

5.0 INTRODUCTION

This section provides an overview of existing environmental resources and addresses the potential environmental effects for the proposed landside and airside improvements at FDK described in this Master Plan. The alternatives were previously discussed in **Section 4 – Alternatives**.

The information provided in this overview is preliminary in nature and should not be viewed as a completed *Affected Environment* chapter of an environmental document nor a complete discourse on environmental conditions. Rather, this Environmental Overview is intended to assist decision-makers in identifying potential environmental problems that may arise from implementation of the proposed Master Plan development and determine the appropriate level of environmental compliance that may be required to implement these improvements in accordance with National Environmental Policy Act (NEPA) of 1969. Depending on the nature and extent of these impacts, more detailed environmental documentation would be required prior to implementation of the proposed projects.

This overview is based on a review of available resource materials, including, but not limited to the *Comprehensive Drainage Report* (June 2000), the *Final Environmental Assessment and Finding of No Significant Impact: Frederick Municipal Airport Five Year Capital Improvement Program* (July 2002), the US Department of Agriculture (USDA) *Soil Survey of Frederick County, Maryland* (2002), the *Final Environmental Assessment and Finding Of No Significant Impact: Runway Extensions and Related Improvements At Frederick Municipal Airport* (July 2004), and the *Phase 1 Archaeological Investigation of the Bowman Farm Property* (August 2004). In addition, prior agency coordination was used as guidance in the preparation of this Environmental Overview. The Maryland State Clearinghouse for Intergovernmental Review was provided the opportunity to comment on the proposed projects as they relate to environmental resources. Once comments are received, they will be included in **Appendix TBD**.

5.1 AIRCRAFT NOISE

Aircraft noise is often the most noticeable environmental effect that an airport produces on the surrounding community. If the sound is sufficiently loud or frequent in occurrence, it may interfere with various activities or be considered a nuisance. Since 1972, the FAA has been developing and enforcing aircraft noise standards, which are based on cumulative day-night average noise levels (DNL). In simple terms, DNL is the average noise level over a 24-hour period, except noise occurring at night (defined as 10:00 PM through 7:00 AM), which is artificially increased by 10 decibels (dB). As an individual's response to noise is highly subjective, special circumstances can affect tolerance. The FAA guidelines indicate that all uses are normally compatible with aircraft noise exposure levels below 65 DNL. This limit is supported by the US Department of Housing and Urban Development (HUD). The HUD standards address whether sites are eligible for Federal funding support for some type of noise mitigation.

The Transportation Systems Center for the United States Department of Transportation (DOT) developed the Integrated Noise Model (INM), Version 6.2, a complex computer program which calculates aircraft noise levels around an airport using annual aircraft operations data. The INM, which has been accepted as a standard by the FAA, the United States Environmental Protection Agency (EPA), and HUD, was used to perform the noise analysis for this Environmental Overview. It uses an extensive internal database of aircraft noise and performance statistics. The input data required include average daily and nightly aircraft operations by specific aircraft type, typical flight paths, runway geometry, and average annual runway and flight path use statistics by aircraft category. The data used in this document are derived from records maintained by both FDK and by the FAA.

In support of this Environmental Overview, a noise evaluation of aircraft operations was performed. Existing noise contours were identified, as well as future noise contours for forecasted aircraft activity during the 5-, 10-, and 20-year planning period. The DNL 65 dB noise contours for existing (2005), 2010, 2015, and 2025 conditions are presented on **Exhibit 5.1-1**. DNL contours are a graphical representation of how the noise from FDK's aircraft operations is distributed over the surrounding area on an average day.

There are approximately 195 acres of land within the existing DNL 65 dB contour; approximately 232 acres of land within the year 2010 DNL 65 dB contour; approximately 241 acres of land within the year 2015 DNL 65 dB contour; and approximately 255 acres of land within the year 2025 DNL 65 dB contour. The DNL 65 dB noise contour is located completely within Airport property for the existing conditions. Approximately 0.5 acres of land within the 2010 DNL 65 dB contour is located off-Airport, to the west of the Runway 5 end. Approximately 0.6 acres of land within the 2015 DNL 65 dB contour is located off-Airport to the west of the Runway 5 end. Approximately 0.9 acres of land within the 2025 DNL 65 dB contour is located off-Airport, including 0.2 acres off the Runway 5 end and 0.7 acres to the west of the Runway 5 end. The affects of noise on land use surrounding the Airport is discussed in **Section 5.2**.

