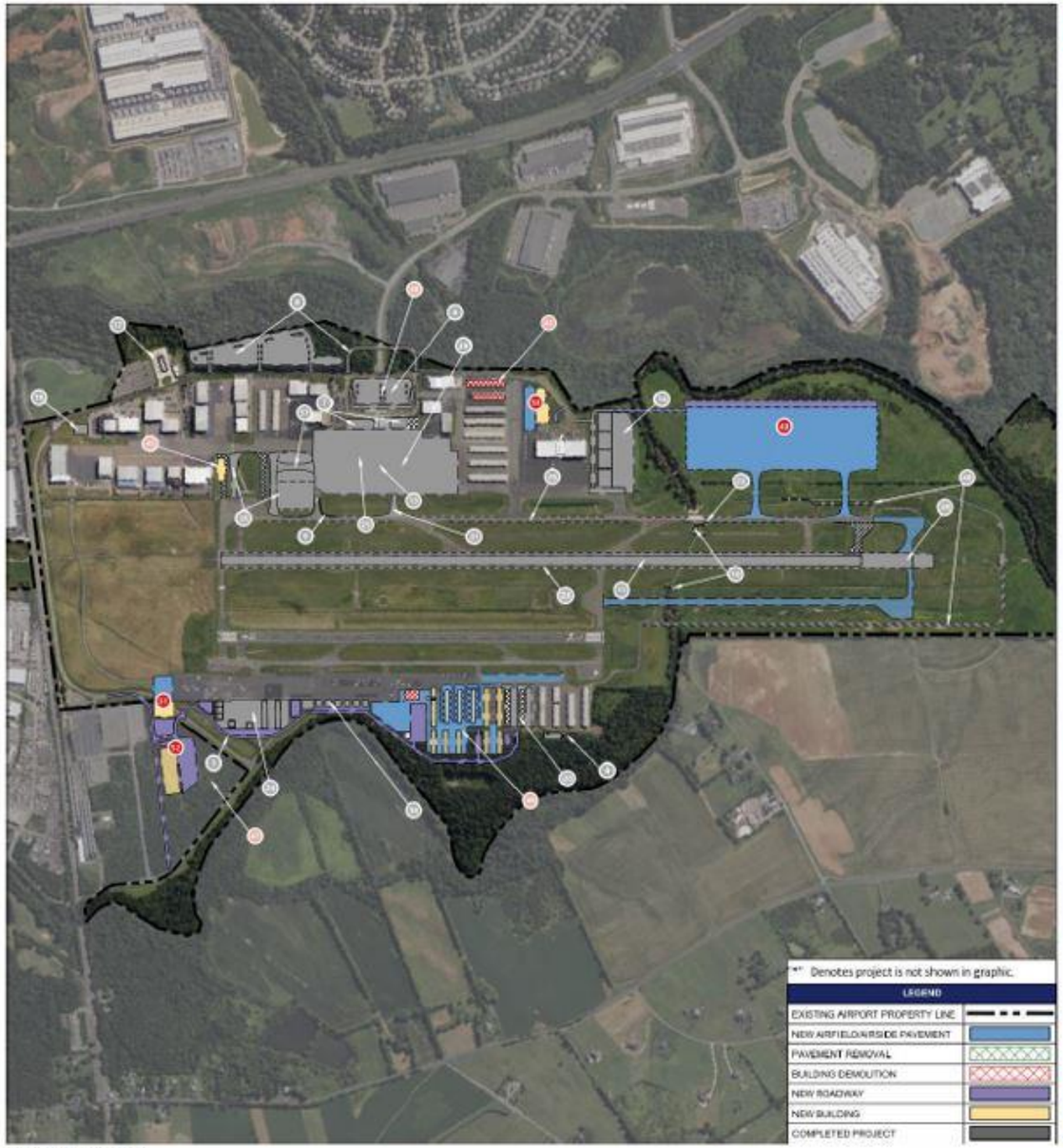
Source: RS&H, 2023

FIGURE 4 MID-TERM PROJECTS



Source: RS&H, 2024

FIGURE 5 LONG-TERM PROJECTS



HEF DEVELOPMENT PHASING PLAN

PROJECTS CURRENTLY UNDERWAY

- Realignment of Observation Road
- Bridge Strengthening - Runway 16L-34R and Taxiway B (Design)*

NEAR-TERM (PAL 1) PROJECTS (2024-2028)

- New FAA ATCT Phase 2 (Design)*
- New FAA ATCT Phase 3 (Construction)
- Runway 16L-34R Reconstruction and Strengthening (Design)*
- Terminal Parking Lot Rehabilitation and Expansion
- Terminal Building Expansion (north and south)
- Satellite Parking #1 Construction and New Entrance Road
- Taxiway J Fillet Widening (Design and Construction)
- Bridge Strengthening - Runway 16L-34R and Taxiway B (Construction)
- Runway 16L-34R Reconstruction and Strengthening (Construction)
- South West Hangar Redevelopment (Design)*
- East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 1
- Taxilane K (Design and Construction)
- Maintenance Equipment Storage (MES) and Snow Removal Equipment (SRE) Facility (Design)*
- Maintenance Equipment Storage (MES) and Snow Removal Equipment (SRE) Facility - (Construction)
- Fuel Farm Upgrades (Design and Construction)
- Install Backup Airfield Generators*
- Acquire Multi-function SRE (2)*
- South West Hangar Redevelopment (Construction)
- West Apron Hangar Expansion - Phase 1 (Design)*
- Taxiway B Reconstruction and Strengthening (South of the Bridge)
- Taxiway B Widening (Design)*

MID-TERM (PAL 2) PROJECTS (2029-2033)

- West Apron Hangar Expansion - Phase 1 (Construction)
- East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 2
- Taxiway B Widening (Construction)
- Runway 16L-34R Widening (Design)*
- Runway 16L-34R Widening (Construction)
- East Ramp Strengthening, Reconfiguration, and Rehabilitation - (Design and Construction) - Phase 3
- West Apron Hangar Expansion - Phase 2 (Design)*
- New East Ramp Taxiway - Design and Construction (2031)
- Expanded East Ramp and Taxilane between Taxiway Delta and Echo (Design)*
- Runway 16L-34R Extension (Design)*
- Taxilane C and Taxilane D Relocation (Design)*
- Taxilane C and Taxilane D Relocation (Construction)
- West Apron Hangar Expansion - Phase 2 (Construction)
- Expanded East Ramp and Taxilane between Taxiway Delta and Echo - (Construction)
- Glen Gerry Property Reimbursement*
- Runway 16L-34R Extension (Construction)
- Vehicle Service Road (Design and Construction)

LONG-TERM (PAL 3) PROJECTS (2034-2039)

- East Apron T-hangar (Demolition)
- ARFF Station (Design)*
- ARFF Station (Construction)
- Airport Master Plan Update*
- West Apron Hangar Expansion - Phase 3 (Design)*
- West Apron Hangar Expansion - Phase 3 (Construction)
- 8 Acre Land Acquisition - Prince William County
- Parking Garage Construction

BEYOND PLANNING PERIOD PROJECTS

- South East Airport Complex Site Development (Construction)
- East Apron Corporate Hangar Development
- West Apron AAM Terminal Facility
- West Apron Corporate Building

0' 1,000' 2,000'

Source: RS&H, 2023

RS&H

TABLE 1 SUMMARY OF ENVIRONMENTAL RESOURCE CATEGORIES WITH POTENTIAL IMPACTS

Airport Development Projects	YEAR	Air Quality	Biological Resources	Climate	Coastal Resources	DOT Act, Section 4(f)	Farmland	Hazardous Materials, Solid Waste, and Pollution Prevention	Historical, Architectural, Archeological, and Cultural Resources	Land Use	Natural Resources & Energy Supply	Noise and Noise-Compatible Land Use	Socioeconomics, Environmental Justice, and Children' s Health and Safety Risks	Visual Effects	Water Resources	CATEX[1]	EA[1]	EIS[1]
Near Term																		
Realignment of Observation Road- Construction	2024	N	N	N	N	N	N	Y	N	N	Y	N	N	N	N	5-6.4(a)		
Bridge Strengthening- Runway 16L/34R & Taxiway B- Design	2024	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
New FAA ATCT Phase 2- Design	2025	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
New FAA ATCT Phase 3- Construction	2025	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N		F	
Runway 16L/34R Reconstruction and Strengthening-Design	2025	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Terminal Parking Lot Rehabilitation, Expansion and Parking Garage- Design and Construction	2025	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(f)		
Terminal Building Expansion (North and South)- Design and Construction	2025	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	N	5-6.4(h)		
Satellite Parking 1 Construction and New Entrance Road- Design and Construction	2025	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(a & f)		
Taxiway E Fillet Widening -Design and Construction	2025	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Bridge Strengthening- Runway 16L/34R and Taxiway B- Construction	2025	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Runway 16L/34 Reconstruction and Strengthening- Construction	2026	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Southwest Hangar Redevelopment- Design	2026	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y*	N/A		
East Ramp Strengthening, Reconfiguration, and Rehabilitation-Design and Construction Phase 1	2026	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Taxilane X-Ray- Design and Construction	2026	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Maintenance Equipment Storage/Snow Removal Equipment Facility- Design	2026	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Maintenance Equipment Storage/Snow Removal Equipment Facility- Construction	2027	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	N	5-6.4(e)		
Fuel Farm Upgrades and Truck Staging Area- Design and Construction	2028	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	N	5-6.4(f & u)		
Install Backup Airfield and Terminal Generators	2028	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Acquire Multi-function SRE (2)	2028	N	N	N	N	N	N	N	N	N	N	N	N	N	N	5-6.4(w)		

Airport Development Projects	YEAR	Air Quality	Biological Resources	Climate	Coastal Resources	DOT Act, Section 4(f)	Farmland	Hazardous Materials, Solid Waste, and Pollution Prevention	Historical, Architectural, Archeological, and Cultural Resources	Land Use	Natural Resources & Energy Supply	Noise and Noise-Compatible Land Use	Socioeconomics, Environmental Justice, and Children's Health and Safety Risks	Visual Effects	Water Resources	CATEX[1]	EA[1]	EIS[1]
Southwest Hangar Redevelopment- Design	2028	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N/A		
West Apron Hangar Expansion Phase 1- Design	2028	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Taxiway B Reconstruction and Strengthening (South of Bridge)	2028	N	N	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(e)		
Taxiway B Widening- Design	2028	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Mid Term																		
West Apron Hangar Expansion Phase 1-Construction	2029	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(e& f)		
East Ramp Strengthening, Reconfiguration, Rehabilitation Phase 2- Design and Construction	2029	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Taxiway B Widening- Construction	2029	N	N	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(e)		
Runway 16L/34R Widening- Design	2029	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Runway 16L/34R Widening- Construction	2030	N	N	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(e)		
East Ramp Strengthening, Reconfiguration and Rehabilitation Phase 3- Design and Construction	2031	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
West Apron Hangar Expansion Phase 2- Design	2031	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
New East Ramp Taxiway- Design and Construction	2031	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(e)		
Expanded East Ramp and Taxilane between Taxiway Delta and Echo- Design	2031	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Runway 16L-34R Extension- Design	2032	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Taxilane C and Taxilane D Relocation- Design	2032	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Taxilane C and Taxilane D Relocation- Construction	2032	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	N	5-6.4(e)		
West Apron Hangar Expansion Phase 2- Construction	2032	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(e)		
Expanded East Ramp and Taxilane between Taxiway Delta and Echo- Construction	2032	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	N	5-6.4(e)		
Glen-Gerry Property Reimbursement	2033	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Runway 16L/34R Extension- Design	2033	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
Vehicle Service Road- Design and Construction	2033	N	Y	N	N	N	N	Y	N	N	N	N	N	N	Y*	5-6.4(e)		
Long Term																		

