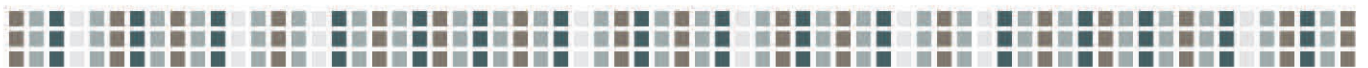


# Chapter 6

## Environmental Overview



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## 6. Environmental Overview

In addition to identifying Airport projects that are financially and technically sound, an important part of the master planning process is minimizing the potential environmental effects of the recommended projects, as well as understanding the environmental issues that could be considered in future environmental reviews. This section provides a general overview of the potential environmental consequences and environmental review requirements associated with the capital improvement projects recommended as part of the preferred development alternative in the MPU. Prior to project implementation, the potential environmental effects of these projects will need to be reviewed in accordance with NEPA requirements and implementing guidance in FAA Orders 1050.1F, *Environmental Impacts: Policies and Procedures*, and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, or the latest versions of those Orders at the time of environmental processing.

A project is considered ready for NEPA evaluation when the construction is expected to be initiated within a few years (i.e., construction should begin within 3 years of the FAA's issuance of a finding). The level of environmental documentation required for a proposed action depends on the type of project(s), the potential environmental effects of the project(s), and the types of environmental resources that could be affected. The three levels of environmental documents prepared to comply with NEPA are:

- **Categorical Exclusion** – FAA Order 1050.1F lists projects that typically do not result in significant adverse impacts. These projects are eligible for a categorical exclusion if no extraordinary circumstances are involved. Following FAA guidance, brief documentation of the project and confirmation that no extraordinary circumstances exist to support the FAA's determination may be required.
- **Environmental Assessment** – An EA is prepared for projects that are not eligible for a categorical exclusion; the EA determines whether the proposed action has the potential to result in a significant adverse impact. The EA presents a discussion and evaluation of the potential environmental effects. If no significant impacts would be expected to occur, or it is demonstrated that any potential impacts could be mitigated to a level below significance, then the FAA issues a Finding of No Significant Impact. If the adverse environmental impacts cannot be mitigated below a level of significance, then further analysis is required and an Environmental Impact Statement (EIS) is prepared by the FAA.
- **Environmental Impact Statement** – An EIS presents detailed analyses of the environmental effects of a proposed action. The EIS process provides for full public disclosure of significant environmental effects, practicable alternatives that would avoid or minimize adverse effects, and mitigation for those impacts that cannot be avoided.

## 6.1 Master Plan Development Projects

**Table 6.1-1** lists the capital improvement projects identified for the MPU preferred development alternative. The table identifies the capital improvement projects that are eligible for categorical exclusion under NEPA, pending confirmation that no extraordinary circumstances exist. Also included are the relevant paragraphs in FAA Order 1050.1F that cite each of the excluded projects as being eligible for NEPA categorical exclusion.

**Table 6.1-1: EYW Master Plan Preferred Development Alternative – Capital Improvement Projects and Categorical Exclusion References**

CAPITAL IMPROVEMENT PROJECT	NEPA CATEGORICAL EXCLUSION <sup>1/</sup>	FAA ORDER 1050.1F PARAGRAPH REFERENCE <sup>2/</sup>
<b>Airfield</b>		
Taxiway A extension to the west	Not Eligible	--
Vehicle service road relocation	Not Eligible	--
Removal of existing taxiway D	Eligible	5-6.4.e
Construction of new runway exits	Eligible	5-6.4.e
Removal of existing wide expanses of pavement	Eligible	5-6.4.e
Fillet modifications	Eligible	5-6.4.e
Commercial ramp expansion to the east	Not Eligible	--
Commercial ramp restriping	Eligible	5-6.4.e
<b>Landside</b>		
Faraldo Circle realignment	Eligible	5-6.4.a
Commercial Curb enhancement	Eligible	5-6.4.f
Public and rental car facilities expansion	Eligible	5-6.4.h
Consolidated rental car expansion	TBD	TBD
Greyhound bus relocation Alternative 1	Eligible	5-6.4.i
Greyhound bus relocation Alternative 2	Eligible	5-6.4.i
General aviation access road construction	Potentially Eligible	5-6.4.a
<b>Terminal</b>		
Terminal expansion	Not Eligible	--
<b>General Aviation</b>		
Overflow aircraft parking ramp expansion Phase 1	Not Eligible	--
Overflow aircraft parking ramp expansion Phase 1	Not Eligible	--
<b>Support Facilities</b>		
Maintenance storage area	Eligible	5-6.4.f

NOTES:

NEPA – National Environmental Protection Agency

FAA – Federal Aviation Administration

1/ Projects are eligible for a categorical exclusion if no extraordinary circumstances exist, as listed in Section 1-10.15 of FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*.

2/ The cited paragraphs in FAA Order 1050.1F relate to the following:

- 5-6.4.a Construction, relocation, or repair that would not reduce the level of service on local traffic systems below acceptable levels.
- 5-6.4.e Construction, repair, reconstruction, resurfacing, extending, strengthening, or widening that would not result in significant erosion or sedimentation, would not result in a significant noise increase over noise sensitive areas, or would not result in significant air quality impacts.
- 5-6.4.f Construction or limited expansion of accessory onsite structures, such as storage buildings, garages, hangars, small parking areas, signs, fences, and other essentially similar minor development items.
- 5-6.4.h Construction or expansion of facilities that would not substantially expand those facilities.
- 5-6.3.i Installations involving fewer than 3 acres of land that do not have the potential to cause significant impacts on bird or bat populations.

SOURCE: Ricondo & Associates, Inc., July 16, 2015 (Based on FAA Order 1050.1F).

PREPARED BY: Ricondo & Associates, Inc., June 2017.

## 6.2 Summary of Potential Environmental Effects

The Environmental Overview considers potential effects of the capital improvement projects on the environmental resource categories identified in FAA Orders 1050.1F and 5050.4B. **Table 6.2-1** lists the environmental categories considered. Categories that are not applicable to the site are briefly explained in the following section.

**Table 6.2-1: Master Plan Preferred Development Alternative – Environmental Categories and Potential Effects**

RESOURCE CATEGORY	RESOURCE EXISTS ON OR NEAR THE AIRPORT	POTENTIAL EFFECT
<b>Water Resources</b>		
Wild and Scenic Rivers	Not Applicable	N/A
Surface Waters	Applicable	Unknown
Wetlands	Applicable	Yes
Coastal Barriers/Coastal Zone Resources	Applicable	Unknown
Floodplains	Applicable	Yes
<b>Department of Transportation Act, Section 4(f)</b>	Applicable	No
<b>Farmlands</b>	Not Applicable	N/A
<b>Air Quality</b>	Applicable	No
<b>Historical, Architectural, Archeological Resources, and Cultural Resources</b>	Applicable	No
<b>Biotic Resources (including fish, wildlife, and plants)</b>	Applicable	Yes
<b>Hazardous Materials, Solid Waste, and Pollution Prevention</b>	Applicable	Unknown
<b>Noise Compatibility and Land Use</b>	Applicable	No
<b>Construction Impacts</b>	Applicable	No
<b>Socioeconomic Impacts</b>	Applicable	No

NOTES:

No – Environmental issue not anticipated.

