

# Chapter 6.0

## Preferred Alternative



BROOKSVILLE - TAMPA BAY REGIONAL AIRPORT  
& TECHNOLOGY CENTER



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INTERNATIONAL

## **6.0 PREFERRED ALTERNATIVE**

### **6.1 Introduction**

The previous chapter presented the preliminary alternatives for BKV including options for extending Runway 9-27 to 8,000 feet and the continued expansion of the airport's landside facilities (e.g., the development of hangars and support facilities). The intent of the preliminary alternatives was to evaluate various scenarios for satisfying the identified facility requirements. A preferred alternative was ultimately selected that represented the recommended development concept for the 20-year planning period of this Master Plan Update. This chapter describes each component of the preferred alternative and also presents an environmental action plan that describes the potential environmental impacts and level of documentation that would be necessary to undertake the proposed developments. The cost estimates for the preferred alternative are presented in the next chapter in conjunction with a Capital Improvement Plan (CIP) that shows anticipated project phasing and funding sources over the course of the 20-year planning period.

### **6.2 Preferred Alternative**

As shown in **Figure 6-1**, the preferred alternative includes a combination of the airfield and landside development alternatives that were presented in the previous chapter. The primary airfield recommendation is an extension of Runway 9-27 to the east (Runway 27 end) by 998 feet to provide a total runway length of 8,000 feet. In conjunction with the Runway 9-27, it would be necessary to shift Runway 3-21 to the south in order to prevent the creation of an overlapping "V" intersection at the ends of Runways 21 and 27. Some modification of the taxiways would also be necessary in that area to provide adequate aircraft traffic flows between the relocated runway ends. Other airfield improvements include the provision of paved blast pads and shoulders for Runway 9-27 and the associated taxiway system and navigational aid, signage, and lighting improvements. A detailed listing of all airfield projects that are anticipated during the planning period is presented with the CIP. In the long-term, additional parallel taxiways may be considered for both runways to allow for continued expansion of the airport's landside infrastructure.

The proposed landside improvements were tailored to separate the traffic on the airport by aircraft classification. The development on the east side of the airport along Taxiway 'B' is focused on providing facilities for small and medium-sized general aviation aircraft. The proposed development includes the provision of 10 additional T-hangar buildings with a total of 100 bays, a new aircraft tiedown apron with an aircraft wash rack, and five corporate hangars that are each 10,000 square feet. It is noted that some of the T-hangars are needed to serve as replacements for the existing T-hangars that are being removed in the Fixed Base Operator (FBO) area. On the west side of the airport, the development is focused on providing facilities for larger corporate and commercial aircraft. Along the closed runway, 10 corporate hangars are shown that are each 14,400 square feet and there are additional maintenance facilities shown that is a previously-considered concept for the area. The 10 corporate hangars are shown along shared taxilanes in order to maximize the development in that area and to reduce overall infrastructure costs, but other layouts may be considered in that area. Along the proposed parallel taxiway that is shown to the south of Runway 9-27, a large cargo apron and processing facility is shown and two larger areas are preserved for activities associated with larger commercial-sized aircraft. The cargo apron was a previously-designed project that provided a ready-to-go plan if the airport was approached by a cargo operator.

Other landside improvements are shown in pockets of the property just north of Runway 9-27 including a potential U.S. Customs and Border Protection (CBP) facility, an aircraft Maintenance, Repair, and Overhaul (MRO) facility, and another corporate hangar development in the northeast corner of the airport property that contains 10 hangars of various sizes.

### **6.3 Non-Aviation Land Use Analysis**

After the preferred development was selected for airfield and landside infrastructure at BKV, it was possible to identify other portions of the airport property that could be considered for non-aviation development. These represent areas that do not have direct access to the airfield and that may not be needed to support the anticipated aviation demands at BKV. **Figure 6-2** illustrates 13 parcels of land where non-aviation development may be considered. The available areas range in size from as small as 8.8 acres to as large as 345 acres, but in no way represents an actual parcelization of the airport's land. In the southwest corner of the airport property, there are several large tracts of land available for lease within the industrial park. It is anticipated that those areas would continue to attract industrial and corporate businesses that desire to be located in Hernando County. Area 3 is located along the rail line and should therefore be reserved for a company that needs rail access. Areas 1, 2, and 4 have direct access from heavily traveled roads in the area (Spring Hill Drive and Broad Street / U.S. Route 41) and could accommodate multi-story structures. The information presented in this land use analysis may be used to better understand the non-aviation development opportunities that exist at BKV.