Airport Development Projects	YEAR	Air Quality	Biological Resources	Climate	Coastal Resources	DOT Act, Section 4(f)	Farmland	Hazardous Materials, Solid Waste, and Pollution Prevention	Historical, Architectural, Archeological, and Cultural Resources	Land Use	Natural Resources & Energy Supply	Noise and Noise-Compatible Land Use	Socioeconomics, Environmental Justice, and Children' s Health and Safety Risks	Visual Effects	Water Resources	CATEX[1]	EA[1]	EIS[1]
East Apron T-Hangar- Demolition	2034	N	N	N	N	N	N	Y	N	N	N	N	N	N	N		T	
ARFF Station- Design	2034	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
ARFF Station- Construction	2034	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	N	5-6.4(f)		
Airport Master Plan Update	2035	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
West Apron Hangar Expansion Phase 3- Design	2036	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N/A		
West Apron Hangar Expansion Phase 3- Construction	2037	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*	5-6.4(f)		
8-Acre Land Acquisition- Prince William County	2040	N	Y	N	N	N	Y	N	N	Y	N	Y	N	Y	N		F	
Parking Garage Construction	2040	N	Y	N	N	N	N	Y	N	N	Y	Y	Y	N	Y*		F	
Beyond Planning Period Projects																		
Southeast Airport Complex Site Development- Design	N/A	N	N	N	N	N	N	N	N	N	N	N	N	N	Y*		F	
East Apron Corporate Hangar Development	N/A	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(f)		
West AAM Terminal Facility	N/A	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(f)		
West Apron Corporate Building	N/A	N	Y	N	N	N	N	Y	N	N	Y	N	Y	N	Y*	5-6.4(f)		

Notes: - [1] To be verified with the FAA Washington ADO when project is "Ripe" for an FAA decision; *- Wetlands OR Floodplains; F –Full, Standard EA; T – Templatized/ Condensed EA; N/A- Design projects not categorized under NEPA

TABLE 2 SUMMARY OF ENVIRONMENTAL RESOURCE CATEGORIES STUDIED

Environmental Resource	Description
Air Quality	The Airport is located in an area designated as "maintenance" for Ozone and "attainment" for all other National Ambient Air Quality Standards (NAAQS).
Biological Resources	Federal- and state-threatened, –endangered and candidate species and migratory birds are in the Airport area. There is no critical habitat at the Airport. See Section 1.3.2 for further details.
Climate	There are greenhouse gas (GHG) emissions (e.g., Carbon dioxide Nitrous Oxide, etc.) produced at the Airport.
Coastal Resources	A portion of the Airport is within Virginia's Coastal Zone Management Program; however, there are no Coastal Barrier Resource System (CBRS) segments within the Airport property.
Department of Transportation Act, Section 4(f)	There are no Section 4(f) properties on Airport property. The closest Section 4(f) property to the Airport is Cannon Branch Earthwork Fort, located adjacent to the Airport property in the northeast section of the Airport.
Farmlands	The Airport property contains prime farmland and farmland of statewide importance soil types. However, because the Airport is located with a U.S. Census Bureau designated Urban Area, it is exempt from the Farmland Protection Policy Act (FPPA) and would not have to complete farmland conversion application.
Hazardous Materials, Solid Waste, and Pollution Prevention	There are six Resource and Recovery Act (RCRA) Hazardous Waste Generators on Airport property. Solid waste generated at the Airport is disposed of at the Manassas Transfer Station. The City has a Virginia Pollutant Discharge Elimination System Permit (VPDES) General Permit (VAR050985). The City also maintains an Oil Discharge Contingency Plan, an Integrated Spill Prevention, Control and Countermeasures (SPCC) Plan, and a Stormwater Pollution Prevention Plan (SWPPP) for the Airport.
Historical, Architectural, Archaeological and Cultural Resources	There are no historic architectural resources located at the Airport. At a small portion of Airport property, a Phase I cultural resources survey previously completed in 2017. This survey did not identify any cultural resources. Additionally, a Phase I ESA was conducted in 2024 in a small southwest portion of the Airport for the Air Traffic Control Tower Replacement Environmental Assessment. This survey did not identify any cultural resource The closest National Register of Historic Places (NRHP)-listed resource is the Davis Beard House (10726 Bristow Road), about one-third mile west of the

Environmental Resource	Description
	Airport. Cannon Branch Fort (VDHR #155-5020) is a historic fort associated with the Civil War, which is potentially eligible for listing on the NRHP. The Fort is adjacent to Airport property in the northeast section of the Airport. Bristoe Station Heritage Park, a Prince Williams County Park, is located about 1 mile west of the Airport. Manassas Battlefield Park (Virginia Department of Historic Resources ID # 076-0271) is located about 6 miles northeast of the Airport. A Phase I archaeological survey was conducted for two portions of the Airport in 2017. One archaeological site, Site 44PW0729, has been identified within the Airport property, west of the Air Traffic Control Tower. This site has subsurface integrity and is interpreted as a campsite.
Land Use	Current land uses surrounding the Airport include classifications such as Airport, Technology Community Mixed Use, Flexible Use Employment Center, Agricultural and Forestry, and Federal property.
Natural Resources and Energy Supply	Electrical power is provided by The City of Manassas through a cooperative agreement with Dominion Power. to the Airport. City of Manassas Utilities Department provides water and Prince William County Service Authority provides sewer services. Washington Gas provides natural gas.
Noise and Noise-Compatible Land Use	The Airport is zoned as an Airport District. It is bordered by areas zoned as industrial to promote compatible development in and around the Airport. Areas bordering the Airport in Prince William County are zoned as Agricultural, Industrial, and Planned Business District.
Socioeconomics, Environmental Justice, Children's Environmental Health, and Safety Risks	The Airport is located within Manassas City, Census Tract 9104.2, Block Group 5 and surrounded by Manassas, VA and Census Tracts 9103.02, 9104.01, and Prince William County, VA and Census Tracts 9103.05, 9014.09, 9013.04, and 9013.03. Of the total population living within the census tract, bout 45% are minority and 20% live below the poverty level. About 24% of the population is people 18 or younger. The closest school to the Airport is George C. Round Elementary School, located about 1 mile northwest of the Airport.
Visual Effects	Light emissions at the Airport currently result from airfield, building, access roadway, parking, and apron area lighting fixtures required for the safe and secure movement of people, vehicles, and aircraft. The visual resources and visual character of the Airport currently include the air traffic control tower, fixed base operators, hangars, and maintenance buildings.

Environmental Resource	Description
Water Resources	Airport property contains wetlands. Palustrine wetland features are on the east side of the Airport. Floodplains, including 100- and 500-year floodplain, are features throughout Airport property and a regulatory floodway that is part of Broad Creek in the southwest area of the Airport. Surface waters at, and in the vicinity of, the Airport include Broad Run and Cannon Branch. The Airport property is in the Rocky Branch-Broad Run watersheds. The Airport property does not contain any wild and scenic rivers.

Prepared by: RS&H, 2024

1.3.1 Air Quality

The U.S. Environmental Protection Agency (USEPA) sets NAAQS for certain air pollutants to protect public health and welfare through Section 109 of the Clean Air Act (CAA). The USEPA has identified the following six criteria air pollutants and has set NAAQS for them: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO_2), 8-Hour Ozone (O_3), Particulate Matter (PM_{10} and $PM_{2.5}$), and Sulfur Dioxide (SO_2).

Areas that violate one or more NAAQS of these pollutants are classified as "nonattainment" areas. States with "nonattainment" areas must develop a State Implementation Plan (SIP) demonstrating how the areas will be brought back into "attainment" of the NAAQS within designated timeframes. Areas where concentrations of the criteria pollutants are below (i.e., within) these threshold levels are classified as "attainment" areas. Areas with prior "nonattainment" status that have since transitioned to "attainment" are known as "maintenance" areas.

According to the United States Environmental Protection Agency (USEPA), the Airport, located in the City of Manassas, is in a "maintenance" area for O_3 and is in an "attainment" area for all other NAAQS.[4] As the USEPA requires, the Metropolitan Washington Air Quality Committee, which is made up of much of the Washington D.C., Maryland and Northern Virginia area, including Prince William County and the City of Manassas, has a SIP for the O_3 standard.[5] According to the Virginia Department of Environmental Quality (VDEQ), the Airport is within an emission control area for oxides of nitrogen (NOx) and volatile organic compounds (VOCs).[6] The FAA Federal Presumed to Conform Actions under General Conformity can be found in the Federal Register, Volume 72, No.145; section 2 lists specific federal actions related to airports that do not require detailed general conformity analyses under the Clean Air Act. This includes activities that are presumed to meet air quality standards and normally do not require further review. However, each project would require FAA Coordination to make the final determination on whether a project meets

[4] U.S. Environmental Protection Agency, Air Quality Green Book, Virginia. Accessed: https://www3.epa.gov/airquality/greenbook/anayo_va.html, May 2024.

[5] Metropolitan Washing Council of Governments, Washington DC-MD-VA 2015 Ozone NAAQS Nonattainment Area Base Year 2017 Emissions Inventory (Updated on October 30,2020). Accessed: https://www.mwcog.org/documents/2020/10/30/washington-dc-md-va-2015-ozone-naaqs-nonattainment-area-base-year-2017-emissions-inventory-updated-on-october-302020-air-quality-air-quality-conformity-ozone/, May 2024.

[6] Virginia Legislative Information System, Administrative Code 9VAC5-20-206. Volatile organic compound and nitrogen oxides emissions control areas. Accessed: https://law.lis.virginia.gov/admincode/title9/agency5/chapter20/section206/, May 2024.

presumed to conform standards or if an air quality analysis including a Construction Emissions Inventory would be required.

1.3.2 Biological Resources

Biological resources include terrestrial and aquatic plant and animal species; game and non-game species; special status species; and environmentally sensitive or critical habitats. The following are relevant federal laws, regulations, Executive Orders (EOs), and guidance[7] that protect biotic communities:

- Endangered Species Act (ESA) (16 U.S.C. §§ 1531-1544)
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668 et seq.)
- Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- Executive Order (EO) 13112, *Invasive Species* (64 FR 6183)
- Marine Mammal Protection Act (16 U.S.C. § 1361 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703 et seq.)
- EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (66 FR 3853)
- Council on Environmental Quality (CEQ) Guidance on Incorporating Biodiversity Considerations into Environmental Impact Analysis under NEPA; and
- Memorandum of Understanding to Foster the Ecosystem Approach.

Table 3 lists the three federally threatened, endangered or candidate species that have the potential to be found at the Airport.[8] According to the U.S. Fish and Wildlife Service (USFWS), there is no designated critical habitat at the Airport.[9] Although the Endangered Species Act does not protect state-protected species or habitats, NEPA documentation ensures that environmental analysis for airport actions addresses the potential effects on state-protected resources. The Virginia Department of Game and Inland Fisheries (VDGIF) Information System (VaFWIS) indicates that nine Commonwealth-listed species may occur within two miles of Airport property.[10] **Table 4** lists the twelve state-listed species with the potential to occur at the Airport.

The Broad Run Stream Conservation Unit is adjacent to the Airport on the west side. The Broad Run Stream Conservation Unit has a biodiversity ranking of B3, which represents a site of high importance. Natural heritage resources for the Brook floater and Yellow lance are associated with that Unit. The VDGIF also designates Broad Run as a "Threatened and Endangered Species Water" for the Brook floater.[11]

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7 Due to the number of federal laws and EOs applicable to development plans, this section presents only the legal citations or references for those requirements in lieu of summarizing their requirements. See FAA's 1050.1F Desk Reference for more.

8 U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC). Accessed: https://ipac.ecosphere.fws.gov/location/WGTIE2AQFFBGXFI5WFTGGH7ZBY/resources#endangered-species, May 2024.

9 U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC). Accessed: https://ipac.ecosphere.fws.gov/location/WGTIE2AQFFBGXFI5WFTGGH7ZBY/resources#endangered-species, May 2024.

10 Virginia Department of Game and Inland Fisheries, Virginia Fish and Wildlife Information Service. Accessed: https://services.dwr.virginia.gov/fwis/index.asp, May 2024.