5.2 LAND USE COMPATIBILITY

The compatibility of existing and planned land use in the vicinity of an airport is usually associated with the extent of noise impacts related to that airport. As illustrated in **Exhibit 5.1-1**, the DNL 65 dB noise contours for the existing conditions are located completely within Airport property. The approximate 0.5 acres of land within the 2010 DNL 65 dB contour and 0.6 acres of land within the 2015 DNL 65 dB contour located off-Airport is land that is proposed for acquisition. Of the approximate 0.9 acres within the 2025 DNL 65 dB contour located off-Airport property, 0.2 acres of land is located off the Runway 5 end and encroaches upon East Patrick Street. The remaining 0.7 acres of land is located to the west of the Runway 5 end on land proposed for future acquisition. Since the land off-Airport within the DNL 65 dB

noise contours are either proposed for acquisition or are in a transportation related use, no adverse impacts with respect to land use compatibility are anticipated.

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

5.3.1 Socioeconomic Impacts

Potential socioeconomic impacts resulting from airport improvement projects are those relating to the direct effects from the acquisition of land or the relocation of homes, businesses, transportation systems, utilities, and other cultural and public facilities. The proposed development at FDK would not require any additional land acquisition, relocation of any residence or business, or the disruption of transportation or utility systems or other community facility.

5.3.2 Environmental Justice

The Airport is located within Census Tract 7509, Block Group 1. US DOT Order 5610.2 defines a minority population as "any readily identifiable group of minority persons who live in geographic proximity." Council on Environmental Quality regulations state that if the percentage of minority population within a given area within the proposed project area is 50 percent or greater, then these areas would be considered minority. The population within this Census Block Group is predominantly white (72 percent). Therefore, this Census Block Group does not contain a minority population, according to the 2000 census information.

The US Bureau of Census follows the Office of Management and Budget's Statistical Policy Directive 14 and uses a set of money income thresholds that vary by family size and composition to determine the poverty threshold and who is poor. If a family's total income is less than that family's threshold, then that family, and every individual in it, is considered poor. The poverty threshold for 2005, as established by the US Bureau of Census, was used to determine the low-income populations within Census Tract 7905, Block Group 1. The average household size is 2.6 persons per household. For this analysis, the poverty threshold was established using the Bureau of Census information for a 3-person household, with one person being a child under the age of 18. Using this criterion, the average poverty threshold is \$15,205. The median household income for Census Tract 7905, Block Group 1 is \$30,673. Therefore, the Census Block Group in which the Airport is located is not considered to be a low-income area, according to the 2000 census information.

Therefore, the proposed improvements at the Airport are not expected to disproportionately impact minorities or low-income population groups.

5.3.3 Children's Environmental Health and Safety Risks

Operations and development proposed at FDK have not been identified by any known source as adversely impacting the health or safety of children in the Frederick area.

5.4 SECONDARY (INDUCED) SOCIOECONOMIC IMPACTS

Induced or secondary impacts result when the proposed projects affect economic growth or employment opportunities, change the need for public services, or alter community cohesion. Changes in business activity would occur as a result of the proposed improvements, specifically with the increased availability of group and corporate hangar space. Short-term increases in local employment related to construction activities are anticipated as well as long-term direct economic benefits from increased airport activity, including fuel sales and hangar leases. No adverse socioeconomic impacts are anticipated to result from the proposed development.

5.5 AIR QUALITY

Under the 1990 Clean Air Act Amendments, all areas within the State of Maryland are designated with respect to compliance, or degree of noncompliance, with the National Ambient Air Quality Standards (NAAQS), as established by the EPA. NAAQS have been established for criteria pollutants [carbon monoxide (CO); nitrogen dioxide (NO₂); sulfur oxides (SO₂); lead (Pb); ozone (O₃); particulate matter with a diameter of 10 microns or less (PM₁₀), and particulate matter with a diameter of 2.5 microns or less (PM_{2.5})]. Both volatile organic compounds (VOCs) and nitrogen oxides (NO_x) play important roles in the formation of O₃. An area with air quality better than the NAAQS is designated as "attainment". When levels of these criteria pollutants exceed the annual average standards for short-term more than once per year, they are considered to be in "non-attainment". Non-attainment areas are further classified as extreme, severe, serious, moderate, and marginal.