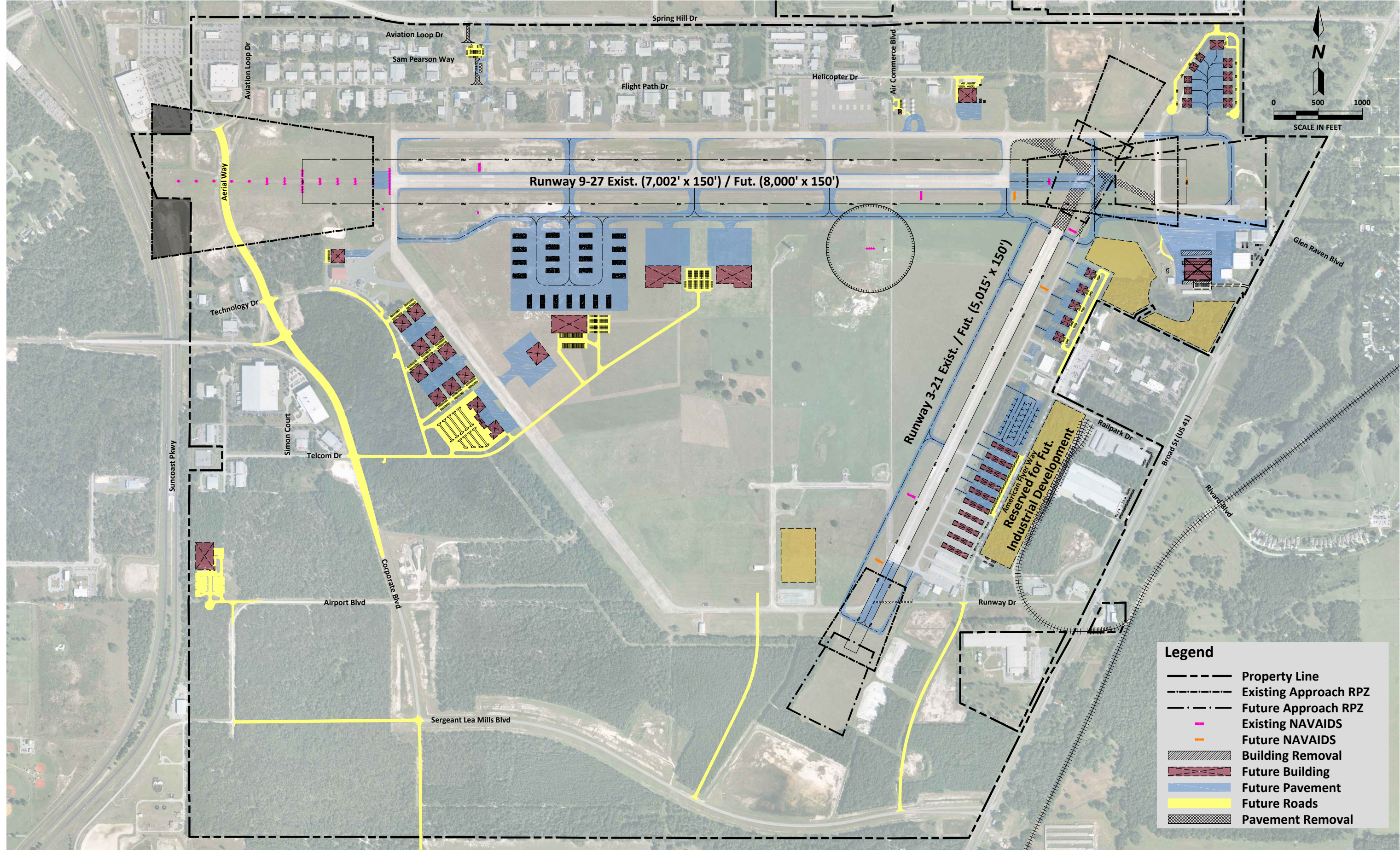


Figure 6-1 Preferred Alternative  