11 Commonwealth of Virginia, Department of Environmental Quality, Letter RE: Federal Consistency Certification for the Manassas Regional Airport West Corporate Development and East Parcel Development, City of Manassas, and Prince William County, DEQ 17-061 F, October 24, 2017.

TABLE 3 FEDERALLY LISTED SPECIES WITH THE POTENTIAL TO OCCUR IN OR AROUND AIRPORT PROPERTY

Species Common Name	Species Scientific Name	Listing Status
Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered
Monarch Butterfly	*Danaus plexippus*	Candidate
Northern Long-eared Bat	*Myotis septentrionalis*	Federally Threatened
Tricolored Bat	*Perimyotis subflavus*	Proposed Endangered

Source: USFWS, 2024; Prepared by RS&H, 2024

The Migratory Bird Treaty Act (MBTA) prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. According to the USFWS IPaC, there is the potential for five migratory bird species to be found at the Airport, see **Table 5** for a complete list.[12]

Essential Fish Habitat (EFH) are those waters and substrate necessary for fish spawning, breeding, feeding, and growth to maturity as defined under the MSA. The MSA also requires federal agencies to consult with NOAA Fisheries about actions that could damage EFH. The Airport is not located in an EFH area.[13]

TABLE 4 STATE-LISTED SPECIES WITH THE POTENTIAL TO OCCUR IN OR AROUND AIRPORT PROPERTY

Species Common Name	Species Scientific Name	Listing Status
Atlantic Sturgeon	*Acipenser oxyrinchus*	State Endangered / Federally Endangered
Northern long-eared bat	*Myotis septentrionalis*	State Threatened / Federally Threatened
Little Brown Bat	*Myotis lucifugus lucifugus*	State Endangered
Tricolored Bat	*Perimyotis subflavus*	State Endangered
Brook Floater	*Alasmidonta varicose*	State Endangered
Peregrine Falcon	*Falco peregrinus*	State Threatened
Loggerhead Shrike	*Lanius ludovicianus*	State Threatened
Henslow's Sparrow	*Ammodramus henslowii*	State Threatened
Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*	State Threatened
Yellow Lance	*Elliptio lanceolata*	State Threatened
Wood Turtle	*Glyptemys insculpta*	State Threatened
Appalachian Grizzled Skipper	*Pyrgus Wyandot*	State Threatened

Source: VDGIF, 2024; Prepared by RS&H, 2024

[12] U.S. Fish and Wildlife Service, Information for Planning and Conservation (IPaC). Accessed: https://ipac.ecosphere.fws.gov/location/WGTIE2AQFFBGXFI5WFTGGH7ZBY/resources#endangered-species, May 2024.

[13] National Marine Fisheries Service, Essential Fish Habitat Mapper. Accessed: https://www.habitat.noaa.gov/apps/efhmapper/, May 2024.

TABLE 5 POTENTIAL MIGRATORY BIRDS IN THE AIRPORT AREA

Species Common Name	Species Scientific Name
Bald Eagle	*Haliaeetus leucocephalus*
Prairie Warbler	*Dendroica discolor*
Red-headed Woodpecker	*Melanderpes erythrocephalus*
Rusty Blackbird	*Euphagus carolinus*
Wood Thrush	*Hylocichla mustelina*

Source: USFWS, 2024; Prepared by RS&H, 2024

1.3.3 Climate

Relevant federal laws, regulations, and EOs that relate to climate include:

- CAA (42 U.S.C. §§ 7408, 7521, 7571, 7661 et seq.)
- EO 13514, *Federal Leadership in Environment Energy and Economic Performance* (74 FR 52117);
- EO 13653, *Preparing the United States for the Impacts of Climate Change* (78 FR 66817); and
- EO 13693, *Planning for Federal Sustainability* (80 FR 15869).

Greenhouse gases (GHG) trap heat in the earth's atmosphere. Naturally occurring and man-made GHGs primarily include water vapor, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Activities that require fuel or power are the primary stationary sources of GHGs at airports. Aircraft and ground access vehicles not controlled by an airport typically generate more GHG emissions than airport-controlled sources.

Research has shown a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the Government Accountability Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data, "compared with other industrial sources, including the remainder of the transportation sector (20 percent) and power generation (41 percent). The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally.[14]

Construction emissions are estimated based on these factors: construction schedule; the number of construction vehicles and/or equipment; the types of construction vehicles and/or equipment; types of fuel used to power the equipment and vehicles; vehicle and equipment hourly activity/vehicle miles traveled; construction materials used and their quantities; and the duration of construction.

In January 2023, the Council on Environmental Quality (CEQ) issued interim guidance, *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change,* to assist agencies in analyzing greenhouse gas emissions (GHG) and climate change effects of a Proposed Project under NEPA. The FAA has not established a significance threshold for Climate impacts.

The CEQ identified Social Cost-Greenhouse Gases (SC-GHG) as the metric for assessing potential climate impacts and represents the monetary estimate of the effect associated with each additional metric ton of

[14] Melrose, Alan, *European ATM and Climate Adaptation: A Scoping Study*, ICAO Environmental Report, 2010. Accessed: http://www.icao.int/environmental-protection/Documents/EnvironmentReport-2010/ICAO_EnvReport10-Ch6_en.pdf, May 2021.

carbon dioxide released into the air (Interagency Working Group, 2021). The three GHGs[2] that are analyzed are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), which represent more than 97% of U.S. GHG emissions. To calculate SC-GHG, the carbon dioxide equivalent (CO_2e) must be calculated. The Interagency Working Group (IWG) determined the social cost of CO_2 ($SC\text{-}CO_2$) through 2050 and assigned a monetary value[3] for each additional metric ton of CO_2 produced. $SC\text{-}CO_2$ is equivalent to SC-GHGs and represents the social costs of the total greenhouse gases converted to the CO_2e equivalent. The $SC\text{-}CO_2$ helps weigh the benefits of climate mitigation against its costs.

1.3.4 Coastal Resources

The primary statutes, regulations, and EOs that protect coastal resources include:

- Coastal Barrier Resources Act (16 U.S.C. § 3501 et seq.);
- Coastal Zone Management Act (CZMA) (16 U.S.C. § 1451-1466);
- National Marine Sanctuaries Act (16 U.S.C. §1431 et seq.);
- EO 13089, *Coral Reef Protection* (63 FR 32701); and
- EO 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes* (75 FR 43021-43027).

Portions of Airport property are in Prince William County, within Virginia's Coastal Zone Management (CZM) Program, according to the Virginia Department of Environmental Quality (VDEQ).[15] The Virginia CZM Program has the following goals.[16]

- "Goal 1: To protect and restore coastal resources, habitats, and species of the Commonwealth. These include, but are not limited to, wetlands, subaqueous lands and vegetation, beaches, sand dune systems, barrier islands, underwater or maritime cultural resources, riparian forested buffers, and endangered or threatened species.
- Goal 2: To restore and maintain the quality of all coastal waters for human and ecosystem health through protection from adverse effects of excess nutrients, toxics, pathogens, and sedimentation.
- Goal 3: To protect air quality.
- Goal 4: To reduce or prevent losses of coastal habitat, life, and property caused by shoreline erosion, storms, relative sea level rise, and other coastal hazards in a manner that balances environmental and economic considerations.
- Goal 5: To provide for sustainable wild fisheries and aquaculture.
- Goal 6: To promote sustainable ecotourism and to increase and improve public access to coastal waters and shorefront lands compatible with resource protection goals.
- Goal 7: To promote renewable energy production and provide for appropriate extraction of energy and mineral resources consistent with proper environmental practices.
- Goal 8: To ensure sustainable development on coastal lands and support access for water-dependent development through effective coordination of governmental planning processes.

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[15] Virginia Department of Environmental Quality, CZM Boundaries. Accessed: https://www.deq.virginia.gov/home/showpublisheddocument/4078/637461463603670000, May 2024.

[16] Virginia Department of Environmental Quality, letter to National Oceanic and Atmospheric Administration, September 4, 2018. Accessed: https://www.deq.virginia.gov/home/showpublisheddocument/13129/637776597193170000, May 2024.

- Goal 9: To avoid and minimize coastal and ocean resource use conflicts through research, planning, and a forum for coordination and facilitation among local, regional, state and federal government agencies, interest groups, and citizens.
- Goal 10: To promote informed decision-making by maximizing the availability of up-to-date educational information, technical advice, and scientific data including the use of new tools such as marine spatial planning."

The Virginia CZM Program also contains the Chesapeake Bay Preservation Act, which establishes resource protection areas (RPAs) around land at or near the shoreline that play a critical role in the water quality value. RPAs have a 100-foot vegetation buffer along streams or rivers to help protect water quality. See **Figure 6** for the Prince William County designated RPAs in and around Airport property. Although RPAs are shown within the limits of the City of Manassas, the City of Manassas does not recognize RPAs because it is not part of the Virginia CZM Program and, therefore, is not subject to the Chesapeake Bay Preservation Act, which establishes RPAs[17]. With regards to the RPA in the eastern portion of the Airport property, an on-site delineation of the Cannon Branch RPA within the eastern portion of the Airport property was reviewed and approved by Prince William County.

[17] Chesapeake Bay Regulations/RPA's. Prince William Conservation Alliance. https://www.pwconserve.org/issues/chesbay.html Accessed June 2024

FIGURE 6 RESOURCE PROTECTION AREAS

According to Prince William County, all creeks and streams in the County are subject to RPA buffers because they feed into the Potomac River and eventually to the Chesapeake Bay.[18] Any work within an RPA requires County review and approval. The County does not allow the following activities in an RPA:

- New development
- Parking lots
- Clear-cutting trees
- Filling and grading activities
- Establishing Lawns

Additionally, no Coastal Barrier Resource System (CBRS) segments are within the Airport property.[19] The closest CBRS segment, St. Catherine Island (MD-56), is over 50 miles southeast of the Airport.

1.3.5 Department of Transportation, Section 4(f)

Relevant federal laws, regulations, and EOs that protect Section 4(f) resources include:

- U.S. Department of Transportation (USDOT) Act, Section 4(f) (49 U.S.C. § 303.);
- Land and Water Conservation Fund Act of 1965 (16 U.S.C. §§ 4601-4604 et seq.);
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – Section 6009 (49 U.S.C. § 303.); and
- U.S. Department of Defense Reauthorization (Public Law (P.L.) 105-185, Division A, Title X, Section 1079, November 18, 1997, 111 Stat. 1916).

The USDOT Act, Section 4(f) provides that no project that requires the use of any land from a public park or recreational area, wildlife and waterfowl refuge, or historic site be approved by the Secretary of Transportation unless there is no viable alternative and provisions to minimize any possible harm are included in the planning. Similarly, the Land and Water Conservation Fund (LWCF) Act prevents the conversion of lands purchased or developed with Land and Water Conservation funds to non-recreation uses unless the Secretary of the Interior, through the National Park Service, approves the conversion. Conversion may only be approved if it is consistent with the comprehensive statewide outdoor recreation plan when the approval occurs. Additionally, the converted property must be replaced with other recreation property of reasonably equivalent usefulness and location and at least equal fair market value.

The closest Section 4(f) property to the Airport is Cannon Branch Earthwork Fort, located adjacent to the Airport property in the northeast section of the Airport.20 The closest LWCF site to the Airport is Dean Park, located about 1.5 miles east of the Airport, which received about $500,000 in LWCF funds in 2017.21. Bristoe Station Heritage Park, a Prince Williams County Park, is located about 1 mile west of the Airport. Manassas Battlefield Park (Virginia Department of Historic Resources ID # 076-0271) is located about 6 miles northeast of the Airport. At a small portion of Airport property, a Phase I cultural resources survey

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18 Prince William County, Resource Protection Areas. Accessed: https://www.pwcva.gov/department/environmental-services/resource-protection-areas, May 2024.

19 U.S. Fish and Wildlife Service, Coastal Barrier Resources System Mapper. Accessed: https://www.fws.gov/cbra/Maps/Mapper.html, May 2024.

