Tampa International Airport

Hillsborough County Aviation Authority
Tampa International, Peter O. Knight,
Plant City and Tampa Executive Airports

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2015 Master Plan Update for

Plant City Airport

Final Technical Report

• • •

March 2018

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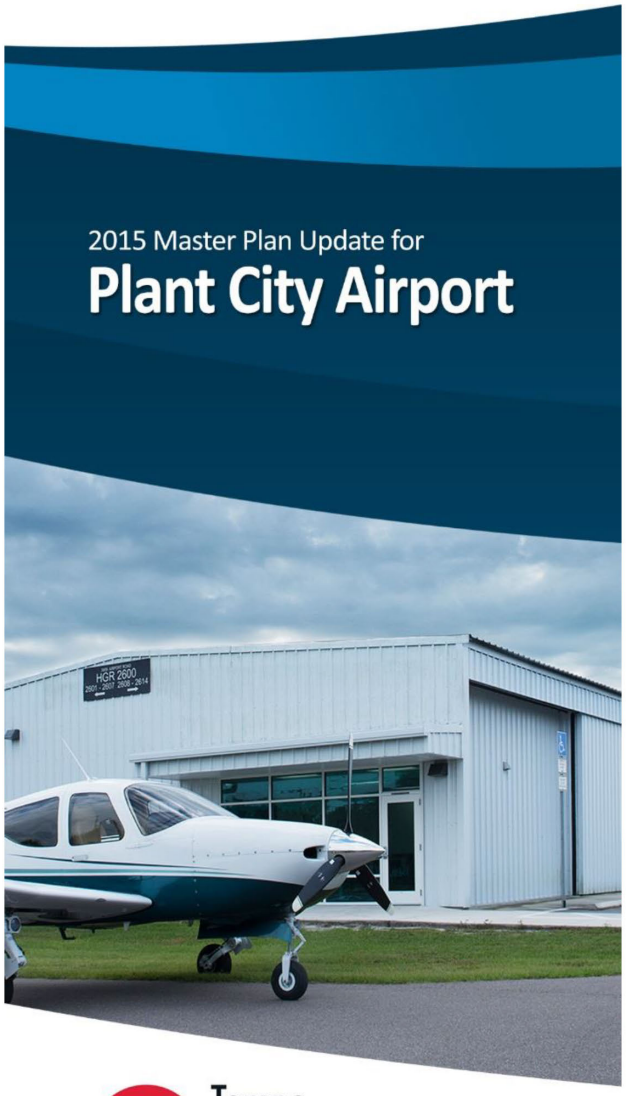

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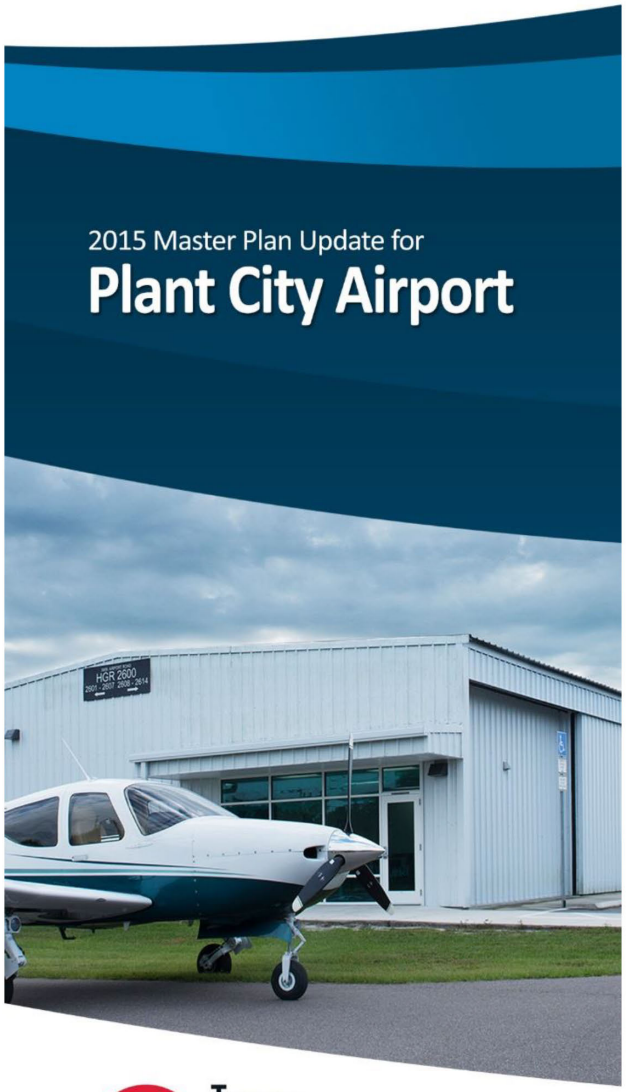


Tampa International Airport

Hillsborough County Aviation Authority

1.0 Introduction

1.1 Overview

In January of 2014, the Hillsborough County Aviation Authority (HCAA) contracted with Michael Baker International, Inc. to develop a Master Plan Update for the Plant City Airport (PCM). The need for the update was essentially twofold. The primary reason was that the Federal Aviation Administration (FAA) requires airports receiving development grants to conduct periodic updates of their future development plans. Secondly, many changes had occurred in both the aviation industry as well as within the nation's economy since the previous Master Plan Update was completed in 2003. Therefore, it was necessary to reassess the 20-year development plans for the Plant City Airport.

Although the development of a Master Plan Update and associated Airport Layout Plan (ALP) Drawing Set serves many objectives, one of the most significant purposes it serves is to allow the airport to meet federal assurances for grant funding eligibility. In 1982, the federal government adopted the Airport and Airway Improvement Act, which allowed federal funds to be distributed through a grant program to airports throughout the country. The federal grants did not require repayment provided that certain rules were followed and adhered to (i.e., assurances). Over the years, the grant legislation has been revised, renamed, and expanded to presently include 39 separate assurances that must be met for an airport to be considered "compliant." The current grant program, referred to as the Airport Improvement Program (AIP), provides grant funding to cover a significant portion of the costs required to address airport safety, capacity, security, or environmental concerns. Grant Assurance Number 29 states that the airport sponsor will develop and maintain an ALP which denotes the airport's boundaries along with all existing and proposed development within. The ALP and any revision or modification thereof must be reviewed and approved via signature by an authorized representative of the United States Secretary of Transportation.

1.2 Public Involvement

The airport does not exist in a static environment, but rather within the context of a larger community. As such, any future developments identified by this study considered potential impacts to the community. Multiple opportunities were made available for community and governmental representatives to participate in this study. This involvement was facilitated through the formulation of a Master Plan Committee consisting of key stakeholders representing the FAA,

Florida Department of Transportation, local planning organizations, the airport's fixed base operator, and representatives from HCAA and the master plan team. In addition, tenants and stakeholders were surveyed and interviewed to solicit key information in support of the planning process.

Over the course of the project, the master plan was supported by a robust public involvement program consisting two rounds of public open house meetings and a series of special presentations to the Metropolitan Planning Organization (MPO) and other local community organizations. Progress of the study was also presented and discussed in an open forum at HCAA briefings. Throughout the project, the local community was provided multiple opportunities to track the status of the plan and comment on project deliverables via the HCAA website.

1.3 Project Scope and Level of Effort

As part of this Master Plan Update, the HCAA wanted to focus on providing development recommendations that would help the airport become more financially self-sustainable while at the same time promoting airfield safety and satisfying aviation demand. Consequently, a parallel support effort concentrated on conducting a Strategic Business Plan to study the land development potential and opportunities for potential income generation. For that reason, the inventory and forecasting efforts were condensed to only focus on specific elements rather than an exhaustive discussion of multiple airport characteristics and activity variables. Additional efforts were allocated towards evaluating short-term and long-term facility needs, developing alternatives to fulfill the identified needs, and creating a financing plan that illustrates revenue-generating opportunities and describes how the HCAA may fund the recommendations of this Master Plan Update.

1.4 Plant City Airport Key Issues

This Master Plan Update provides a comprehensive review of the airport's needs over the next 20 years including issues related to the timing of proposed developments, cost estimates, and financing and management options to provide a clear action plan for the HCAA. Prior to the start of the Master Plan Update, the HCAA identified the following key issues that should be addressed during this planning effort:

- Identify revenue-generating opportunities and/or provide development recommendations that may encourage revenue-generating opportunities in the future.
- Identify market demand in the context of a regional airport system.
- Review airport land parcels to identify the highest and best use of each in regard to its future development potential.
- Assess the operational efficiency, effectiveness and safety of the airport.
- Evaluate the airport facility layout for conformance with FAA Advisory Circular (AC) 150/5300-13A, Airport Design, as well as other applicable guidance.
- Review vertical obstacles located in the vicinity of PCM in comparison to the airport's airspace requirements.
- Assess the needs of current tenants and requirement improvements that will be necessary to attract new tenants and/or to expand existing tenant facilities.

- Assist the airport in supporting aviation demand within the HCAA's system of airports.
- Identify areas of environmental concern and provide mitigation options for future development.
- Evaluate long-term development options for general aviation and airport support facilities.
- Evaluate the airport's existing and ultimate runway length requirements to identify improvements necessary to meet demand and/or to entice additional traffic to the airport.

1.5 Process

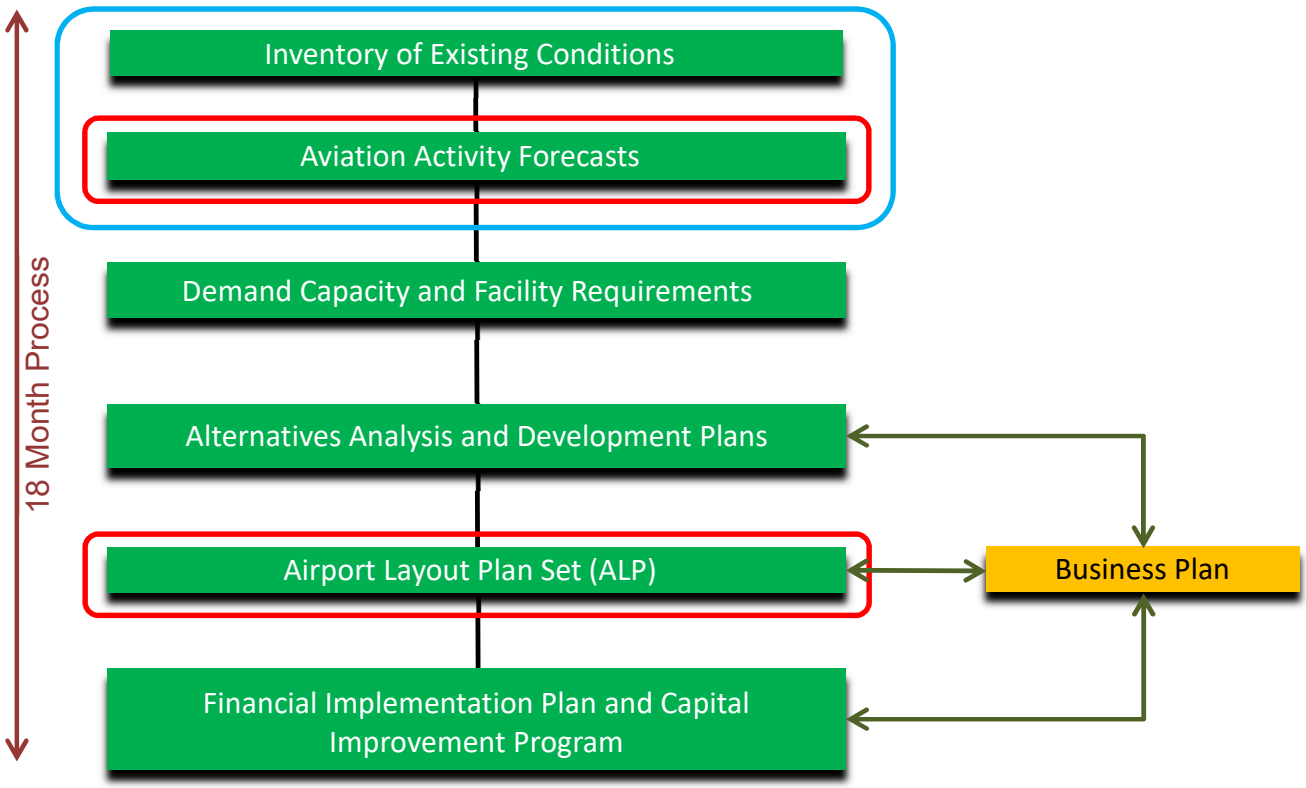
This Master Plan Update provides a systematic outline of the development actions that will be necessary to maintain and further develop PCM's airside and landside facilities. This process provides the officials responsible for the scheduling, budgeting, and ultimate funding of airport improvement projects with advanced notice of the future airport needs. By phasing the airport improvements, the development can be conducted in an orderly and timely fashion.

In order to accomplish the HCAA's long-term development goals for PCM, this Master Plan Update was prepared in accordance with FAA and the Florida Department of Transportation (FDOT) requirements. All portions of this document are based on the criteria set forth in the FAA AC 150/5070-6B, Airport Master Plans, and FAA AC 150/5300-13A, Airport Design. The following study tasks were performed for this effort:

- Conducted an inventory of the existing documents related to the airport, the physical airport facilities, the demographics of the airport service area, and the airport environment.
- Evaluated and compared the airfield capacity to the expected aviation activity.
- Determined the airport facilities improvements that will be necessary to meet the forecast demand.
- Developed and evaluated alternative methods to meet the facility requirements of the airfield.
- Developed a concise ALP Drawing Set that reflects proposed 20-year improvements.
- Compiled a schedule of the proposed improvements to include the cost estimates, phasing, and financial feasibility of each.

The individual report chapters provide detailed explanations of the tasks described above. It should be noted that each step in the master plan process is built upon information and decisions made during previous steps. Taken as a whole, they address the key issues identified in this chapter and describe how the study objectives were met.

Figure 1-1
Master Planning Process



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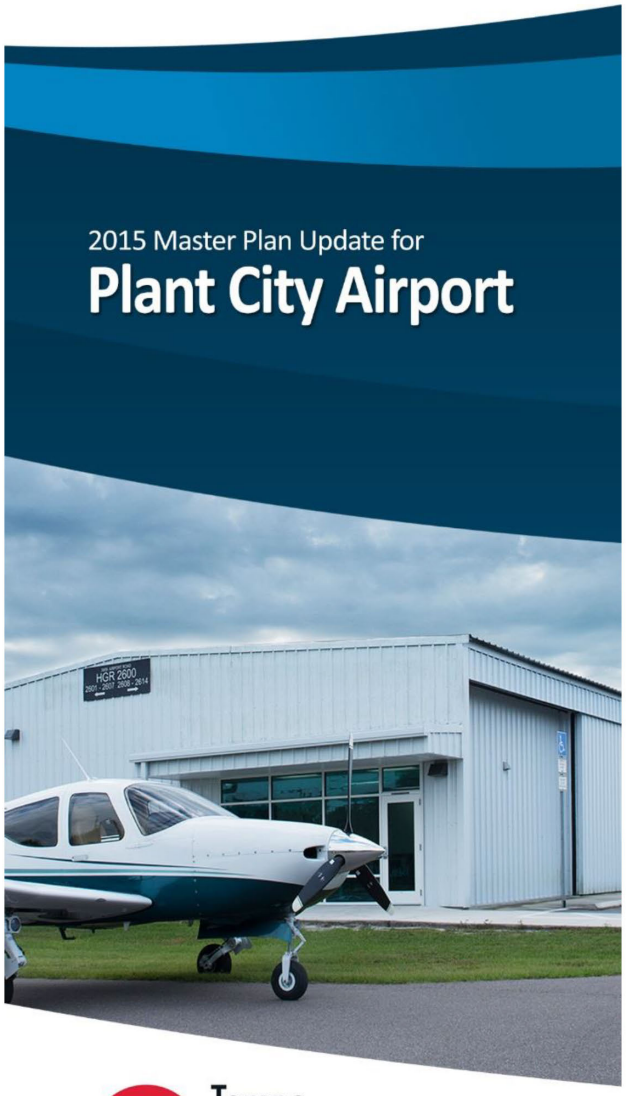
Chapter 2.0
Inventory of Existing Conditions



Tampa International Airport

Hillsborough County Aviation Authority

2.0 Inventory of Existing Conditions

2.1 Background

The master planning process requires the gathering of information related to the airport's existing airside and landside facilities. This information is important since it serves as the baseline for future evaluation steps throughout the remainder of the master planning process. For this reason, information related to the Plant City Airport (PCM) and its surrounding areas was collected, evaluated, and documented within this chapter. The data collected in this phase provides an inventory of the following:

- Existing physical facilities: runway, taxiways, aircraft parking aprons, navigational aids, airport terminal, and facility areas for general aviation, corporate, and aviation support activities.
- Locale and climate information related to PCM.
- Airspace environment and land use controls within the vicinity of the airport.
- The airport's overall role in central Florida: development history, location, and access relationship to other transportation modes.

2.2 Airport History, Land Holdings, and Role

Plant City was named after Henry Bradley Plant who was the founder of the Plant system of steamboats and railroads that ran along the south Atlantic seaboard which provided better access routes to the north for orange growers in Florida. Today, the railroad lines comprise a significant portion of the CSX Corporation's operations in Florida. Plant also constructed several hotels in the Tampa area including a large $2.5 million hotel which today is better known as the main building for the University of Tampa. Because of his contributions to the transportation system and many hotels, the Henry Plant Museum and Henry B. Plant High School in Tampa were named after him as well as the City of Plant City itself. Plant City is well-known for its production of flora including tropical fruits and houseplants but is most notable for its production of strawberries and for hosting the annual Florida Strawberry Festival that is attended by more than 500,000 people annually which travel from various parts of the country.

The Plant City Airport was originally founded back in 1948 for the purpose of shipping strawberries. Runway 10-28 (originally Runway 9-27) was most recently lengthened and re-designated back in 1999. Shortly thereafter, a new terminal facility was constructed in 2000 along with two new hangars and a Jet-A fuel tank. Most recently in 2012, an additional 14-unit T-hangar was constructed to the east of existing T-hangar facilities for additional based aircraft storage. Presently, the airport provides aircraft housing for approximately 85 based aircraft including single-engine and multi-engine fixed wing aircraft as well as helicopters. The airport property comprises approximately 195 acres and serves the general aviation needs of eastern Hillsborough County. Due to its close proximity to the Lakeland Linder Regional Airport (LAL), PCM experiences peak periods of activity during the Sun 'n Fun Fly-In & Expo that occurs at LAL annually during the month of April. During this event, PCM typically experiences an influx of overnight aircraft, fuel sales, and increased operational activity.

FAA-designated Aeronautical Role

As part of the FAA's development and classification of public use airports within the Nation Plan of Integrated Airports (NPIAS), the National Asset Study (ASSET 1) classifies and further defines the activity and levels of service offered by three types of nearly 3,000 airports, heliports, and seaplane bases. The study aligns the general aviation airports into four categories---National, Regional, Local, and Basic to better capture their diverse functions and the economic contributions general aviation airports make to their communities and the Nation.

PCM is currently classified as one of 1,236 NPIAS listed general aviation airports having a "Local" classification that supplements local communities by providing access primarily to intrastate and some interstate markets. This type of ASSET-classified airport is typically characterized as having moderate levels of activity with some multiengine propeller aircraft. The airport, on average, accommodate approximately 33 based aircraft propeller-driven aircraft and no jets.

2.3 Location / Locale

As shown in **Figure 2-1**, the Plant City Airport is located approximately two miles southwest of the city's central business district and approximately 1.75 miles south of Interstate 4. The nearest public use airport in the vicinity of PCM is LAL which is located approximately 7.7 nautical miles to the east. **Table 2-1** provides a brief comparison of the public airports located within a 20 nautical mile radius along with their respective facilities and associated distances from PCM.

Figure 2-1
Locale

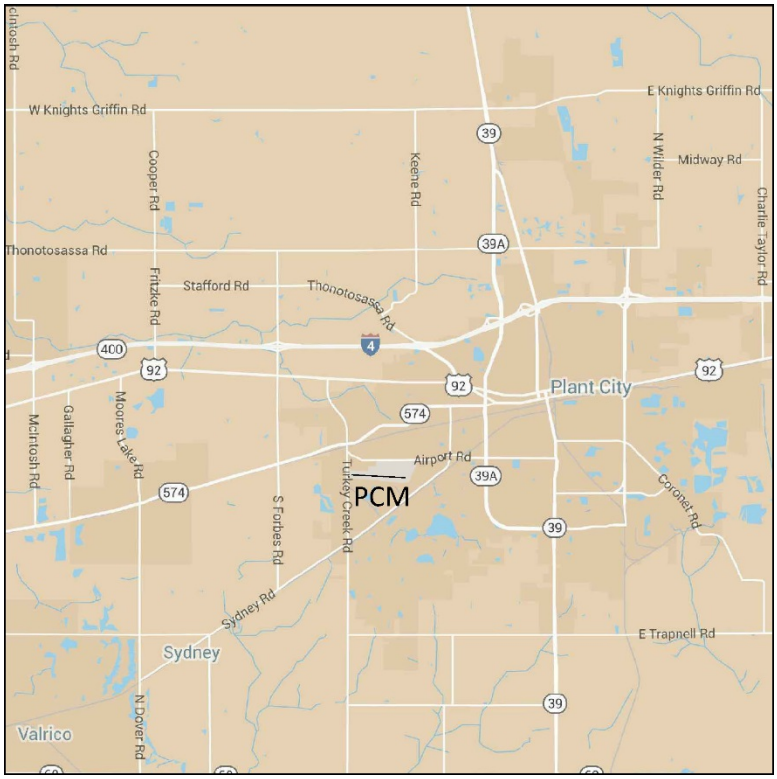


Table 2-1 Public Airports In The Region			
Airport	NM from PCM	Runways	Published Instrument Approach Procedures
Lakeland Linder (LAL)	7.7 E	9-27 (8,499' x 150') 5-23 (5,005' x 150')	ILS, LOC, RNAV, VOR
Tampa Executive (VDF)	9.7 W	5-23 (5,000' x 100') 18-36 (3,219 x 75')	ILS, LOC, RNAV
Zephyrhills Municipal (ZPH)	13.7 N	4-22 (4,999' x 100') 18-36 (4,954' x 100')	RNAV, NDB
Peter O. Knight (TPF)	16.0 W	4-22 (3,580' x 100') 18-36 (2,687' x 75')	RNAV
Tampa International (TPA)	19.7 W	1L-19R (11,002' x 150') 1R-19L (8,300' x 150') 10-28 (6,999' x 150')	ILS, RNAV, LOC
Source: FAA Airport/Facility Directory, effective August 20, 2015.			