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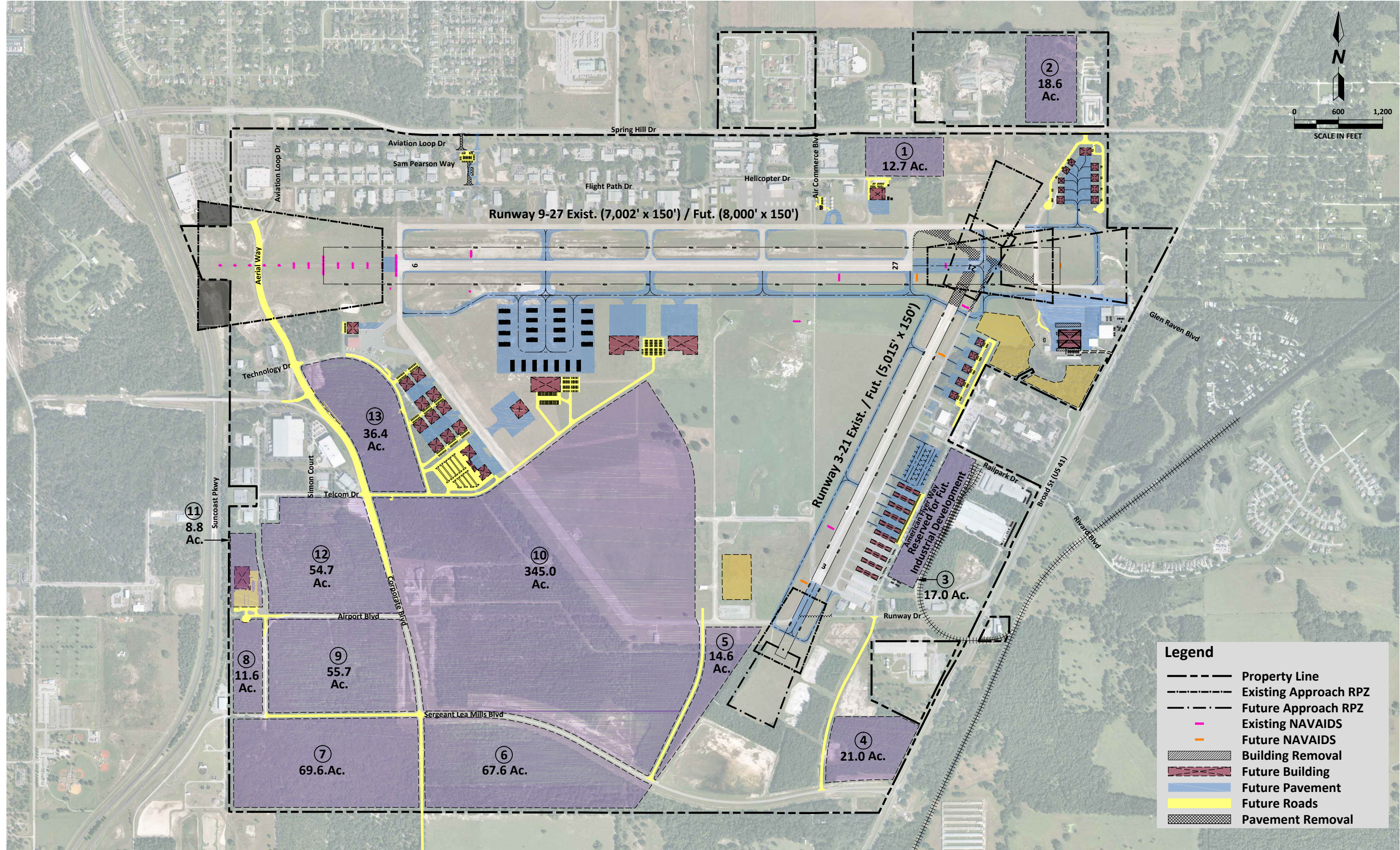