Yes – Potential environmental issue.

Unknown – Potential impact unknown.

Applicable/Not Applicable – Resource is present on or near the Airport or may be affected by the Preferred Development Project.

SOURCE: Ricondo & Associates, Inc., June 2017 (see Section 1.3).

PREPARED BY: Ricondo & Associates, Inc., June 2017.

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## 6.3 Resource Area Overview

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### 6.3.1 WATER RESOURCES

#### 6.3.1.1 Wild and Scenic Rivers

Wild and scenic rivers are designated by the U.S. Department of the Interior to protect the most beautiful and unspoiled rivers in the nation under the Wild and Scenic Rivers Act. Two rivers in Florida, the Loxahatchee River and the Wekiva River, are designated as Wild and Scenic Rivers.<sup>1</sup> Neither river is near the Airport; therefore, the MPU preferred development projects would not affect a wild and scenic river.

#### 6.3.1.2 Wetland Habitats

Wetlands are habitats that are frequently inundated or saturated with water, have soils that show the effects of saturation, and support plant species that have adapted to wet conditions.

Executive Order 11990, *Protection of Wetlands*, directs federal agencies to minimize the destruction, loss, or degradation of wetlands on federal property or on projects with federal funding. Wetlands that are adjacent to Waters of the United States<sup>2</sup>, or those that have a significant physical, chemical, or biological nexus, are also considered Waters of the United States. These jurisdictional wetlands are protected under the Clean Water Act of 1972 and require a permit from the U.S. Army Corps of Engineers before they may be filled.

The U.S. Fish and Wildlife Service's (USFWS's) National Wetlands Inventory (NWI) informs of several on-Airport wetlands. Based on the current NWI, the following projects could impact on-Airport wetlands:<sup>3</sup>

- west Taxiway A extension
- commercial ramp extension
- service road relocation
- overflow aircraft parking ramp (Phases 1 and 2)
- Greyhound bus station relocation
- public parking expansion
- rental car facilities expansion
- construction of new runway exits

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<sup>1</sup> National Wild and Scenic Rivers System, <https://www.rivers.gov/florida.php> (accessed June 6, 2017).

<sup>2</sup> United States Environmental Protection Agency, About Waters of the United States, <https://www.epa.gov/wotus-rule/about-waters-united-states> (assessed April 6, 2018)

<sup>3</sup> United States Fish and Wildlife Service, National Wetlands Inventory, <https://www.fws.gov/wetlands/data/mapper.html> (accessed June 15, 2017).

Therefore, as part of future NEPA evaluations for these projects, site investigations with the USFWS should be coordinated to determine whether the mapped wetlands meet the relevant criteria. Results of these site investigations should be incorporated into the NWI.

### 6.3.1.3 Coastal Barriers/Coastal Zone Resources

The Coastal Zone Management Act requires that federal permitting and funding decisions be fully consistent with the state's approved coastal management program. All projects at the Airport are within the boundaries of the Coastal Zone Management Program. Additionally, if the City is seeking federal funding or approval, then the projects would require review by appropriate federal and State of Florida environmental agencies.

Although EYW property is not located within a Coastal Barrier Resources Act Zone or seaward of the Coastal Construction Control Line permit area, as defined by the Florida Department of Environmental Protection (FDEP), the City of Key West is designated as an "Area of Critical Concern." Therefore, future Airport development may impact coastal resources under purview of the Florida Coastal Management Program (FCMP). Future coordination with the FDEP would be required to determine the potential effects on FCMP resources resulting from development of the preferred alternative.

### 6.3.1.4 Surface Water Quality

The Federal Water Pollution Control Act, as amended (commonly referred to as the Clean Water Act), establishes water quality standards; develops waste treatment management plans and practices; prevents or minimizes the loss of wetlands; establishes location with regard to an aquifer or sensitive ecological area, such as a wetlands area; and regulates other issues concerning water quality. The City of Key West regulates stormwater runoff through a FDEP Environmental Resource Permit (ERP), which may require modification to accommodate the MPU preferred development alternative.

Waters surrounding the Florida Keys are designated as "Outstanding Florida Waters (OFW)". Section 403.061(27), Florida Statutes, grants the FDEP with the power to establish rules that provide for a special category of waterbodies within the state, to be referred to as "Outstanding Florida Waters (OFW)," which shall be worthy of special protection because of their natural attributes.<sup>4</sup> Statutes dictate that the FDEP cannot issue permits for direct discharges to OFWs that would lower ambient (existing) water quality. The FDEP also may not issue permits for indirect discharges that would significantly degrade a nearby waterbody designated as an OFW.<sup>5</sup>

Coordination with the City of Key West and the FDEP would be necessary to ensure water quality standards are not affected by future Airport development.

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<sup>4</sup> Florida Department of Environmental Protection, *Factsheet about Outstanding Florida Waters*, <http://www.dep.state.fl.us/water/wqssp/ofwfs.htm> (accessed June 15, 2017).

<sup>5</sup> Florida Administrative Code, *Surface Water Quality Standards*, Chapters 62–302.



### 6.3.1.5 Floodplains

Airport development will be subject to Executive Order 11988, *Floodplain Management*, which requires “federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.”<sup>6</sup> Department of Transportation (DOT) Order 5650.2, *Floodplain Management and Protection*, and FAA Orders 1050.1F and 5050.4B contain policies and procedures for implementing the Executive Order and for evaluating potential floodplain impacts. FAA Order 1050.1F, *Environmental Impacts, Policies and Procedures*, supports DOT Order 5650.2 through policies and procedures for evaluating potential floodplain impacts.

Executive Order 11988 directs federal agencies to reduce the risk of flood loss; to minimize the impact of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains.

A review of FEMA flood zone maps indicates the entire Airport appears to be situated in a flood hazard area, Zones “AE” and VE.” Zone AE refers to an area inundated by 100-year flooding, for which base elevations have been determined. Zone VE refers to an area inundated by 100-year flooding with velocity hazard (wave action), for which base elevations have been determined. Exhibit 2-34, included in the inventory chapter, illustrates the FEMA flood zone designations on and surrounding the Airport’s property.

### 6.3.2 DEPARTMENT OF TRANSPORTATION ACT SECTION 4(f) LANDS

Section 4(f) of the U.S. DOT Act of 1966 specifies that transportation projects cannot take land from public parks, historic sites, or wildlife refuges without it first being determined that no reasonable and prudent alternative exists. Takings can include physical acquisition of these lands or environmental impacts, such as high noise levels, that would make these lands unsuitable for their desired uses.

Section 4(f) resources within or adjacent to EYW, as described within the 2007 RSA EA for the Airport, are the following:

1. East Martello Tower: The tower is located at 3501 South Roosevelt Boulevard near the entrance to the Airport. The East Martello Tower is a publicly owned historic resource and is located on Airport property. The parcel containing the East Martello Tower is leased from Monroe County by the Key West Art & Historical Society; it was listed in the National Register of Historic Places (NRHP) in 1972.
2. “The Pines” Public Park: A small public park, unofficially named “The Pines,” is located on South Roosevelt Boulevard at the entrance to EYW. The County-owned park is located on Airport property. The park property provides unimproved space for vehicle parking and contains several concrete tables and benches.