20 City of Manassas, Parks, Recreation, and Culture, Map. Accessed: https://www.manassasva.gov/Parks-Culture-Recreation/Parks/Map_Parks_11x17.pdf, March 2022.

21 Land Water Conservation Fund, Virginia. Accessed: https://lwcf.tplgis.org/mappast/, March 2022.

previously completed in 2017. This survey did not identify any cultural resources. [22] Additionally, a Phase I ESA was conducted in 2024 in a small southwest portion of the Airport for the Air Traffic Control Tower Replacement Environmental Assessment. This survey did not identify any cultural resource.[23] **Figure 7** shows Section 4(f) resources, as well as Section 6(f), Historical, and Archaeological sites.

[22] Elizabeth Anderson Comer Archaeology. Phase I Cultural Survey. 2017.

[23] Mannik & Smith Group. Phase I Cultural Survey. 2024.

FIGURE 7 SECTION 4(F), SECTION 6(F), ARCHITECTURAL, ARCHAEOLOGICAL RESOURCES

1.3.6 Farmlands

The following statutes, regulations, and guidance pertain to farmlands:

- Farmland Protection Policy Act (FPPA) (7 U.S.C. §§ 4201-4209); and
- CEQ Memorandum on the Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act (45 FR 59189).

The FPPA of 1981 regulates federal actions that have the potential to convert farmland to non-agricultural uses. The FAA requires consideration of "important farmlands," which it defines as "all pasturelands, croplands, and forests (even if zoned for development) considered to be prime, unique, or statewide or local important lands."[24]

According to the Natural Resource Conservation Service (NRCS), portions of Airport property contain soils classified as prime farmland and farmland of statewide importance (see **Figure 8**).[25] However, most Airport property is within an area that the U.S. Census Bureau (USCB) identifies as an urban area complex.[26] Under Section 523(10)(B) of the Farmland Protection Policy Act, land that the U.S. Census Bureau identifies as urbanized areas is not subject to the provisions of the Farmland Protection Policy Act. **Figure 8** shows an excerpt from the Urbanized Area Map with the Airport property outlined in yellow.

1.3.7 Hazardous Materials, Solid Waste, and Pollution Prevention

Federal laws, regulations, and EOs that relate to hazardous materials, solid waste, and pollution prevention include:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. §§ 9601-9765)
- Emergency Planning and Community Right to Know Act (42 U.S.C. §§ 11001-11050);
- Federal Facilities Compliance Act (42 U.S.C. § 6961);
- Hazardous Materials Transportation Act (49 U.S.C. §§ 5101-5128);
- Oil Pollution Prevention Act of 1990 (33 U.S.C. §§ 2701-2762);
- Pollution Prevention Act (42 U.S.C. §§ 13101-13109);
- Toxic Substances Control Act (TSCA) (15 U.S.C. §§ 2601-2697);
- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §§ 6901-6992k);
- EO 12088, *Federal Compliance with Pollution Control Standards* (43 FR 47707);
- EO 12580, *Superfund Implementation* (52 FR 2923), (63 CFR 45871), and (68 CFR 37691);
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919); and
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (74 FR 52117).

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[24] Federal Aviation Administration, *1050.1F Desk Reference*, February 2020. Accessed: May 2024.

[25] Natural Resources Conservation Service, Web Soil Survey. Accessed: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx, May 2024.

[26] U.S. Census Bureau, 2010 Census – Urbanized Area Reference Map: Washington, DC – VA – MD. Accessed: https://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/ua92242_washington_dc--va--md/DC10UA92242.pdf, May 2024.

FIGURE 8 FARMLAND SOIL TYPES ON AIRPORT PROPERTY

1.3.7.1 Hazardous Materials

In a regulatory context, the terms "hazardous wastes," "hazardous substances," and "hazardous materials" are defined as:

- **Hazardous Wastes**. Subpart C of the RCRA defines hazardous wastes (sometimes called characteristic wastes) as solid wastes that are ignitable, corrosive, reactive, or toxic. Examples include waste oil, mercury, lead, or battery acid. In addition, Subpart D of the RCRA contains a list of specific types of solid wastes that the USEPA has deemed hazardous (sometimes called listed wastes). Examples include degreasing solvents, petroleum refining waste, or pharmaceutical waste.
- **Hazardous Substances**. Section 101(14) of the CERCLA defines hazardous substances broadly and includes hazardous wastes, hazardous air pollutants, or hazardous substances designated as such under the Clean Water Act and TSCA and elements, compounds, mixtures, solutions, or substances listed in 40 CFR Part 302 that pose substantial harm to human health or environmental resources. Pursuant to the CERCLA, hazardous substances do not include any petroleum or natural gas substances and materials. Examples include ammonia, bromine, chlorine, or sodium cyanide.
- **Hazardous Materials**. According to 49 CFR Part 172, hazardous materials are any substances commercially transported that pose unreasonable risk to public health, safety, and property. These substances include hazardous wastes and hazardous substances, as well as petroleum and natural gas substances and materials. As a result, hazardous materials represent hazardous wastes and substances. Examples include household batteries, gasoline, or fertilizers.

Aircraft fuel constitutes the largest quantity of hazardous substances stored and consumed at the Airport. Fuel is stored at the fuel farm on Airport property in aboveground storage tanks, and fuel trucks are used to fuel aircraft.

The USEPA identifies the following six RCRA hazardous waste generators on Airport property:[27]

- Dulles Aviation Inc (Handler ID: VAD982704686) - No longer in operation at the Airport;
- T Hangars of VA Inc (Handler ID: VAR000010157) - No longer in operation at the Airport;
- Jet Services Inc (Handler ID: VAR000500199);
- Leidos Inc. Hangar 2 (Handler ID: VAR000537852);
- Asou Offsite (Handler ID: VAR000500389);
- Colgan Air (Handler ID: VAR000504332) - No longer in operation at the Airport.

There are no Superfund sites on Airport property. The closest Superfund site to Airport property, Marine Corps Development Command (Site EPA ID: VA1170024722), is 23 miles southeast of the Airport.[28]

[27] U.S. Environmental Protection Agency, Envirofacts, RCRA Info. Accessed: https://www3.epa.gov/enviro/facts/rcrainfo/search.html, May 2024.

[28] U.S. Environmental Protection Agency, Superfund, National Priorities List, Minnesota. Accessed: https://www.epa.gov/superfund/search-superfund-sites-where-you-live#map, May 2024.

1.3.7.2 Solid Waste

Solid waste generated at the Airport is taken to the Manassas Transfer Station, which is then transferred to the Prince William County Landfill.[29] The Manassas Transfer Station is about 4 miles east of the Airport, and the Prince William County Landfill is about 8 miles southeast of the Airport. An independent assessment of the Prince William County Landfill was conducted, and it is expected to reach capacity around 2065.[30]

1.3.7.3 Pollution Prevention

The Airport operates under a Virginia Pollutant Discharge Elimination System Permit (VPDES) General Permit (VAR050985) for stormwater discharge associated with industrial activity. On August 23, 2023, the State Water Control Board authorized the reissuance of the Small MS4 General Permit, making the existing permit effective through October 31, 2028.[31] The City of Manassas also maintains an Oil Discharge Contingency Plan, an Integrated Spill Prevention, Control and Countermeasures (SPCC) Plan, and a Stormwater Pollution Prevention Plan (SWPPP) for the Airport. These plans outline best management practices (BMPs) for controlling potential pollutant releases to the surrounding surface waters. These plans also provide detailed procedures to follow in the unlikely event of a spill to minimize potential effects on the surrounding environment.

1.3.8 Historical, Architectural, Archaeological, and Cultural Resources

The National Historic Preservation Act (NHPA) (54 U.S.C. §§300101 et seq.) establishes the Advisory Council on Historic Preservation (ACHP). The ACHP oversees federal agency compliance with the NHPA. The NHPA also established the National Register of Historic Places (NRHP) that the National Park Service (NPS) oversees. Other applicable statutes and EOs include:

- American Indian Religious Freedom Act (42 U.S.C. § 1996)
- Antiquities Act of 1906 (54 U.S.C. §§320301-320303)
- Archeological and Historic Preservation Act (54 U.S.C. §§ 312501-312508)
- Archeological Resources Act (16 U.S.C. §§ 470aa-470mm)
- USDOT Act, Section 4(f) (49 U.S.C. § 303)
- Historic Sites Act of 1935 (16 U.S.C. §§ 461-467)
- Native American Graves Protection and Repatriation Act (25 U.S.C. §§ 3001-3013)
- Public Building Cooperative Use Act (40 U.S.C. §§ 601a, 601a1, 606, 611c, and 612a4)
- EO 11593, *Protection and Enhancement of the Cultural Environment* (36 FR 8921)
- EO 13006, *Locating Federal Facilities on Historic Properties in Our Nation's Central Cities* (61 FR 26071)
- EO 13007, *Indian Sacred Sites* (61 FR 26771)

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29 Manassas Virginia, Trash & Recycling, Manassas Transfer Station. Accessed: https://www.manassasva.gov/public_works/trash___recycling/manassas_transfer_station.php, May 2024.

30 Prince William County Solid Waste Management, Accessed: https://www.pwcva.gov/assets/2022-02/SWMP%20Presentation%20Web%20Feb22%20-website.pdf June 2024.

31 VDEQ. MS4 Stormwater Permits. https://www.deq.virginia.gov/permits/water/ms4, June 2024.

- EO 13175, *Consultation and Coordination with Indian Tribal Governments* (65 FR 67249)
- Executive Memorandum, Government-to-Government Relations with Native American Tribal Governments (April 29, 1994)
- Executive Memorandum on Tribal Consultation (Nov. 5, 2009) (65 FR 67249); and
- USDOT Order 5650.1, *Protection and Enhancement of the Cultural Environment*.

A Phase I archaeological survey was conducted for two portions of the Airport in 2017. One archaeological site, Site 44PW0729, has been identified within the Airport property, west of the Air Traffic Control Tower. This site has subsurface integrity and is interpreted as a campsite.[32] The site is associated with the Middle Archaic to the Late Woodland prehistoric period. It is considered potentially eligible for listing on the NRHP. Planning efforts have resulted in the placement of a 20-foot buffer around the site for any future development. See previous **Figure 7** for Archaeological and Historical Sites.

The closest National Register of Historic Places (NRHP)-listed resource is the Davis Beard House (10726 Bristow Road), about one-third mile west of the Airport.[33] Cannon Branch Fort (VDHR #155-5020) is a historic fort associated with the Civil War, which is potentially eligible for listing on the NRHP. The Fort is adjacent to Airport property in the northeast section of the Airport.

1.3.9 Land Use

Various statutes, regulations, and EOs relevant to land use include:

- The Airport and Airway Improvement Act of 1982 and subsequent amendments (49 U.S.C. 47107(a)(10));
- The Airport Improvement Program (49 U.S.C. 47106(a)(1);
- The Airport Safety, Protection of Environment, Criteria for Municipal Solid Waste Landfills (40 CFR § 258.10); and
- State and local regulations

The Airport is in the City of Manassas in Virginia. Land uses within the immediate vicinity of the Airport include Airport and Technology.[34] The Airport borders Prince William County, Virginia, with a separate land use plan. Land uses in Prince William County that borders the Airport include Community Mixed Use, Flexible Use Employment Center, Agricultural and Forestry, and Federal Property.[35]

Zoning in the City of Manassas classifies Airport property as IA – Airport District, I1 Light Industrial, and I2 Heavy Industrial, with surrounding land in the City of Manassas also classified as I1 and I2. [36] Zoning areas

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[32] Phase I Archaeological Study for the Proposed West Corporate Development and East Parcel Development at Manassas Regional Airport, City of Manassas, Prince William County, Virginia, Elizabeth, Anderson Comer/Archaeology. Accessed June 2024.

[33] U.S. National Park Service, National Register of Historic Places. Accessed: https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466, May 2024.