2.4 Climate

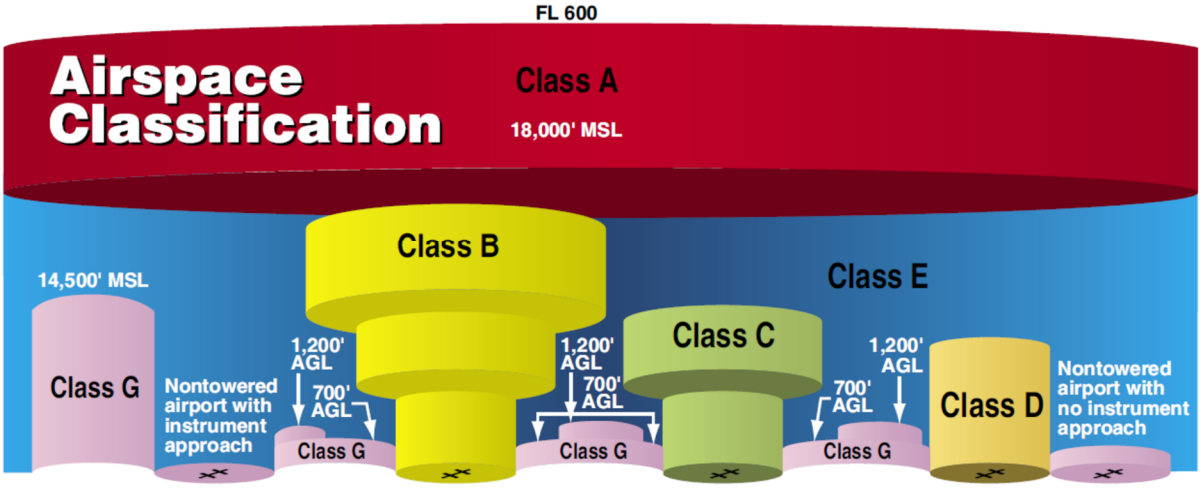
Due to its location within the west central region of Florida and close proximity to the warm waters of the Gulf of Mexico, temperatures within the Plant City area typically include hot and humid summers and relatively mild winters. The average low in the summer months (June, July, August, and September) varies between 71 and 73 degrees Fahrenheit; whereas, the average high during the same months varies between 89 and 91 degrees Fahrenheit. During the winter months (December, January, and February), the average high temperature varies between 72 and 75 degrees Fahrenheit; whereas, the average low temperature during the same months varies between 49 and 52 degrees Fahrenheit. In regard to precipitation, the wettest months of the year are June, July, August, and September with an average precipitation that varies between seven and eight inches per month. The precipitation amounts during the remaining eight months of the year typically average between 1.8 and three inches.[1]

2.5 Airspace Environment

Because PCM is located within 30 nautical miles of TPA, it is located within TPA's Mode C Veil, which requires all aircraft operating at PCM be equipped with a two-way radio and a Mode C transponder. PCM is also located beneath TPA's Class 'B' airspace where all aircraft operating between 3,000 feet Above Mean Sea Level (AMSL) and 10,000 feet AMSL must obtain clearance from Tampa Approach/Departure. Lastly, PCM is located within Class 'E' airspace where aircraft that are operating under Instrument Flight Rule (IFR) conditions must obtain clearance from Tampa Approach/Departure when operating between 700 feet Above Ground Level (AGL) and 18,000 feet AMSL. All other Visual Flight Rule (VFR) activity that is not subject to the clearance requirements typically communicate (self-announce) by using the Common Traffic Advisory Frequency (CTAF) (frequency 123.05 MHz) once in the vicinity of the airport or traffic pattern. **Figure 2-2** graphically depicts a comparison of the airspace classes by type; whereas, the aeronautical chart for PCM and the surrounding areas is shown in **Figure 2-3**.

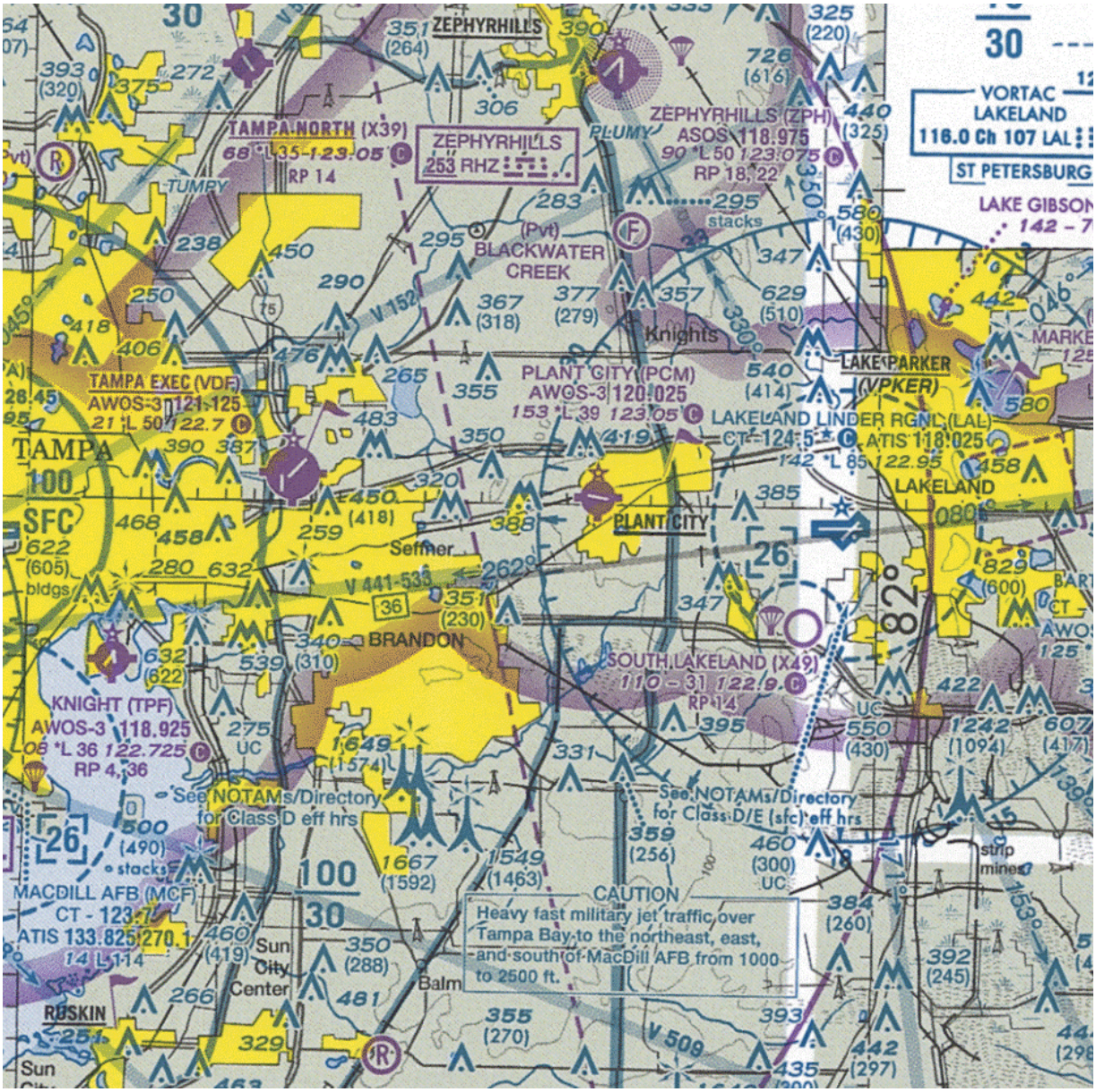
[1] www.weather.com, accessed April 1, 2014.

Figure 2-2
Airspace Classes



Source: FAA 2013 Pilot's Handbook of Aeronautical Knowledge.

Figure 2-3
Aeronautical Chart



Source: FAA Jacksonville Sectional Aeronautical Chart.

2.6 Airport Zoning and Land Use Controls

On April 1, 2010, the Hillsborough County Aviation Authority (HCAA) adopted Resolution No. 2010-54, Airport Zoning Regulations for Tampa International, Plant City, Tampa Executive, and Peter O. Knight Airports. The zoning regulations were established to promote aviation safety, to limit the height of structures located within the vicinity and approaches of airports, to discourage land uses that are incompatible with existing and planned airport operations, and to establish administrative procedures for the uniform review of land development proposals. The zoning regulations were based upon guidance provided in Florida Statute 333, Federal Aviation Regulations (FAR) Part 77, and FAR Part 150 regulations which address land use compatibility,

height of objects in the vicinity of airports, and noise compatibility planning in relation to airport operations. As part of this Master Plan Update, the HCAA's recently updated Airport Zoning Regulations were considered during the creation and evaluation of development alternatives and the selection of recommended developments that are illustrated on the Airport Layout Plan (ALP) for PCM. In addition, HCAA is working closely with Hillsborough County to establish an interlocal agreement in support of the zoning regulations.

The Plant City Code of Ordinances (Subpart B, Chapter 102, Article 4, Division 16) also defines permitted uses, special requirements, and minimum building requirements for the area surrounding PCM that is zoned Airport-Industrial (M-AP). The purpose of the M-AP zoning district is to promote land uses that are compatible with airport development and aircraft operations. In addition, the Plant City Code of Ordinances (Subpart B, Chapter 102, Article 7, Division 8) contains Airport Zoning Regulations that are intended to control the height of structures around PCM, prevent the construction of schools within five miles of the runway centerline, and to prevent the construction of sanitary landfills within 10,000 feet of the nearest point of the runway. Height zoning permits and variances must be obtained from the HCAA.

2.7 Airport Access and Parking

As shown in Figure 2-1, there are multiple major access roads located within the vicinity of PCM including Interstate 4, U.S. Highway 92, and State Roads 39, 60, and 574. Those utilizing Interstate 4 will exit at Branch Forbes Road (Exit 17) and will travel south until it intersects U.S. Highway 92 or State Road 574, both of which lead eastward and intersect North Turkey Creek Road. North Turkey Creek Road leads south and intersects with Airport Road. The airport's main entrance is located approximately a half-mile east of the intersection of those two roads. To the east of the airport, Airport Road intersects South Woodrow Wilson Street to the north, West Grant Street to the east, and Sydney Road to the south. The airport's main entrance is located approximately one mile west of the intersection of those four roads. Overall, access to the airport is considered good. In regards to airport access, the City of Plant City intends to straighten Airport Road where it currently connects to Turkey Creek Road in order to create a 90 degree angle between them. Automobile parking is provided at the terminal building only; however, most aircraft owners will park vehicles in their hangars while aircraft are being utilized.

2.8 Airside Facilities

The inventory of airside facilities includes those facilities required to support the movement and operation of aircraft. Airside facilities include the airport's runway, taxiways, taxilanes, aprons, airfield lighting, navigational aids, pavement markings, and signage. The existing airfield facilities at PCM are discussed in the following sections and are illustrated in **Figure 2-4**.

Airfield Characteristics

The airfield at PCM consists of a single runway with a parallel taxiway. Runway 10-28 has an east-west orientation and is 3,948 feet long and 75 feet wide. There is a 198 foot long displaced threshold on the Runway 10 end, which means that only 3,750 feet of runway is available for landings on that end. Both ends of Runway 10-28 have non-precision markings and Medium Intensity Runway Lights (MIRLs) are provided along the edges of the runway. Parallel Taxiway A is 40 feet wide and runs along the north side of the runway from threshold to threshold, and therefore, aircraft must back taxi approximately 198 feet in order to make full use of Runway 10 for departures or if the full runway length is needed for landings on Runway 28. Medium Intensity Taxiway Lighting (MITLs) are provided along the edges of the taxiway. Signage is provided throughout the airfield that identifies the location of the runway, taxiways, and other airside facilities at the airport.

Apron Facilities

PCM includes two large apron areas that are located on the north side of Runway 10-28 near the midpoint of runway. The easternmost apron is located in front of the airport's terminal building, comprises approximately 133,800 square feet, and contains 23 spaces for based and transient general aviation aircraft parking. The east apron also includes a large island refueling area with two pumps and hoses for the refueling of 100LL fuel. The west apron comprises approximately 138,000 square feet and provides parking spaces for up to 23 general aviation aircraft. The west apron serves to provide parking for based aircraft tenants and also provides access to hangar 5600 which is utilized for the bulk storage of aircraft.

Airfield Pavement

It is important to establish the condition of PCM's existing airfield pavements in order to determine the phasing of future maintenance and development needs. A majority of the airfield pavement at PCM is currently in fair to good condition; however, the taxiway connector to the west apron is in fair condition and the taxiway connector near the Runway 10 end is also considered in poor condition. **Figure 2-5** illustrates the current conditions of the various pavement areas at PCM as indicated in FDOT's Statewide Airfield Pavement Management Program Report for District 7, dated June 2015.

Navigational Aids and Instrument Approaches

An airport's navigational aids and instrument approach facilities collectively allow pilots to navigate to the runway ends during poor visibility conditions. **Table 2-2** illustrates the various navigational aids that are available at PCM. **Table 2-3** identifies the instrument approach procedures that are currently published to the runway ends and the lowest vertical and horizontal visibility minimums that are available for each runway end.

Table 2-2 PCM Navigational Aids		
Runway	**Navigational Aids**	**Runway Markings**
10	GPS, Runway End Identifier Lights (REILs), 2-Light Precision Approach Path Indicator (PAPI-2L)	Non-Precision
28	GPS, REILs, PAPI-2L	Non-Precision
Airport	Beacon, Lighted Wind Cone and Segmented Circle	N/A
Sources: FAA Airport/Facility Directory and FAA Terminal Procedures Publication, effective August 20, 2015.		

Table 2-3 PCM Instrument Approach Procedures			
Runway	**Runway Dimensions**	**Lowest Approach Minimums (Vertical / Horizontal)**	**Published Approaches**
10	3,948 x 75’	LNAV/VNAV (404’ AMSL / 1 Mile)	GPS (LPV, LNAV/VNAV, LNAV, Circling)
28	3,948 x 75’	Straight VOR DME (600’ AMSL / 1 Mile)	VOR (Straight, Circling)
		LPV (414’ AMSL / 1 Mile)	GPS (LPV, LNAV/VNAV, LNAV, Circling)
Sources: FAA Airport/Facility Directory and FAA Terminal Procedures Publication, effective August 20, 2015.			

Weather Facilities

The airport is equipped with an on-site Automated Weather Observation System (AWOS-3) that is located to the east of the terminal building near the recently-constructed T-hangar facility. The AWOS-3 includes a suite of sensors that measure, collect, and broadcast weather data to help pilots and flight dispatchers prepare and monitor weather during all phases of flight including en-route, departures, and landings. The AWOS-3 reports several variables such as wind speed, wind gusts, wind direction, temperature, dew point, altimeter setting, density altitude, cloud height, sky conditions, and present weather. The AWOS-3 broadcasts at PCM are transmitted on frequency 120.025 MHz and can be received by aircraft operating at altitudes up to 10,000 feet AGL and as far away as 25 nautical miles. A lighted wind cone and segmented circle is also provided near the AWOS-3 to allow pilots to see the surface wind conditions while in-flight or on the ground.

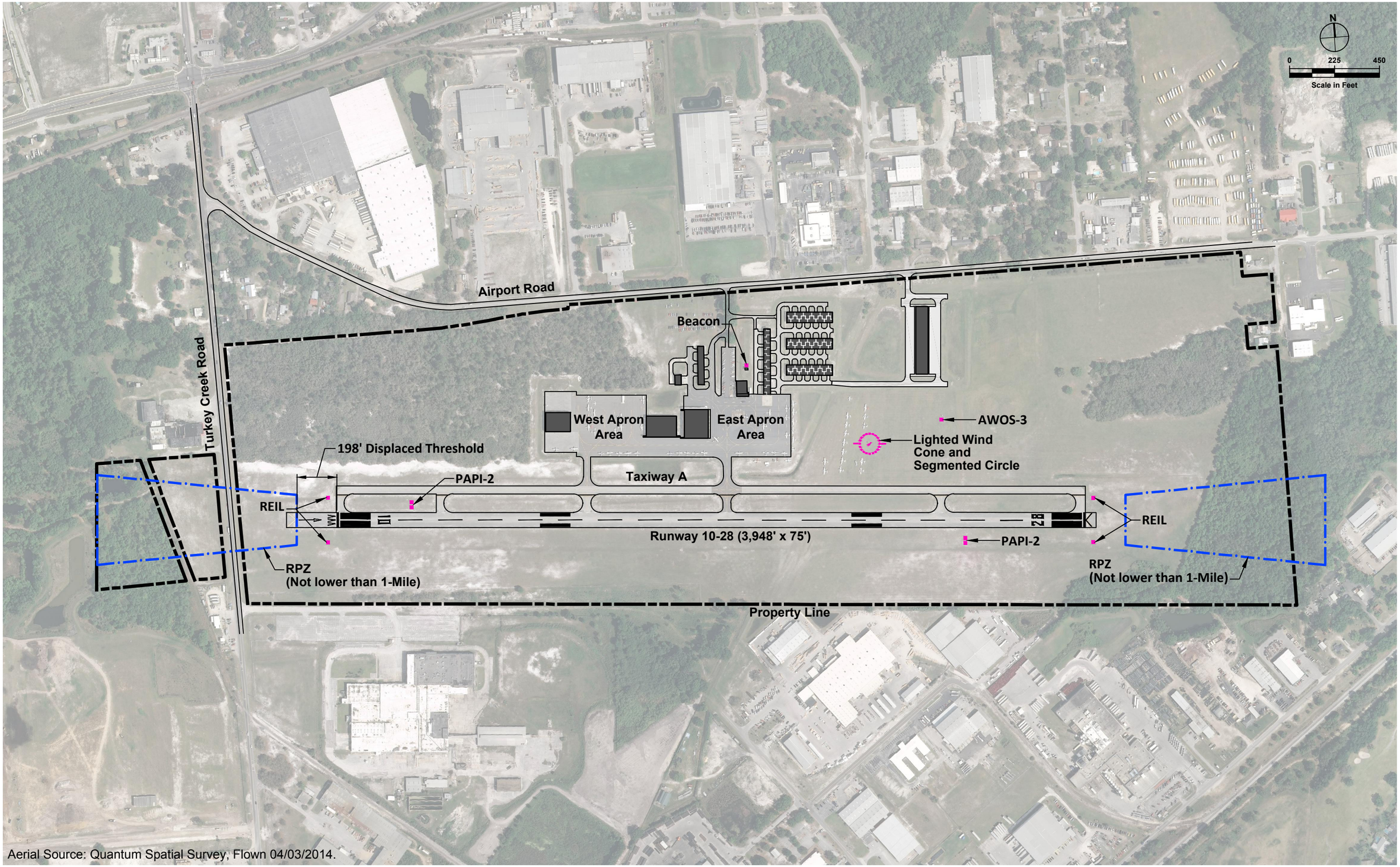


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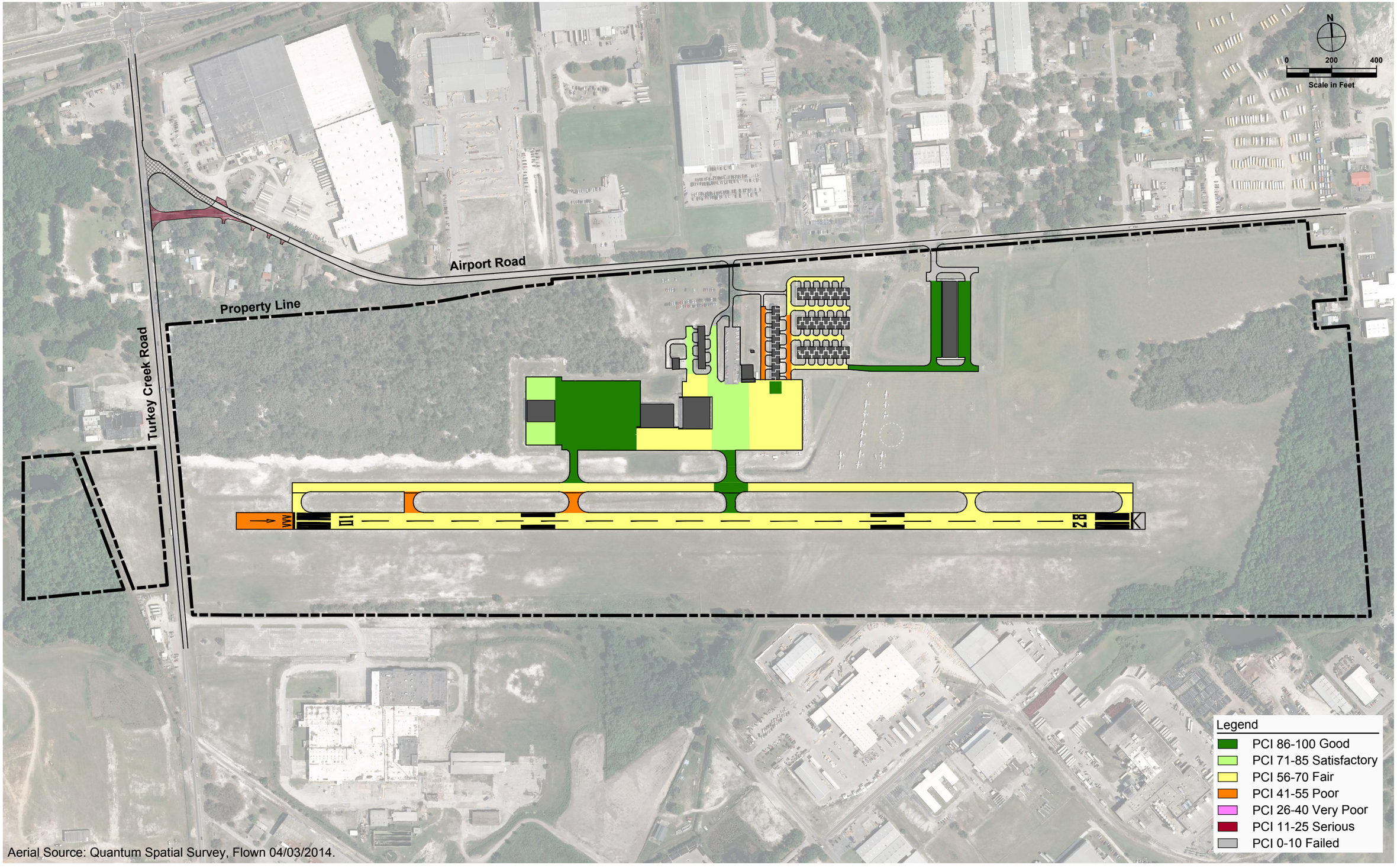
Figure 2-4 Existing Airside Facilities



Y:\Planning\HCAA\GA MPs Project – 2-6-2014\PCM\Drawings\(PCM)_Fig_2-5_Pavement Conditions Map.dwg March 14 2018-10:48

Figure 2-5 Pavement Conditions Map

Source: Florida Department of Transportation - Aviation and Spaceports Office, 2015.

2.9 Landside and Support Facilities

The inventory of landside and support facilities includes all facilities located within the airport boundaries that are not required for aircraft movement or air navigation. Some examples of these facilities include but are not limited to hangar structures, fuel storage and fueling facilities, and terminal/Fixed Base Operator (FBO) facilities. **Figure 2-5** presents a graphic illustrating the various landside facilities at PCM and **Table 2-4** contains a photo of each facility along with the size, capacity, and use of each.

Fixed Base Operator (FBO)

Plant City Airport Services (PCAS) is the airport's only FBO at PCM and they provide services that include Jet A and 100LL fuel sales, hangar rental, tie-down parking, flight training, courtesy transportation, internet access, rental cars, aircraft rental, pilot supplies, and aircraft maintenance. The terminal building contains approximately 4,206 square feet of space serves as a base for the FBO operation with a number of amenities including a passenger and terminal lounge, vending machines, pilot's lounge / snooze room, restrooms and showers, and a weather room for flight planning. In addition to the terminal facility, PCAS also occupies a large hangar (Building 5000) that is utilized for aircraft maintenance and also for the storage of aircraft that are utilized for flight training and rentals. In addition to many of the day-to-day responsibilities of the airport operation, PCAS also leases hangars and collects various fees for use of airport facilities.