According to the EPA, Maryland is divided into six air quality control regions (AQCR). Frederick County is located with the Metropolitan Washington Council of Governments (MWCOG) and is currently designated as "Moderate" non-attainment for 8-hour O₃. There is a deadline of June 2010 to meet the new ozone standard. In addition, this area is in non-attainment for PM_{2.5}.

Due to Frederick County's "non-attainment" status for criteria pollutants, an air quality analysis would be required for construction activities.

5.6 DEPARTMENT OF TRANSPORTATION SECTION 4(f) LANDS

Section 4(f) of the DOT Act of 1966 [recodified in 1983 as Title 49, Section 303(c) of the United States Code] provides for the protection of publicly owned recreational resources and requires the analysis of potential impacts to these resources arising from DOT actions. Resources protected under Section 4(f) include the public parks and recreation areas, as well as wildlife and waterfowl refuges or management areas of national, state, or local significance. Section 4(f) also applies to historic sites of national, state, or local significance as determined by the official that has jurisdiction over these historic resources. Such sites include those that are listed or eligible for inclusion in the National Register of Historic Place (NRHP), as well as those identified by appropriate state or local agencies as having historic significance.

As part of this Master Plan Update, an on-site evaluation was conducted on the existing Airport Administration Building at the Airport (see **Appendix TBD**). The Maryland Historical Trust (MHT) concurred with the recommendation that the building is eligible for listing in the NRHP under Criterion A for its association with local history and under Criterion C as a representative example of Moderne design. Further coordination is required with MHT should the proposed development occur near this facility or require any alteration to this facility.

Located within an aviation easement on the north side of the Monocacy River is an archaeological site. This site, referred to as the Rosenstock Site, is a Native American village dating from roughly 1400-1450 AD. In previous coordination with the MHT for the preparation of the *Final Environmental Assessment/Finding of No Significant Impact for the Five Year Capital Improvement Program* (July 2002), it was determined that this archaeological site is eligible for listing in the NRHP. The proposed development at the Airport is not anticipated to impact this potential Section 4(f) resource.

The Jug Bridge Park, a public park and recreational area, is located south of FDK between East Patrick Street and I-70. Park amenities include the Jug monument and picnic tables. The proposed development at the Airport is not anticipated to impact this Section 4(f) resource.

A Phase I Archaeological Investigation of the Bowman Farm Property was conducted in 2004. Three prehistoric archaeological sites were revealed; however only one of these sites could be eligible for listing in the NRHP. It is recommended that a Phase II investigation be conducted should development plans call for alteration of this area. As currently planned, the Bowman Farm, which has been in an ongoing acquisition process for several years, is reserved for future aviation related development. Once site specific plans are developed for this area, a Phase II investigation should be conducted as well as further coordination with the MHT.

Previous research and coordination with the MHT indicated that the buildings located on the Bowman Farm were determined to not be eligible for listing due to their severely deteriorated condition. MHT concurred with this determination.

5.7 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

As mentioned previously, a Phase I Archaeological Investigation on the Bowman Farm resulted in the identification of three archaeological sites with one site as potentially eligible for listing in the NRHP. A Phase II investigation is recommended once design plans are developed for this area.

In addition, the existing Airport Administration Building is eligible for listing in the NRHP under Criterion A and Criterion C. The MHT concurred with the recommendation; further coordination is required with MHT should the proposed development occur near this facility or require any alteration to this facility.

As discussed in **Section 5.6**, an additional archaeological site, the Rosenstock Site, is located within the avigation easement on the north side of the Monocacy River. The proposed development at the Airport is not anticipated to impact this site.

There are no additional known historic, architectural, archaeological, or cultural resources located on Airport property or within the immediate vicinity that would be affected by the proposed improvements.