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<sup>6</sup> 42 Federal Register (FR) 26951, Executive Order 11988, Floodplain Management, May 24, 1977.

3. Little Hamaca Park: Owned by the City of Key West, the park is located on Government Road at a former coastal defense missile site on the north edge of the salt pond north of the EYW property boundary. The park has a botanical nature trail, which includes boardwalks and a picnic area. The park provides for educational and recreational walking tours of native vegetation types, birds, and wildlife.

It is not expected that any DOT Section 4(f) lands would be affected by the Airport MPU preferred development alternative, because there would be no direct or indirect impacts to these properties. DOT Section 4(f) lands described above are illustrated on **Exhibit 6.3-1**.

### 6.3.3 FLORIDA NATURAL AREAS INVENTORY

The Florida Natural Areas Inventory<sup>7</sup> is a database of conservation land in Florida. The database includes data on national parks, forests, wildlife management areas, and wildlife preserves which is obtained from federal, state, and local governments, and privately management organizations. Land designated as conservation areas on airport property, which are managed by Monroe County equates to 1,706 acres. These areas are illustrated on **Exhibit 6.3-2**.

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<sup>7</sup> Florida Natural Areas Inventory, <http://fnai.org/conservationlands.cfm> (accessed April 17, 2018)



**LEGEND**  
 - - - - - Airport Boundary

SOURCE: Martinez GeoSpatial, *Basemap Planimetrics*, November 2016; Martinez GeoSpatial, *Aerial Photography*, April 2016.  
 PREPARED BY: Ricondo, Inc., April, 2018.

**EXHIBIT 6.3-1**



Department of Transportation Act Section 4(f) - Public Parks & Historical Sites Near Airport

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Public Parks Exhibit.dwg\Layout: Exhibit 6.3-1 Plotted: Oct 9, 2018, 12:26PM



SOURCE: Google Earth, April 2018 (aerial photography); Florida Natural Areas Inventory, Florida Conservation Lands, <http://fnai.org/conservationlands.cfm> (accessed April 17, 2018).  
PREPARED BY: Ricondo & Associates, Inc., April 2018.

**EXHIBIT 6.3-2**



## Florida Natural Areas Inventory - Conservation Areas on Airport Property

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg Layout: Conservation lands Plotted: Jun 12, 2020, 07:35AM

### 6.3.4 FARMLAND

Preservation of prime farmland is a priority goal for the U.S. Department of Agriculture, and the effects on prime farmland related to projects with federal support must be assessed.

In accordance with the Farmland Protection Policy Act (FPPA), if land was purchased prior to August 6, 1984, for the purposes of being converted to nonagricultural uses, then the provisions of the FPPA are not applicable. The MPU development projects would occur on land purchased prior to August 6, 1984, for military use and the development of EYW; therefore, the FPPA would not apply to projects on Airport property.<sup>8</sup>

### 6.3.5 AIR QUALITY

The federal Clean Air Act, as amended, required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS) for principle air pollutants considered harmful to public health and the environment. Those areas where the NAAQS are not met are designated as “nonattainment.” Monroe County, Florida, is classified as “attainment” for all criteria air pollutants.<sup>9</sup>

The two principle sources of air pollution associated with the development and operation of the Airport are vehicular (both customer and maintenance vehicles and equipment) and aircraft emissions. Changes in air quality resulting from aircraft and/or vehicle emissions are not anticipated since the preferred development alternative is not expected to induce activity or increase the number of aircraft operations. Implementation of the preferred development alternative would require coordination with the Florida Department of Environmental Protection Division of Air Resource Management to determine permitting requirements under the New Source Review and Prevention of Significant Deterioration Program. In addition, future Airport development projects that require NEPA review must consider the project’s effect on air quality.

Construction permits are used to implement the federal Clean Air Act requirements for air quality, including Best Available Control Technology determinations. Air quality associated with construction emissions, specifically dust, will not be a long-term factor. All necessary permits should be obtained before construction begins to ensure Best Management Practices, such as watering, are followed to reduce any impacts associated with dust from construction activity.

### 6.3.6 HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) of 1966 requires that an initial review be made to determine if any properties that are included or eligible for inclusion in the NRHP are within the area of a proposed action’s potential effects. Section 106 of the NHPA directs that any sponsor of a federally assisted undertaking “take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register.”

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<sup>8</sup> 7 U.S.C. 4201 and 7 CFR, Chapter VI, Part 658, *Farmland Protection Policy Act*.

<sup>9</sup> United States Environmental Protection Agency, *Nonattainment Areas for Criteria Pollutants*, <https://www.epa.gov/green-book> (accessed June 6, 2017).

The Archeological and Historic Preservation Act of 1974 provides for the survey, recovery, and preservation of significant scientific, prehistoric, historical, archeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project.

A review of the NRHP database<sup>10</sup> shows one historical resource: East Martello Tower.

East Martello Tower is located at 3501 South Roosevelt Boulevard near the entrance to the Airport; it is a publicly owned historic resource that is located on EYW property. The parcel containing the East Martello Tower is leased from the County by the Key West Art & Historical Society. The East Martello Tower was listed in the NRHP in 1972.

There are no other NRHP-listed historical properties located at EYW or within one-half mile of the Airport boundary. Prior studies at the Airport indicate there is one other non-NRHP recorded historic resource on-Airport: the East Martello Battery Bunker.<sup>11</sup> This site, however, is not within the development area of future projects defined within this MPU.

Although there are no known historic, architectural, archaeological, or cultural resources that would be affected by on-Airport development, if ground-disturbing activities resulting from the implementation of any development uncover historic and/or archaeologically significant materials, then work must stop immediately, and the City must take all reasonable measures to avoid or minimize harm to the property. Work would not proceed until the State Historic Preservation Office determines that appropriate measures have been taken to ensure the project is in compliance with the NHPA.

### 6.3.7 BIOTIC RESOURCES (INCLUDING FISH, WILDLIFE, AND PLANTS)

#### 6.3.7.1 Critical Habitat

The Airport is located within a USFWS-designated critical habitat area (Staghorn coral and Elkhorn coral), defined within the Endangered Species Act as “a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection.” Activities that involve federal permitting must determine if a proposed action under its purview would affect a federally listed species or habitat critical to the species.

#### 6.3.7.2 Threatened and Endangered Species

**Table 6.3-1** lists the state and federal listed plant and animal species known to exist in Monroe County, as listed within the U.S. Fish & Wildlife Environmental Conservation database. As previously noted, activities that involve

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<sup>10</sup> National Park Service, National Register of Historic Places, <https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466> (accessed June 6, 2017).

<sup>11</sup> URS Corporation and Monroe County Board of County Commissioners, *Final Environmental Assessment for Proposed Runway Safety Area Improvements*, July 23, 2007 (prepared for the Federal Aviation Administration).

federal permitting must determine if a proposed action under its purview would affect a federally listed species or habitat critical to the species.