General Aviation (GA) Hangar Facilities

In regard to airport hangar facilities, PCM only has four types of hangar facilities available that include enclosed T-hangars, shade hangars, bulk hangars, and one maintenance hangar. **Figure 2-5** illustrates the location of the hangar facilities at PCM and **Table 2-5** describes the size and condition of each hangar.

Enclosed Hangar – These facilities include multiple T-hangar units that are enclosed on three sides by walls and contain a door at the front of each hangar for aircraft ingress and egress. There are presently five enclosed hangars at PCM that provide housing for approximately 44 small general aviation aircraft (Buildings 2600, 3000, 3400, 3600, and 4600).

Shade Hangar – The shade hangars are simply a roof structure that provides shade from the sun and limited protection from weather elements. At PCM, there is one shade hangar that contains space for 10 aircraft (Building 3200).

Bulk Hangar Facilities – These large facilities are sometimes called community hangars and they are typically utilized to store multiple aircraft that may be owned by one or multiple owners. There are presently two bulk hangar facilities at PCM that provide housing for up to 12 small aircraft (Buildings 5200 and 5600).

Maintenance Hangar – As their name implies, maintenance hangars are larger hangars that are intended to be used for aircraft maintenance. There is only one maintenance hangar at PCM (Building 5000) that is occupied by the FBO (Plant City Airport Services).

Fuel Storage Facilities

As mentioned earlier, the FBO at PCM provides both 100LL and Jet-A aviation fuels for its aviation customers. The Jet-A fuel storage facility is centrally located on the northeast portion of the 7000 ramp. This facility includes one large aboveground fuel tank that has a 12,000 gallon capacity. Fuel is dispensed directly from this tank into aircraft that are parked nearby. This facility was constructed around the year 2000, was recently serviced by the HCAA, and is considered to be in very good condition.

The airport's 100LL facilities are located within the transient terminal apron area and are comprised of two underground storage tanks which have capacities of 4,000 gallons and 10,000 gallons. Aircraft owners park adjacent to the 100LL facilities and utilize hoses that extend from the fuel dispensers to refill aircraft. During the annual Sun 'n Fun event, the airport often brings in an additional large fuel storage tank and fuel trucks to help meet the additional demand that is associated with this event.

Table 2-4
PCM Existing Landside Facilities

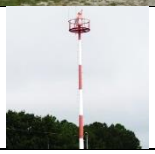
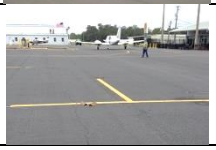
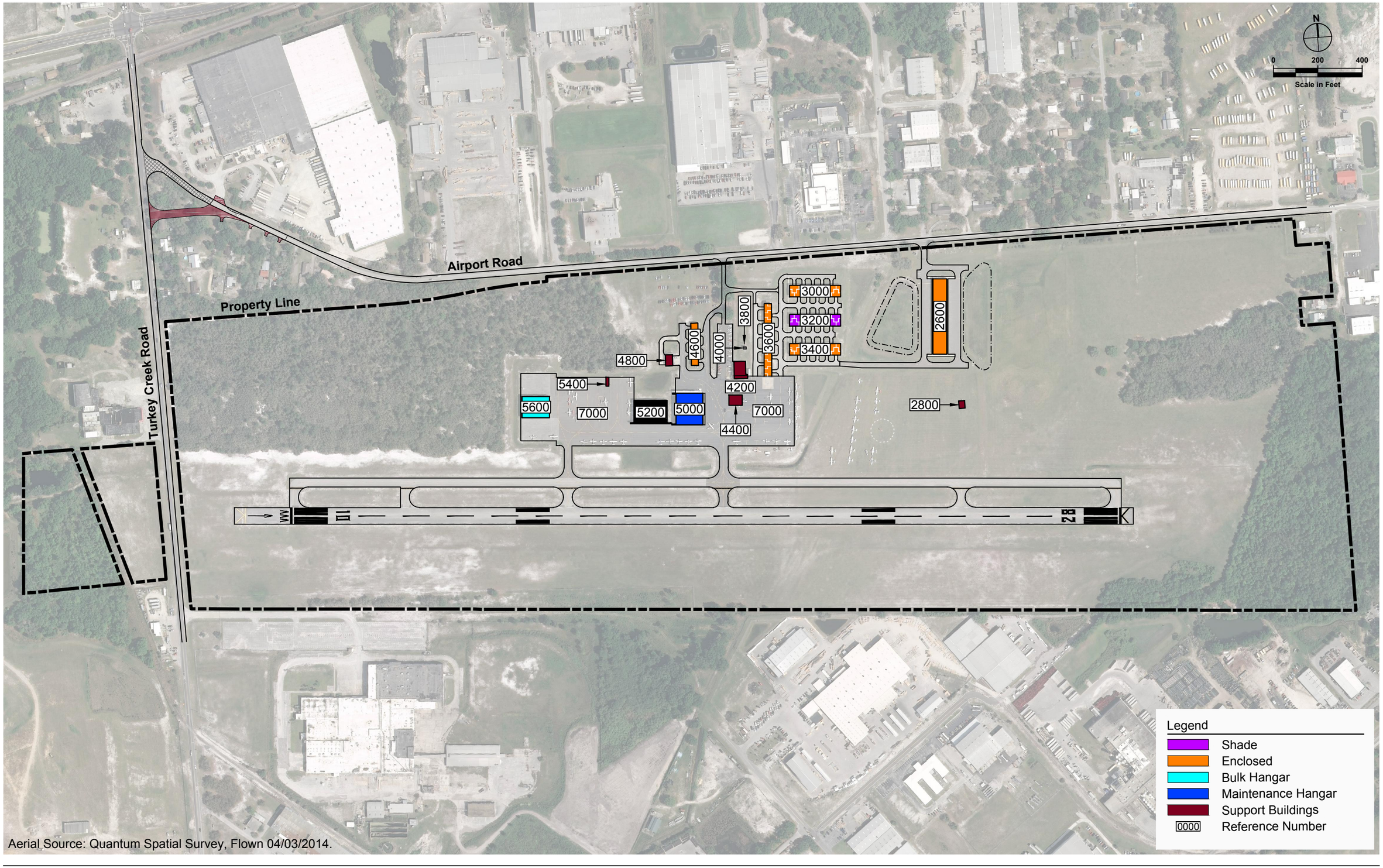
Facility #	Description	Size / Capacity	Notes	Image
2600	Enclosed Hangar (14 Units)	21,080 SF	Constructed in 2012	
2800	AWOS	N/A	Constructed in 2005	
3000	Enclosed Hangar (10 Units)	12,095 SF	Constructed in 2005	
3200	Shade Hangar (10 Units)	12,095 SF	Constructed Between 1994 and 1999	
3400	Enclosed Hangar (10 Units)	12,095 SF	Constructed Between 1994 and 1999	
3600	Enclosed Hangar (10 Units)	11,363 SF	Constructed Between 1982 and 1992 (Recently Refurbished)	
3800	Rotating Beacon	N/A	Constructed Between 1994 and 1999	

Table 2-4 PCM Existing Landside Facilities				
Facility #	**Description**	**Size / Capacity**	**Notes**	**Image**
4000	Electrical Vault	150 SF	Constructed Between 1994 and 1999	
4200	Terminal Building	4,206 SF	Constructed in 2000	
4400	Avgas Fuel Farm	N/A	Constructed Between 1982-1992	
4600	Enclosed Hangar	6,202 SF	Constructed Before 1971	
4800	Operations and Maintenance Shop	1,621 SF	Constructed Between 1982-1992	
5000*	FBO Maintenance Hangar / Bulk Hangar	17,368 SF	Constructed Before 1971 (Offices Within are in Poor Condition)	
5200*	Bulk Hangar	15,988 SF	Constructed Between 1971-1982	
5400	Jet-A Fuel Farm	N/A	Constructed Between 1999-2002 (Good Condition – Recently Serviced)	
5600*	Bulk Hangar	11997 SF	Constructed Between 2008-2011 Aerial Operator	
7000	Tie Down	25 Based Aircraft Positions		

Sources: Airport Records and Michael Baker International, Inc., 2014.
*Large hangar doors are difficult to close on these hangars



Aerial Source: Quantum Spatial Survey, Flown 04/03/2014.

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Michael Baker INTERNATIONAL

Figure 2-6 Existing Landside Facilities

2.10 Environmental Overview

As a component of the inventory effort, an environmental overview was conducted to identify environmental considerations that could affect future airport development at PCM. This overview was based on a review of available resource materials and databases, which included:

- Federal Emergency Management Agency (FEMA) digital 100-year floodplain mapping
- Southwest Florida Water Management District (SWFWMD) Florida Land Use, Cover, and Forms Classification System (FLUCCS) data
- Florida Natural Areas Inventory (FNAI) tracking list of protected species for Hillsborough County
- National Register of Historic Places (NRHP) database
- United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, Farmland Classification and Hydric Rating by Map Unit - Hillsborough County, Florida
- United States Environmental Protection Agency (USEPA) NEPAssist database
- United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) Protected Species data
- USFWS National Wetlands Inventory (NWI)

The environmental information was collected based upon the guidelines set forth in FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for airport Actions, and FAA's Environmental Desk Reference for airport Actions, which includes 23 categories of potential areas of impact that must be addressed in compliance with NEPA.

For the purpose of this overview, only the environmental categories that were deemed applicable to PCM were addressed, with the goal of identifying features that could affect proposed development projects identified as a product of this Master Plan Update study. Based on review of available resource materials, the following environmental considerations were identified:

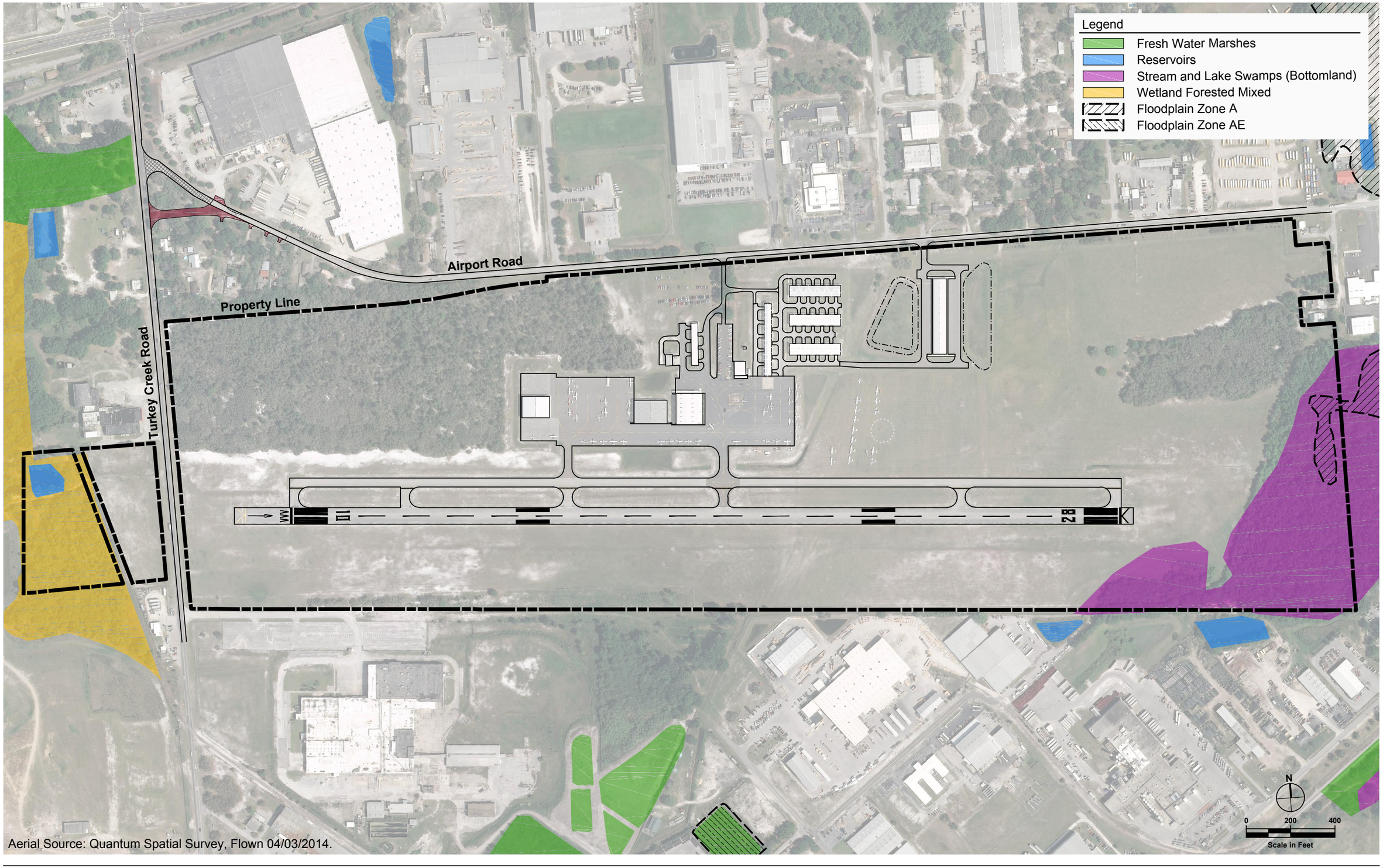
Hazardous Material Sites

The USEPA NEPAssist database[2] was utilized to obtain information regarding potential waste and hazardous material sites. The inventory identified twelve sites off airport property that are listed on federal or state solid and hazardous waste databases. **Table 2-5** includes the names of each of the potential hazardous material sites with their corresponding map identification numbers that correspond to **Figure 2-7**.

[2]USEPA, NEPAssist, http://nepassisttool.epa.gov/nepassist/nepamap.aspx?action=searchloc&wherestr=Plant%20City%20Airport%2C%20Tampa%2C%20Florida (March 13, 2014).

Table 2-5 Potential Hazardous Material Sites		
Map ID	**Site**	**Database**
1	Dart Container Company, Florida LP	RCRA
2	Gatsby Spas Inc./Centex Builders Supply	RCRA
3	Style Crest Products	TRI, AFS
4	Santa Sweets	RCRA
5	Pecks Products Company	RCRA, TRI
6	Hillsborough County Maintenance IV	RCRA
7	D.H. Griffin Wrecking Company	AFS
8	Redman Homes Incorporated	AFS, TRI
9	ModTech Holdings, Inc.	AFS, TRI
10	Bulk Manufacturing Company	RCRA
11	Lykes Meat Group, Inc.	RCRA
12	M.D. Howe Enterprises/Montgomery Tank Lines	RCRA
Source: USEPA NEPAssist, 2014 Acronyms: AFS = Air Facility System RCRA = Resource Conservation and Recovery Act TRI = Toxic Release Inventory		

No known contamination or violations were identified during review of the USEPA NEPAssist database. No potential waste or hazardous material sites are located on airport property. Two underground storage tanks for aviation fuel are located south of the terminal building and one aboveground storage tank located on the north side of the west apron area was also noted.



Aerial Source: Quantum Spatial Survey, Flown 04/03/2014.

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Michael Baker INTERNATIONAL

Figure 2-7 Natural Features Inventory

Source: FEMA Floodplain Data, 2008. SWFWMD FLUCCS Data, 2011.

Socioeconomics and Environmental Justice

The 2010 United States Census data (American Community Survey, 2008-2012/5-Year Summary File) was used at the Block Group (BG) level for determining population and income characteristics in the vicinity of PCM. A BG is the smallest geographic division that is used by the United States Census Bureau to categorize data3. The airport is encompassed by Census Tract (CT) 125.01 BG 3. **Table 2-6** provides demographic and economic characteristics of this BG, as compared to both Hillsborough County and Florida. The minority population in the vicinity of the airport comprises approximately 28.3 percent of the total population. The minority population percentage in the immediate vicinity of the airport (CT 125.01 BG 3) is larger than both the state and county minority populations. The percent of the population in the immediate vicinity of the airport that is living below the poverty level (1.9 percent), however, is far smaller than that of the county and state, at 16.5 and 15.6 percent respectively.

Table 2-6
Select Demographic and Economic Characteristics

Area	Characteristic		
	Total Population	% Minority	% Below Poverty
Florida	18,885,152	23.5	15.6
Hillsborough County	1,238,365	26.7	16.5
CT 125.01 BG 3	647	28.3	1.9

Source: U.S. Census Bureau, 2008-2012 American Community Survey 5-year Estimates.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, requires federal agencies to identify community issues of concern during the NEPA planning process, particularly those issues relating to decisions that may have a disproportionate impact to low-income or minority populations. To determine if there were higher concentrations of environmental justice populations in the vicinity of the airport, the block group data pertaining to percentage of low-income and minority populations were compared to that of Hillsborough County. Although the percent of the population in the vicinity of PCM that is living below the poverty level is far smaller than that of Hillsborough County, based on the high percentage of minority residents in CT 125.01 BG 3 (28.3 percent), potential environmental justice populations may exist in the vicinity of the airport.

Historic, Architectural, Archaeological, and Cultural Resources

There are no NRHP-eligible or listed sites on, or in the vicinity of airport property. However, archaeological resources were not evaluated because this data is protected to preserve the integrity of the sites and was not accessible through standard internet searches.

Floodplains

Executive Order (EO) 11988, Floodplains, and the United States Department of Transportation Order 5650.2, Floodplain Management and Protection, require that all airport development actions must avoid floodplain impacts wherever there is a practicable alternative. If there is no other alternative, the long and short-term adverse impacts associated with the occupancy and

3 United States Census Bureau, "Glossary," http://factfinder.census.gov/home/en/epss/glossary_a.html (August 30, 2012).

modification of floodplains must be minimized to the maximum extent possible. In addition, the design must also minimize the adverse impacts to the floodplain's natural and beneficial values and minimize the likelihood of flood-related risk to human life, health, and welfare.

As depicted on Figure 2-7, a very small area designated as 100-year floodplain extends onto airport property along the eastern boundary. This floodplain is classified as Zone AE, which is defined as areas inside of the 100-year floodplain for which prior hydraulic studies have been completed and base flood elevations (BFEs) are available. The Zone AE floodplains on airport property have a defined BFE of 114.2 feet.

Water Quality

The airport is located within two watersheds, Alafia watershed to the west (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] 03100204) and Hillsborough watershed (HUC 03100205) to the east. The closest surface waters include Spartman Branch to the northeast, within the Hillsborough watershed, and numerous small ponds (refer to "Reservoirs" identified on Figure 2-7) in the vicinity of airport property.

As part of the Clean Water Act, states are required to record the condition of surface waters in accordance with Section 303(d) documentation. The Florida 303(d) documentation identifies water bodies that are considered impaired because they do not meet state water quality standards regarding pollutant levels. Spartman Branch was listed impaired on the 2010 Florida Section 303(d) list due to high levels of fecal coliform bacteria and chlorophyll-A, as well as low levels of dissolved oxygen. Although a Total Maximum Daily Load (TMDL) has been completed for fecal coliform, TMDLs are still needed for Chlorophyll-A and dissolved oxygen. The TMDLs calculate the maximum amount of a pollutant allowed to enter a waterbody, also known as the loading capacity, so that the waterbody will attain the water quality standards for that particular pollutant.[4]

Airport development projects are required to acquire a SWFWMD Environmental Resource Permit which includes stormwater runoff treatment water quality protection, and stormwater pollution prevention best management practices. National Pollutant Discharge Elimination System (NPDES) Construction Permits are required prior to construction of development projects. NPDES Construction Permits mandate sediment and erosion control measures prior to, during and after construction is completed.

Wetlands and Other Jurisdictional Waters of the United States

In Florida, land use and vegetative cover are frequently described using FLUCCS. This classification scheme was originally developed by the FDOT, but has been adopted by Florida's Water Management Districts for mapping land cover types within their respective jurisdictions.[5] The SWFWMD FLUCCS mapping identified only one wetland land cover type, Stream and Lake Swamps, as occurring within the airport property boundary. This land cover type is commonly referred to as bottomland hardwoods and is typically associated with river, creek, or lake

[4] USEPA, "Overview of Impaired Waters and Total Maximum Daily Loads Program," http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/intro.cfm (March 25, 2014).
[5] FDOT, Florida Land Use, Cover and Forms Classification System, January 1999.

floodplain areas.[6] Other wetland or surface water FLUCCS types identified in the vicinity of the airport include freshwater marshes to the west and south, wetland forested mix to the west, and several small reservoirs.

Potential wetland areas within and adjacent to the airport were also identified using USFWS NWI mapping, which indicated the occurrence of emergent marsh and forested wetlands to the east, as well as an emergent marsh wetland and a pond to the south.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA, 16 U.S.C. §§1451-1466) is administered by the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). After a state develops its coastal zone management plan and NOAA approves the plan, CZMA provisions allow for the transfer of coastal zone management authority to the state. The Florida Coastal Management Program (FCMP) received approval from NOAA in 1981, and the FDEP became the lead agency for implementation of the FCMP through its Office of Intergovernmental Programs (OIP).

One of the primary requirements of the CZMA is Federal consistency review. Federal consistency review is required for federal agency activities that affect coastal resources, for projects involving federal assistance (grants, loans, subsidies, insurance, etc.) to state or local governments and for federal licensing and permitting actions. The Florida State Clearinghouse within OIP coordinates federal consistency review by the nine state agencies and five water management districts that comment during the review process. Plant City Airport is located within Florida's regulated coastal zone.

Threatened and Endangered Species

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the Bald and Golden Eagle Protection Act of 1940, and the Florida Endangered and Threatened Species Act, habitats at PCM were evaluated with respect to suitability for federal- and state-protected species. A list of federally protected species known to occur or with potential to occur in Hillsborough County, dated May 1, 2013, was acquired from the USFWS.[7] A list of state-protected species was accessed from the Florida Natural Areas Inventory (FNAI) species database for Hillsborough County, last updated in December 2013.[8] Due to lack of suitable habitats, several of the species on the USFWS list for Hillsborough County and the FNAI Tracking List for Hillsborough County would not be anticipated to occur in the immediate vicinity of the airport. The remaining species which could potentially occur in the immediate vicinity due to the presence of suitable habitats are depicted in **Table 2-7.**

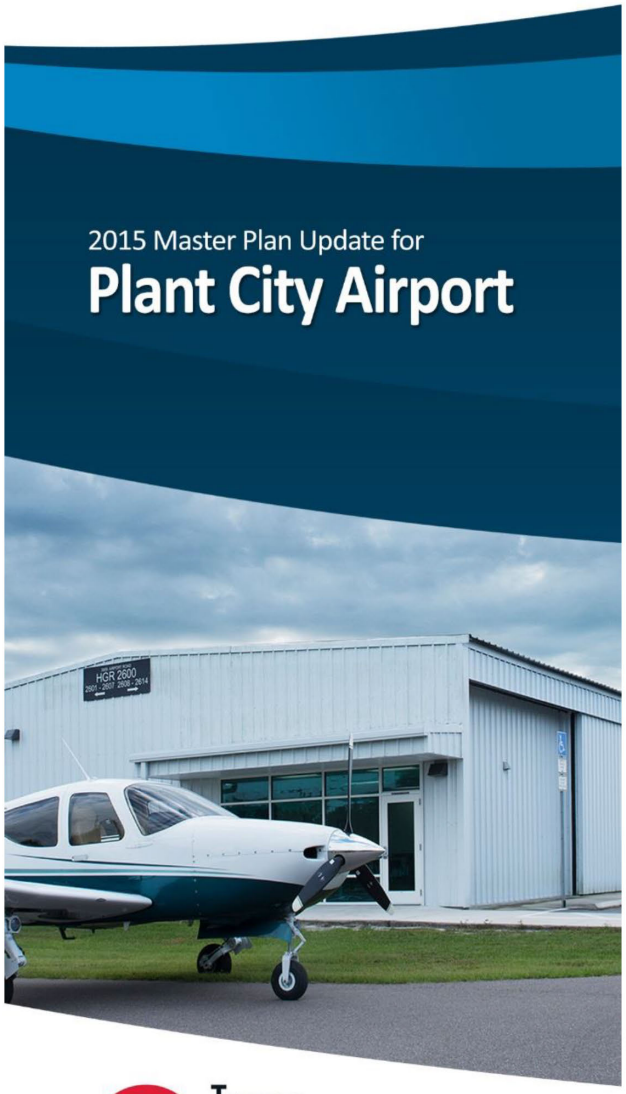
[6] FDOT, Florida Land Use, Cover and Forms Classification System, January 1999, p.41.
[7] USFWS, "Federally Listed Species in Hillsborough County, Florida," http://www.fws.gov/northflorida/CountyList/Hillsbor.htm, May 1, 2013 (March 24, 2014).
[8] FNAI, "FNAI Tracking List, Hillsborough County," http://www.fnai.org/bioticssearch.cfm, December 2013 (March 24, 2014).