5.8 WATER QUALITY

FDK drains to the Monocacy River, which is located within the Carroll Creek/Rock Creek subwatershed, which is a component of the Lower Monocacy River drainage area, which is a component of the larger Upper Potomac watershed and the even larger Chesapeake Bay watershed. A part of the Piedmont carbonate aquifer underlies the western portion of FDK and supplies a source of groundwater for Frederick County. Impacts to groundwater are not anticipated as a result of the implementation of the proposed development.

Stormwater runoff at FDK is collected at several different locations, ultimately depositing into the Monocacy River. Stormwater runoff from the northern side of the Airport drains into a Stormceptor®. The Stormceptor® separates grit, suspended solids, oil and grease from stormwater runoff prior to discharge into the Monocacy River. Airfield runoff is collected at three different locations: an outfall next to the Department of Public Works facility, a grassed swale located east of Taxiway C, and another grassed swale located north of the runway to runway intersection. These locations respectively drain to

the unnamed intermittent stream that runs parallel to the Bowman Farm property line, the sediment basin positioned approximately 1,000 feet south of Runway 30, and an additional sediment basin found approximately 1,300 feet north of Runway 23.

The Maryland Department of the Environment (MDE) administers the stormwater management (SWM) program in Maryland to ensure compliance with Federal and state regulations. Most recent MDE guidance is set forth in *Maryland Stormwater Management Guidelines for State and Federal Projects* (July 2001) and *Maryland Stormwater Design Manual* (2000). Landowners are required to address SWM, in terms of water quality and water quantity, when either new development or redevelopment activities are undertaken. Development is classified as new development when a net increase in impervious surface results for the project. Water quality shall be provided for 20% of the project's predevelopment impervious area. Any reconstruction of, or new construction on, existing impervious area, exceeding 5,000 square feet, is considered redevelopment. In addition, redevelopment projects should reduce existing impervious areas impacted within the project limits by 20%. Stormwater runoff can be expected to increase as a result of the additional impervious surface proposed.

The proposed projects would require erosion and sediment permits from the City for construction activities, as well as long-term SWM facilities to compensate for the increase in impervious surface. Coordination with MDE, as well as the City of Frederick would be required.

5.9 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (PL 90-545, as amended) was implemented to facilitate the protection of rivers possessing outstanding scenic, recreational, geological, fish and wildlife, historical, cultural, or any other similar values. There are no Federally-designated Wild and Scenic Rivers in the vicinity of FDK. The Monocacy River was added to the Maryland Scenic and Wild Rivers program in April 1974.

5.10 FLOODPLAINS AND FLOODWAYS

Executive Order 11988 defines floodplains as the "lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, the area subject to a one percent or greater chance of flooding in any given year". The Order directs Federal agencies to take action to reduce the risk of flood loss, minimize the impacts on human safety, health, and welfare, and restore and preserve the natural and beneficial values served by floodplains. Under DOT Order 5620.2, the FAA must make a finding that there is no practicable alternative before taking action that would encroach on a floodplain based on a 100-year flood.

A review of Federal Emergency Management Administration (FEMA) Flood Insurance Rate Maps (FIRM), dated 1978 and 1988, showed that the Airport is primarily within Zone X (upland areas outside of 500-year floodplain) except the low-lying areas adjacent to the Monocacy River. These areas, although shown on the FIRM, are estimated limits of the floodplain of the Monocacy River. According to the estimated FIRM, based on a 1978 study, FDK's property within this area is found within Zone A (areas of 100-year flood) and Zone X500 (areas of 500-year flood).

The proposed development is not anticipated to encroach upon floodplains.

5.11 WETLANDS AND WATERS OF THE US

Wetlands have been defined in Executive Order 11990 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 or production". Federal, state, and local programs regulate activities conducted in wetlands in order to minimize the continuing reduction and degradation of these resources and strive to achieve a "no net loss" policy. The Federal program is based on Section 404 of the Clean Water Act and the US Army Corps of Engineer's (COE) implementation regulations (33 Code of Federal Regulations, Parts 320-330). These regulations define those lands that are considered wetlands and other "waters of the United States", including lakes, ponds, rivers, and streams.