## 6.3.8 HAZARDOUS MATERIALS AND SOLID WASTE

### 6.3.8.1 Hazardous Materials

Federal, state, and local laws regulate hazardous material use, storage, transport, and disposal. These laws may extend to past and future landowners of properties containing these materials. In addition, disrupting sites containing hazardous materials or contaminants may cause significant impacts to soil, surface water, groundwater, air quality, and the organisms using these resources. These include: the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation, and Liability Act; the Clean Air Act; the Clean Water Act; the Safe Drinking Water Act; and the Hazardous Materials Transportation Act. These regulations govern the storage, use, transportation, and, with contaminated sites, the recovery, mitigation, and cleanup activities.

Federal and state regulatory agency records did not reveal any sites or facilities near the proposed projects that are included on the EPA National Priorities List for sites with known releases or threatened releases of hazardous substances.<sup>12</sup> The FDEP administers and enforces federal hazardous materials regulations. Based on a review of the FDEP's Contamination Locator Map,<sup>13</sup> there are three petroleum cleanup sites located south of the Airport terminal within and adjacent to the existing vehicle parking areas. **Table 6.3-2** lists the site location, identification reference, and status of cleanup.

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<sup>12</sup> United States Environmental Protection Agency, NPL Site Status Information, <https://www.epa.gov/superfund/npl-site-status-information> (accessed June 7, 2017); Florida Department of Environmental Protection, Waste Cleanup Program, [http://www.dep.state.fl.us/waste/categories/wc/pages/npl\\_1199.htm](http://www.dep.state.fl.us/waste/categories/wc/pages/npl_1199.htm) (accessed June 7, 2017).

<sup>13</sup> Florida Department of Environmental Protection, Contamination Locator Map, <http://prodenv.dep.state.fl.us/DepClnup/viewmap.do> (accessed June 7, 2017).

**Table 6.3-1: Monroe County Endangered and Threatened Species**

GROUP	COMMON NAME	FORMAL NAME	STATUS
<b>Birds</b>			
	Everglade snail kite	<i>Rostrhamus sociabilis plumbeus</i>	Endangered
	Cape Sable seaside sparrow	<i>Ammodramus maritimus mirabilis</i>	Endangered
	Bachman's warbler	<i>Vermivora bachmanii</i>	Endangered
	Wood stork	<i>Mycteria americana</i>	Threatened
	Audubon's crested caracara	<i>Polyborus plancus audubonii</i>	Threatened
	Piping plover	<i>Charadrius melodus</i>	Threatened
	Roseate tern	<i>Sterna dougallii dougallii</i>	Threatened
	Red knot	<i>Calidris canutus rufa</i>	Threatened
<b>Fishes</b>			
	Atlantic sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened
<b>Plants</b>			
	Blodgett's silverbush	<i>Argythamnia blodgettii</i>	Threatened
	Big pine partridge pea	<i>Chamaecrista lineata keyensis</i>	Endangered
	Wedge spurge	<i>Chamaesyce deltoidea serpyllum</i>	Endangered
	Sand flax	<i>Linum arenicola</i>	Endangered
	Garber's spurge	<i>Chamaesyce garberi</i>	Threatened
	Florida pineland crabgrass	<i>Digitaria pauciflora</i>	Proposed Threatened
	Key tree cactus	<i>Pilosocereus robinii</i>	Endangered
	Cape Sable thoroughwort	<i>Chromolaena frustrata</i>	Endangered
	Florida prairie-clover	<i>Dalea carthagenensis floridana</i>	Proposed Endangered
	Florida semaphore cactus	<i>Consolea corallicola</i>	Endangered
	Everglades bully	<i>Sideroxylon reclinatum ssp. austrofloridense</i>	Proposed Threatened
<b>Insects</b>			
	Schau swallowtail butterfly	<i>Heraclides aristodemus ponceanus</i>	Endangered
	Miami blue butterfly	<i>Cyclargus thomasi bethunebakeri</i>	Endangered
	Bartram's hairstreak butterfly	<i>Strymon acis bartrami</i>	Endangered
	Florida leafwing butterfly	<i>Anaea troglodyta floralis</i>	Endangered
<b>Mammals</b>			
	Florida panther	<i>Puma concolor coryi</i>	Endangered
	Rice rat	<i>Oryzomys palustris natator</i>	Endangered
	West Indian manatee	<i>Trichechus manatus</i>	Threatened
	Key Largo cotton mouse	<i>Peromyscus gossypinus allapaticola</i>	Endangered
	Key Largo woodrat	<i>Neotoma floridana smalli</i>	Endangered
	Lower Keys marsh rabbit	<i>Sylvilagus palustris hefneri</i>	Endangered
	Puma (i.e., mountain lion)	<i>puma concolor</i> (all subsp. except <i>coryi</i> )	Threatened
<b>Reptiles</b>			
	American alligator	<i>Alligator mississippiensis</i>	Threatened
	Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
	Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
	Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
	Eastern indigo snake	<i>Drymarchon corais couperi</i>	Threatened
	American crocodile	<i>Crocodylus acutus</i>	Threatened
	Gopher tortoise	<i>Gopherus polyphemus</i>	Candidate
<b>Snails</b>			
	Stock Island tree snail	<i>Orthalicus reses</i> (not incl. <i>nesodryas</i> )	Threatened

SOURCE: United States Fish & Wildlife Service, Environmental Conservation Online System, <https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=12087> (accessed June 15, 2017).

PREPARED BY: Ricondo & Associates, Inc., June 2017.



**Table 6.3-2: Key West International Airport Petroleum Cleanup Sites**

SITE NAME	SITE ADDRESS	FACILITY ID	STATUS
<b>Signature Flight Support</b>	3471 S. Roosevelt Blvd.	8624743	Site Rehabilitation Completed <sup>1/</sup>
<b>Monroe County–Key West Intl Airport</b>	3491 S. Roosevelt Blvd.	8511825	Pending <sup>2/</sup>
<b>Monroe County–Public Works Div Key West</b>	3583 S. Roosevelt Blvd.	8624745	Active Petroleum Cleanup

## NOTES:

1/ Florida Department of Environmental Protection, Site Rehabilitation Completion Order, FDEP Facility ID No. 8624743, March 8, 2016.

2/ No cleanup/remediation documents present in FDEP electronic documents database.

SOURCE: Florida Department of Environmental Protection, Contamination Locator Map and Cleanup Facility Electronic Documents Listing, <http://prodenv.dep.state.fl.us/DepClnup/viewmap.do> (accessed June 7, 2017).

PREPARED BY: Ricondo & Associates, Inc., June 2017.

The Airport's MPU preferred development projects, listed in Table 6.1-1, that are in the general vicinity of the active petroleum cleanup site No. 5624745 and the pending site No. 8511825 include:

Site No. 8511825 located at 3491 S. Roosevelt Boulevard:

- Consolidated Rental Car Expansion
- Greyhound Bus Relocation Alternative 2
- General Aviation Access Road Construction
- Commercial Curb Enhancement
- Terminal Expansion

Site No. 8624745 located at 3583 S. Roosevelt Boulevard:

- Public Parking Expansion
- Greyhound Bus Relocation Alternative 1

If any hazardous materials are encountered during project construction, then treatment, storage, transportation, and disposal of any such materials would be conducted in accordance with all applicable local, state, and federal regulations.