Table 2-7 Potential Federal- and State- Protected Species in Vicinity of the Airport			
Scientific Name	**Common Name**	**Federal Status**	**State Status**
Plants			
Asplenium erosum	Auricled Spleenwort	Not Listed	Endangered
Bonamia grandiflora	Florida Bonamia	Threatened	Endangered
Carex chapmanii	Chapman's Sedge	Not Listed	Threatened
Centrosema arenicola	Sand Butterfly Pea	Not Listed	Endangered
Glandularia tampensis	Tampa Vervain	Not Listed	Endangered
Nolina brittoniana	Britton's Beargrass	Endangered	Endangered
Ophioglossum palmatum	Hand Fern	Not Listed	Endangered
Pecluma plumula	Plume Polypody	Not Listed	Endangered
Rhynchospora megaplumosa	Large-plumed Beaksedge	Not Listed	Endangered
Triphora amazonica	Broad-leaved Nodding-caps	Not Listed	Endangered
Animals			
Drymarchon couperi	Eastern Indigo Snake	Threatened	Threatened
Gopherus polyphemus	Gopher Tortoise	C	Threatened
Lampropeltis extenuata	Short-tailed Snake	Not Listed	Threatened
Aphelocoma coerulescens	Florida Scrub-Jay	Threatened	Threatened
Picoides borealis	Red-cockaded Woodpecker	Endangered	Endangered
Falco sparverius paulus	Southeastern American Kestrel	Not Listed	Threatened
Grus canadensis pratensis	Florida Sandhill Crane	Not Listed	Threatened
Mycteria americana	Wood Stork	Endangered	Endangered

Sources: USFWS, Federally Listed Species in Hillsborough County, Florida, last updated May 1, 2013, and FNAI species database for Hillsborough County, last updated in December 2013.
USFWS, Federally Listed Species in Hillsborough County, Florida, http://www.fws.gov/northflorida/CountyList/Hillsbor.htm, May 1, 2013 (3/24/2014).
FNAI, Tracking List for Hillsborough County Florida, http://www.fnai.org/bioticssearch.cfm, December 2013 (3/24/2014).
Acronyms:
C = Candidate for federal listing as Endangered or Threatened.

NEPA and permitting requirements associated with the preferred airport development alternative may be found in Section 6 of this report.

Chapter 3.0
Aviation Activity Forecasts



Tampa International Airport

Hillsborough County Aviation Authority

3.0 Aviation Activity Forecasts

3.1 Introduction

The purpose of the aviation activity forecast is to provide reasonable and acceptable estimates of projected aircraft operational and aircraft basing level demand that would be accommodated at the airport for a foreseeable future (20-year) period. Such forecasts also typically include, but are not limited to: annual aircraft operational and basing levels and derivative forecasts of instrument activity and peaking levels.

Aviation activity forecasts directly support airport facility planning and to identify the need, type, and timing of airport facility improvements and to identify anticipated changes in the mix (e.g., type and size) of the aircraft that are anticipated to operate and base at the airport.

The Plant City Airport is located within the northeast quadrant of Hillsborough County 2 statute miles southwest of Plant City. The Airport is bounded by Airport Road to the north, Turkey Creek Road to the west, and Sydney Road to the southeast. Land uses adjacent, and in proximity to the airport's southeast side are zoned for industrial use. Nearby residential land uses are located north of East Dr. Martin Luther King Jr. Boulevard and southeast of Sydney Road.

Because of its relative location within the County and its distance from the central downtown Tampa business district, the airport is anticipated to primarily accommodate and serve recreational general aviation activity throughout the 20-year forecast period. The relative location and proximal distance of the noise-sensitive residential land uses, available runway take-off lengths and the absence of an operating Airport Traffic Control Tower (ATCT) may further serve to limit the ability of the airport to fully accommodate and serve larger general aviation turbo-prop and fan-jet aircraft that typically support business aviation activity.

3.2 Forecast Development Assumptions

The development of the aviation activity forecasts for each of the three Hillsborough County Aviation Authority (HCAA) general aviation airports were predicated upon the following overlying and guiding assumptions:

- HCAA's system of general aviation airports will remain in place and will evolve as demand dictates throughout the 20-year Master Planning Forecast Period (2014-2033).
- HCAA will continue to develop and improve the availability of needed aviation facilities to maintain the desired level of services, and to fully accommodate existing and latent general aviation demand at each airport.
- HCAA desires to maintain the highest and best use of each airport to support and enhance the entire system of general aviation airports to: 1) provide opportunities for continued airport facility development, 2) increase levels of services offered to the flying public, 3) accommodate increased demand for aircraft activity and aircraft basing needs, and 4) preserve the capability and flexibility to accommodate and facilitate on-airport economic and revenue generation activities.

3.3 Published Forecasts and Available Information

Forecasts of aviation activity provide the necessary information and data that is used for the assessment of the need and timing of airport development projects. For the purpose of identifying previously published aviation activity forecasts that may be suitable for the development of a forecast of aviation activity specific to this update of the Plant City Airport (PCM) Master Plan, the following documents were reviewed:

- The Federal Aviation Administration's (FAA) Terminal Area Forecast (TAF),
- The FAA Aerospace Forecast (2014 – 2034),
- The Florida Department of Transportation's (FDOT) Florida Aviation System Plan (FASP) Forecast,
- FAA Order 5090.3C, Field Formulation of the National Plan of Integrated Airport Systems (NPIAS),
- HCAA Based Aircraft Inventory 2008 through 2013,
- FAA's Traffic Flow Management System Instrument Activity Counts (TFMSC),
- Flightwise.com Aircraft Flight Tracking Data,
- HCAA's Airscene.com (Exelis) Noise Monitoring Data, and
- HCAA-Coordinated Telephone Interviews of Airport Tenants.

Following the review and use of one or more previously published aviation activity forecasts for PCM, and through the use of airport-specific FAA-TAF and FDOT-FASP-generated Compound Annual Growth Rates (CAGR) and Operations Per Based Aircraft (OPBA) forecasting methodologies, a derived Master Plan-specific forecast of based aircraft and aircraft operations was developed. Derivative forecasts of peak activity levels and instrument operations were compared to the derived aviation activity forecast developed for the Master Plan Update and the FAA TAF as required for FAA acceptance and review purposes.

Review of FAA Aerospace Forecast

The FAA Aerospace Forecast Fiscal Year 2014-2034 was reviewed for possible use in the development of a forecast of aviation activity for the Master Plan Update. The FAA Aerospace Forecast contains projections of future United States (U.S.) aviation demand at the national level. This publication provides a 21-year outlook and is updated each year in March. It is the official FAA view of the immediate future for aviation within the United States. The FAA Aerospace Forecast examines future trends expected in the aerospace industry. The publication includes aggregate level forecasts of the fleet, hours flown, and pilots for general aviation and considers the economics of the aviation industry in general, as well as trends expected to affect the commercial and general aviation community. The FAA Aerospace Forecast was reviewed to ascertain the general health and prosperity of the general aviation industry as a whole and to provide a sense of future aviation activity growth that may occur at PCM throughout the 20-year Master Plan Update planning period.

Highlights of the FAA Aerospace Forecast that were considered germane to PCM are as follows:

- The active domestic (U.S.) general aviation fleet is projected by the FAA Aerospace Forecast[9] to increase at an average annual rate of 0.5 percent over the 21-year forecast period. This forecast of future general growth of general aviation aircraft fleet nationwide is considered to be virtually flat.
- The number of active piston-powered aircraft (including rotorcraft) is projected to decrease at an average annual rate of 0.3 percent. This includes declines in both single and multi-engine fixed wing aircraft, but with the smaller category of piston-powered rotorcraft growing at 1.7 percent a year. Single-engine fixed-wing piston aircraft are projected to decline at a rate of 0.4 percent, while multi-engine fixed wing piston aircraft are projected to decline by 0.5 percent a year.
- In 2005, a new category of aircraft (previously not included in the FAA's aircraft registry counts) was created: "light sport" aircraft. At the end of 2012, a total of 2,001 active aircraft were estimated to be in this category. The forecast assumes a 4.1 percent annual growth of the fleet by 2034.
- The number of general aviation hours flown nationwide is projected to increase by 1.4 percent yearly over the forecast period. The FAA projects above average growth in hours will occur after 2023 with increases in the fixed wing turbine aircraft fleet, as well as increasing utilization of both single and multi-engine piston aircraft as the aging of this fleet starts to slow down. In the medium term, much of the increase in hours flown reflects strong growth in the rotorcraft and turbine jet fleets.
- Hours flown by turbine aircraft (including rotorcraft) are forecast to increase 3.2 percent yearly over the forecast period, compared with a decline of 0.4 percent for piston-powered aircraft. Jet aircraft are forecasted to account for most of the increase, with hours flown increasing at an average annual rate of 4.2 percent over the forecast period. The large increases in jet hours result mainly from the increasing size of the business jet fleet, along with a measured recovery in utilization rates from recession induced record lows. Rotorcraft hours, which were less impacted by the economic downturn when compared to other categories and rebounded earlier, are projected to grow by 2.8 percent yearly, with turbine rotorcraft growing at an average annual rate of 3.1 percent. Sales reports show that most replacements were not for pistons, which suggests that the new purchases were possibly to replace other turbine helicopter at the lower end of the market, or the newly introduced light turbine model was a product fulfilling a previously unmet need at the light end of the market. Overall, the market growth was robust in both segments of the industry. Lastly, the light sport aircraft category, which not includes only the special light sport, is expected to see an increase in hours flown of 5.1 percent a year; this is primarily driven by growth in the fleet.

Based upon the FAA Aerospace Forecast regarding the manufacture and utilization of general aviation aircraft within the U.S., it can be readily assumed that the year-over-year growth of general aviation activity and aircraft basing levels at PCM will continue, albeit at a relatively low annualized rate of growth. The airport will most likely experience continued growth in aviation

[9] FAA Aerospace Forecast fiscal years (FY) 2014-2034 Tables 28 and 29.

activity based primarily on the number of and annualized growth rate of locally-based aircraft and their associated activity levels.

Review of FAA Terminal Area Forecast

The FAA's Terminal Area Forecast (TAF) was reviewed as part of the development of a forecast of aviation activity for the PCM Master Plan Update. The TAF is a detailed FAA forecast planning database that the FAA Office of Aviation Policy and Plans (APO) produces each year covering airports in the National Plan of Integrated Airport Systems (NPIAS). The TAF is prepared to assist the FAA in meeting its planning, budgeting, and staffing requirements. The TAF contains both historical and forecast data. The TAF forecasts are made at the individual airport level and are based in part on the national FAA Aviation Forecast. The TAF assumes an unconstrained demand for aviation services (i.e., an airport's forecast is developed independent of the ability of the airport and/or the air traffic control system to supply the capacity required to meet the demand). The FAA TAF forecast of aviation activity published for PCM is presented in **Table 3-1.**

Between 2000 and 2012, the number of reported based aircraft increased from 61 to 91, however, the number of estimated aircraft operations remained unchanged at 47,975 for the same time period. These published historical levels of aviation activity and number of locally-based aircraft were not recorded or considered to be verifiable because the airport is non-towered. The TAF indicates that PCM had 92 based aircraft and 48,921 aircraft operations in 2013. The TAF forecast projections of based aircraft increases this number from 92 to 125 over the next 27 years representing a CAGR of 1.97 percent. For the same period, the number of annual aircraft operations at the airport is expected to increase from 48,921 to 82,888 representing a CAGR of 1.97 percent. Because there are no formal records of past aircraft activity levels for the airport, for the purposes of this Master Plan Update, that the stated number of 48,921 annual aircraft operations, albeit non-verifiable, was considered to be reasonable and acceptable for use as one of several data sources from which the forecast of future aircraft activity at PCM through the 20-year planning period could be developed.

Table 3-1
FAA TAF Aircraft Operations and Based Aircraft

Year	Itinerant					Local			Total	Based Aircraft
	Air Carrier	Air Taxi/ Commuter	General Aviation	Military	Total	Civil	Military	Total		
Historical Activity										
2000	0	200	11,000	25	11,225	36,750	0	36,750	47,975	61
2001	0	154	12,739	19	12,912	23,979	0	23,979	36,891	74
2002	0	157	13,061	19	13,237	24,585	0	24,585	37,822	72
2003	0	161	13,383	19	13,563	25,191	0	25,191	38,754	72
2004	0	164	13,700	19	13,883	25,789	0	25,789	39,672	72
2005	0	168	14,022	19	14,209	26,396	0	26,396	40,605	72
2006	0	171	14,299	19	14,489	26,916	0	26,916	41,405	72
2007	0	175	14,581	19	14,775	27,447	0	27.447	42,222	72
2008	0	200	11,000	25	11,225	36,750	0	36,750	47,975	72
2009	0	200	11,000	25	11,225	36,750	0	36,750	47,975	65
2010	0	200	11,000	25	11,225	36,750	0	36,750	47,975	89
2011	0	200	11,000	25	11,225	36,750	0	36,750	47.975	91
2012	0	200	11,000	25	11,225	36,750	0	36,750	47,975	91
Projected Activity										
2013	0	204	11218	25	11,447	37,474	0	37,474	48,921	92
2018	0	225	12365	25	12,615	41,315	0	41,315	53,930	101
2020	0	234	12857	25	13,116	42,960	0	42,960	56,076	103
2023	0	248	13634	25	13,907	45,551	0	45,551	59,458	108
2025	0	258	14178	25	14,461	47,364	0	47,364	61,825	110
2028	0	273	15,033	25	15,331	50,222	0	50,222	65,553	113
2030	0	284	15634	25	15,943	52,221	0	52,221	68,164	115
2033	0	302	16584	25	16,911	55,372	0	55,372	72,283	118
2035	0	316	17248	25	17,589	57,577	0	57,577	75,166	120
2040	0	351	19029	25	19,405	63,483	0	63,483	82,888	125
Compound Annual Growth Rate										
2013-2018	--	1.98	1.97	--	1.96	1.97	--	1.97	1.97	1.35
2018-2023	--	1.97	1.97	--	1.97	1.97	--	1.97	1.97	1.35
2023-2028	--	1.94	1.97	--	1.97	1.97	--	1.97	1.97	0.91
2028-2033	--	1.99	1.98	--	1.97	1.97	--	1.97	1.97	0.89
2013-2040	--	2.03	1.98	--	1.97	1.97	--	1.97	1.97	1.14

Source: FAA TAF Plant City Airport, February 2014.
Note: Listed historical operations represent estimates and do not reflect actual based aircraft and aircraft operations.

Review of FDOT FASP Forecast

In cooperation with the FAA and Florida's public airports as part of the Continuing Florida Aviation System Planning Process (CFASPP), the Florida Department of Transportation's Aviation Office (FDOT) developed the Florida Aviation System Plan (FASP) that incorporates the traditional planning elements that are typically included in most state aviation system plans. The FASP 2031 forecast includes an analysis of the intermodal aspects of the state transportation system and a strategic planning element which identifies strategic goals, approaches, measurements, and recommendations to achieve these goals. Each year, as part of the CFASPP, the FDOT Aviation Office updates the forecasts of based aircraft and operational activity levels for each Florida public-use airport or airpark. **Table 3-2** summarizes the FDOT FASP listing of historical levels of based aircraft and aircraft operations data through 2011, and lists projections for based aircraft and annual aircraft operations at PCM through the year 2033.

Table 3-2
FDOT FASP General Aviation Forecast (2012-2033)

Year	Based Aircraft	Aircraft Operations
Historical Activity		
2000	75	47,975
2001	71	47,975
2002	71	47,975
2003	71	47,975
2004	60	49,548
2005	58	49,548
2006	86	49,548
2007	82	49,548
2008	84	49,548
2009	94	47,975
2010	94	47,975
2011	94	47,975
Projected Activity		
Year	Based Aircraft	Aircraft Operations
2012	96	48,743
2013	97	49,522
2018	105	53,613
2023	114	58,042
2028	123	62,836
2033[1]	133	68,027
Period	**Compound Annual Growth Rates**	
2013-2018	1.57%	1.60%
2018-2023	1.57%	1.60%
2023-2028	1.57%	1.60%
2028-2033[1]	1.57%	1.60%

Sources: FDOT FASP, 2012-2031.
URS, 2014.
[1] Period 2031-2033 assumes FASP extrapolated CAGR.

Between 2000 and 2012, the number of reported based aircraft increased from 75 to 96, however, the number of estimated aircraft operations increased from 47,975 to 48,743 for the same time period. These published historical levels of aviation activity and number of locally-based aircraft were not recorded or considered to be verifiable because the airport is non-towered. FASP records

indicate that PCM had 97 based aircraft and 49,522 aircraft operations in 2013. The FASP forecast projections of based aircraft increases this number from 97 to 133 over the next 20 years representing a CAGR of 1.57 percent. For the same period, the number of annual aircraft operations at the airport is expected to increase from 49,522 to 68,027 representing a CAGR of 1.60 percent. Because there are no formal records of past aircraft activity levels for the airport, for the purposes of this Master Plan Update, that the stated number of 49,522 annual aircraft operations, albeit non-verifiable, was considered to be reasonable and acceptable for use as one of several data sources from which the forecast of future aircraft activity at PCM through the 20-year planning period could be developed.

3.4 Based Aircraft and Aircraft Operations Forecasts

The number of aircraft based at an airport or airpark is typically used to determine the level of existing and future forecasted levels of aviation activity and to determine the number and size of facilities needed to accommodate the based aircraft tie-down and covered aircraft storage needs of aircraft owners.

The forecast of based aircraft for the 20-year planning period was developed using information provided by the HCAA that included the total number and relative mix of aircraft type that were based at the airport in 2013.

Based Aircraft Levels Using TAF CAGR

Using the 2013 HCAA-inventoried number and mix of based aircraft at PCM and applying the period-to-period (2013-2033) based aircraft growth rates as projected in the FAA TAF forecast (1.25 percent annually), a "normalized" based aircraft forecast for PCM was developed. By using this forecasting methodology, the number of based aircraft at PCM is projected to increase from 84 to 108 within the 20-year planning period. The derived forecast of based aircraft through the 20-year planning period is presented in **Table 3-3**.

Table 3-3
Normalization of Based Aircraft Forecast – PCM TAF

Year	TAF	Normalized
2013	92	84[1]
2018	101	89
2023	108	95
2028	113	101
2033	118	108
CAGR	1.25 %	1.25 %

Sources: URS, 2014.
FAA TAF Plant City Airport, February 2014.
[1] Actual HCAA Based Aircraft Counts for PCM, November 2013.
Note: Listed based aircraft values rounded for each forecast period using stated CAGR value.

Based Aircraft Levels Using FASP CAGR

Using the 2013 number and mix of based aircraft at PCM and applying the period-to-period (2013-2033) based aircraft growth rates as projected in the FASP forecast (1.57 percent annually), a "normalized" based aircraft forecast for PCM was developed. By using this forecasting methodology, the number of based aircraft at PCM is projected to increase from 84 to 115 within the 20-year planning period. The derived forecast of based aircraft through the 20-year planning period is presented in **Table 3-4**.

Table 3-4
Normalization of Based Aircraft Forecast – PCM FASP

Year	FASP	Normalized[2]
2013	97	84[1]
2018	105	91
2023	114	98
2028	123	106
2033	133	115
CAGR	1.57 %[2]	1.57%

Sources: URS, 2014.
FDOT FASP, 2012-2031.
[1] Actual HCAA Based Aircraft Counts for PCM, November 2013.
[2] FASP 2012-2031 CAGR, Period 2031-2033 assumes extrapolated FASP CAGR of 1.57 percent.
Note: Listed based aircraft values rounded for each forecast period using stated CAGR value.

Averaging of Based Aircraft Levels

Using the 2013 number and mix of based aircraft at PCM and applying the period-to-period based aircraft growth rates as projected in the TAF (1.25 percent annually) and the FASP forecast (1.57 percent annually), average based aircraft forecasts for PCM were developed. **Table 3-5** summarizes these forecasts and averages the normalized TAF and FASP forecasts. The normalized average (1.45% annually) was found to be reasonable and was subsequently adopted for future planning purposes.

Table 3-5
Averaging of Based Aircraft Forecast

Year	TAF Normalized	FASP Normalized[2]	Normalized Average
2013	84[1]	84[1]	84[1]
2018	89	91	90
2023	95	98	97
2028	101	106	104
2033	108	115	112
CAGR	1.25%	1.57%	1.45%

Source: URS, 2014.
[1] Actual HCAA Based Aircraft Counts for PCM, November 2013.
[2] FASP 2012-2031 CAGR, Period 2031-2033 assumes extrapolated FASP CAGR of 1.57 percent.
Note: Listed based aircraft values rounded for each forecast period using stated CAGR value.