Figure 6-2 Non-Aviation Land Use Analysis  
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## 6.4 Noise Contours and Land Use Compatibility

The FAA’s Integrated Noise Model (INM) computer program is used to generate airport noise contours and to evaluate incompatible noise exposure to sensitive land uses such as residential properties, schools, places of worship, and hospitals. The noise contours illustrate the Day-Night Average Sound Level (DNL) that occurs during an average day and are generated by inputting various airport-specific factors into INM (aircraft activity and fleet mix, flight tracks, runway utilization, day and night activity, etc.). According to the FAA’s Environmental Desk Reference for Airport Actions, “DNL is the 24-hour average sound level in decibels (dB). This average is derived from all aircraft operations during a 24-hour period that represents an airport’s average annual operational day. [...] DNL adds a 10 dB noise penalty to each aircraft operation occurring during nighttime hours (10 p.m. to 7 a.m.). DNL includes that penalty to compensate for people’s heightened sensitivity to noise during this period.” The FAA identifies DNL levels of 65 dB and higher as incompatible with noise sensitive land uses.

Using the latest version of INM (Version 7.0d), DNL noise contours were generated for the following two scenarios at BKV: 1) existing 2013 activity levels, fleet mix, and runway configuration, and 2) forecast 2033 activity levels, fleet mix, and runway configuration (including an extension of the Runway 9-27 to the east and a shift of Runway 3-21 to the south). The INM inputs in **Table 6-1** were derived from the fleet mix forecasts in Table 3-6 and 3-8 and by reviewing historical flight records to identify aircraft models that commonly operate at BKV. As shown in **Figure 6-3**, the DNL 65 dB contour remains within the airport’s boundary under the existing and forecast scenarios. With the extension of Runway 9-27 and the shift of Runway 3-21, the 2033 DNL 65 dB contour would not encompass any sensitive land uses, and therefore, the preferred airfield development should not result in any significant noise impacts.

Aside from noise, the projects illustrated within the preferred alternative should not produce any new incompatible land uses. The relocated Runway Protection Zones (RPZs) would remain on the airport property beyond the ends of Runway 3, 21, and 27. Although portions of the RPZ beyond the end of Runway 9 currently extends over the Suncoast Parkway and the parking lot in front of Target, no additional incompatible land uses would be introduced into that RPZ as part of the preferred alternative. Furthermore, easements are recommended for those portions of the RPZ that extend off the airport property in order to be able to clear trees and to prevent the construction of incompatible land uses. The airspace is currently protected in that area in accordance with the Hernando County Code of Ordinances, which describes a specific zoning ordinance pertaining to the airport (Article X – Brooksville-Tampa Bay Regional Airport Zoning Ordinance).

**Table 6-1**  
**Integrated Noise Model (INM) Inputs**

Aircraft Type	Model	INM Code	2013 Operations	2033 Operations
Single-Engine Piston	Cessna 182	CNA182	37,871	55,707
Multi-Engine Piston	Beechcraft Baron 58	BEC58P	3,607	5,367
Turboprop	Cessna Conquest	CNA441	2,404	3,346
Jet (Small)	Lear 35	LEAR35	459	1,065
Jet (Medium)	Bombardier Challenger	CL600	953	2,212
Jet (Commercial)	Boeing 757-300	757300	0	580
Military Turboprop	Lockheed C130	C130AD	200	297
Military Helicopter	Sikorsky S-70	S70	4,809	7,156

Source: Michael Baker Jr., Inc., 2015.