### 6.3.8.2 Waste Management

FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*, would require an analysis of the following: future projects and their associated solid waste impacts relative to waste from the airfield development; waste from terminal area development, and the location of local waste disposal facilities. There are no landfills located near the Airport or within the City of Key West. Solid waste is currently handled by the local transfer station and disposed of outside the County.

### 6.3.9 COMPATIBLE LAND USE

The FAA established guidelines, published in 14 CFR Part 150,<sup>14</sup> for the compatibility of residential, institutional, commercial, industrial, and recreational land uses exposed to various levels of aircraft noise. Most land uses are compatible with noise exposure below DNL 65 (expressed in A-weighted decibels [dBA]<sup>15</sup>) and are noncompatible with noise exposure of DNL 75 dBA and higher. Noise-sensitive land uses, such as residential, schools and libraries, and religious facilities, are considered noncompatible with aircraft noise of DNL 65 dBA and higher.

Existing land uses surrounding Airport property are discussed in Section 2.8. As stated, the majority of the existing land uses adjacent to the Airport are designated by the City as open-space conservation lands, which will prevent potential encroachment of noncompatible land uses within areas that are exposed to aircraft noise of DNL 65 dBA and higher.

There are currently 15 existing residential areas exposed to aircraft noise of DNL 65 dBA and higher. However, EYW has continually sought approval and funding from the FAA to eliminate noncompatible land uses. This began with the FAA approval of the Policies & Procedures for a Noise Insulation Program (NIP) contained in the Airport's Noise Compatibility Program (NCP) in 1999. Since then 297 homes and 17 condominiums have been insulated.

The Part 150's NCP which was approved by the FAA in March 2015, contained an updated NIP to insulate homes that fall within EYW's updated 2013 65 dBA and higher noise contours. EYW's capital improvement plan also contains projects seeking FAA funding for the design and insulation of the homes identified to be noncompatible. It is anticipated that future compatible land use issues stemming from noise will be addressed in subsequent Part 150 Study updates. The BOCC also established an Ad Hoc Committee on Noise in 1995, this committee continues to meet four times a year to provide insight and recommendations on noise.

### 6.3.10 CONSTRUCTION IMPACTS

Impacts associated with construction activity include noise generated by construction equipment at the site and the increased vehicular traffic related to the delivery of construction materials through the local transportation network, the disposal of soil, air pollution from construction equipment exhaust and dust, and water pollution from erosion.

These impacts would be mitigated, to the extent possible, by incorporating the provisions of FAA AC 150/5370-10, *Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, in the project specifications.

For water quality, each project would be required to adhere to the applicable Stormwater Pollution Prevention Plan of the Airport. For those projects where construction could take place in proximity to residential areas, this

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<sup>14</sup> 14 CFR Part 150, *Airport Noise Compatibility Planning*.

<sup>15</sup> A-weighting is focused on the frequencies of sound perceptible to the human ear; therefore, it reflects actual sound levels as they are heard by humans.

construction would be subject to local noise ordinances. Major roadways border the Airport; therefore, construction traffic would likely avoid residential areas. Construction impacts would be evaluated as part of any NEPA analysis required, prior to constructing any of the proposed development projects.

### 6.3.11 SOCIOECONOMIC IMPACTS

The areas that would be affected by the scope of the preferred development alternative are contained within the Airport property boundaries and areas designated for Airport-related activities. Therefore, there are no anticipated highly adverse impacts on minority or low-income populations. Also, there are no anticipated impacts or disproportionate risks to children resulting from environmental health or safety risks.

### 6.3.12 NOISE

As part of the MPU, noise contours were prepared for the following scenarios:

- Existing Conditions, using the baseline year of 2015
- Future Conditions, using the forecasts for 2025 and 2035

This technical section regarding noise analysis describes the methodology used to develop the contours and the resulting noise exposure levels in the vicinity of the Airport. The noise contours were prepared for informational and planning purposes only, and they are not intended to be used for 14 CFR Part 150 Noise Exposure Maps, or the Airport's Noise Compatibility Program. The noise analysis resulted in noise contours associated with the forecast aeronautical activity at the Airport.

#### 6.3.12.1 Methodology

The noise contour maps were developed using the FAA Aviation Environmental Design Tool (AEDT) Version 2d. The AEDT was developed by the FAA using methods and calculations from SAE International's Aerospace Information Report (AIR) 1845, *Procedure for the Calculation of Airplane Noise in the Vicinity of Airports*.

The AEDT produces aircraft noise contours that delineate areas of equal DNL. The AEDT works by defining a network of grid points at ground level around an airport. It then selects the shortest distance from each grid point to each flight track and computes the noise exposure generated by each aircraft operation, along each flight track. Corrections are applied for atmospheric acoustical attenuation, acoustical shielding of the aircraft engines by the aircraft itself, and aircraft speed variations. The noise exposure levels for each aircraft are then summed at each grid location. The cumulative noise exposure levels at all grid points are then used to develop noise exposure contours for selected values (e.g., DNL 65, 70, and 75 dBA). Using the results of the grid point analysis, noise contours of equal noise exposure can then be plotted.

The DNL is a 24-hour time-weighted sound level that is expressed in A-weighted decibels and is abbreviated as dBA. The FAA, and other federal agencies, use DNL as the primary measure of noise impact because: it correlates well with the results of attitudinal surveys regarding noise; it increases with the duration of noise events; and it accounts for an increased sensitivity to noise at night by increasing each noise event that occurs during nighttime hours (i.e., 10 p.m. to 7 a.m.) by 10 dBA.

In Appendix A of 14 CFR Part 150, the FAA identifies, as a function of yearly (365-day average) DNL value, land uses that are compatible and land uses that are not compatible in an airport environs. As shown in **Table 6.3-3**, the FAA considers all land uses to be compatible with aircraft noise if the DNL is less than 65 dBA.

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*,<sup>16</sup> stipulates that the AEDT is to be used to provide noise exposure contours at the DNL 65, 70, and 75 dBA levels. Accordingly, this report includes documentation of DNL contours, in addition to flight tracks, for the existing conditions and future conditions.

### 6.3.12.2 Baseline Conditions (2015)

This section details the development of noise contours for the baseline 2015 conditions. The data used as input to the AEDT for the year 2015 were the following:

- runway layout and use
- number of aircraft operations
- operational time-of-day
- aircraft fleet mix
- flight tracks and profiles

#### *Runway Layout and Use*

The 2015 baseline conditions assumed a runway length of 4,801 feet<sup>17</sup>. Of the two runway ends, Runway 9 was used predominantly (80 percent of operations annually) versus Runway 27, which was used for 20 percent of operations.