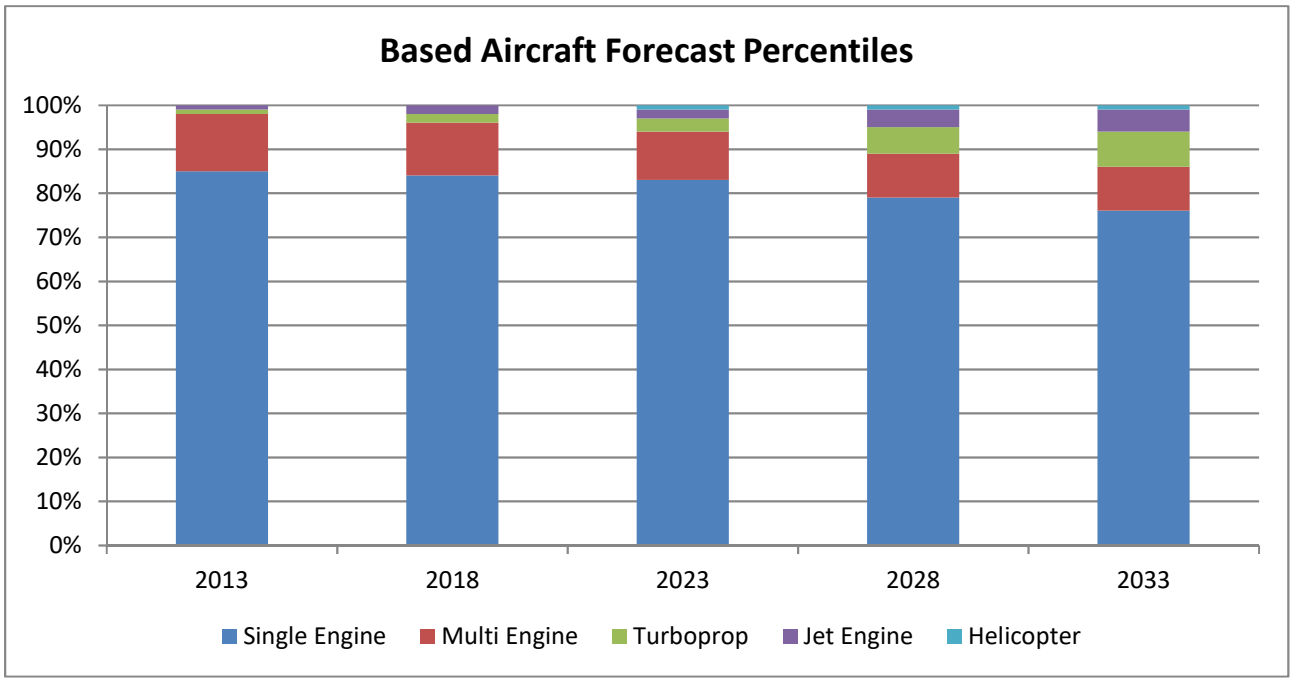
3.5 Adoption of Based Aircraft Forecast

As listed in **Table 3-6** and illustrated in the graph presented below, the relative mix of aircraft types that will be based and operating at the airport is anticipated to change throughout the forecast period. This will be primarily influenced by the anticipated increase in the availability of aircraft storage and maintenance facilities and the associated level of services offered at the airport.

Table 3-6
Based Aircraft Forecast Percentiles

Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2013	85%	13%	1%	1%	0%	100%
2018	84%	12%	2%	2%	0%	100%
2023	83%	11%	3%	2%	1%	100%
2028	79%	10%	6%	4%	1%	100%
2033	76%	10%	8%	5%	1%	100%

Source: URS, 2014.
Note: Derived forecast based on 2013 based aircraft information provided by Plant City Airport and forward-looking changes in fleet mix, based on planned future facility development.



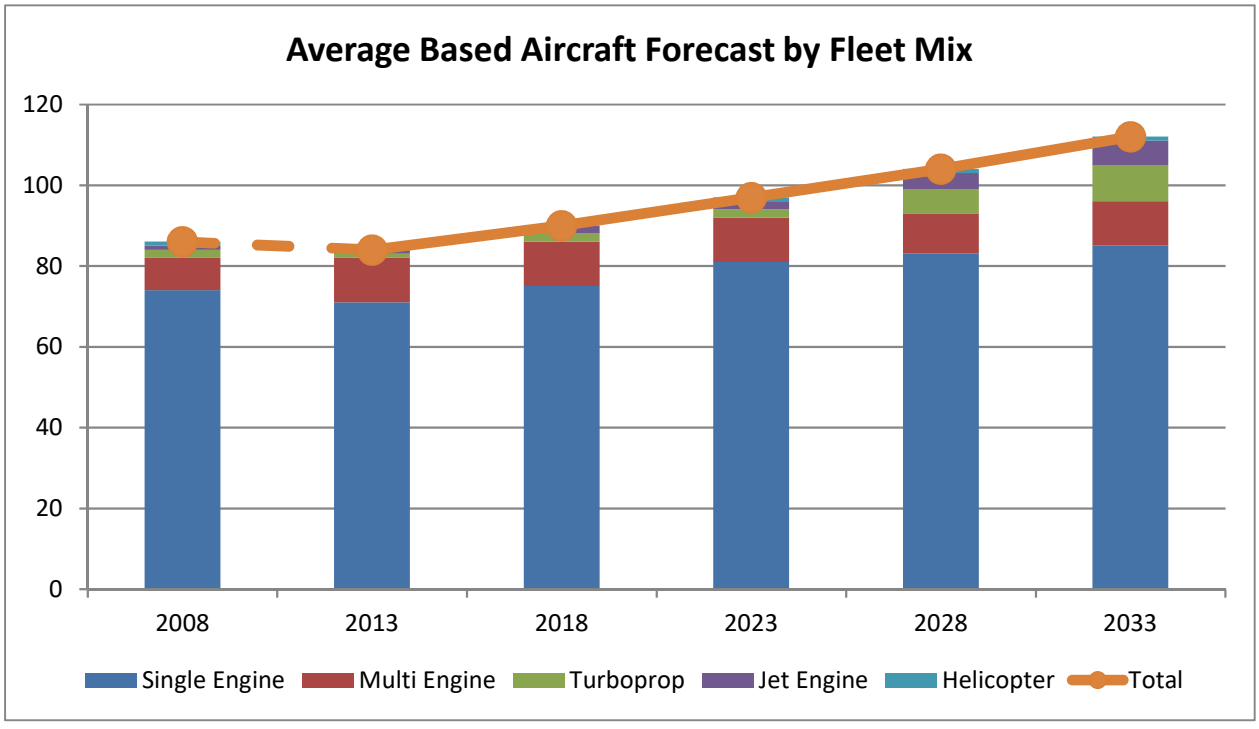
Source: URS, 2014.

Table 3-7 and the associated graph show the based aircraft forecast by aircraft type for PCM using the average normalized based aircraft forecast, which was adopted for future planning purposes.

Table 3-7
Average Based Aircraft Forecast By Fleet Mix[1]

Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2008	74	8	2	1	1	86
2013	71	11	1	1	0	84
2018	75	11	2	2	0	90
2023	81	11	2	2	1	97
2028	83	10	6	4	1	104
2033	85	11	9	6	1	112
AAGR 2013-2018	1.10%	0.00%	14.87%	14.87%	0.00%	1.45%
AAGR 2019-2023	1.55%	0.00%	0.00%	0.00%	0.00%	1.45%
AAGR 2024-2028	0.49%	-1.89%	24.57%	14.87%	0.00%	1.45%
AAGR 2029-2033	0.48%	1.92%	8.45%	8.45%	0.00%	1.45%

Source: URS, 2014.
[1] Number/type of based aircraft at the airport in 2008 and 2013 were provided by the Plant City Airport.
Note: For the purpose of reporting average annualized rates of growth of based aircraft when the base year value is zero, it was assumed that at least one additional based aircraft would be present beginning in the first year of the 5-year forecast period.
Distribution of aircraft type based on forecast assumptions listed in Table 3-6.



Source: URS, 2014.

3.6 Forecast of Aircraft Operations Using OPBA Forecasting Methodologies

While this forecast of general aviation activity included the review of similar forecasts published for PCM as part of the TAF and FASP, two additional "bottom-up" aviation activity forecasts for PCM were developed for this Airport Master Plan update using the Operations Per Based Aircraft (OPBA) metric. The OPBA metric offers an alternative, yet comparative, method to assess historical and potential future levels of aircraft operations at an individual airport. The OPBA metric, however, provides an overly simplistic high-level comparative measure of aircraft operation activity levels that is driven solely by the number based aircraft at an airport and ignores the relative split between the number of operations generated by those based aircraft and operations generated by visiting (i.e. itinerant) aircraft. The use of the OPBA metric also ignores operations generated by intensified levels of training activities by locally-based or itinerant aircraft that typically include recursive Touch-and-Go pattern-based training activities. Various industry-published recommendations regarding the use of and formulation of OPBA factors vary ranging from 250 to 750 depending upon the airport's level of service, size and training activity.

Recognizing that the airfield capabilities, number and availability of aircraft storage facilities and the inherent level of services offered at each of the three HCAA general aviation airports vary, airport-specific an (5-year) average OPBA factors were developed for each airport.

Development of Forecast-Specific Historical OPBA Factors

Using the 2013 HCAA inventory of based aircraft for PCM, the TAF- and FASP-normalized forecasts of based aircraft based upon respective CAGRs, year- and forecast-specific OPBA values were derived using the historical inventoried based aircraft levels and the reported TAF and FASP operations levels for the five-year period 2008 through 2012. The respective 5-year average OPBA values and OPBA-generated forecasts of aircraft operations are listed in **Table 3-8.**

Table 3-8
Average (5-Year) OPBA TAF & FASP Normalized

TAF					FASP			
Year	Operations	Based Aircraft	OPBA		Year	Operations	Based Aircraft	OPBA
2008	47,975	86	558		2008	49,548	86	576
2009	47,975	85	564		2009	47,975	85	564
2010	47,975	78	615		2010	47,975	78	615
2011	47,975	77	623		2011	47,975	77	623
2012	47,975	85	564		2012	48,743	85	573
Average (5-Year) OPBA			585		Average (5-Year) OPBA			590

Sources:URS, 2014.
FAA TAF Plant City Airport, February 2014.
FASP 2012-2031 Based Aircraft Forecast, Plant City Airport.
HCAA Based Aircraft Count for PCM, November 2013.

Using the HCAA 2013 based aircraft inventory, the respective TAF- and FASP-based average annual rates of projected based aircraft level growth at PCM (**Table 3-5**), and the TAF- and FASP-derived OPBA factors, forecasts of future aircraft operational levels were derived and are listed in **Tables 3-9 and 3-10.**

Table 3-9
Operations Forecast 5-Year Historical TAF OPBA

Year	Based Aircraft	OPBA	Operations
2013	84	585	49,140
2018	90	585	52,650
2023	97	585	56,745
2028	104	585	60,840
2033	112	585	65,520
CAGR	1.45%	--	1.45%

Source: URS, 2014.
HCAA Based Aircraft Counts for PCM, November 2013.
FAA TAF Plant City Airport, February 2014.
5-Year Historical TAF OPBA-PCM.

Table 3-10
Operations Forecast 5-Year Historical FASP OPBA

Year	Based Aircraft	OPBA	Operations
2013	84	590	49,560
2018	90	590	53,100
2023	97	590	57,230
2028	104	590	61,360
2033	112	590	66,080
CAGR	1.45%	--	1.45%

Source: URS, 2014.
HCAA Based Aircraft Counts for PCM, November 2013.
FASP 2012-2031 Based Aircraft Forecast, Plant City Airport.
5-Year Historical FASP OPBA-PCM.

There has been no record keeping of past itinerant Part 135 Air Taxi/Commuter, Military or Air Cargo operational activity at PCM. Inspection of the FAA TAF forecast for PCM reveals an assumed static historical level of 200 Air Taxi and 25 military annual operations occurring at the airport.

Considering the airport relative distance from the Tampa downtown central business district and limited runway take-off length, additional itinerant operations were added to the respective OPBA-generated operations forecasts for comparison purposes as listed in **Table 3-11.**

For the purpose of this update of the forecast of aviation activity at PCM, and to provide a commonality between all but the FASP operational forecast, similar to the TAF forecast, projections of 200 future itinerant Air Taxi operations were included within each year of the respective 5-Year OPBA-TAF and OPBA-FASP operational forecasts. The annual number of Air Taxi operations at PCM were assumed to remain static throughout the forecast period.

Based upon the FAA TAF, a static level of 25 historical and projected future military operations have been documented or forecasted for PCM. For the purpose of this update of the forecast of aviation activity at PCM, however, no military or Air Cargo operations were projected to occur throughout the forecast period.

Table 3-11
Normalized Average (5-Year) OPBA with Additional CFR Part 135 Itinerant

TAF					FASP			
Year	OPBA Operations	Additional CFR Part 135 Itinerant Operations	Total Operations		Year	OPBA Operations	Additional CFR Part 135 Itinerant Operations	Total Operations
2013	49,140	200	49,340		2013	49,560	200	49,760
2018	52,650	200	52,850		2018	53,100	200	53,300
2023	56,745	200	56,945		2023	57,230	200	57,430
2028	60,840	200	61,040		2028	61,360	200	61,560
2033	65,520	200	65,720		2033	66,080	200	66,280
CAGR			1.44%		CAGR			1.44%

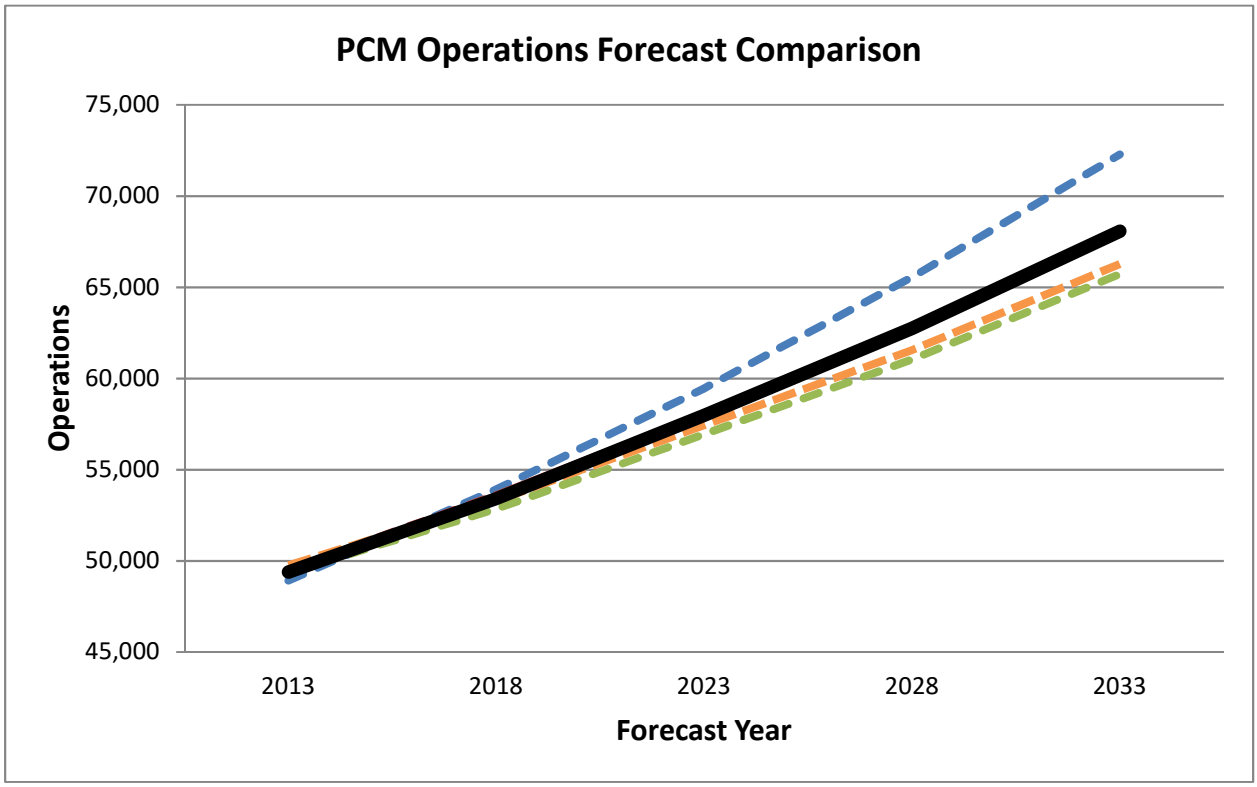
Source: URS, 2014.

Table 3-12 provides a comparison of the operations forecasts between the FAA TAF, FDOT FASP, TAF- and FASP-OPBA normalized forecasts, and an average of the four forecasts.

Table 3-12
Operations Forecast Comparison

Forecast	CAGR	2013	2018	2023	2028	2033
TAF	1.97 %	48,921	53,930	59,458	65,553	72,283
FASP	1.60 %	49,522	53,613	58,042	62,836	68,027
5-Year OPBA-TAF	1.44 %	49,340	52,850	56,945	61,040	65,720
5-Year OPBA-FASP	1.44 %	49,760	53,300	57,430	61,560	66,280
Average of all Forecasts	1.62 %	49,386	53,423	57,969	62,747	68,078

Source: Compiled by URS, 2014.



Source: URS, 2014.

After careful review and consideration of the four separate operations forecasts and an average of all forecasts, HCAA selected and retained the average of all forecasts for submittal to the FAA for review and approval for HCAA's incorporation and use within this update of the PCM Airport Master Plan.

3.7 Derivative Forecast of Aircraft Operations by Fleet Mix

The derivative percentile forecasts of aircraft operations by fleet mix are shown in **Table 3-13** and **Table 3-14** and will be used within subsequent elements of this Master Plan Update for the identification of future airport facility development needs.

Table 3-13
Aircraft Operations Forecast Percentiles

Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2013	93.84%	5.00%	0.11%	0.05%	1.00%	100%
2018	93.71%	4.99%	0.17%	0.08%	1.04%	100%
2023	93.50%	4.98%	0.28%	0.11%	1.12%	100%
2028	93.22%	4.97%	0.46%	0.16%	1.19%	100%
2033	92.82%	4.95%	0.73%	0.24%	1.26%	100%

Source: URS, 2014.

Table 3-14 Aircraft Operations Forecast By Fleet Mix						
Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2013	46,342	2,469	54	27	494	49,386
2018	51,002	2,717	94	42	567	54,423
2023	54,200	2,888	164	66	651	57,969
2028	58,493	3,116	287	104	748	62,747
2033	63,191	3,367	500	162	858	68,078
AAGR 2013-2018	1.93%	1.93%	11.77%	9.37%	2.80%	1.96%
AAGR 2019-2023	1.14%	1.14%	11.77%	9.37%	2.80%	1.19%
AAGR 2024-2028	1.52%	1.52%	11.77%	9.37%	2.80%	1.58%
AAGR 2029-2033	1.56%	1.56%	11.77%	9.37%	2.80%	1.65%
AAGR 2013-2033	1.56%	1.56%	11.77%	9.37%	2.80%	1.62%
Source: URS, 2014.						

3.8 Aircraft Operations Split

Table 3-15 shows the split between itinerant and local operations. The determination of itinerant to local aircraft is based on 2014 airport operations statistics provided by AirNav, LLC.

Table 3-15 Aircraft Operations Forecast Split			
Year	Itinerant	Local	Total Operations
	23%	77%	
2013	11,359	38,027	49,386
2018	12,287	41,136	53,423
2023	13,333	44,636	57,969
2028	14,432	48,315	62,747
2033	15,658	52,420	68,078
Sources: AirNav, LLC, Plant City Airport May 29, 2014. URS, 2014.			

3.9 Forecast of Instrument Operations

Each of the three HCAA general aviation airports have published instrument procedures and associated instrument-related aircraft operations. An instrument operation represents a single take-off or landing. PCM has two Non-precision Instrument Approach Procedures (IAPs) serving Runway 10 (RNAV) and Runway 28 (VOR).

There are no historical or current recorded activity levels of instrument operations to or from PCM as reported by the FAA's Traffic Flow Management System Counts (TFMSC). Although the FAA's TFMSC system did not report historical instrument operations at PCM, such instrument operational data were reported through Flightwise.com, an aviation industry commercial subscription service. Flightwise reported a total of 716 instrument operations occurring at PCM during the 2013 calendar year that represented 1.45 percent of all operations. This percentile of instrument operations was assumed to be reasonable for the development of the derivative forecast of instrument operations at PCM through the 20-year forecast period. The relative share of instrument operations generated by aircraft type, however, was assumed to change over time and

is reflected in **Table 3-16**. The number of projected instrument operations by aircraft type is listed in **Table 3-17**.

Table 3-16
Aircraft Instrument Forecast Percentiles

Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2013	68%	22%	6%	2%	2%	100%
2018	70%	20%	6%	2%	2%	100%
2023	71%	18%	7%	2%	2%	100%
2028	72%	16%	7%	3%	2%	100%
2033	72%	15%	8%	3%	2%	100%

Source: URS, 2014.

Table 3-17
Aircraft Instrument Operations By Fleet Mix

Year	Single Engine	Multi Engine	Turboprop	Jet Engine	Helicopter	Total
2013	487	158	43	14	14	716
2018	542	155	46	16	16	775
2023	597	151	59	17	17	841
2028	655	146	64	27	18	910
2033	710	148	79	30	20	987
AAGR 2013-2018	2.17%	0.33%	1.58%	1.58%	1.58%	1.58%
AAGR 2019-2023	1.94%	0.47%	4.83%	1.65%	1.65%	1.65%
AAGR 2024-2028	1.88%	0.77%	1.60%	10.18%	1.60%	1.60%
AAGR 2029-2033	1.64%	0.34%	4.40%	1.64%	1.64%	1.64%

Source: URS, 2014

3.10 Operational Peaking Characteristics

Aviation activity forecasts were derived for facility planning purposes that include derivative forecasts of peak month operations, average day peak month operations, and average hour average day peak month operations.

The peak month was estimated to represent 15 percent of annual aircraft operations. The average day peak month operations were derived by dividing the estimated peak month operations by 30.42 (365/52=30.42). The average day peak hour can represent a large portion of the average day peak month. At non-towered airports, the average day peak hour can be difficult to measure, but it is estimated that peak hour activity can equate to as much as 20 percent of the average day peak month operations. Peak activity projections for PCM are presented in **Table 3-18.**

Table 3-18 Aircraft Operations Peaking Characteristics Forecast				
Year	Annual	Peak Month	Average Day Peak Month	Average Day Peak Hour
2013	49,386	7,408	244	49
2018	53,423	8,013	263	53
2023	57,969	8,695	286	57
2028	62,747	9,412	309	62
2033	68,078	10,212	336	67
Source: URS, 2014.				

3.11 Forecast Summary and Comparison to FAA TAF

FAA forecast development guidance includes the requirement to develop a comparison between the selected Master Plan Update forecasts and the FAA TAF forecasts as published for PCM. **Table 3-19** summarizes the aviation activity forecast. The comparison of the derived forecast of aviation activity at PCM to the FAA TAF forecast is presented in **Table 3-20**.

The projected future annual operational levels will not deviate from the FAA TAF annual level of aircraft operations by more than 10 percent in the five-year forecast period, or by 15 percent in the ten-year forecast period. For all classes or airports, forecasts for total enplanements, based aircraft, and total operations are considered consistent with the TAF if they meet these criteria. Although there is a low variance between the FAA TAF of 1.97 percent CAGR and the selected forecast of 1.62 percent CAGR, the FAA TAF does not provide a true forecast for PCM. Aircraft operations growth at Plant City Airport is projected to increase at a steady rate annually. This growth accounts for based aircraft and fleet mix changes at PCM and is considered reasonable for planning purposes.

The forecasts presented in Table 3-19 were approved by the FAA on September 25, 2014.