[34] City of Manassas, Manassas 2040, Chapter 3: Land Use, Adopted February 24, 2020. Accessed: https://www.manassasva.gov/Community%20Development/Comp%20Plan/Chapter%203%20-%20Land%20Use%20web.pdf, May 2024.

[35] Prince William County, Virginia, Pathway to 2040: Land Use. Accessed: https://www.pwcva.gov/assets/2022-02/DRAFT_LRLU_3000_36x66%2020220201.pdf, May 2024.

[36] City of Manassas, Manassas Zoning and Parcel Map App. Accessed: https://cityofmanassas.maps.arcgis.com/apps/webappviewer/index.html?id=5435b6acfd274042a95914ad9ae97660, May 2024.

that border the Airport in Prince William County are classified as A-1 Agricultural, M/T Industrial/ Transportation, and PBD Planned Business District[37] *(*see **Figure 9** for Manassas Zoning and **Figure 10** for Prince William County Zoning).

1.3.10 Natural Resources and Energy Supply

Statutes and EOs that are relevant to natural resources and energy supply include:

- Energy Independence and Security Act (42 U.S.C. § 17001 et seq.);
- Energy Policy Act (42 U.S.C. § 15801 et seq.);
- EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (72 FR 3919); and
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (74 FR 52117).

Natural resources (e.g., water, asphalt, aggregate, etc.) and energy use (e.g., fuel, electricity, etc.) at an airport are a function of the needs of aircraft, support vehicles, airport facilities, support structures, and terminal facilities. Airport personnel and tenants regularly use consumable materials to maintain various airside and landside facilities and services. Those materials may include asphalt, concrete, aggregate for sub-base materials, various metals associated with such maintenance, and fuels associated with the operation of aircraft and vehicles.

Energy use at the Airport is primarily in the form of electricity required to operate Airport-related facilities (e.g., terminal building, hangars, airfield lighting) and fuel for aircraft, aircraft support vehicles/equipment, and Airport maintenance vehicles/equipment. Electrical power is necessary to keep the Airport operational and safe. Electrical power is provided by The City of Manassas through a cooperative agreement with Dominion Power to the Airport.[38] The City of Manassas Utilities Department provides water and Prince William County Service Authority provides sewer services.[39] Water is drawn from the Potomac River and Lake Manassas and is treated at either Fairfax Water's James J. Corbalis, Jr. Water Treatment Plant or the City of Manassas' water treatment plant.[40] Lake Manassas is located approximately seven miles northwest of the Airport and the Potomac River is about 18 miles southeast of the Airport. Washington Gas Company provides natural gas services to Prince William County and the City of Manassas.[41] None of the natural resources the Airport uses or has used are in rare or short supply.

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37 Prince William County, County Mapper, Zoning. Accessed: https://gisweb.pwcgov.org/webapps/CountyMapper/, March 2024.

38 Dominion Power. Service Territories. Accessed: https://www.dominionenergy.com/economic-development/virginia/service-area-locator June 2024.

39 Prince William County. Service Authority. Accessed: https://www.pwcsa.org/who-we-are/about-us June 2024.

40 Prince William County. Water Sources and Quality. Accessed: https://www.pwcsa.org/water-quality-faq June 2024.

41 Washington Gas Company. Service Territory. Accessed: https://www.washingtongas.com/services/contractors/service-territory?_ga=2.159014714.1033685967.1719865293-2101091560.1719865293&_gl=1*158str5*_gcl_au*MTY1ODAxODAyOS4xNzE5ODY1Mjkz*_ga*MjEwMTA5MTU2MC4xNzE5ODY1Mjkz*_ga_399BRKZ9LL*MTcxOTg2NTI5My4xLjEuMTcxOTg2NTMyMy4zMC4wLjA. June 2024.

***FIGURE 9* ZONING CLASSIFICATIONS ON AIRPORT PROPERTY AND SURROUNDING AREAS OF MANASSAS**

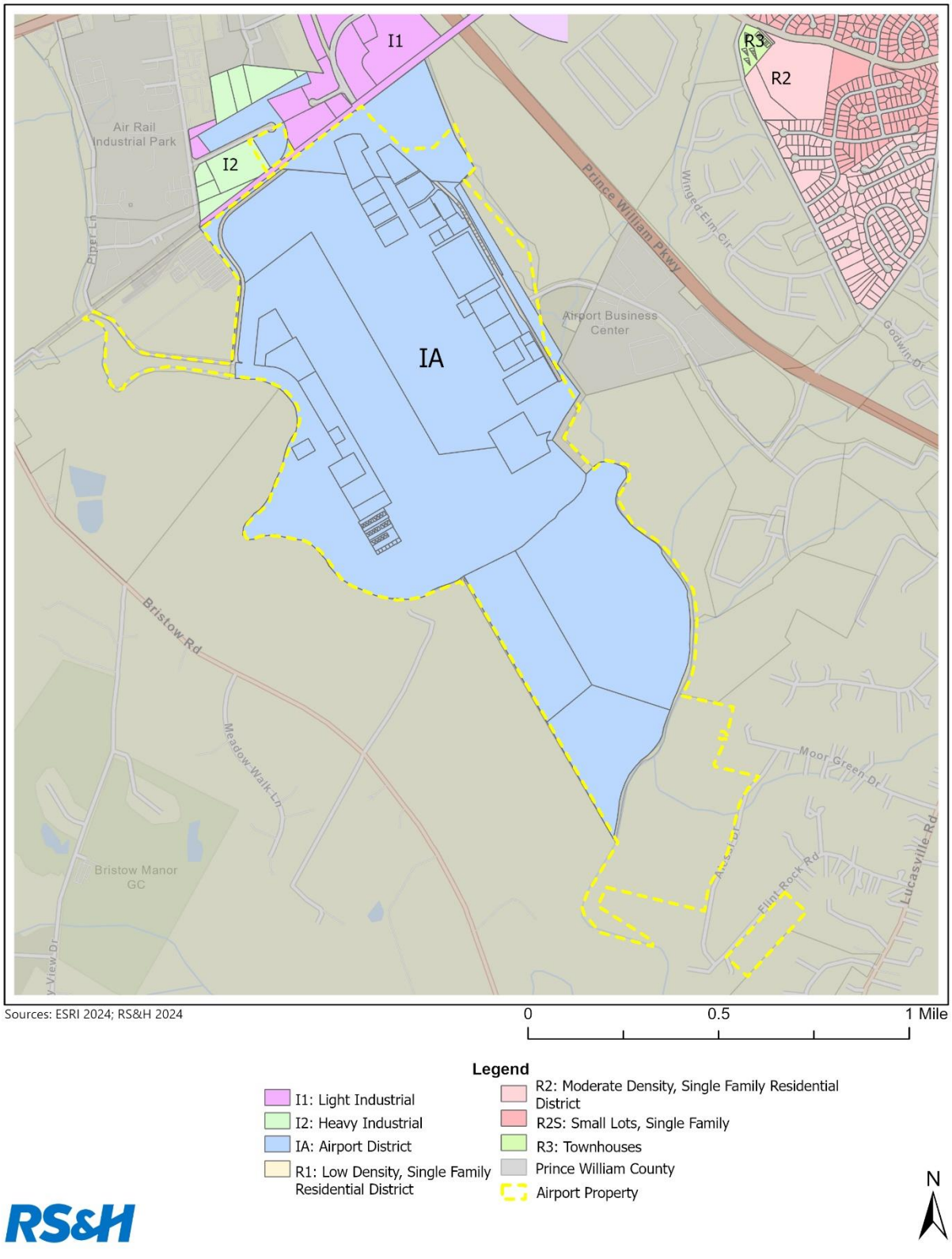
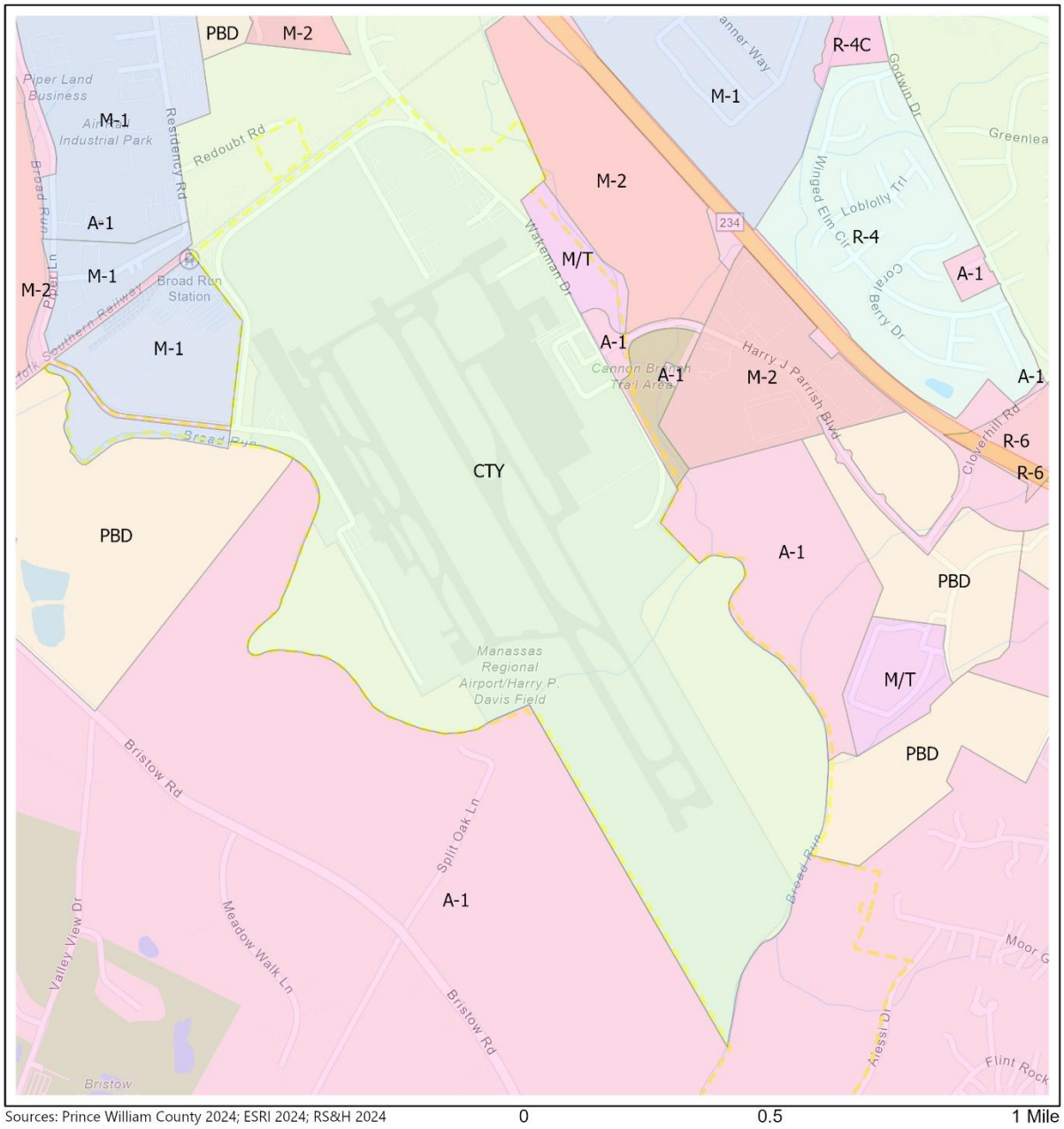


FIGURE 10 ZONING CLASSIFICATIONS IN SURROUNDING AREAS OF PRINCE WILLIAM COUNTY



1.3.11 Noise and Noise-Compatible Land Use

Statutes and EOs relevant to noise and noise-compatible land use include:

- The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968 (49 U.S.C. § 44715)
- The Noise Control Act of 1972 (42 U.S.C. §§ 4901-4918)
- Aviation Safety and Noise Abatement Act of 1979 (49 U.S.C. § 47501 et seq.)
- Airport and Airway Improvement Act of 1982 (49 U.S.C. § 47101 et seq.)
- Airport Noise and Capacity Act of 1990 (49 U.S.C. §§ 47521-47534, §§ 106(g)
- Section 506 of the FAA Modernization and Reform Act of 2012, *Prohibition on Operating Certain Aircraft Weighting 75,000 Pounds of Less Not Complying with Stage 3 Noise Levels* (49 U.S.C. §§ 47534); and
- State and local noise laws and ordinances.