#### *Aircraft Operations*

Forecasts of operations by aircraft type were prepared as part of the EYW MPU for the 2015 base year. The overall forecast of aviation activity was divided into categories of aircraft. **Table 6.3-4** lists the 2015 aircraft operations by category. As shown, in 2015 there were 53,548 operations at EYW (an average of approximately 147 operations per day). An aircraft operation is defined as either one arrival or one departure. A touch-and-go operation—an arrival of an aircraft and the departure of the same aircraft—is defined as two operations.

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<sup>16</sup> Federal Aviation Administration, Order 1050.1F, Appendix B, Section B-1.4, July 2015.

<sup>17</sup> The use of the pavement area between the Runway 9 end and EMAS only became operational in late 2018.

**Table 6.3-3: Land Use Compatibility**

LAND USE	DNL EXPRESSED IN DB(A)					
	BELOW 65	65-70	70-75	75-80	80-85	OVER 85
<b>Residential</b>						
Residential, other than mobile homes and transient lodgings	Y	N <sup>1/</sup>	N <sup>1/</sup>	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N <sup>1/</sup>	N <sup>1/</sup>	N <sup>1/</sup>	N	N
<b>Public Use</b>						
Schools	Y	N <sup>1/</sup>	N <sup>1/</sup>	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y <sup>2/</sup>	Y <sup>3/</sup>	Y <sup>4/</sup>	Y <sup>4/</sup>
Parking	Y	Y	Y <sup>2/</sup>	Y <sup>3/</sup>	Y <sup>4/</sup>	N
<b>Commercial Use</b>						
Offices, business, and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware, and farm equipment	Y	Y	Y <sup>2/</sup>	Y <sup>3/</sup>	Y <sup>4/</sup>	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y <sup>2/</sup>	Y <sup>3/</sup>	Y <sup>4/</sup>	N
Communication	Y	Y	25	30	N	N
<b>Manufacturing and Production</b>						
Manufacturing, general	Y	Y	Y <sup>2/</sup>	Y <sup>3/</sup>	Y <sup>4/</sup>	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y <sup>6/</sup>	Y <sup>7/</sup>	Y <sup>8/</sup>	Y <sup>8/</sup>	Y <sup>8/</sup>
Livestock farming and breeding	Y	Y <sup>6/</sup>	Y <sup>7/</sup>	N	N	N
Mining and fishing, resource production, and extraction	Y	Y	Y	Y	Y	Y
<b>Recreational</b>						
Outdoor sports arenas and spectator sports	Y	Y <sup>5/</sup>	Y <sup>5/</sup>	N	N	N
Outdoor music shells and amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

## NOTES:

DNL – Day-Night Average Sound Level

DB(A) – A-Weighted Decibels

Y (Yes) – Land use and related structures compatible without restrictions. N (No) – Land use and related structures are not compatible and should be prohibited. NLR (Noise Level Reduction) – Outdoor to indoor; to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 – Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dBA must be incorporated into design and construction of structure.

1/ Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dBA and 30 dBA should be incorporated into building codes and should be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dBA; thus, the reduction requirements are often stated as 5, 10, or 15 dBA over standard construction and normally assume mechanical ventilation and closed windows year-round. However, the use of NLR criteria will not eliminate outdoor noise problems.

2/ Measures to achieve NLR 25 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, as well as office areas, noise sensitive areas, or where the normal noise level is low.

3/ Measures to achieve NLR of 30 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, as well as office areas, noise sensitive areas, or where the normal noise level is low.

4/ Measures to achieve NLR 35 dBA must be incorporated into the design and construction of portions of these buildings where the public is received, as well as office areas, noise sensitive areas, or where the normal level is low.

5/ Land use compatible if special sound reinforcement systems are installed.

6/ Residential buildings require an NLR of 25.

7/ Residential buildings require an NLR of 30.

8/ Residential buildings not permitted.

SOURCE: Title 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*.

PREPARED BY: KB Environmental Sciences, Inc., September 2017.

**Table 6.3-4: 2015 Aircraft Operations by Category**

OPERATOR CATEGORY	AIRCRAFT CATEGORY	OPERATIONS
<b>Passenger</b>	Small Piston/Turboprop/Regional Jet	10,204
	Medium Regional Jet/Turboprop	1,527
	Large Regional Jet/Turboprop	4,399
	Small Narrowbody	2,521
	Medium Narrowbody	0
	Large Narrowbody/Widebody	0
	<b>Subtotal</b>	<b>18,651</b>
<b>Cargo</b>	<b>Subtotal (Small Piston/Turboprop)</b>	<b>729</b>
<b>General Aviation</b>	Single Engine	20,716
	Multi-Engine	5,436
	Jet	1,974
	Rotorcraft	486
	Other	0
	<b>Subtotal</b>	<b>28,612</b>
<b>Military</b>	<b>Subtotal</b>	<b>676</b>
<b>Other Air Taxi</b>	<b>Subtotal</b>	<b>4,880</b>
	<b>Total</b>	<b>53,548</b>

NOTE: Operations are subject to rounding.

PREPARED BY: KB Environmental Sciences, Inc., September 2017.

### *Operational Time-of-Day*

As previously stated, DNL is calculated such that aircraft operations that occur after 10 p.m. and before 7 a.m. (i.e., during the nighttime) are penalized by the addition of 10 dBA to each operation. Based on discussions with Airport staff, it was estimated that approximately 15 percent of the operations at the Airport occur during the nighttime hours.

### *Fleet Mix*

The AEDT includes several individual aircraft types, as well as several FAA-approved substitute aircraft. The fleet mix was developed from the model inputs in the EYW 14 CFR Part 150 Study, which was conducted in 2013. The fleet mix information was updated to reflect the activity forecasts for 2015, as defined for the MPU. **Table 6.3-5** presents the 2015 AEDT aircraft operations and fleet mix.

**Table 6.3-5: 2015 Aviation Environmental Design Tool Aircraft Fleet Mix**

CATEGORY	AIRCRAFT ID	OPERATIONS
<b>Jet</b>	737700	6,018
	CL600	1,307
	EMB145	1,148
	CNA55B	1,069
	CNA500	954
	IA1125	494
	LEAR35	446
	CNA750	394
	CNA560U	310
	ECLIPSE500	219
	CNA510	179
	CIT3	164
	CNA680	134
	GIV	126
	GV	76
	A319-131	12
	LEAR25	9
F16PW0	6	
F-18	6	
<b>Multi-Engine Prop</b>	BEC58P	4,431
	PA30	1,849
<b>Single-Engine Prop</b>	CNA172	8,344
	GASEPV	5,928
	COMSEP	3,266
	GASEPF	2,223
	CNA20T	562
T34	17	
<b>Turboprop</b>	SF340	7,480
	CNA208	2,678
	CNA441	1,551
	DHC6	1,458
	C130	118
	PA42	51
	DHC8	18
	P3A	13
	HS748A	2
<b>Helicopter</b>	EC130	171
	S70	136
	A109	128
	B206L	26
	R44	26
<b>Total</b>		<b>53,548</b>

NOTE: Operations are subject to rounding.

SOURCES: URS Corporation, Noise Compatibility Program for the Part 150 Study, March 2015; Federal Aviation Administration, Traffic Flow Management System Counts (TFMSC), 2017.

PREPARED BY: KB Environmental Sciences, Inc., September 2017.