Table 3-19
Summary of Aviation Activity Forecast

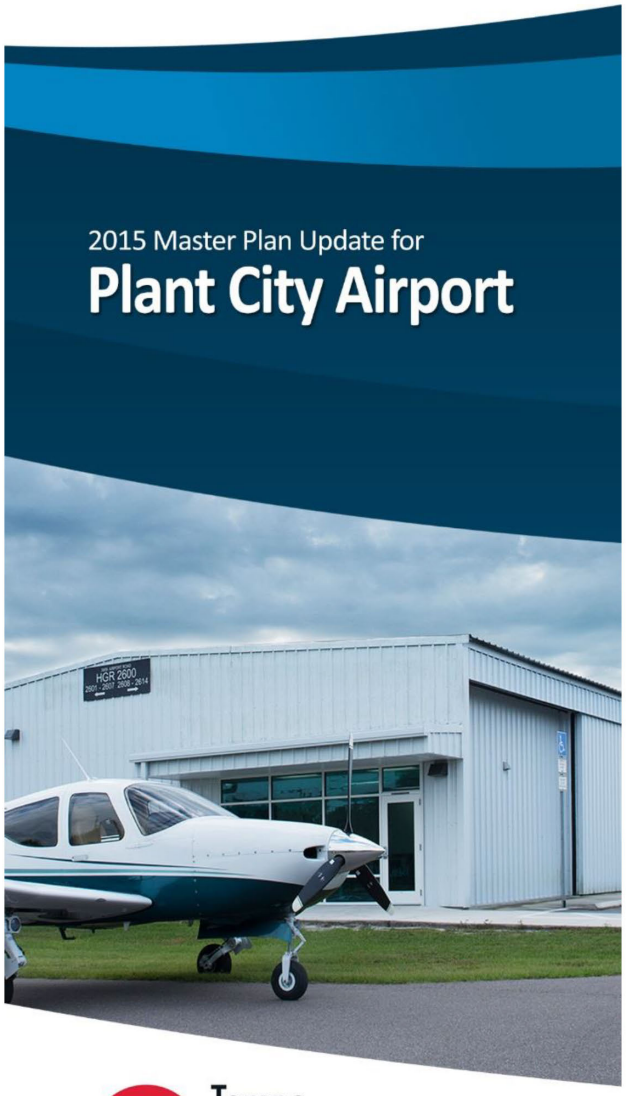
Forecast Levels and Growth Rates											
Passenger Enplanements	**Forecast Level of Aviation Activity**						**Average Annual Compound Growth Rates**				
	2013	**2014**	**2018**	**2023**	**2028**	**2033**	**2013 to 2014**	**2013 to 2018**	**2013 to 2023**	**2013 to 2028**	**2013 to 2033**
Air Carrier	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Commuter	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Total Enplanements	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Operations											
Itinerant											
Air Carrier/Commuter (Part 121)	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Air Taxi (Part 135)	200	200	200	200	200	200	0.00%	0.00%	0.00%	0.00%	0.00%
Total Commercial Operations	200	200	200	200	200	200	0.00%	0.00%	0.00%	0.00%	0.00%
General Aviation	11,159	11,339	12,087	13,133	14,232	15,458	1.61%	1.61%	1.64%	1.63%	1.64%
Military	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Local											
General Aviation	38,027	38,629	41,136	44,636	48,315	52,420	1.58%	1.58%	1.62%	1.61%	1.62%
Military	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Total Operations	**49,386**	**50,168**	**53,423**	**57,969**	**62,747**	**68,078**	**1.58%**	**1.58%**	**1.62%**	**1.61%**	**1.62%**
Instrument Operations	716	727	775	841	910	987	1.54%	1.60%	1.62%	1.61%	1.62%
Peak Day Operations	244	248	263	286	309	336	1.64%	1.51%	1.60%	1.59%	1.61%
Cargo/Mail (Enplaned+Deplaned Tons)	0	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%	0.00%
Single-Engine (Non-jet)	71	72	75	81	83	85	1.41%	1.10%	1.55%	0.49%	0.90%
Multi-Engine (Non-jet)	11	11	11	11	10	11	0.00%	0.00%	0.00%	-1.89%	0.00%
Turboprop	1	1	2	2	6	9	0.00%	14.87%	0.00%	24.57%	11.61%
Rotorcraft	0	0	0	1	1	1	0.00%	0.00%	0.00%	0.00%	0.00%
Jets	1	1	2	2	4	6	0.00%	14.87%	0.00%	14.87%	9.37%
Total Based Aircraft	**84**	**85**	**90**	**97**	**104**	**112**	**1.19%**	**1.39%**	**1.45%**	**1.43%**	**1.45%**

Operational Factors						
Average Aircraft Size (Seats)	2013	2014	2018	2023	2028	2033
Air Carrier	--	--	--	--	--	--
Commuter	--	--	--	--	--	--
Average Enplaning Load Factor	2013	2014	2018	2023	2028	2033
Air Carrier	--	--	--	--	--	--
Commuter	--	--	--	--	--	--
GA Operations Per Based Aircraft	586	588	591	596	601	606

Source: URS, 2014.
Note: For the purpose of reporting average annualized rates of growth of based aircraft when the base year value is zero, it was assumed that at least one additional based aircraft would be present beginning in the first year of the 5-year forecast period.

Table 3-20 Comparison of Derived and FAA TAF Forecast			
Year	Selected Forecast	FAA TAF	Selected Forecast vs. FAA TAF (%)
Passenger Enplanements			
2013	0	0	0.0%
2018	0	0	0.0%
2023	0	0	0.0%
2028	0	0	0.0%
Commercial Operations			
2013	0	0	0.0%
2018	0	0	0.0%
2023	0	0	0.0%
2028	0	0	0.0%
Total Operations			
2013	49,386	48,921	0.95%
2018	53,423	53,930	-0.94%
2023	57,969	59,458	-2.50%
2028	62,747	65,553	-4.28%
2033	68,078	72,283	-5.82%
Source: URS 2014 Note: FAA TAF data is on a U.S. Government FY basis (October through September).			

Chapter 4.0
Capacity Assessment and Identification of Facility Needs



Tampa International Airport

Hillsborough County Aviation Authority

4.0 Airport Capacity Assessment and Identification of Facility Needs

4.1 Introduction

The purpose of the airport capacity assessment and identification of facility needs is to evaluate the single runway airfield system and supporting landside facilities to accommodate existing and future projected aviation activity at Plant City Airport (PCM).

The airport capacity assessment serves to identify annual service volume and hourly capacity, as well as aircraft operational delay for future airport operations planning. Airfield design standards will also be reviewed to identify current design standards and future needs. Facility requirements for current and future aviation demand will be evaluated.

4.2 Quantification of Airfield Capacity

Approach and Methodology

Airfield capacity analysis provides a numerical metric measure of the airfield's ability to accommodate the safe and efficient movement of aircraft activities. The capacity of the airfield is primarily affected by several factors that include the physical layout of the airfield, local prevailing meteorological conditions, aircraft fleet mix, runway utilization rates, percent of aircraft arrivals to each runway, relative level of aircraft touch-and-go activity on one or more of an airport's runways, and the location of exit taxiways relative to the approach end of the runway. An airport's airfield capacity is expressed in terms of Annual Service Volume (ASV) and represents a reasonable estimate of the maximum level of aircraft operations that can be accommodated in a year without induced aircraft operational delay.

Annual Service Volume and Hourly Capacity

The ability of the airport's single runway system to accommodate existing and future levels of operational demand was determined using published FAA guidelines as detailed in FAA AC 150/5060-5, *Airport Capacity and Delay.* The aircraft fleet mix for PCM during 2013 was determined using based aircraft information provided by HCAA and Flightwise.com data from January to December 2013.

Based on the data, it is estimated that Class A and Class B comprise 99.30 percent of aircraft operations, Class C aircraft comprise 0.42 percent of aircraft operations, and helicopter operations comprise 0.28 percent of aircraft operations.

The FAA's handbook methodology uses the term "Mix Index" to describe an airport's fleet mix. The FAA defines the Mix Index as the percentage of Class C operations plus three times the percentage of Class D operations. By applying this calculation to the fleet mix percentages for the Airport, a Mix Index of 0.42 percent is obtained per the following equation:

Class C Operations (0.42%) + (3 * Class D Operations (0.00%)) = Mix Index (0.42%)

The Annual Service Volume (ASV) is a reasonable estimate of an airport's annual capacity. ASV takes into consideration differences in runway use, aircraft mix, weather conditions, and other

factors that would be encountered over a year. For PCM, the ASV is 230,000 operations per year. PCM has an hourly capacity of 98 VFR operations per hour and 59 IFR operations per hour.

Aircraft Operational Delay

Aircraft operational delay is the difference in time between a constrained and an unconstrained aircraft operation. As the level of aircraft operations increase as a relative proportion of the calculated ASV value, aircraft operational delay increases at an increasing rate. The level of aircraft operations at PCM for the year 2013 represented approximately 21 percent of the calculated ASV, (49,386/230,000) thus indicating virtually no associated aircraft operational delay. At the end of the 20-year forecasting period (2033), this relative percentage increases to approximately 30 percent, (68,078/230,000) continuing to reflect little or no associated aircraft operational delay.

Findings

The aircraft operations forecast for PCM indicates that projected aircraft operations (68,078 operations annually in 2033) through the 20-year planning period are not expected to exceed the ASV (230,000 operations annually). The capacity of the airfield system will not be exceeded and will be able to fully satisfy existing and projected future aircraft operational demand for the forecast period without induced adverse effects to aircraft operations and associated aircraft operational delay.

4.3 Runway Orientation and Wind Coverage

Required Wind Coverage

A key meteorological factor is wind direction and speed. Ideally, runways should be aligned with the prevailing wind to reduce the effects of crosswinds on landing aircraft, especially for small aircraft. A tailwind is not a favorable condition for take-off and landing. A wind analysis is to ensure that the runway is properly oriented to suit both VMC and IMC.

Crosswind Components

The crosswind component of wind direction and velocity is the resultant vector which acts at a right angle to the runway. When a runway orientation provides less than 95.0 percent wind coverage for the aircraft which are forecast to use the airport on a regular basis, a crosswind runway may be required. The 95.0 percent wind coverage is computed on the basis of the crosswind component not exceeding the allowable value, per Runway Design Code (RDC). For a RDC of B-I, the allowable crosswind component is 10.5 knots and for a future B-II RDC, the crosswind component is 13 knots. **Table 4-1** shows the allowable crosswind component per RDC.

Table 4-1
Allowable Crosswind Component per Runway Design Code (RDC)

RDC knots	Allowable Crosswind Component
A-I and B-I	10.5 knots
A-II and B-II	13 knots

Source: Advisory Circular 150/5300-13A, Change 1, Airport Design, Table 3-1.

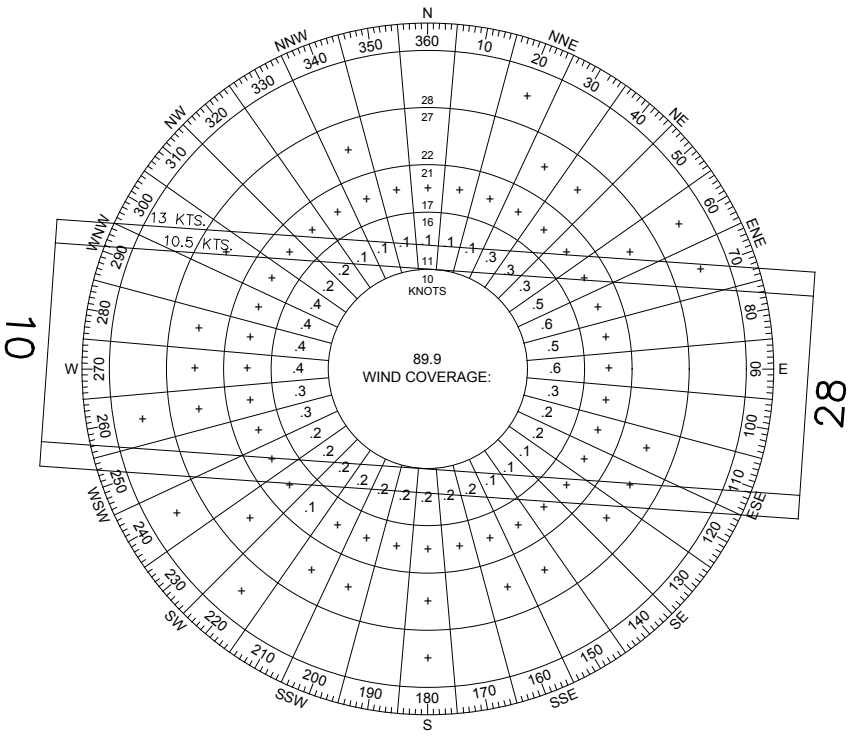
Wind Coverage Analysis

To determine the wind coverage, ten years of historical wind data was analyzed. For planning purposes, as part of the Airport Master Plan, the use of the 13 knot crosswind component was also analyzed. The all-weather wind coverage of Runway 10-28 is 98.49 percent using a 13 knot crosswind component. This also exceeds the FAA's recommended 95.0 percent wind coverage for the future design aircraft and the most critically affected aircraft at PCM. **Table 4-2** shows the wind coverage crosswind components for PCM. The All-Weather, VMC, and IMC conditions are show in **Figures 4-1** through **4-3**.

Table 4-2
Runway Wind Coverage Percentiles

Meteorological Condition	Runway	Wind Coverage Crosswind Component	
		10.5 knots	13 knots
All-Weather	10-28	96.94	98.49
Visual Meteorological Conditions (VMC)	10-28	97.00	98.54
Instrument Meteorological Conditions (IMC)	10-28	95.30	97.39
Instrument Meteorological Conditions (IMC) - Lowest Minimums	10-28	95.51	97.51

Sources: Lakeland Linder Regional Airport USAF 722119 – Period: 2004 to 2013 FAA Airports GIS Program, Airport Design Tools, Standard Wind Analysis.



METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT		
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS
ALL - WEATHER	10/28	96.94	98.49	74,253

WIND ROSE DEPICTED RELATIVE TO TRUE NORTH (NAD 83)
RUNWAY 10 ORIENTATION: 94°12'35.99" (TRUE)
RUNWAY 28 ORIENTATION: 274°12'35.99" (TRUE)
MAGNETIC DECLINATION: 5°2'14"W

NOTES:

1. THIS GRAPHICAL CHART PLOTS, FOR THE DATA PERIOD LISTED, THE RECORDED OCCURRENCES (IN PERCENT) OF WIND BY DIRECTION AND SPEED WHILE THE RECTANGULAR BOXES REPRESENT THE MAXIMUM ACCEPTABLE CROSSWIND COMPONENTS OF 10.5, AND 13 KNOTS FOR THE RUNWAY BASED ON ARC B–II AIRCRAFT DESIGN AND CROSSWIND LIMITATIONS. THE AIRFIELD COVERAGE CAPABILITY IS THUS DETERMINED BY TOTALING ALL OCCURRENCES FALLING WITHIN THE RECTANGLE.
2. RUNWAYS ARE NUMBERED USING MAGNETIC HEADINGS WHILE WIND DATA IS PRESENTED USING TRUE HEADINGS. THEREFORE, THERE IS A 5°2'14"W DIFFERENCE BETWEEN THE RUNWAY HEADINGS AND THE WIND ROSE HEADINGS.

SOURCES:
U.S DEPARTMENT OF COMMERCE; NATIONAL CLIMATIC DATA CENTER (NCDC) ASHEVILLE, NORTH CAROLINA, SURFACE OBSERVATION DATA OBTAINED FOR WEATHER STATION: LAKELAND LINDER REGIONAL AIRPORT
STATION NO.: 722119
RECORD PERIOD: 2004–2013
SURFACE OBSERVATION DATA COMPILED BY URS, 2014.

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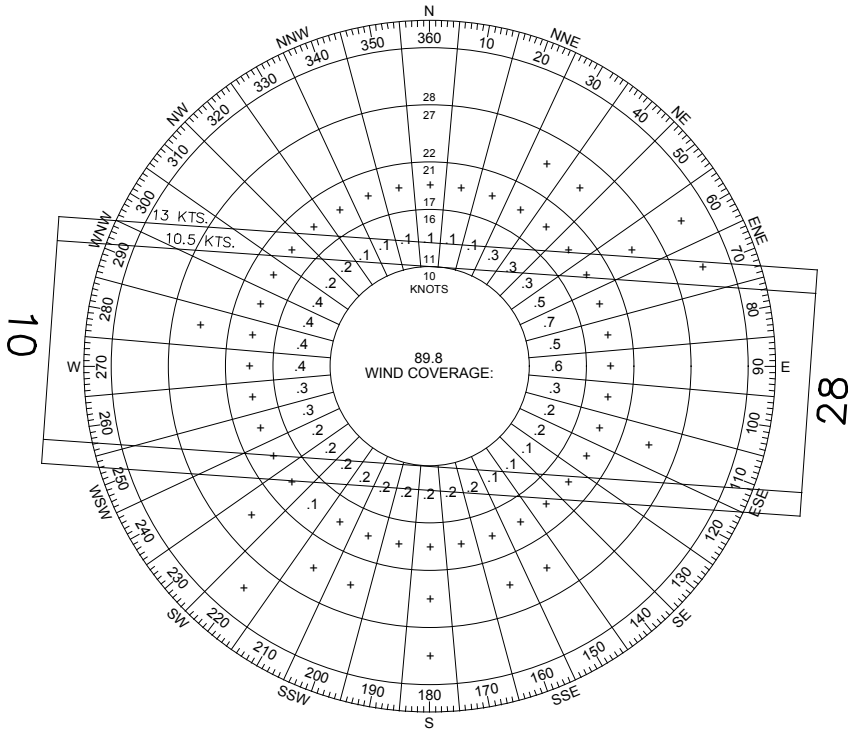

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT		
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS
VMC	10/28	97.00	98.54	69,346

WIND ROSE DEPICTED RELATIVE TO TRUE NORTH (NAD 83)
RUNWAY 10 ORIENTATION: 94°12'35.99" (TRUE)
RUNWAY 28 ORIENTATION: 274°12'35.99" (TRUE)
MAGNETIC DECLINATION: 5°2'14"W

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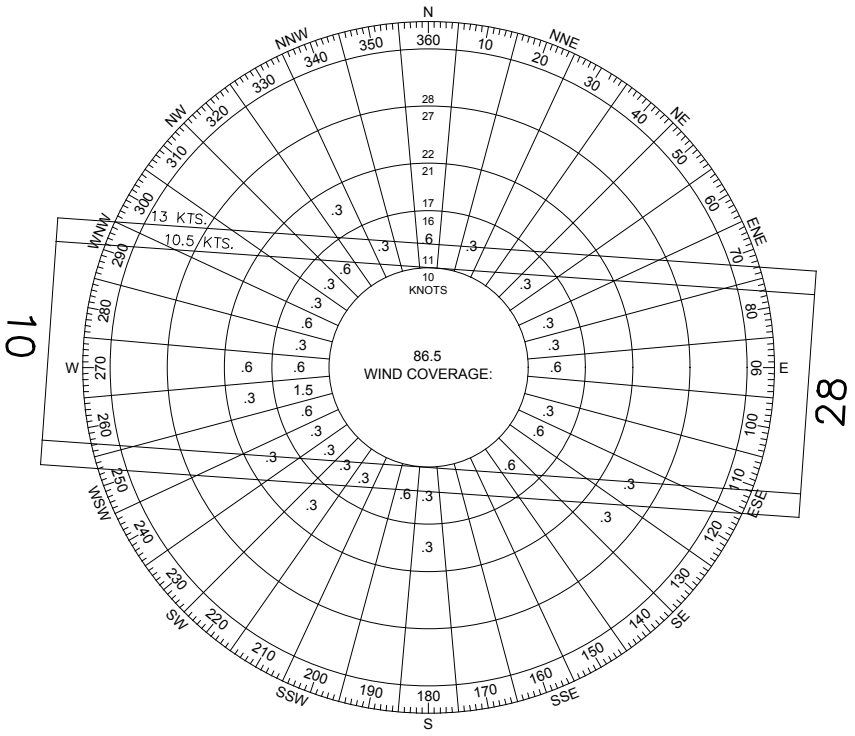

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT		
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS
IMC (LOWEST MIN.)	10/28	95.51	97.51	340

WIND ROSE DEPICTED RELATIVE TO TRUE NORTH (NAD 83)
RUNWAY 10 ORIENTATION: 94°12'35.99" (TRUE)
RUNWAY 28 ORIENTATION: 274°12'35.99" (TRUE)
MAGNETIC DECLINATION: 5°2'14"W

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STATION NO.: 722119
RECORD PERIOD: 2004-2013
SURFACE OBSERVATION DATA COMPILED BY URS, 2014.

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Findings

The existing runway system at PCM exceeds FAA guidelines for wind coverage, which requires at least 95 percent wind coverage. Additional runways are not required for the purpose of wind coverage.

4.4 Airfield Design Standards

The following sections describe the fundamental airfield design standards for safe, efficient, and economic aircraft operations. Airfield design standards are determined by a careful analysis of the aircraft characteristics for which the airfield will be designed.

Aircraft Approach Category

The Aircraft Approach Category (AAC) as specified in 14 CFR Part 97 § 97.3, *Symbols and Terms Used in Procedures*, represents a grouping of aircraft based on a reference landing speed (V_{REF}), if specified, or if V_{REF} is not specified, 1.3 times stall speed (V_{SO}) at the maximum certificated landing weight. V_{REF}, V_{SO}, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry. The AAC definitions are shown in **Table 4-3**. PCM has an AAC of B, representing an approach speed of 91 knots or more, but less than 121 knots.

Table 4-3
Aircraft Approach Category

Aircraft Approach Category	Approach Speed
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more, but less than 121 knots
C	Approach speed 121 knots or more, but less than 141 knots
D	Approach speed 141 knots or more, but less than 166 knots
E	Approach speed 166 knots or more
Source: AC 150/5300-13A Change 1, Airport Design, Paragraph 105.	

Airplane Design Group

The Airplane Design Group (ADG) classifies aircraft based on wingspan and tail height, as shown in **Table 4-4**. When the aircraft wingspan and tail height fall in different groups, the higher group is used. PCM has an ADG of I, representing a tail height of less than 20 feet and a wingspan of less than 49 feet. In the future, PCM plans to be an ADG II airport, consisting of aircraft with a tail height of 20 feet to less than 30 feet and a wingspan of 49 feet to less than 79 feet.

Table 4-4 Airplane Design Group		
Group	Tail Height (Feet)	Wingspan (Feet)
I	Less than 20	Less than 49
II	20 to less than 30	49 to less than 79
III	30 to less than 45	79 to less than 118
IV	45 to less than 60	118 to less than 171
V	60 to less than 66	171 to less than 214
VI	66 to less than 80	214 to less than 262
Source: AC 150/5300-13A Change 1, Airport Design, Paragraph 105.		

Design Aircraft

Airfield geometric designs that are based on only existing aircraft can severely limit the ability to expand the airport to meet future requirements for larger, more demanding aircraft. On the other hand, airfield designs that are based on large aircraft never likely to operate at the airport are not economical.

According to FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS),* §3-4, airport dimensional standards (such as runway length and width, separation standards, surface gradients, etc.) should be selected which are appropriate for the *"critical"* or *"design"* aircraft that will make *substantial use* of the airport in the planning period. Based upon the NPIAS definition, substantial use means either 500 or more annual itinerant operations, or scheduled commercial service.

The critical aircraft may be a single aircraft or a composite of the most demanding characteristics of several aircraft. The "design" or "critical" aircraft (or composite aircraft) is used to identify the appropriate Airport Reference Code for airport design criteria (such as dimensional standards and appropriate pavement strength) and is contained within FAA Advisory Circular 150/5300-13A, Change 1, *Airport Design*. A runway may be designed with a number of different design aircraft. For example, a very large aircraft may be the design aircraft when it comes to runway length specifications, while a very small aircraft may be the design aircraft when designing for runway orientation, while yet another may be used to design the pavement specifications of the runway. For the purposes of airspace protection, the aircraft with the greatest "approach speed" is used. Although the NPIAS Field Formulation guidance prescribes the use of a "design" or critical aircraft for consideration of future airport development, it was recognized that although currently classified as having an Airport Reference Code of B-I (Small), there are occasional aircraft operations that are generated by aircraft having greater operational and physical characteristics, (i.e, faster approach speeds and wider wingspans).