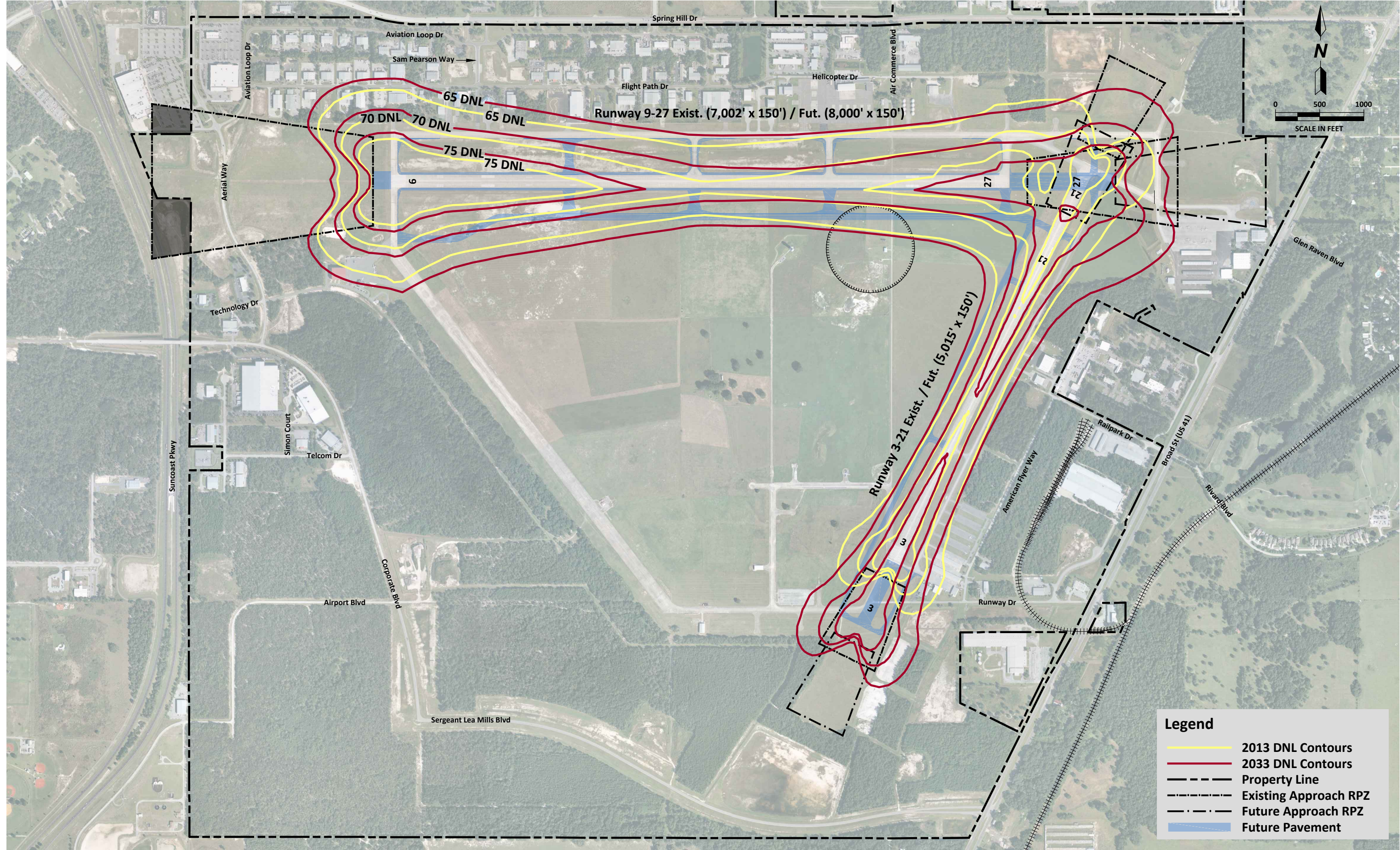


Figure 6-3 Noise Contours  
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## **6.5 Potential NEPA Documentation and Environmental Permits**

The following sections describe the necessary level of documentation and permitting that would be associated with undertaking the projects proposed within the preferred alternative, as well as identify any potential environmental impacts could be expected.