### Flight Tracks and Profiles

The AEDT uses Airport-specific ground tracks and vertical flight profiles to compute three-dimensional flight paths for each modeled aircraft. The “default” AEDT vertical profiles, which consist of altitude, speed, and thrust settings, are compiled from data provided by aircraft manufacturers.

The location of flight paths is an important factor in determining the geographic distribution of noise contours on the ground. **Exhibit 6.3-3** and **Exhibit 6.3-4** show the itinerant AEDT flight tracks. **Exhibit 6.3-5** shows the local touch-and-go tracks. These flight tracks were originally developed in 2013 as part of the 14 CFR Part 150 Study, and they were verified as being representative of 2015 conditions.

### 2015 Existing DNL Contours

**Exhibit 6.3-6** shows the 2015 DNL contours. **Table 6.3-6** provides the area, in acres, of each contour interval (i.e., DNL 65–69 dBA, DNL 70–74 dBA, and DNL 75 dBA and greater). As shown, the total area encompassed by the DNL 65 dBA contour is 428 acres.

**Table 6.3-6: 2015 Day-Night Average Sound Level Contour Areas**

DNL –DB(A)	AREA –ACRES
65 to <70	252
70 to <75	97
75 and greater	79
<b>Total</b>	<b>428</b>

NOTES: dB(A) – A-Weighted Decibels; DNL – Day-Night Average Sound Level  
SOURCE: KB Environmental Sciences, Inc., September 2017.

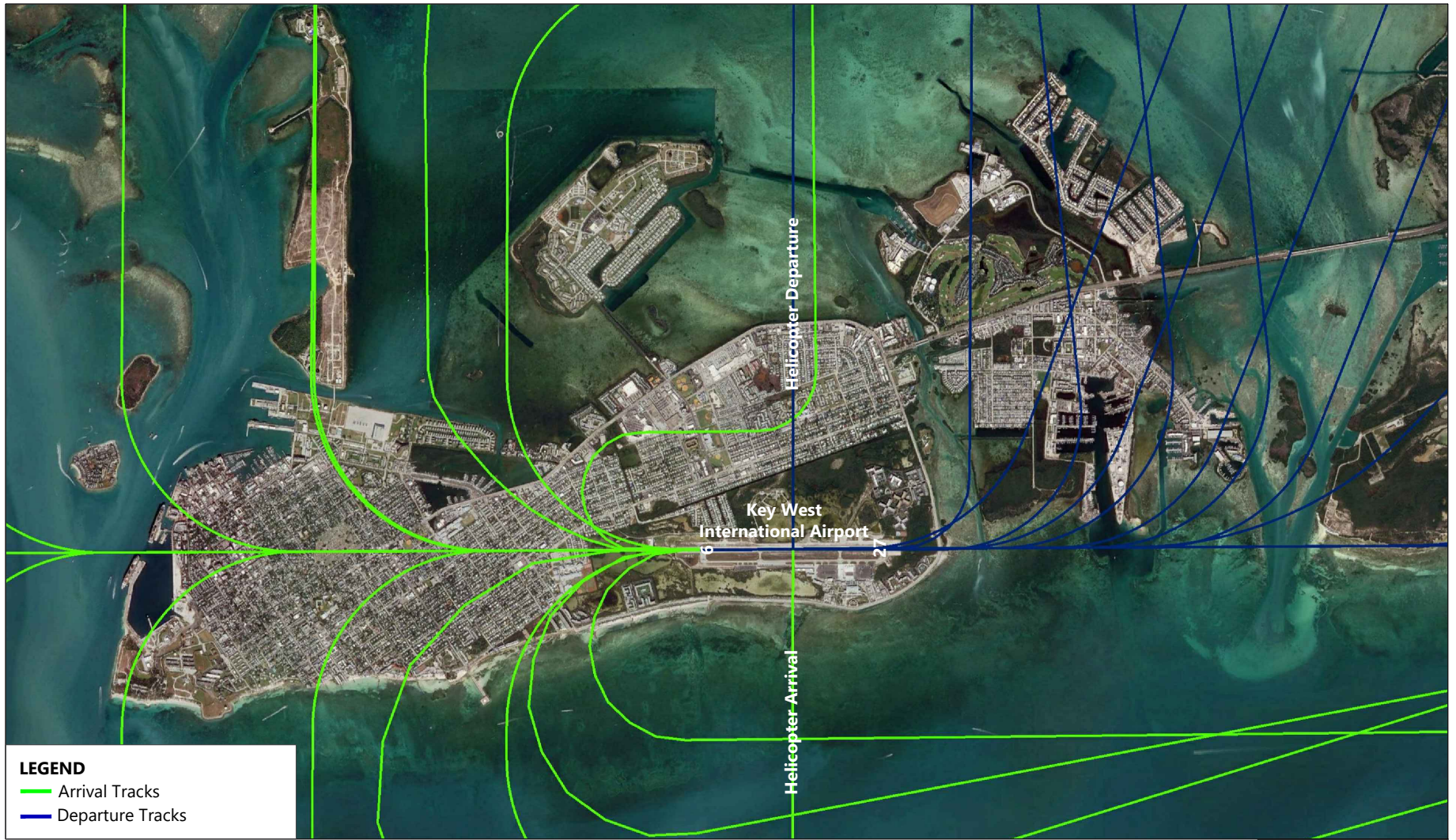
### 6.3.12.3 Future Conditions (2025 and 2035)

This section discusses the input data for the future 2025 and 2035 conditions and the resulting DNL contours. The future 2025 and 2035 conditions included the same runway layout and use, flight tracks, and profiles as the existing conditions. However, the 2025 and 2035 aircraft operations and fleet mix were defined using the MPU’s aviation activity forecast.

### Runway Layout and Use

The airfield configuration modeled for the 2025 conditions were the same as the existing conditions, with only one exception. It is anticipated that the Airport will use an existing overrun pavement area to provide additional takeoff distance for Runway 9 (for a total available distance of 5,075 feet). Under this plan, all aircraft will take off from a new point on Runway 9; however, arrivals to Runway 9 will not change touchdown location. The start of takeoff roll will be 140 feet farther west than the current Runway 9 departure threshold; this change was modeled in AEDT for all departure tracks from Runway 9. The 2035 airfield configuration also assumes the extension of the runway 200 feet to the east. Also, of note, runway use for both future conditions were the same as the existing conditions.





SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
 PREPARED BY: Ricondo & Associates, Inc., April 2018.

EXHIBIT 6.3-3

Aircraft Flight Tracks - East Flow



Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg Layout: East Flow Plotted: Jun 12, 2020, 07:36AM



SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
 PREPARED BY: Ricondo & Associates, Inc., April 2018.

EXHIBIT 6.3-4



### Aircraft Flight Tracks - West Flow

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg Layout: West Flow Plotted: Jun 12, 2020, 07:36AM



SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
PREPARED BY: Ricondo & Associates, Inc., April 2018.

EXHIBIT 6.3-5



### Local Flight Tracks

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg Layout: Local Tracks Plotted: Jun 12, 2020, 07:38AM



SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
PREPARED BY: Ricondo & Associates, Inc., April 2018.