A review of FAA-published aircraft operational data for the year 2013 representing aircraft operational activity conducted to and from the airport under Instrument Flight Rules, does not indicate 500 or more itinerate operations by larger and more demanding aircraft. For this reason, and to safely and efficiently accommodate aircraft operations at the airport by larger aircraft, the previously selected design aircraft as identified in the 2003 Airport Master Plan update was retained for planning purposes as part this update of the Airport Master Plan. The design aircraft for PCM is the Beechcraft King Air 200 with a wingspan of 54 feet 5 inches and classifies as a B-II aircraft.

Instrument Approach Capabilities

Instrument flight visibility minimums are expressed in feet of Runway Visual Range (RVR) as shown in **Table 4-5**. For PCM, the visibility is not lower than 1 mile and the RVR is 5,000 feet. The instrument flight visibility is not expected to change through the 20-year planning period.

Table 4-5
Instrument Flight Visibility Category (Statute Mile)

RVR (Feet)	Visibility (statute mile)
5,000	Not lower than 1 mile
4,000	Lower than 1 mile but not lower than ¾ mile
2,400	Lower than ¾ mile but not lower than ½ mile
1,600	Lower than ½ mile but not lower than ¼ mile
1,200	Lower than ¼ mile

Source: AC 150/5300-13A Change 1, Airport Design, Paragraph 105.

Required Protection of Navigable Airspace

Federal Regulation 49 CFR Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This part provides criteria for whether or not a proposed object should be submitted to the FAA for evaluation; whether or not that object would be classified as an obstruction to air navigation; and, if so, whether it should be studied further in order to assess hazard status. This part in itself does not contain the criteria for determining whether or not an obstruction will be considered a hazard to air navigation.

Civil airport imaginary surfaces defined and prescribed by this part are established with relation to each airport and to each runway at that airport. The size and slope of each such imaginary surface is based on the category of each runway according to the type of approach available or planned for that runway. The slope and dimensions of an Approach Surface that are applied to a particular runway end are determined by the most precise (i.e. having the lowest published cloud base and horizontal visibility) approach procedure minimums that exist, or are planned for that runway end. The slopes of the Approach Surface that extend outward and upward from the end of the Primary Surface are expressed in terms of rise over run ratios (e.g., 20:1, 34:1, or 50:1).

Civil airport imaginary surfaces that are applicable to this airport include:

- Primary Surface – A flat surface that is longitudinally-aligned with each runway centerline that extends to a length of 200 feet beyond end of the runway at the same elevations as the end of the runway.
- Approach Surface – A sloping surface that is longitudinally-aligned with each runway centerline that extends outward and upward at varying ratios (depending on type of approach) beyond from the end of the Primary Surface.
- Transitional Surface – A sloping surface that extends outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the Primary Surface and from the sides of the Approach Surface. Transitional Surfaces for those portions of the precision Approach Surface which project through and beyond the limits of the Conical Surface extend to a distance of 5,000 feet measured

horizontally from the edge of the Approach Surface and at right angles to the runway centerline.

- Horizontal Surface – A flat surface that represents a horizontal plane established 150 feet above the highest runway elevation. The perimeter of the Horizontal Surface is constructed by swinging arcs of specified radii from the center of each end of the Primary Surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs.
- Conical Surface – A sloping surface that extends outward and upward from the periphery of the Horizontal Surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet.

Each published instrument approach procedure established for each runway end has published minima describing the lowest cloud base height expressed in feet Above Mean Sea Level and Above Ground Level, and horizontal visibility distances expressed in statute miles or Runway Visual Range (RVR) reporting values expressed in feet.

The following describes each runway end having one or more published instrument procedures, the associated cloud base height and visibility distance minimums and Approach Surface slope:

- Each end of the Runway 10-28 at PCM is served by published Non-precision Instrument approach procedures that are described as follows:

- Runway 10 is served by a RNAV (GPS) Non-precision Instrument approach procedure having LPV straight-in cloud base and horizontal visibility minimums of 455 feet and 1 statute mile. PCM is currently designated as having an Airport Reference Code of B-I (*Small*) this is based upon the assumption that the most demanding "critical" or "design" aircraft conducting 500 or more annual operations at the airport have maximum certificated takeoff weights of 12,500 pounds or less (i.e., "Small" aircraft). This aircraft category has traditionally been associated with previous airport design terminology that references a "Utility" runway categorization. For example, when the runway is designated as a "Utility runway" that serves "small" aircraft, the runway safety-related setbacks and CFR Part 77 Approach Surface Slope and length are specific to that category. Accordingly, although each end of the runway is served by a published Non-precision Instrument approach procedure having LPV straight-in minimums, the Approach Surface Slope is currently 20:1 rather than the typical more conservative 34:1.

- Runway 28 is also served by a RNAV (GPS) Non-precision Instrument approach procedure having LPV straight-in cloud base and horizontal visibility minimums of 414 feet and 1 statute mile. For similar reasons, the approach slope for this published instrument approach procedure is currently 20:1.

At such time that the full-length of parallel Taxiway A is relocated to the north to provide a minimum runway-to-taxiway centerline separate of 240 feet, the "small" designation will no longer be applicable. It is also envisioned that the airport will be designed and operated as fully satisfying ARC B-II airport design standards. This change increases safety-related setback distances and the slope and length of the CFR Part 77 Approach Surfaces to each runway end.

The FAA periodically reviews Instrument Approach Procedures established for each runway. Obstacles discovered and/or reported within Approach, Departure, Horizontal or Conical surfaces may result in the FAA establishing increased (i.e., "higher") cloud base and/or visibility minima for one or more published instrument approach procedures, loss of approaches and/or loss of night operations. Development on and off an airport may potentially create adverse effects to the protection of navigable airspace at and around airports. Such adverse effects, may affect current and future airport operations when it creates obstacles to the safe and efficient use of the airspace surrounding the airport. Approach and Departure surfaces should remain clear of obstacles, including aircraft, in order to prevent operational restrictions that might affect aircraft operating weights and visibility minimums.

The Civil Airport Imaginary surfaces established for this airport by CFR Part 77 were found to be appropriate and sufficient. At such time that any runway is lengthened, shortened, or upgraded to provide increased published instrument approach capabilities, these Civil Airport Imaginary surfaces should be reviewed and modeled as required.

The HCAA's protection of navigable airspace above and surrounding each of its three general aviation airports has been developed, constructed and publicly published to fully comply with Title 14 of the Code of Federal Regulations (14 CFR) Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* and Florida Statutes 14-60.009, *Airspace Protection*.

Runway Design Code

The Runway Design Code (RDC) is a code signifying the design standards to which the runway is to be built. It is comprised of the AAC, ADG, and the runway visibility minimums. PCM has a RDC of B-I-5000 and a future RDC of B-II-5000.

Although FAA criteria are based upon the three described parameters, aircraft weight should also be considered when assessing the adequacy of pavement strength and length of haul should be considering when considering runway length requirements.

Airport Reference Code

The Airport Reference Code (ARC) is a coded system composed of the AAC and ADG. The ARC relates airport design criteria to the operational and physical characteristics of the aircraft that will operate at the airport. PCM has an existing ARC of B-I (Small) and future ARC of B-II. Existing and future aircraft operations are considered based on FAA-approved aviation demand forecasts and the airport's existing and future role within the air transportation system. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely at the airport.

4.5 Runway Design Standards

Runway design standard guidance is provided by FAA Advisory Circular 150/5300-13A, *Airport Design* and FAA Advisory Circular 150/5325-4B, *Runway Length Requirements for Airport Design.*

Width

Runway width requirement factors include approach minimums, AAC, and ADG for the runway's design aircraft. With a RDC of B-I-5000, the runway width standard at PCM is 60 feet. PCM currently has a runway width of 75 feet, which also satisfies requirements for the future B-II-5000 runway width standard, which is 75 feet.

Length

Runway length requirements for the airport were determined using FAA Advisory Circular 150/5325-4B, *Runway Length Requirements for Airport Design*. This methodology accounts for a wide variety of factors including: airport elevation, runway gradient, aircraft take-off and landing weights, air temperature, runway conditions (wet or dry), length of haul, etc. All of these factors were considered in the development of runway length requirements. To define the mean daily maximum temperature of the hottest month of the year, data was obtained from NOAA's National Climatic Data Center. This provided the latest data, averaged over a thirty-year period. This data showed August to be the hottest month of the year for PCM, with a mean daily maximum temperature of 91.2° Fahrenheit.

Table 4-6 shows runway length requirements for select aircraft operating at PCM. To determine length requirements, critical design aircraft were identified for the planning period. AC 150/5324-4B, Table 1-1 categorized the selected aircraft into the 12,000 pounds or less Maximum Takeoff Weight (MTOW) and divided the fleet by aircraft with less than 10 passengers and those with 10 or more passengers. This determined that Chapter 2, Paragraph 205, Figure 2-1 and Figure 2-2 were utilized for runway length requirement calculations in addition to mean daily temperature of the hottest month at the Airport and the Airport's elevation.

Table 4-6
Aircraft Runway Length Requirements

Aircraft	Code	Runway Length Requirement
King Air 90; A90-E90	B-II	3,700 feet
Super King Air 200	B-II	4,180 feet
Caravan 1-208 Super	B-II	4,180 feet
Citation CJ2	B-II	3,700 feet
Citation Excel/560XL	B-II	3,700 feet
Conquest/Conquest 2	B-II	3,700 feet
Commander 500	B-II	3,700 feet
Citation Jet C 525	B-I	3,700 feet

Source: AC 150/5324-4B, Runway Length Requirements for Airport Design.
Note: Runway length requirements based on mean daily temperature of the hottest month at the airport, 91.2°F, and Plant City Airport elevation, 152.7 feet.
In the absence of information about specific aircraft runway length requirement ranges, Advisory Circular 150/5325-4B, Figure 2-1 and Figure 2-2 were utilized to determine specific runway length requirements.

Based on the review of guidance offered in FAA Advisory Circular 150/5324-4B, the runway's current length of 3,950 was found to be sufficient to accommodate the runway take-off length requirements for the Beech King Air aircraft throughout the 20-year planning period.

Shoulders

Runway shoulders provide resistance to blast erosion and accommodate the passage of maintenance and emergency equipment and the occasional passage of an aircraft veering from the runway. A stabilized surface, such as turf, normally reduces the possibility of soil erosion and engine ingestion of foreign objects. Soil not suitable for turf establishment requires a stabilized or low cost paved surface. Paved shoulders are required for runways accommodating Airplane Design Group (ADG) IV and higher aircraft, and are recommended for runways accommodating ADG-III aircraft.

Turf, aggregate-turf, soil cement, lime or bituminous stabilized soil are recommended adjacent to runways accommodating ADG-I and ADG-II aircraft. PCM currently has a shoulder width of 5 feet. The recommended width is 10 feet.

Blast Pad

Paved runway blast pads provide blast erosion protection beyond runway ends during jet aircraft operations. Blast pads at runway ends should extend across the full width of the runway plus the shoulders. For a RDC of B-I-5000, the standard blast pad width is 80 feet and the length is 60 feet. PCM's current width is 75 feet and does not meet the standard. The current blast pad length is 200 feet, which meets standards. For a future B-II-5000 RDC, the standards are a width of 95 feet and a length of 150 feet. PCM needs to increase the width by 20 feet to comply with standards.

Safety Area

The Runway Safety Area (RSA) is a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway. The current RSA requirements for a RDC of B-1-5000 are 240 feet beyond the departure end of the runway, 240 feet prior to the threshold, and a width of 120 feet. PCM meets all standards for RSA dimensions. The standard for a RDC of B-II-5000 is 300 feet beyond the departure end of the runway, 300 feet prior to threshold, and 150 feet in width. PCM currently does not meet B-II-5000 design standards and needs to evaluate RSA dimensions for compliance.

Object Free Area

The Object Free Area (OFA) is an area centered on the ground on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by remaining clear of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. The standard for a RDC of B-I-5000 is 240 feet beyond the runway end, 240 feet prior to the threshold, and 250 feet in width. PCM meets all design requirements for the OFA. For future RDC B-II-5000, the OFA standards are 300 feet beyond the departure end, 300 feet prior to the threshold, and 500 feet in width. PCM does not meet B-II-5000 design requirements given existing conditions.

Obstacle Free Zone

The Obstacle Free Zone (OFZ) is the three-dimensional airspace along the runway and extended runway centerline that is required to be clear of obstacles for protection for aircraft landing or taking off from the runway and for missed approaches. For a RDC of B-I-5000, the design standards are 200 feet in length and 250 feet in width, meeting design standards. For a future RDC of B-II-5000, the OFZ standards remain the same, and no additional changes are required.

Runway Protection Zone

The Runway Protection Zone (RPZ) in an area at ground level prior to the threshold or beyond the runway end that is designed to enhance the safety and protection of people and property on the ground. For a RDC of B-I-5000, the design standards are 1,000 feet in length, 250 feet inner width, 450 feet outer width, and an area of 8.035 acres. PCM meets these design standards. For a future RDC of B-II-5000, the RPZ standards remain the same, and no additional changes are required.

TERPS Approach Obstacle Clearance Surfaces

The FAA's Terminal Instrument Procedures (TERPS) final approach Obstacle Clearance Surfaces (OCS) are applicable to precision instrument approach capabilities (i.e., ILS) and non-precision approach capabilities offering vertical guidance using Localizer Performance with Vertical guidance (LPV) capabilities. The OCS areas consists of the "W", "X", and "Y" surfaces that begin 200 feet from the landing threshold point. The "W" OCS rises outward and upward at a slope of 34:1. The X surface rises outward and upward at a slope of 4:1 and perpendicular to the "W" surface. In similar fashion, the "Y" surface rises outward and upward at a slope of 7:1 and perpendicular to the "X" surface.

Runway 10 is served by a RNAV (GPS) Non-precision Instrument approach procedure having LPV straight-in cloud base and horizontal visibility minimums of 454 feet and 1 statute mile.The existing TERPS final Approach Obstacle Clearance surfaces established for Runway 10 was found to be appropriate and sufficient.

At such time that any runway is lengthened, shortened, or downgraded to provide less than LPV published instrument approach capabilities, the TERPS Approach Obstacle Clearance surface should be reviewed and modeled by HCAA as required.

TERPS Departure Surfaces

When a runway has an established and published instrument approach procedure, the TERPS Instrument Departure surfaces apply. The prescribed Instrument Departure Surface begins at the departure end of the runway and extends outward and upward along the extended runway centerline with a slope of 1 unit vertically for every 40 units horizontally (40:1). When the height of objects along the aircraft departure climb are maintained at or below the height of the overlying 40:1 Instrument Departure, and referencing the FAA's standard aircraft departure climb gradient is 200 feet per nautical mile utilizing a resultant 48 feet of vertical clearance is provided along at a distance of one nautical mile from the departure end of the runway. When the 40:1 Instrument Departure Surface is penetrated by natural or man-made objects, the FAA may require modification of the instrument departure procedures that may potentially require the application

of non-standard (increased) climb rates, and/or non-standard (increased) published instrument departure minimums.

Runways 10 and 28 are each used for instrument departure activity and have no noted penetrations of their respective 40:1 Instrument Departure Surfaces. It is highly recommended that HCAA identify and remove any future natural (trees or vegetation) or any other man-made object that may penetrate the established and overlying 40:1 Instrument Departure Surfaces to protect and enhance the instrument departure capabilities for those runways.

The existing TERPS Departure surfaces established for Runway 10 and Runway 28 were found to be appropriate and sufficient. At such time that any runway is lengthened or shortened these surfaces should be reviewed and modeled by HCAA as required.

It is highly recommended that HCAA identify and remove any future natural (trees or vegetation) other or any other man-made object that may penetrate the established and overlying 40:1 Instrument Departure Surfaces to protect and enhanced the instrument departure capabilities for those runways.

Runway Centerline to Parallel Taxiway Centerline Separation

The runway centerline to parallel taxiway centerline separation standard for a RDC of B-I-5000 is 150 feet. PCM currently meets this design standard. For a future RDC B-II-5000, the separation is 240 feet. PCM does not meet B-II-5000 design requirements given existing conditions.

Pavement Strength

Runway 10-28 has a pavement strength to accommodate aircraft with a single-wheel load rating of 20,000 pounds or less. The runway is constructed of asphalt and is in fair to good condition as recorded in the FAA 5010, Airport Master Records and Reports for PCM. Based upon the Florida Department of Transportation – Aviation and Spaceports Office, 2015 Pavement Conditions Report, PCM has runway, taxiway and areas that range from fair to good condition. As identified in PCM's Inventory of Existing Conditions, **Figure 2-4,** there are two taxiway connectors that need improvements and are in poor and very poor condition.

Threshold Siting Surface

For any given runway, the threshold is the demarcation line that defines the beginning of useable pavement for an aircraft to land. Typically, the threshold is located at the end of the physical pavement of the runway, thereby allowing an approaching aircraft to land with the maximum amount of pavement provided. When required, a threshold can be "*displaced*" at a specified distance from the approach end of the runway. The displaced threshold defines a new location along the runway where an approaching aircraft may begin their touchdown on the runway. Often, the purpose of the displaced threshold is to allow an approaching aircraft ample clearance over obstacles in the approach area (i.e., those obstacles that would exceed the Threshold Siting Surfaces as defined in FAA Advisory Circular 150/5300-13A Change 1, Table 3-2*, Approach/Departure Standards.*)

Displacement of the threshold shortens the useable runway length for landing, while not adversely (i.e., shortening) affecting the length of the runway available for departing aircraft. As a basic airport design requirement, threshold siting surfaces must be kept clear of obstacles either by removing or lowering the obstacles or displacing the threshold.

The dimensions of the Threshold Siting Surfaces, which depend on the runway type, approach type, and other factors, include the following:

- Whether or not the runway is authorized for a visual, non-precision, precision approaches, night-time operations and the approach visibility minimums.
- Whether or not there are published instrument departure procedures on the runway.
- Whether or not the runway is used by scheduled air carriers (those operating under FAR Part 121), and
- The approach category of the runway's design aircraft.

In many cases the requirements for maintaining airspace clear of objects depend, in part, on the type of aircraft that typically use a runway. Airport runway design standards are based, in fact, on what is known as the runway's "*critical"* or "*design*" aircraft.

When a penetration to a Threshold Siting Surface occurs, one or more of the following actions may be required by the airport owner to protect the runway Approach Surface:

- Removal or lowering of the object to preclude penetration of applicable threshold siting surface;
- Displacement of the threshold to preclude object penetration of applicable threshold siting surface, with a resulting shorter landing distance;
- Modification of the approach Glide Path Angle and/or Threshold Crossing Height, or a combination of both;
- Increase of published instrument approach procedure visibility minimums; or
- Prohibition of night-time operations unless the object is lighted or an approved Visual Glide Slope Indicator (VGSI) is in use.

The existing Threshold Siting Surfaces established for each runway end were found to be appropriate and sufficient. At such time that any runway is lengthened or shortened, or a threshold is relocated or displaced on an existing runway, these siting surfaces should be reviewed and modeled by HCAA as required.

HCAA should continue to monitor and review all proposals for the erection of temporary or permanent objects in proximity to the airport as filed by proponents via the FAA's 7460-1 and OE/AAA notification process. Further, HCAA should maintain its current pro-active role within this review process with the goal of reducing or eliminating any potential penetrations to the various approach and departure surfaces to preserve the safe an efficient use of the airport.

Runway Design Standard Compliance Needs Summary

Summarized in **Table 4-7** and **Table 4-8** are the runway design standards for PCM. PCM currently meets design standards at this time with exception of runway shoulders and blast pad width. Turf, aggregate-turf, soil cement, lime or bituminous stabilized soil are recommended adjacent to runways accommodating ADG-I and ADG-II aircraft. PCM currently has a shoulder width of 5 feet. The recommended width is 10 feet. The blast pad width at the Airport is currently 75 feet for both runway ends. The design standard is 80 feet.

Table 4-9 and **Table 4-10** summarize the runway design standards for PCM's future RDC of B-II-5000. The design standards that need to be reviewed and changed at this time include runway shoulders, blast pad width, lengthening and widening of the RSA, lengthening and widening of the ROFA, and an increased runway centerline to parallel taxiway centerline separation.