### ***Potential NEPA Documentation***

Change 1 of FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, provides the FAA policy and procedures to ensure compliance with the requirements of National Environmental Policy Act (NEPA) for FAA funded projects and lists the type of NEPA documentation required for each project type. Chapter 3 of FAA Order 1050.1E contains advisory and emergency actions and categorically excluded projects and actions. Categorically excluded projects and actions are those that meet the criteria contained in 40CFR 1508.4 and represent actions that do not normally require and EA or EIS and do not individually or cumulatively have a significant effect on the environment. Chapter 4 of FAA Order 1050.1E provides a summary of requirements for environmental assessments and findings of no significant impact (FONSI) and lists examples of actions or projects that normally require an EA which includes but is not limited to the following:

- ➔ Actions that are not categorically excluded
- ➔ Actions that are categorically excluded but involves at least one extraordinary circumstance that may significantly impact the environment
- ➔ Actions that require a Section 404 Individual permit
- ➔ Establishment of fuel storage and distribution systems
- ➔ Federal financial participation in or unconditional airport layout plan approval of a major runway extension

### ***Potential Regulatory Permits***

Permitting requirements for each project type are based upon current federal, state, and local environmental regulations. The following criteria were used to determine the potential environmental permit that would be required for each project:

#### ***1. State Environmental Resource Permit (ERP)***

An ERP is required if the project meets one of the following criteria:

- a. The project proposes work in, on or over wetlands and surface waters.
- b. The project proposes to construct more than 4,000 square feet of impervious or semi-pervious surface.
- c. The project proposed has an area that is greater than 1 acre.
- d. The project proposes impounding greater than 40-acre feet.
- e. The project has a dam that is greater than 10 feet in height.
- f. The project is part of a larger development plan.
- g. The project is a modification of an existing permit.

#### ***2. National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activity***



An NPDES for Construction permit is required if the project area is greater than 1 acre.

*3. Gopher Tortoise Relocation Permit*

The project is in an undeveloped upland that has the potential to contain gopher tortoise habitat and gopher tortoise.

*4. FDEP Industrial Wastewater Permit*

The project has the potential to contaminate groundwater.

*5. Section 404 Permit or Corps of Engineers (COE) Dredge and Fill Permit*

A Section 404 Permit is required if the project proposes to fill or dredge wetlands.

**Preferred Alternative Projects**

The projects proposed for the preferred alternative were overlaid on a Florida Land Use, Cover and Classification System (FLUCFCS) map and the most recent aerial photograph to determine if the proposed project would potentially impact developed areas, wetlands, non-forested uplands, and forested uplands. The projects proposed for the preferred alternative, their potential impact to wetlands, forested uplands, and protected species, the anticipated level of documentation (Categorical Exclusion or Environmental Assessment) that will be required by the FAA to satisfy NEPA requirements and the section of FAA Order 1050.1E that the project falls under, and the regulatory permits that would be required to construct the project are listed in **Table 6-2**.

The projects have been divided into the following:

1. Projects with no potential environmental impact
2. Projects with potential protected species impact
3. Projects with potential wetland impact
4. Projects with potential wetland and protected species impact

***Projects with No Potential Environmental Impacts***

Projects with no potential environmental impacts are located on developed areas within airport property. These include mowed upland or paved areas that do not require land acquisition and have a project area that is greater than one acre. These projects are typically categorically excluded and require an ERP and NPDES permit except when specifically identified in FAA Order 1050.1E as requiring additional documentation such as the construction of a fueling facility or a major runway extension.

***Projects with Potential Protected Species Impacts***

Projects with potential protected species impacts are projects that are located on undeveloped forested and non-forested areas of the airport that has the potential to contain gopher tortoise and their habitat. The gopher tortoise is a listed species in the State of Florida and impacts to this listed species and their habitat require a Florida Fish and Wildlife Conservation Commission Gopher Tortoise Relocation Permit. The projects under this category are categorically excluded except for



the fuel farm and Runway 9-27 extension which requires an Environmental Assessment (EA) per FAA Order 1050.1E.