**EXHIBIT 6.3-6**



Future 2015 Day-Night Average Sound Level Contours

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg; Layout: 2015 DNL Plotted: Jun 12, 2020, 08:06AM

### Aircraft Operations

As part of the MPU, a forecast of operations was prepared for the years 2025 and 2035. **Table 6.3-7** presents the forecast of operations for both years by aircraft category. As shown, the 2025 forecast includes 62,920 operations at EYW (an average of approximately 172 operations per day). The 2035 forecast includes 69,435 operations at EYW (an average of approximately 190 operations per day).

**Table 6.3-7: 2025 and 2035 Aircraft Operations by Category**

OPERATOR CATEGORY	AIRCRAFT TYPES	2025 OPERATIONS	2035 OPERATIONS
<b>Passenger</b>	Small Piston/Turboprop/Regional Jet	10,525	1,588
	Medium Regional Jet/Turboprop	2,649	11,022
	Large Regional Jet/Turboprop	5,061	5,337
	Small Narrowbody	2,985	1,531
	Medium Narrowbody	1,612	5,020
	Large Narrowbody/Widebody	0	0
	<b>Subtotal</b>		<b>22,832</b>
<b>Cargo</b>	<b>Subtotal (Small Piston/Turboprop)</b>	<b>984</b>	<b>1,247</b>
<b>General Aviation</b>	Single Engine	21,180	21,612
	Multi-Engine	7,705	10,569
	Jet	2,901	3,668
	Rotorcraft	451	472
	Other	0	0
	<b>Subtotal</b>		<b>32,237</b>
<b>Military</b>	<b>Subtotal</b>	<b>676</b>	<b>676</b>
<b>Other Air Taxi</b>	<b>Subtotal</b>	<b>6,191</b>	<b>6,693</b>
	<b>Total</b>	<b>62,920</b>	<b>69,435</b>

NOTE: Operations are subject to rounding.

PREPARED BY: KB Environmental Sciences, Inc., September 2017.

### Operational Time-of-Day

The percentages of nighttime operations for the future conditions were maintained at a similar level as the existing conditions.

### Fleet Mix

The future conditions aircraft fleet mixes were determined by multiplying the existing condition percentages by aircraft type by the total operations forecast for 2025 and 2035. **Table 6.3-8** lists the future aircraft operations and fleet mixes.

**Table 6.3-8: 2025 and 2035 Aircraft Operations and Aviation Environmental Design Tool Fleet Mix**

CATEGORY	AIRCRAFT ID	2025 OPERATIONS	2035 OPERATIONS
<b>Jet</b>	EMB175	5,061	5,337
	A319-131	2,985	1,531
	EMB170	2,103	8,749
	737700	1,612	5,020
	EMB145	1,082	163
	CNA55B	1,039	1,314
	CL600	813	2,582
	CNA750	508	228
	LEAR35	344	436
	CNA560U	276	349
	IA1125	276	349
	CNA500	208	263
	ECLIPSE500	140	176
	CNA680	126	19
	CIT3	68	86
	CNA510	68	86
	GIV	68	86
	F16PW0	6	6
F-18	6	6	
<b>Multi-Engine Prop</b>	BEC58P	8,951	11,021
	PA30	4,945	6,241
<b>Single-Engine Prop</b>	CNA172	5,697	5,814
	GASEPF	4,067	4,150
	COMSEP	3,664	3,739
	GASEPV	2,859	2,918
	T34	17	17
<b>Turboprop</b>	SF340	7,050	1,064
	CNA208	5,877	6,239
	DHC6	1,374	207
	C130	591	570
	DHC8	245	76
	CNA441	212	32
	P3A	81	81
	PA42	48	7
<b>Helicopter</b>	EC130	158	166
	S70	127	132
	A109	119	124
	B206L	24	25
	R44	24	25
<b>Total</b>		<b>62,920</b>	<b>69,435</b>

NOTE: Operations are subject to rounding.

SOURCE: KB Environmental Sciences, Inc., (based upon Ricondo & Associates, Inc., *Airport Master Plan Update, Aviation Activity Forecasts*, July 2016), September 2017.

### Flight Tracks

The flight tracks for the future conditions modeled were the same as those for the existing 2015 conditions. Flight track use was maintained at similar levels as the existing conditions.

### 2025 and 2035 DNL Contours

**Exhibit 6.3-7** and **Exhibit 6.3-8** show the 2025 and 2035 DNL contours. **Table 6.3-7** provides the area, in acres, of each contour interval. The 2025 area located within the 65 DNL contour is 146 acres larger, or approximately 34 percent, than the 428 acres encompassed by the 2015 noise contour. In 2035, the 65 DNL is 60 percent larger, an increase of 207 acres as compared to 2015.

**Table 6.3-9: 2025 and 2035 Day-Night Average Sound Level Contour Areas**

DNL – DB(A)	2025	2035
	AREA – ACRES	AREA – ACRES
65 to <70	344	382
70 to <75	132	145
75 and greater	98	107
<b>Total</b>	<b>574</b>	<b>635</b>

NOTES:

dB(A) – A-Weighted Decibels

DNL – Day-Night Average Sound Level

SOURCE: KB Environmental Sciences, Inc., March 2019.

### 6.3.12.4 Conclusion

As part of the Airport’s MPU, a noise analysis was prepared to identify the noise exposure from the baseline 2015 condition and the future 2025 and 2035 conditions. In all three noise contour maps, residences were identified within the limits of the DNL 65 dBA contour—based on a visual inspection of aerial imagery (see Exhibits 6.3-4, 6.3-5, and 6.3-6). The noise contours were prepared for informational and planning purposes only, and they are not intended to be used for the purposes of 14 CFR Part 150. They are, however, a useful tool to gauge the need for and timing of a potential Part 150 update. It should be noted, the increase in size of the 65 DNL noise contour is largely attributed to a modest increase in operational activity, rather than a change in fleet mix or major runway extension. Therefore, the operational levels presented above will be useful in determining the potential timing for updated noise analysis.



SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
PREPARED BY: Ricondo & Associates, Inc., April 2018.

**EXHIBIT 6.3-7**



Future 2025 Day-Night Average Sound Level Contours

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\EYW Environmental Overview Exhibits.dwg Layout: 2025 DNL Plotted: Mar 6, 2019, 10:12AM





SOURCE: KB Environmental Sciences, Inc.; AEDT 2C SP2; Esri; DigitalGlobe; GeoEye; Earthstar Geographics; CNES/Airbus DS; USDA; USGS; AEX; Getmapping; Aerogrid; IGN; IGP; Swisstopo; GIS User Community; September 2017; Google Earth, April 2018 (aerial photography).  
PREPARED BY: Ricondo & Associates, Inc., April 2018.

**EXHIBIT 6.3-8**



Future 2035 Day-Night Average Sound Level Contours

Drawing: P:\Project-Orlando\Monroe County\Task 200 - EYW Master Plan\207 - Environmental Overview\CAD\IEYW Environmental Overview Exhibits.dwg; Layout: 2035 DNL Plotted: Mar 6, 2019, 10:14AM