Day-Night Sound Level (DNL) is based on sound levels measured in relative intensity of sound (decibels or dB) on the "A-weighted scale" or dBA over a time-weighted average normalized to a 24-hour period.[42] DNL has been widely accepted as the best available method to describe aircraft noise exposure. The USEPA identifies the DNL as the principal metric for airport noise analysis. The FAA requires DNL as the noise descriptor for aircraft noise exposure analysis and noise compatibility planning. DNL levels are commonly shown as lines of equal noise exposure, like terrain contour maps, referred to as noise contours. All residential areas are considered compatible with cumulative noise levels below DNL 65 dB.

There are rural and residential land uses near the Airport. These areas are sensitive to aircraft noise associated with the Airport. However, most of the development around the Airport is industrial and commercial. The designated noise-sensitive area east and south of the Airport is not within the existing DNL 65 dBA noise contour. See **Figure 11** for existing 2019 noise contours at the Airport.

According to the City, the noise-sensitive area is designated by historically having the most concentration of noise comments.[43] The Airport has a voluntary noise program (i.e., FAA Part 150) that is comprised of suggestions for pilots to follow when it is safe and possible to do so. For flight training, instructors are recommended to teach their students the Airport's noise abatement procedures, including pilots, during their biennial flight reviews. The Airport advises all flight operations that the preferred way to avoid the noise-sensitive area is to follow major roads and railroad tracks near the Airport, see **Figure 12 ,13, and 14.** A map of these routes is available on the Airport's website and in the Airport Director's Office. The Airport also has arrival and departure procedures that divert traffic around the noise-sensitive area. Additionally, it is recommended that fixed-wing aircraft with carbureted engines utilize a 2,200 RPM setting while in the traffic pattern for any of the runways. Aircraft with fuel injection engines should use 2,100 RPM. These power settings help minimize aircraft engine noise as well as reduce fuel consumption. Helicopter operations are advised to maintain as high an altitude as practical and conduct as much of their descent within the Airport boundary as safe flight operations allow. Maintenance engine run-ups in designated areas nearby FBO's and hangars are restricted to 7:00 AM to 10:00 PM, daily. Operations conducted after these hours must be submitted to the Airport Director for written approval. [44]

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[42] Federal Aviation Administration, *Technical Support for Day/Night Average Sound Level (DNL) Replacement Metric Research, Final Report*, June 14, 2011. Accessed: May 2024.

[43] Allabaugh, Richard, Airport Operations, Manassas Regional Airport. Personal Communication, May 2024.

[44] Manassas, Virginia, Airport, Noise Program. Accessed: https://www.manassasva.gov/airport/noise_program.php, May 2024.

FIGURE 11 EXISTING AIRPORT NOISE CONTOURS

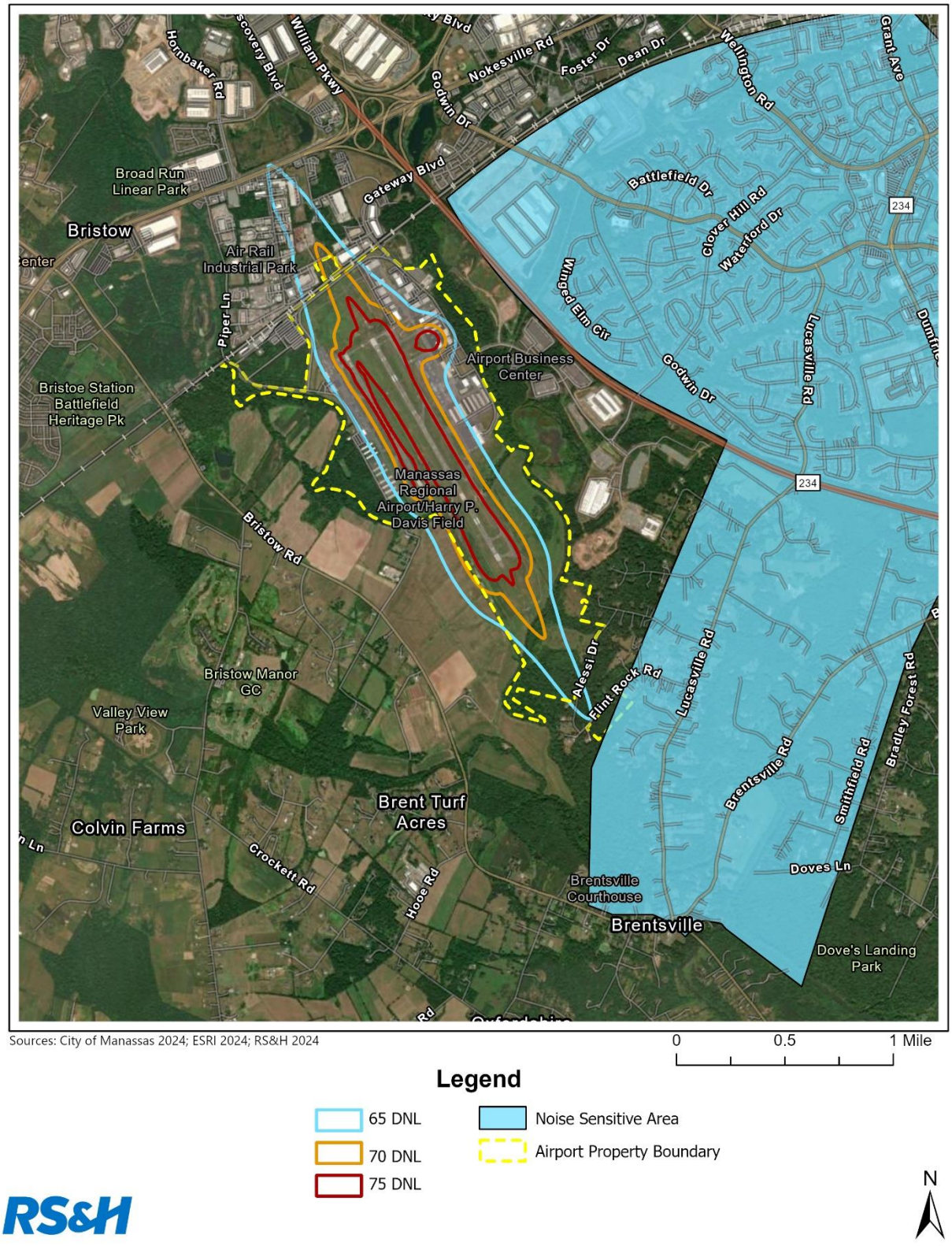
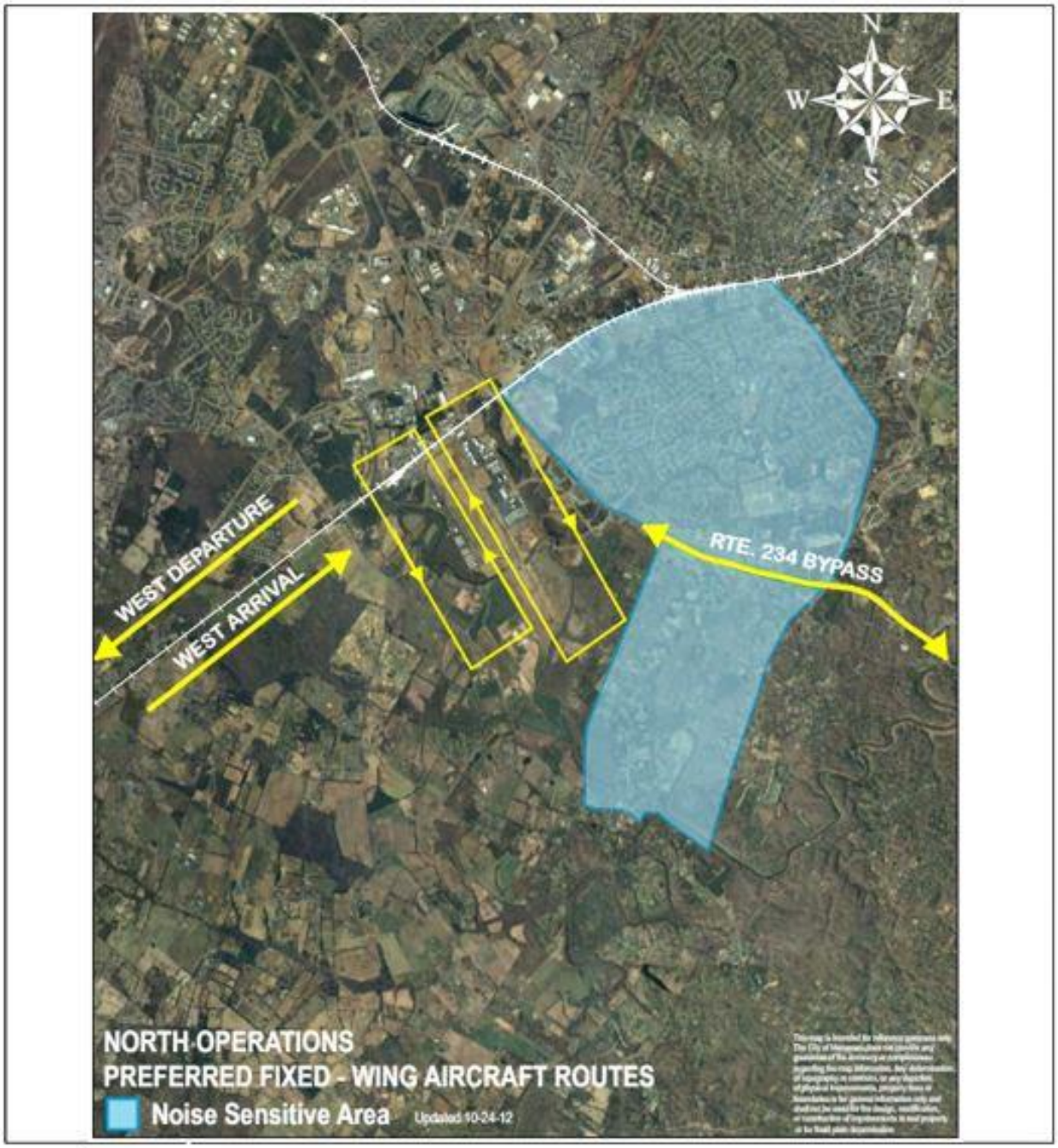