***Projects with Potential Wetland Impacts***

Projects that are located in areas that contain wetlands or are near wetlands are required to have an ERP permit. In the State of Florida there is a memorandum of agreement between the state and the COE for Joint Application such that the ERP also serves as the application for a Section 404 or COE Dredge and Fill Permit. Projects with wetland impacts that require a Section 404 Individual permit are also required to have EA NEPA documentation. Projects with wetland impacts that can be permitted with a Section 404 Nationwide or General Permit would most likely be categorically excluded. The realigned airport entrance road has the potential to impact State Surface Waters which is not a Waters of U.S. and therefore would not require a Section 404 permit. The Corporate Boulevard extension and other roadway projects have the potential to impact wetlands and may require a Section 404 permit depending on the total area of wetlands that would be impacted and therefore may require an EA to meet NEPA requirements.



Table 6-2 Preliminary Environmental Review of Preferred Alternative												
Project	Acreage	Noise	Air Quality	Wetland	Upland Forested	Protected Species	NEPA Documentation	1050.1E Reference	State Permit	Federal Permit	Comments	FLUCFCS Code Impacted
Projects with No Environmental Impacts												
T-Hangars (4 Buildings - Construction)	6.6	N	N	N	N	N	CatEx	310 f	ERP, NPDES	None	Project area has been cleared & paved	8100
Airfield Electrical Improvements (Design & Construction)	8.8	N	N	N	N	N	CatEx	310 g	ERP, NPDES	None		8100
FBO Apron Rehabilitation (Construction) - remill - resurface	11	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None	Project area is paved	8100
Realigned Airport Entrance Road (Design & Construction) -	5.4	N	N	Y	N	N	CatExD	310 a or k	ERP, NPDES	None*	State surface water impact. *Provided the surface water is not Waters of the U.S. or the project is permitted as COE Nationwide or General Permit	6530
Airport Signage (Landside)		N	N	N	N	N	CatEx or CatExD	310 f	ERP, NPDES	None		4400/4120
T-Hangar Demolition	3.9	N	N	N	N	N	CatEx	310 f	ERP, NPDES	None		8100
Airport Security Improvements (Construction)		N	N	N	N	N	CatEx	309 h	ERP, NPDES	None	Project area assumed to be developed.	8100
FBO Hangar, Parking, & Access Improvements (American Aviation)	4.7	N	N	N	N	N	CatEx or CatExD	310 f	ERP, NPDES	None		8100
Wildlife Hazard Remediation (Grading Improvements)	5	N	N	N	N	N	CatEx	310 e	ERP-Exemption	None	RSA & TSA - mowed areas	8100
Runway 9 ILS Replacement (MALSR)	21.4	N	N	N	N	N	CatEx	309 b	ERP, NPDES	None		8100
Runway 9 ILS Replacement (Glide Slope & Localizer)	3.2	N	N	N	N	N	CatEx	309 b	ERP, NPDES	None		8100
Pavement Maintenance (2,400 LF of Closed Runway) - resurface only	11.1	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Closure of Runway Drive (Pavement Removal)	0.6	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Runway End Decoupling (Runway Ends 21 and 27)	5.7	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Pavement Maintenance (Taxiway B)	4.6	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Customs Facility	4.1	N	N	N	N	N	CatEx	310 f	ERP, NPDES	None		8100
Taxiway A8 Connector (Asphalt)	1.5	N	N	N	N	N	CatEx	309 e	ERP, NPDES	None		8100
Pavement Maintenance (Runway 3-21 - Asphalt)	17.2	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Runway 3-21 Shift (Asphalt - Runway 3 End Only)	9.4	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Air Cargo Apron (Phase I) & Taxiway C Improvements	22.5	N	N	N	N	N	CatEx	310 e & 310	ERP, NPDES	None		8100
Air Cargo Building	9	N	N	N	N	N	CatEx	310 f	ERP, NPDES	None		8100
Pavement Maintenance (Runway 9-27 - Asphalt)	24.1	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Blast Pads & Shoulders (Runway 9-27) - new	9	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Pavement Maintenance (Taxiway A - Asphalt)	23.9	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Taxiway A Fillet & Shoulder Improvements (widening)	2	N	N	N	N	N	CatEx	310 e	ERP, NPDES	None		8100
Projects with Potential Protected Species Impacts												
MRO Facility (Construction)	4.6	N	Y	N	Y	Y	CatEx	310 f	ERP, NPDES	None	Contains gopher tortoise	4340
Extension of Telecom Drive & Technology Drive with Infrastructure Improvements	9.9	N	N	N	Y	Y	CatEx or CatExD	310 a	ERP, NPDES	None	May contain gopher tortoise	4400/4120
Corporate Boulevard & Aerial Way Realignment	22	N	N	N	Y	Y	CatEx or CatExD	310 a	ERP, NPDES, GTRP	None	May contain gopher tortoise	2600/7400/4400/8100
Westside Infrastructure Improvements (utilities)	50	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400; 8100
Eastside Apron & Aircraft Wash Rack	9	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP, FDEP IWP	None		4340;1900;8100
Airfield Signage Improvements	0.5	N	N	N	N	Y	CatEx	310 f	GTRP	None	May contain gopher tortoise	8100
Westside Aircraft Maintenance Facilities	7.2	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Airport Maintenance & Fueling Facility - new area	5.5	N	N	N	N	Y	Focused EA	401 f	ERP, NPDES	None	May contain gopher tortoise	8100
Taxilane Improvements (T-hangar Taxilanes)	5.5	N	N	N	Y	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	4340;8100
Eastside Tree Removal (GA & Industrial Parcels - 30+ Acres) - east of Runway 3-21 & Taxiway B	30	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4340;1900;8100
T-Hangars (3 Buildings)	4.6	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4340;8100
Westside Corporate Hangar Development (Phase 1)	7.2	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Eastside Corporate Hangar Development (Phase 1)	5.1	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4340;8100
Westside Maintenance Hangar & Apron Expansion	1.7	N	N	N	Y	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Taxilane Improvements (T-Hangar Taxilanes)	5.5	N	N	N	Y	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
T-Hangars (3 Buildings)	5.5	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Runway 9-27 Extension (Asphalt)	30.7	Y	Y	N	N	Y	EA	401k (3)	ERP, NPDES, GTRP	None	May contain gopher tortoise; Requires updated noise contours or Part 150 Study	8100
South Connector Road - Sergeant Lea Mills Boulevard to Midfield (Design and Construction)	6.9	N	N	N	Y	Y	CatEx or CatExD	310 a	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Westside Corporate Hangar Development (Phase 2)	9.3	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Eastside Corporate Hangar Development (Phase 2)	7.1	N	N	N	Y	Y	CatEx, CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4340;8100