A wetland delineation was conducted in 2002 and 2003 on approximately all of the western half of Airport property. This delineation identified a linear wetland system between the parking lot outfall of the Department of Public Works building and the Monocacy River; a small pond north of the linear wetland system, and a stormwater management pond located approximately 1,200 feet northeast of Runway 23.

The linear system drains east into the Monocacy River, receiving runoff from the Department of Public Works facility and adjacent agricultural field. This wetland system consists of three emergent wetlands, one scrub-shrub wetland, and Waters of the US. The wetland areas are identified as Wetlands A through D.

Wetland A is a palustrine, emergent, seasonally flooded wetland (PEM1C) that receives runoff from the Department of Public Works facility parking lot outfall and also from the adjacent agricultural fields. This wetland is dominated entirely by narrow-leaved cattail (*Typha angustifolia*). Classified as Waters of the US, a narrow, un-vegetated, intermittent stream carries drainage flow east from Wetland A. This stream is one to two feet wide having banks vegetated with foxtail (*Alopecurus geniculatus*), switchgrass (*Panicum virgatum*), and sedges (*Carex* sp.).

Wetland B is a palustrine, emergent, temporarily flooded wetland (PEM1A) dominated by soft rush (*Juncus effusus*), narrow-leaved cattail, spearmint (*Mentha spicata*), skunk cabbage (*Symplocarpus sp.*), and sedges.

Wetland C is a palustrine, scrub-shrub, temporarily flooded wetland (PSS1A) dominated by soft rush, young green ash (*Fraxinus pennsylvanica*), Japanese honeysuckle (*Lonicera japonica*), skunk cabbage, and young red maple (*Acer rubrum*). The stream forms a well defined channel through the center of this wetland.

From the eastern edge of Wetland C, a small channel continues east as Waters of the US with approximately 200 feet of easterly flow. The stream is bordered by a palustrine, emergent, temporarily flooded wetland (PEM1A), Wetland D. This emergent wetland was at one time an open water farm pond. The vegetation present at Wetland D consists of soft rush, spearmint, skunk cabbage, wool grass (*Scirpus cyperinus*), and sedges. The stream channel remains well defined through the center of this wetland.

East of Wetland D, the stream channel continues as Waters of the US with a narrow band of emergent vegetation along the banks of the channel. The stream flows east approximately 800 feet from Wetland D until its confluence with the Monocacy River.

Wetland E is an open water pond northeast of the drainage ditch. The fringes of the pond are forested. The area is classified as palustrine, open water of unknown water regime. A stormwater management pond is located approximately 1,200 feet beyond the Runway 23 end. This is an open water area with grasses on all shores and is classified as palustrine, open water of an unknown water regime.

A Jurisdictional Determination with the COE was conducted in August 2002 and received in writing in November 2002 for these wetlands areas discussed above. The proposed ATCT/turf runway access road would be located immediately adjacent to this wetland system (see **Exhibit 5.11-1**). Should impacts to this wetland occur, additional coordination with the COE would be necessary. Additionally, areas on the east side of the Airport have not been delineated and would therefore require field investigations.

5.12 COASTAL RESOURCES

Frederick County, and therefore FDK, is not located with Maryland's Coastal Zone. Therefore, no impacts to the coastal zone would occur with the proposed development at the Airport.

5.13 BIOTIC COMMUNITIES

With exception to the impervious areas on the Airport, the Airport property is primarily maintained grass. Small areas on the northeast section of the property are planted in corn, and some woody vegetation exists beyond the Runway 23 threshold. The Monocacy River is the most significant natural resource within the vicinity of the Airport. A riparian forest exists along the river, ranging in width from 25 feet to 500 feet. This area is listed as a Conservation Area, according to the Frederick County Comprehensive Plan (1998). North of the river lies a mid-seral Oak-Hickory forest.

In support of the 2004 EA, the Maryland Department of Natural Resources (MDNR)-Wildlife and Heritage Division and US Fish and Wildlife Service (FWS) were consulted regarding the presence of rare, threatened, or endangered species and associated habitat within the vicinity of the Airport. Coordination with the MDNR indicated that there are no State records of rare, threatened, or endangered species within the project area. The FWS indicated that with the exception of occasional transient individuals, no Federally-listed or proposed endangered or threatened species have been documented in the vicinity of the Airport.