FIGURE 12 NORTH OPERATIONS PREFERRED FIXED WING AIRCRAFT ROUTES AROUND NOISE SENSISTIVE AREAS

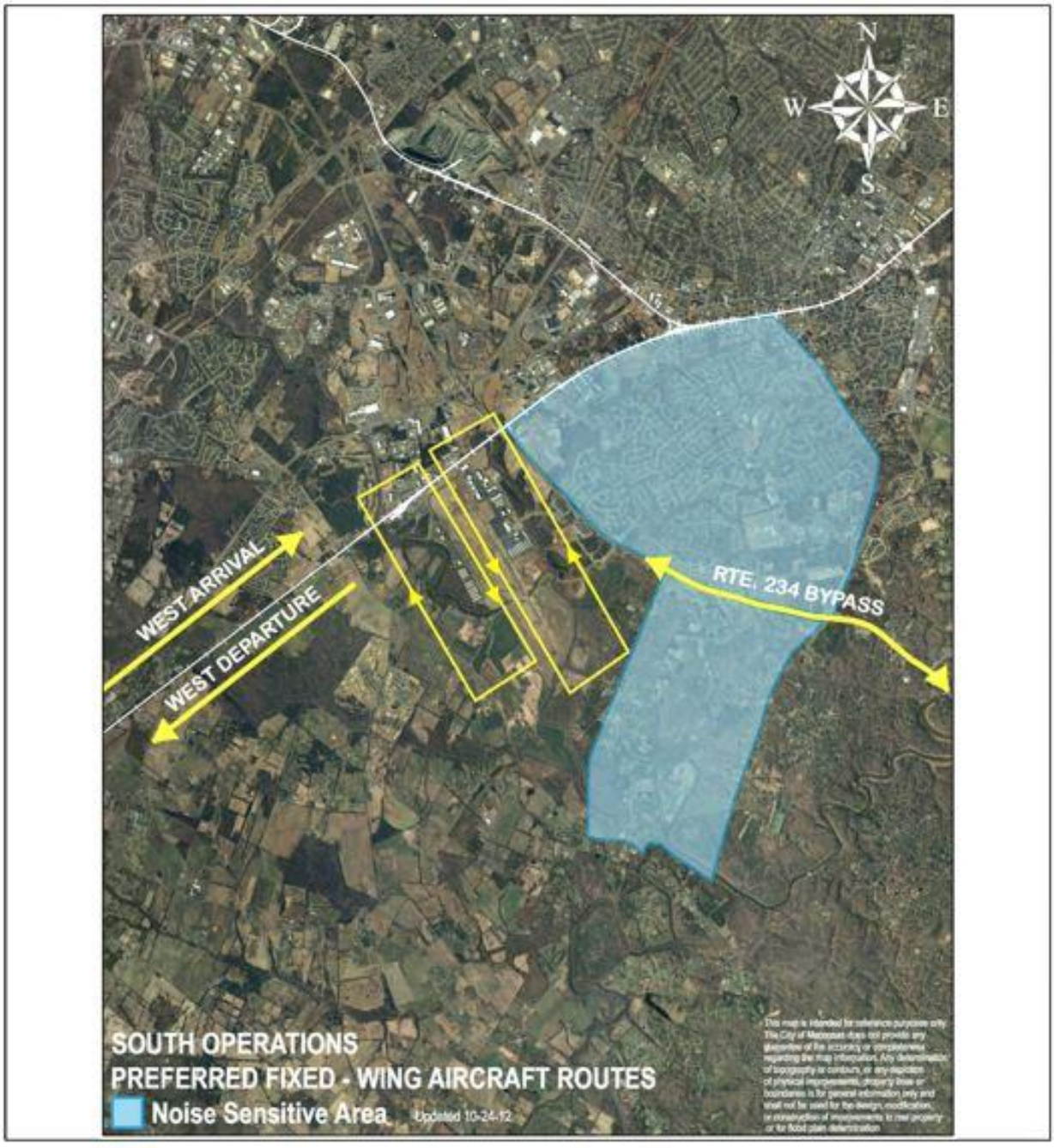


Legend

Aircraft Traffic Patterns

RS&H

FIGURE 13 SOUTH OPERATIONS PREFERRED FIXED WING AIRCRAFT ROUTES AROUND NOISE SENSISTIVE AREAS

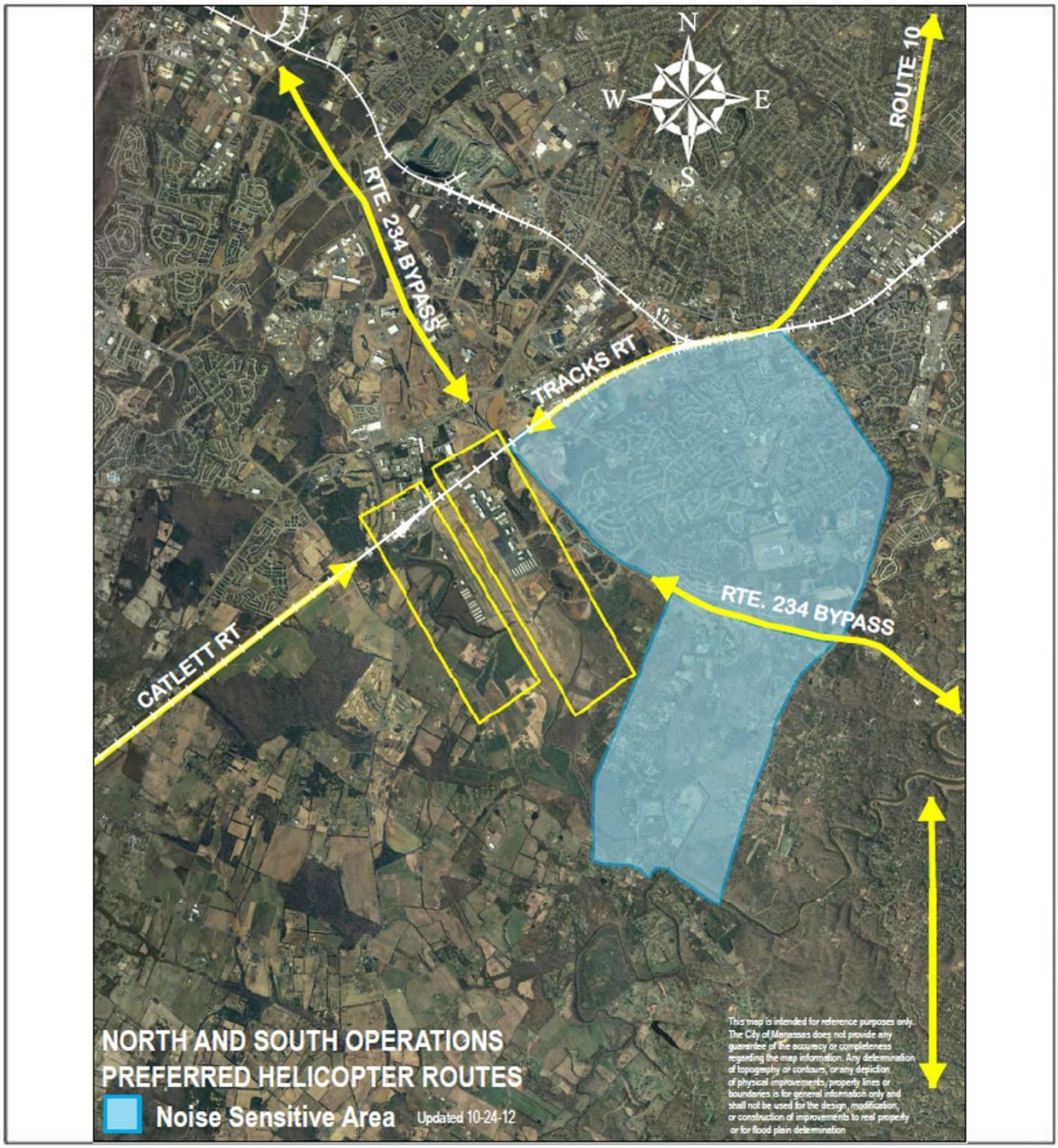


Legend

Aircraft Traffic Patterns

RS&H

FIGURE 14 NORTH AND SOUTH OPERATIONS PREFERRED HELICOPTER ROUTES AROUND NOISE SENSISTIVE AREAS



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Aircraft Traffic Patterns

RS&H

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

The primary considerations of socioeconomics analysis are the economic activity, employment, income, population, housing, public services, and social conditions of the area. The Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970 (42 U.S.C. § 61 et seq.), implemented by 49 CFR Part 24, is the primary statute related to socioeconomic impacts. Statutes, EOs, memorandums, and guidance that are relevant to environmental justice and children's environmental health and safety risks include:

- Title VI of the Civil Rights Act, as amended (42 U.S.C. §§ 2000d-2000d-7);
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (59 FR 7629);
- Memorandum of Understanding on Environmental Justice and EO 12898;
- USDOT Order 5610.2(a), Environmental Justice in Minority and Low-Income Populations (77 FR 27534);
- CEQ Guidance: *Environmental Justice: Guidance Under the National Environmental Policy Act*;
- Revised USDOT Environmental Justice Strategy (77 FR 18879); and
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885).

The Airport is located entirely within U.S. Census Tract 9104.2. This census tract was used to describe the Airport area's socioeconomic and environmental justice characteristics compared to the City of Manassas and the State of Virginia (see **Table 6**).

TABLE 6 SOCIOECONOMIC AND ENVIRONMENTAL JUSTICE CHARACTERISTICS

Characteristic	Census Tract 9104.02	City of Manassas	Virginia
Total Population	6,112	42,772	8,631,393
Percent Minority	45.9%	60.9%	39.7%
Percent Living Below the Poverty Level	20.1%	14.9%	14.1%
Percent of the population below 18 Years of Age	23.9%	26.7%	19.1%
Total Housing Units	2,171	14,365	3,618,247
Persons per Household	2.25	3.0	2.4

Sources: U.S. Census Bureau, 2020 ACS 5-Year Estimates; U.S. Census Bureau, 2020 Decennial Census; Prepared by RS&H, 2024

Regarding children's environmental health and safety risks, the closest school in Manassas to the Airport is George C. Round Elementary School, located about one-mile northwest of the Airport.[45] The school serves students in pre-kindergarten through fourth grade. The closest school in Prince William County is Victory Elementary School, about 2 miles northeast of the Airport. The school serves kindergarten through 5th grade.

[45] U.S. Environmental Protection Agency, NEPAssist, Schools. Accessed: https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=hef+airport, May 2024.

1.3.13 Visual Effects

No federal statutory or regulatory requirement exists for adverse effects resulting from light emissions or visual impacts. FAA Order 1050.1F describes factors to consider within light emissions and visual resources/visual character. A project's potential impact from light emissions includes the annoyance or interference with normal activities and effects on the area's visual character due to light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.

1.3.13.1 Light Emissions

Various lighting features currently illuminate Airport facilities, such as the airfield (e.g., runways and taxiways), buildings, access roadways, automobile parking areas, and apron areas for the safe and secure movement of people and vehicles (e.g., aircraft, passenger cars, etc.). The closest light-sensitive area is a rural residential area about 1,200 feet southwest of Runway 34L.[46]

1.3.13.2 Visual Resources and Visual Character

Structures at the Airport include, but are not limited to, fixed base operators, hangars, the air traffic control tower, and maintenance buildings. As previously described, the Airport is zoned as an Airport District. It is developed with a visual character that is consistent with this zoning. Some rural residential properties southwest of Runway 34L have a line of sight to Airport property; however, this line of sight is generally partially obscured by vegetation.

1.3.14 Water Resources

Water resources include wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers. These resources typically function as a single, integrated natural system that is important in providing drinking water in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems.

1.3.14.1 Wetlands

Statutes and EOs that are relevant to wetlands include:

- EO 11990, *Protection of Wetlands* (42 FR 26961);
- Clean Water Act (33 U.S.C. §§ 1251-1387);
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d); and
- USDOT Order 6660.1A, *Preservation of the Nation's Wetlands*.

The Clean Water Act defines wetlands as "…those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." [47] Wetlands have three necessary characteristics:

- Water: the presence of water at or near the ground surface for a part of the year;

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[46] U.S. Environmental Protection Agency, NEPAssist. Accessed: https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=hef+airport, Mayl 2024.

[47] U.S. Environmental Protection Agency, Section 404 of the Clean Water Act. Accessed: https://www.epa.gov/cwa-404/section-404-clean-water-act-how-wetlands-are-defined-and-identified, June 2024.

- Hydrophytic Plants: a preponderance of plants adapted to wet conditions; and
- Hydric Soils: soil developed under wet conditions.

According to the USFWS National Wetland Inventory (NWI), wetlands are throughout the Airport property (see **Figure 15**).[48] Wetlands present at the Airport include Palustrine Forested and Palustrine Emergent wetlands, additionally, a 3.9 acre area on the west side of the Airport was surveyed for wetlands in April 2024. The survey showed no wetland features.