Table 6-2 Preliminary Environmental Review of Preferred Alternative												
Project	Acreage	Noise	Air Quality	Wetland	Upland Forested	Protected Species	NEPA Documentation	1050.1E Reference	State Permit	Federal Permit	Comments	FLUCFCS Code Impacted
Northeast Apron & Hangar Development	19.3	N	N	N	Y	Y	CatEx or CatExD	310 f	ERP, NPDES, GTRP	None	May contain gopher tortoise	4100;8100
Parallel Taxiway C (Runway 9-27 - Asphalt)	49.2	N	N	N	N	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	8100
Westside Commercial Aviation Development (2 areas)	42.6	N	N	N	Y	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	4400;4120;8100
Parallel Taxiway D (Runway 3-21 - Asphalt)	32.2	N	N	N	N	Y	CatEx or CatExD	310 e	ERP, NPDES, GTRP	None	May contain gopher tortoise	8100
Projects with Potential Wetland Impacts												
Corporate Boulevard Extension (Design and Construction)	12.9	N	N	Y	Y	Y	CatEx D/Focused EA	310 a	ERP, NODES, GTRP	404		4120; 4400; 2100;6530
Other Roadway Projects (West of Lee Mills and North of Lee Mills)	9.8	N	N	Y	Y	Y	CatExD/Focused EA	310 a	ERP, NPDES, GTRP	404	May contain gopher tortoise	4120; 6530;7400; 4400
ERP = Environmental Resource Permit NPDES = National Pollutant Discharge Elimination System Permit for Construction Activity Section 404 = Corps of Engineers Dredge and Fill Permit GTRP = Gopher Tortoise Relocation Permit FDEP IWP = FDEP Industrial Wastewater Permit												