Coordination with both the MDNR and FWS would be necessary to ensure that the proposed development would not impact any rare, threatened, or endangered species or associated habitat.

5.13.1 *Maryland Forest Conservation Act*

In accordance with the Annotated Code of Maryland (Natural Resources Article, Title 5, Subtitle 16) and Code of Maryland Regulations Title 08, Subtitle 19, Forest Conservation as well as the City of Frederick Forest Conservation Ordinance (December 1992), the Forest Conservation Act of 1991 requires that prior to the approval of any public or private subdivision, project plan, grading permit, or sediment control permit on a unit of land 40,000 square feet or greater, applicants must submit a Forest Stand Delineation and a Forest Conservation Plan to the City Department of Planning.

5.14 FARMLANDS

The Farmland Protection Policy Act (FPPA) of 1981 was implemented to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The FPPA does not apply to land that is already committed to urban development, regardless of whether it has been classified as prime or statewide important farmland by the Natural Resource Conservation Service. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, oilseed, and other agricultural crops.

Statewide or locally important soils are those other than prime farmland soils that are important for the production of food, fiber, feed, or oilseed crops.

Soils at the Airport are classified as either prime farmland or soils of statewide importance; however, the FPPA would not apply since the Airport is zoned light industrial and is therefore committed to urban development. Therefore, since all of the proposed projects would be located on Airport property, no impacts to prime farmland or soils of statewide importance would result.

5.15 LIGHT EMISSIONS AND VISUAL IMPACTS

Currently, light emissions arise from a number of sources, including airfield and building lighting, navigational aids, and vehicular traffic. Each of these lighting sources can vary in terms of beam angle, location of light, color, and intensity. Future lighting sources proposed at the Airport include common lighting for various aircraft hangars and administration buildings. The proposed lighting improvements at the Airport are not anticipated to create adverse visual impacts to surrounding areas.

5.16 NATURAL RESOURCES AND ENERGY SUPPLY

Increased energy requirements associated with airport improvement projects are those relating to increased consumption from stationary sources (i.e., additional buildings requiring heating and cooling), and those involving substantial increases in aircraft and ground vehicle movement and their related fuel consumption. Allegheny Power Company provides power to the Airport. Existing and proposed demand for electrical power is within the capacity currently provided. Therefore, the proposed development is not anticipated to have an adverse impact on energy supply. In addition, the proposed development is also not anticipated to require any natural resources or scarce materials.

5.17 HAZARDOUS MATERIALS AND SOILD WASTE

5.17.1 *Hazardous Materials*

Areas of potential impact include the release of existing undisturbed toxic substances, release of toxic substances from construction activities, and the release of toxic materials from newly constructed facilities. Hazardous substances are known to exist at the Airport in terms of fuel and other maintenance service type fluids.

The proposed development involves the expansion of the existing fuel area to include an additional 12,000-gallon above-ground JetA fuel storage tank. This fuel farm area would be sized accordingly to meet the new US EPAs secondary containment requirements for parked fueling trucks.

5.17.2 Solid Waste

Solid waste disposal for the Airport is provided by the City of Frederick. Solid waste will be generated from construction at the Airport. Other wastes will be transported and disposed of as directed by appropriate Airport officials in accordance with local laws and regulations. Significant debris accumulation may result from the proposed demolition of existing buildings and paved areas. The solid waste generated from the operation of the Airport may increase slightly due to the possibility of future growth in air traffic. However, levels of additional daily refuse generated at the Airport are not expected to be significant.

5.18 SUMMARY

This Environmental Overview has been completed to provide the City of Frederick and the FAA with information regarding environmental concerns that may need to be addressed prior to implementing the proposed improvements at FDK as outlined in the Master Plan. Based upon the review of the preliminary environmental issues and planned improvements, additional environmental documentation in accordance with the National Environmental Policy Act of 1969 and FAA Order 5050.4B, as directed by the FAA, will need to be conducted for the future development.