1.3.14.2 Floodplains

Statues and EOs that are relevant to floodplains include:

- EO 11988, *Floodplain Management* (42 FR 26951);
- National Flood Insurance Act (42 U.S.C. § 4001 et seq.); and
- U.S. Department of Transportation (USDOT) Order 5650.2, *Floodplain Management and Protection*.

Floodplains are "…lowland areas adjoining inland and coastal water which are periodically inundated by flood waters, including flood-prone area of offshore islands." Floodplains are often referred to as the 100-year floodplain instead of the one percent chance of a flood occurring in any given year. The USDOT Order 5650.2 outlines the policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests. Therefore, the objective is to avoid, to the extent practicable, any impacts within the 100-year floodplain. FEMA defines a "regulatory floodway" as "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height."[49]

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) encompassing the Airport, portions of the Airport are within the 100-year floodplain and floodway, as well as the 500-year flood area (see **Figure 16**).[50]

1.3.14.3 Surface Waters

Statues that are relevant to surface water include:

- Clean Water Act (33 U.S.C. §§ 1251-1387);
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d); and
- Rivers and Harbors Act (33 U.S.C. § 401 and 403).

Surface waters include areas where water collects on the ground's surface, such as streams, rivers, lakes, ponds, estuaries, and oceans.

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48 USFWS, National Wetlands Inventory. Accessed: https://www.fws.gov/wetlands/data/mapper.HTML, May 2024.

49 Federal Emergency Management Agency, Glossary. Accessed: https://www.fema.gov/about/glossary, May 2024.

50 FEMA, Flood Map Service Center, Flood Insurance Rate Map 51153C0159D (effective January 5, 1995), 51153C0157D (effective January 5, 1995). Accessed: https://msc.fema.gov/portal/search#searchresultsanchor, May 2024.

FIGURE 15 NWI WETLANDS AT AND IN THE VICINITY OF THE AIRPORT

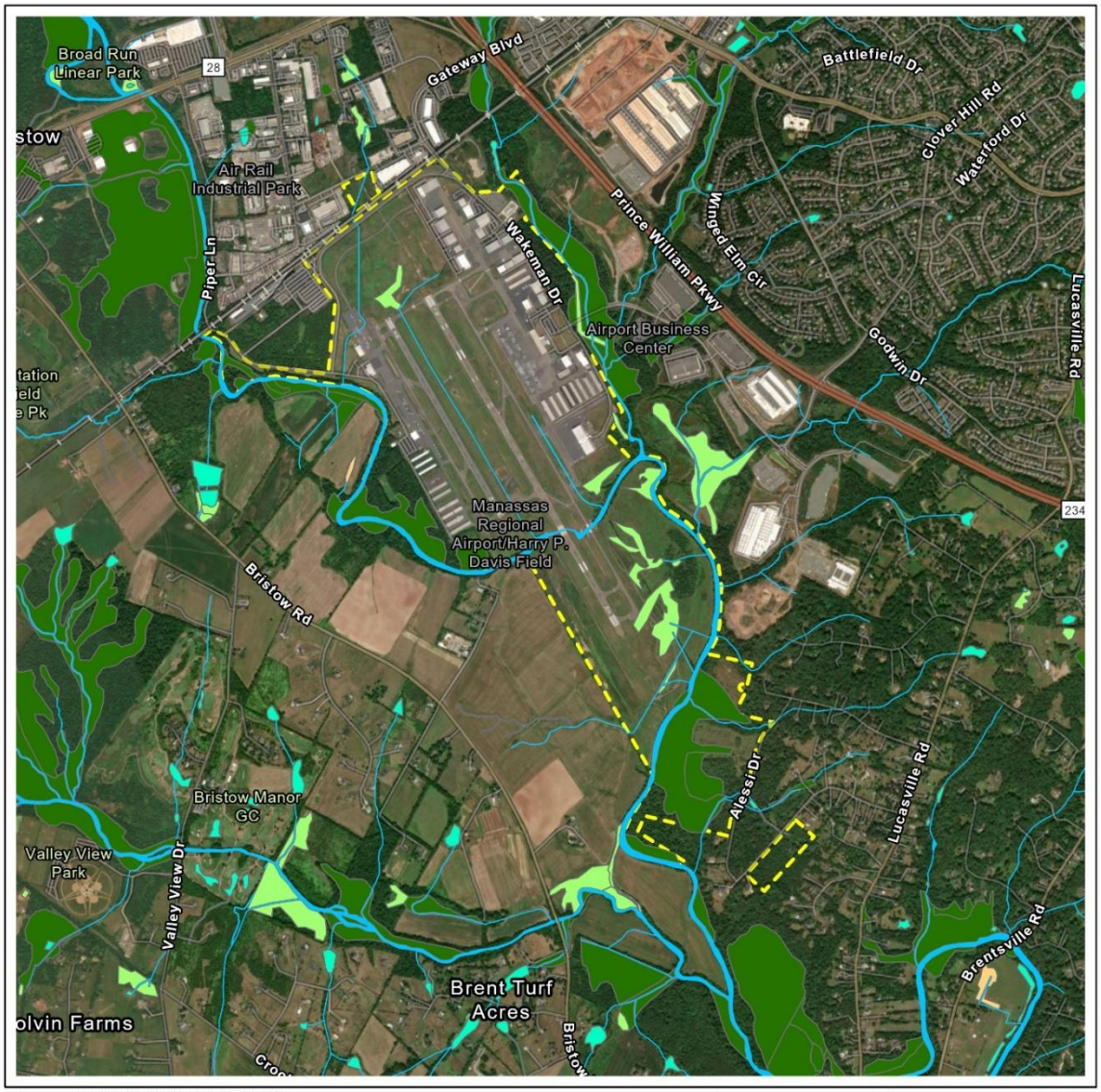
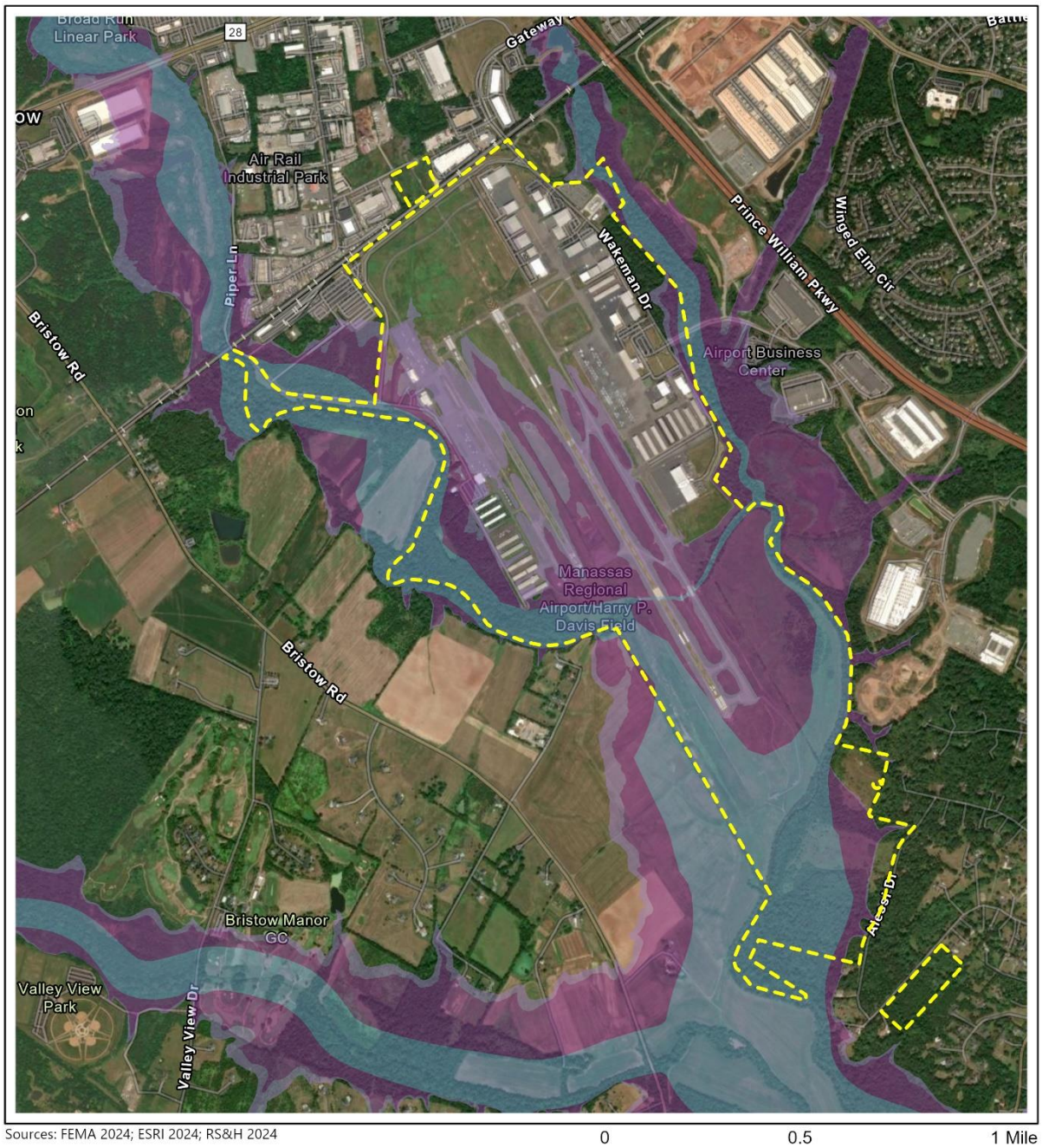


FIGURE 16 FLOODPLAINS



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Broad Run is on Airport property and has been tunneled underneath Runway 16L-34R. Cannon Branch is on the eastern side of the Airport before it intersects Broad Run east of Runway 16L-34R (see **Figure 17**).[51]

1.3.14.4 Groundwater

Statues relevant to groundwater include:

- Safe Drinking Water Act (42 U.S.C. §§ 300(f)-300j-26).

Groundwater is "subsurface water that occupies the space between sand, clay, and rock formations."[52] The Airport is within the Rocky Branch-Broad Run watershed (HUC 12 ID: 020700100504).[53]

The City draws water from Lake Manassas, the primary water source, and if needed, the Prince William County Service Authority, which draws water from the Potomac River.[54] The City uses the Prince William County Service Authority during peak consumption periods or in emergencies. According to the Virginia Department of Health – Office of Drinking Water, there are two public groundwater wells near the Airport at Broad Run Golf (PWS ID: 6153264) and Bristow Manor Golf Club (PWS ID: 6153041).[55]

1.3.14.5 Wild and Scenic Rivers

Statues relevant to wild and scenic rivers include:

- Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1278).

Wild and scenic rivers are "outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations."[56] There are no wild and scenic rivers or river segments within the Airport property.[57] The closest wild and scenic river, the White Clay Wild and Scenic River is over 110 miles northeast of the Airport. The closest river on the Nationwide River Inventory (NRI) is Bull Run, located 7 miles northeast of the Airport.[58]

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52 Federal Aviation Administration, *1050.1F Desk Reference*, Section 14.4 Groundwater.

53 U.S. Environmental Protection Agency, NEPAssist, Water Features, Watersheds (HUC 12). Accessed: https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=hef+airport, May 2024.

54 City of Manassas, Annual Water Quality Report – Reporting Year 2020. Accessed: https://www.manassasva.gov/Electric-Water-Sewer/Water%20Quality%20Reports/2020%20CCR%20Web%20Ready.pdf, May 2024.

55 Virginia Department of Health, Office of Drinking Water. Public Water System Database. Accessed: https://www.vdh.virginia.gov/content/uploads/sites/14/2020/08/Water-07.21.2020.pdf, May 2024.

56 National Wild and Scenic Rivers System, About the WSR Act. Accessed: https://www.rivers.gov/wsr-act.php, May 2024.

57 U.S. Environmental Protection Agency, NEPAssist, Water Features, Wild and Scenic Rivers. Accessed: https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=Range+Regional+Airport%2C+Hibbing+MN, May 2024.

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FIGURE 17 SURFACE WATERS