Table 4-7 Runway Design Standard Matrix – PCM – Runway 10 Runway Design Code (RDC): B-I-5000			
Item	**Standard**	**Existing**	**Satisfies Requirements**
Runway Design			
Runway Length	3,600 ft[1]	3,950 ft	☑
Runway Width	60 ft	75 ft	☑
Shoulder Width	10 ft	5 ft	☒
Blast Pad Width	80 ft	75 ft	☒
Blast Pad Length	60 ft	200 ft	☑
Crosswind Component	10.5 knots	13 knots	☑
Runway Protection			
Runway Safety Area (RSA)			
Length beyond departure end	240 ft	240 ft	☑
Length prior to threshold	240 ft	240 ft	☑
Width	120 ft	120 ft	☑
Runway Object Free Area (ROFA)			
Length beyond runway end	240 ft	240 ft	☑
Length prior to threshold	240 ft	240 ft	☑
Width	250 ft	250 ft	☑
Runway Obstacle Free Zone (ROFZ)			
Length	200 ft[2]	200 ft	☑
Width	250 ft[2]	250 ft	☑
Precision Obstacle Free Zone (POFZ)			
Length	N/A	N/A	N/A
Width	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Departure Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Runway Separation			
Runway centerline to:			
Parallel runway centerline	N/A	N/A	N/A
Holding Position	125 ft	130 ft	☑
Parallel Taxiway / Taxilane centerline	150 ft	150 ft	☑
Aircraft parking area	125 ft	310 ft	☑

Sources: FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design.
FAA Advisory Circular 150/5300-13A, Change 1, Airport Design.
Note 1: Refer to AC 150/5325-4B paragraph 205, A (2), 75 percent of fleet at 90 percent useful load.
Note 2: Refer to Advisory Circular 150/5300-13A paragraph 308 for design standards. ROFZ width changes based on aircraft approach speed.
Note: N/A= Not Applicable

Table 4-8 Runway Design Standard Matrix – PCM – Runway 28 Runway Design Code (RDC): B-I-5000			
Item	**Standard**	**Existing**	**Satisfies Requirements**
Runway Design			
Runway Length	3,600 ft[1]	3,950 ft	☑
Runway Width	60 ft	75 ft	☑
Shoulder Width	10 ft	5 ft	☒
Blast Pad Width	80 ft	75 ft	☒
Blast Pad Length	60 ft	60 ft	☑
Crosswind Component	10.5 knots	13 knots	☑
Runway Protection			
Runway Safety Area (RSA)			
Length beyond departure end	240 ft	240 ft	☑
Length prior to threshold	240 ft	240 ft	☑
Width	120 ft	120 ft	☑
Runway Object Free Area (ROFA)			
Length beyond runway end	240 ft	240 ft	☑
Length prior to threshold	240 ft	240 ft	☑
Width	250 ft	250 ft	☑
Runway Obstacle Free Zone (ROFZ)			
Length	200 ft[2]	200 ft	☑
Width	250 ft[2]	250 ft	☑
Precision Obstacle Free Zone (POFZ)			
Length	N/A	N/A	N/A
Width	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Departure Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Runway Separation			
Runway centerline to:			
Parallel runway centerline	N/A	N/A	N/A
Holding Position	125 ft	130 ft	☑
Parallel Taxiway / Taxilane centerline	150 ft	150 ft	☑
Aircraft parking area	125 ft	158 ft	☑

Sources: FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design.
FAA Advisory Circular 150/5300-13A, Change 1, Airport Design.
Note 1: Refer to AC 150/5325-4B paragraph 205, A (2), 75 percent of fleet at 90 percent useful load.
Note 2: Refer to Advisory Circular 150/5300-13A paragraph 308 for design standards. ROFZ width changes based on aircraft approach speed.
Note: N/A= Not Applicable

Table 4-9 Runway Design Standard Matrix – PCM – Runway 10 Runway Design Code (RDC): B-II-5000 (Future Condition)			
Item	**Standard (feet)**	**Existing (feet)**	**Satisfies Requirements**
Runway Design			
Runway Length	4,700 ft[1]	3,950 ft	☑
Runway Width	75 ft	75 ft	☑
Shoulder Width	10 ft	5 ft	☒
Blast Pad Width	95 ft	75 ft	☒
Blast Pad Length	150 ft	200 ft	☑
Crosswind Component	13 knots	13 knots	☑
Runway Protection			
Runway Safety Area (RSA)			
Length beyond departure end	300 ft	240 ft	☒
Length prior to threshold	300 ft	240 ft	☒
Width	150 ft	120 ft	☒
Runway Object Free Area (ROFA)			
Length beyond runway end	300 ft	240 ft	☒
Length prior to threshold	300 ft	240 ft	☒
Width	500 ft	250 ft	☒
Runway Obstacle Free Zone (ROFZ)			
Length	200 ft[2]	200 ft	☑
Width	250 ft[2]	250 ft	☑
Precision Obstacle Free Zone (POFZ)			
Length	N/A	N/A	N/A
Width	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Departure Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Runway Separation			
Runway centerline to:			
Parallel runway centerline	N/A	N/A	N/A
Holding Position	125 ft	130 ft	☑
Parallel Taxiway / Taxilane centerline	240 ft	150 ft	☒
Aircraft parking area	250 ft	310 ft	☑

Sources: FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design.
FAA Advisory Circular 150/5300-13A, Change 1, Airport Design.
Note 1: Refer to AC 150/5325-4B paragraph 303, A and B, 75 percent of fleet at 60 percent useful load.
Note 2: Refer to Advisory Circular 150/5300-13A paragraph 308 for design standards. ROFZ width changes based on aircraft approach speed.
Note: N/A= Not Applicable

Table 4-10 Runway Design Standard Matrix – PCM – Runway 28 Runway Design Code (RDC): B-II-5000 (Future Condition)			
Item	**Standard**	**Existing**	**Satisfies Requirements**
Runway Design			
Runway Length	4,700 ft[1]	3,950 ft	☑
Runway Width	75 ft	75 ft	☑
Shoulder Width	10 ft	5 ft	☒
Blast Pad Width	95 ft	75 ft	☒
Blast Pad Length	150 ft	60 ft	☒
Crosswind Component	13 knots	13 knots	☑
Runway Protection			
Runway Safety Area (RSA)			
Length beyond departure end	300 ft	240 ft	☒
Length prior to threshold	300 ft	240 ft	☒
Width	150 ft	120 ft	☒
Runway Object Free Area (ROFA)			
Length beyond runway end	300 ft	240 ft	☒
Length prior to threshold	300 ft	240 ft	☒
Width	500 ft	250 ft	☒
Runway Obstacle Free Zone (ROFZ)			
Length	200 ft[2]	200 ft	☑
Width	250 ft[2]	250 ft	☑
Precision Obstacle Free Zone (POFZ)			
Length	N/A	N/A	N/A
Width	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Departure Runway Protection Zone (RPZ)			
Length	1,000 ft	1,000 ft	☑
Inner Width	250 ft	250 ft	☑
Outer Width	450 ft	450 ft	☑
Area (Acres)	8.035	8.035	☑
Runway Separation			
Runway centerline to:			
Parallel runway centerline	N/A	N/A	N/A
Holding Position	125 ft	130 ft	☑
Parallel Taxiway / Taxilane centerline	240 ft	150 ft	☒
Aircraft parking area	250 ft	158 ft	☒

Source: FAA Advisory Circular 150/5300-13A, Change 1, Airport Design
Note 1: Refer to Advisory Circular 150/5300-13A paragraphs 302 and 304 for design standards
Note 2: Refer to Advisory Circular 150/5300-13A paragraph 308 for design standards. ROFZ width changes based on aircraft approach speed
Note 3: Refer to Advisory Circular 150/5300-13A paragraph 316 for design standards.
Note 4: Refer to Advisory Circular 150/5390-2

4.6 Declared Distances Criteria

As defined in §322 of Advisory Circular 150/5300-13A, Change 1, *Airport Design*, declared distances represent the maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distances performance requirements for turbine powered aircraft where it is impracticable to meet the airport design standards or mitigate the environmental impacts by other means, and the use of declared distances is practical. When applicable and prudent, declared distance criteria is applied and published for each runway end where it is impracticable to meet the standard design criteria established for the Runway Safety Area (RSA), the Runway Object Free Area (ROFA), the Runway Protection Zone (RPZ), or where required to fully satisfy minimum vertical clearances over traverseways as prescribed for CFR Part 77 Approach Surfaces and/or TERPS Departure Surfaces. One or more of the any or all of the following declared distances may apply to a particular runway by direction of travel (i.e., arrival or departure).

1. Takeoff Run Available (TORA) – the runway length declared available and suitable for the ground run of an aircraft taking off;
2. Takeoff Distance Available (TODA) – the TORA length plus the length of any remaining runway or clearway beyond the far end of the TORA; the full length of TODA may need to be reduced because of obstacles in the departure area;
3. Accelerate-Stop Distance Available (ASDA) – the runway length plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting a takeoff; and
4. Landing Distance Available (LDA) – the runway length declared available and suitable for landing an aircraft.

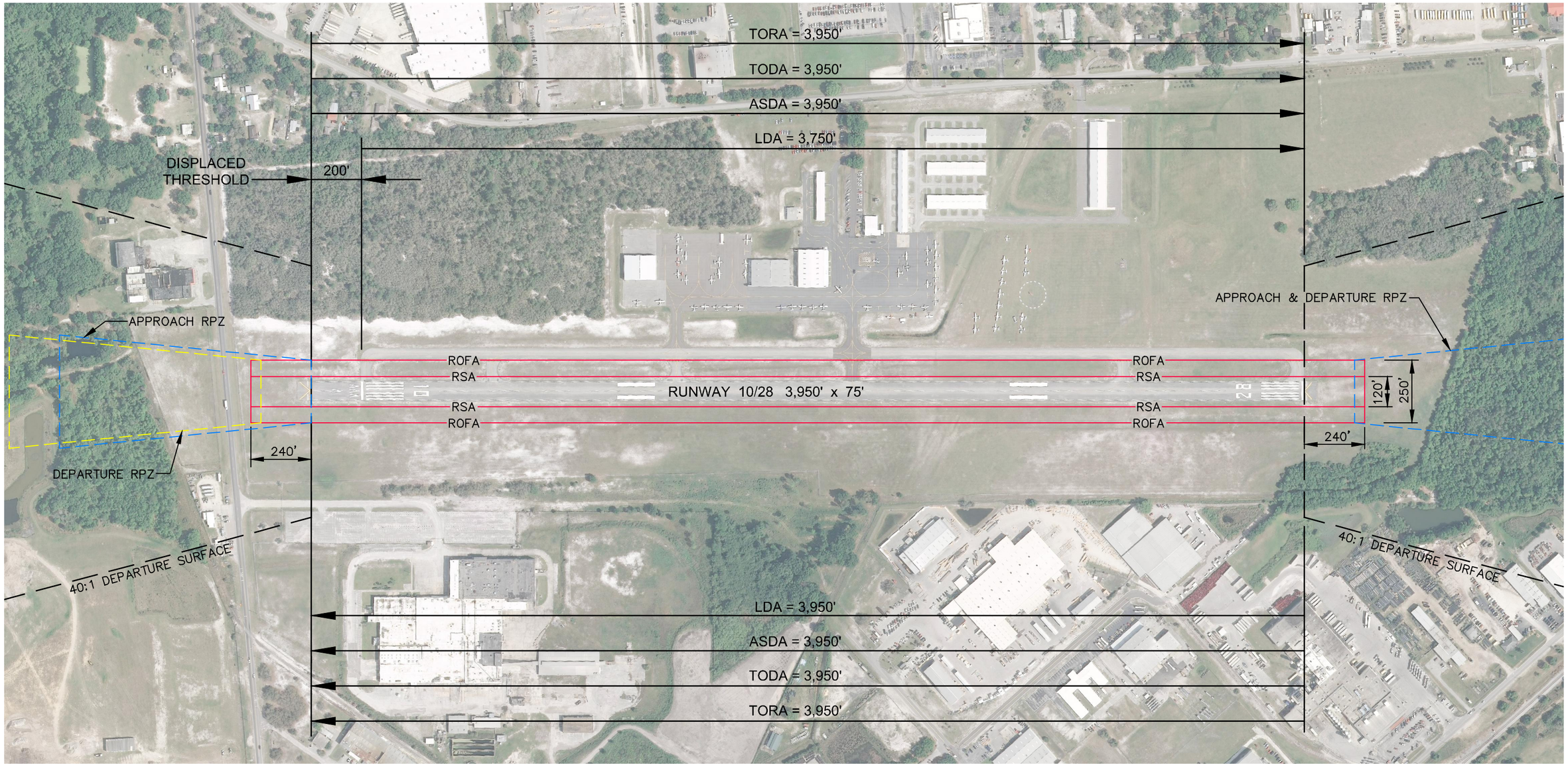
By treating these distances independently, application of declared distances is a design methodology that results in declaring and reporting the TORA, TODA ASDA and LDA for each operational direction. When applicable, declared distances limit or increase runway use.

Runway 10-28 has a surveyed and published length of 3,950 feet. The threshold for Runway 10 is displaced 200 feet to provide the required CFR Part 77 Approach Surface 15-foot vertical clearance over Turkey Creek Road. **Table 4-11** shows the resultant applied declared distances. The applicable declared distances are shown in **Figure 4-4**.

Table 4-11
Existing Declared Distances - PCM

Runway	TORA (ft)	TODA (ft)	ASDA (ft)	LDA (ft)
10	3,950	3,950	3,950	3,750
28	3,950	3,950	3,950	3,950

Source: HCAA, August 2015.
Note: declared distances are not published



NOTES:

1. RSA/ROFA LENGTHS AND WIDTHS BASED ON AAC A/B AND ADG I (SMALL UTILITY) CRITERIA, WITH RUNWAYS 10 AND 28 HAVING VISIBILITY MINIMUMS NOT LOWER THAN 1 MILE.

N

0 200 400

SCALE IN FEET

Y:\Planning\HCAA\GA MPs Project – 2-6-2014\Received URS\PCM-FIG 4-4.dwg March 14 2018-11:12

Figure 4-4 Existing Declared Distances

4.7 Taxiway/Taxilane Design Standards

Runway design standard guidance is provided by FAA Advisory Circular 150/5300-13A Change 1, *Airport Design.* PCM's taxiway design standards are based on Taxiway Design Group (TDG) 1B, the TDG for PCM's design aircraft.

Width

Taxiway pavement requirements are based on TDG, which in turn is based on the dimensions of the airplane's undercarriage, which includes the Main Gear Width (MGW) and Cockpit to Main Gear (CMG). For a TDG 1B taxiway, the design standard for width is 25 feet. PCM has a current taxiway width of 40 feet, satisfying requirements.

Shoulders

Unprotected soils adjacent to taxiways are susceptible to erosion, which can result in engine ingestion problems for jet engines that overhang the edge of the taxiway pavement. A dense, well-rooted turf cover can prevent erosion and support the occasional passage of aircraft, maintenance equipment, or emergency equipment under dry conditions. Turf, aggregate-turf, soil cement, lime or bituminous stabilized soil are recommended adjacent to paved surfaces accommodating ADG-I and ADG-II aircraft. For PCM, the recommended taxiway shoulder width is 10 feet.

Safety Area

The Taxiway Safety Area (TSA) is centered on the taxilane centerline. To provide room for rescue and fire-fighting operations, the TSA width equals the maximum wingspan of the ADG. For PCM, the TSA is 49 feet for ADG I and 79 feet for ADG II.

Object Free Area

The Taxiway Object Free Area (TOFA) is centered on the taxiway centerline. The TOFA clearing standards prohibit service vehicle roads, parked aircraft, and other objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes. For PCM, the TOFA is 89 feet for ADG I and 131 feet for future ADG II.

Taxiway Design Group

The Taxiway Design Group (TDG) is a classification of airplanes based on outer to outer Main Gear Width (MGW) which is the distance from the outer edge to outer edge of the widest set of main gear tires, and the Cockpit to Main Gear distance (CMG) which the distance from the pilot's eye to the main gear turn center.

Unlike the Aircraft Approach Category and the Airplane Design Group, the Taxiway Design Groups do not fit in a simple table format. TDG standards can be found in Advisory Circular 150/5300-13A, Change 1, *Airport Design.* PCM has a TDG of 1B.

Edge Margin

The Taxiway Edge Safety Margin (TESM) is the distance between the outer edge of the landing gear of an airplane with its nose gear on the taxiway centerline and the edge of the taxiway pavement. The TESM for TDG 1B is 5 feet.

Wingtip Clearance

Wingtip clearance for TDG 1B is 26 feet for taxiways and 18 feet for taxilanes. PCM currently satisfies these requirements.

Centerline to Fixed or Moveable Object

TDG 1B taxiway centerline to fixed or moveable object separation is 65.5 feet. PCM currently satisfies these requirements.

Taxiway Centerline to Parallel Taxilane Centerline Separation

Taxiway centerline to parallel taxilane centerline separation is 70 feet for ADG I design standards and 105 feet for ADG II standards. PCM currently satisfies requirements for both ADG I and future ADG II design standards.

Holding Bays

The purpose of a holding bay is to provide space for one aircraft to pass another in order to reach the runway end. This reduces airfield delays which can result when an aircraft is conducting engine run-ups or pre-flight checks. PCM does not have any hold bays.

Taxiway Design Standard Compliance Needs Summary

PCM meets TDG 1B taxiway design standards, based on the design aircraft at the airport. The full-length parallel taxiway system provides adequate capacity and efficient flow of aircraft operations. Turf, aggregate-turf, soil cement, lime or bituminous stabilized soil are recommended adjacent to paved surfaces accommodating ADG-I and ADG-II aircraft. For PCM, the recommended taxiway shoulder width is 10 feet.

4.8 Airfield Facility Requirements

Lighting

The airfield lighting at PCM consists of Medium Intensity Runway Lights (MIRLs) located along the edge of Runway 10-28. Both runway ends have Runway End Identifier Lights (REILs) and 2-Light Precision Approach Path Indicators (PAPI-2L) on the left side of the runway. There are no anticipated changes to the airfield lighting system and current airfield lighting satisfies requirements for non-precision approaches.

Marking and Signage

Advisory Circular 150/5324-1K, *Standards for Airport Markings,* contains standards for markings used on airport runways, taxiways, and aprons. Runway 10-28 and Taxiway A are properly marked for non-precision instrument approach capabilities (Runway 10 end). Taxiways and apron areas at

PCM are properly marked and in good condition. No issues with airfield signage were identified. Future changes to RDC and TDG and PCM will require reevaluation of runway, taxiway, and apron area markings and signage for compliance.

Itinerant and Based Aircraft Apron Needs

Based upon the existing distribution of based aircraft by type as reported by the FBO at the time of this Airport Master Plan update, the existing available apron space appears to be sufficient at this time. It is recognized, however, that as aircraft operational levels increase throughout the planning period, and to better accommodate anticipated seasonal and event-driven demand for tie-down space, additional apron areas will be required. The amount, layout, location and timing for new apron areas will most likely be developed as based upon demand for these types of facilities availability of funding.

Although the timing of new aprons is not readily identifiable, **Figures 4-5** through **4-9** provide information that serves to facilitate future apron space planning and to accommodate aircraft basing needs based on size and type of aircraft.

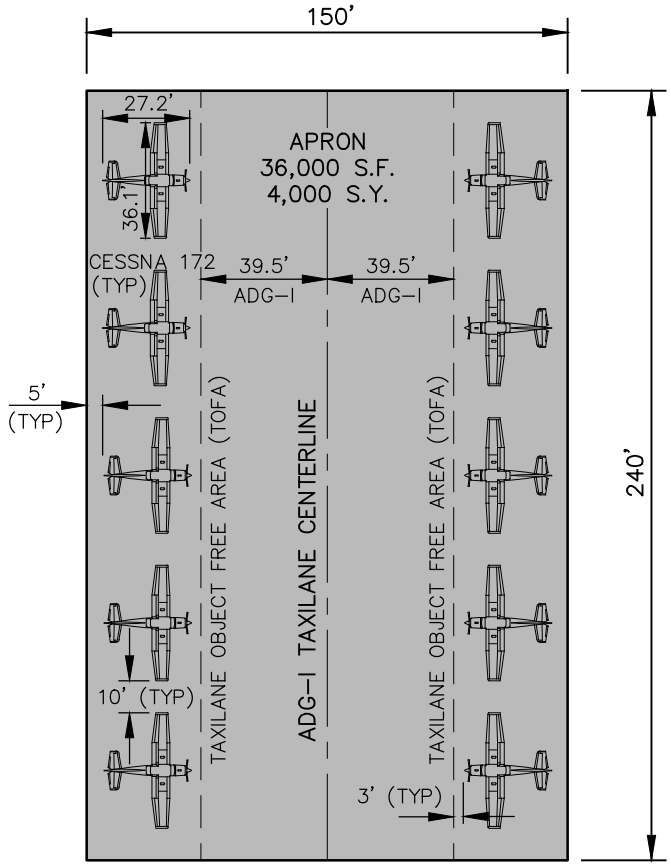
Aircraft Basing Requirements

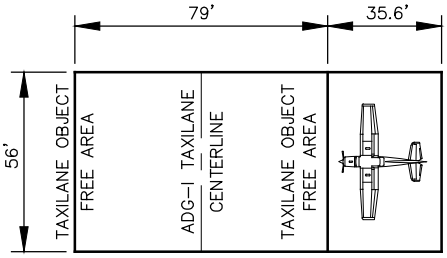
Based on information provided by the sole FBO regarding the current allocation of based aircraft hangar usage by type, it is evident that additional single-unit hangars will be required. These hangars may be needed to accommodate a one or more single-owner aircraft requiring individual or group aircraft storage. Based upon the existing distribution of based aircraft and the existing availability of single aircraft hangars, additional hangar space will be required within the 20-year planning period.

It is envisioned that as demand dictates, HCAA will develop additional grouped hangar facilities that may include: enclosed T-hangars, open shade hangars, and any variety of hangar style currently in use at the airport. Larger bulk-style hangars will most likely be developed in support FBO or commercial aircraft maintenance activities that may occur at the airport throughout the 20-year planning period.

Although the timing of new hangars is not readily identifiable, **Figures 4-5** through **4-8** provide information that serves to facilitate future hangar space planning and to accommodate aircraft basing needs based on size and type of aircraft.

The number, type, style, layout, location and timing for new hangar development will most likely occur based solely upon demand for these types of facilities and availability of funding.





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APRON TIE-DOWN AREA REQUIREMENT
6,418 SF
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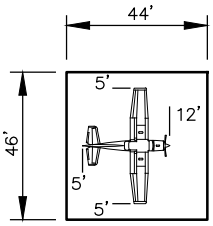

CESSNA 172
HANGAR STORAGE AREA REQUIREMENT
2,024 SF

0 30 60
SCALE IN FEET

SOURCE : URS, 2014

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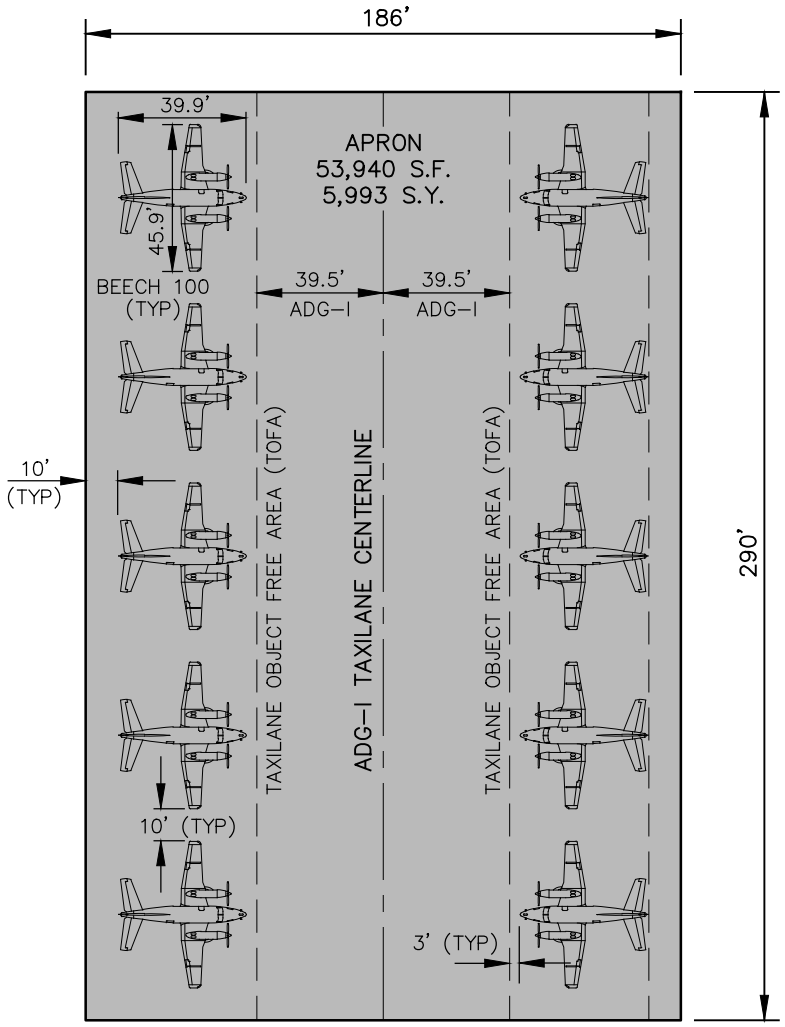
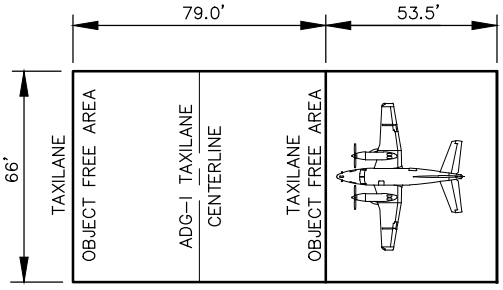
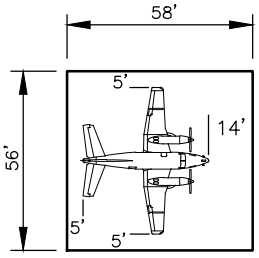
Michael Baker INTERNATIONAL

Figure 4-5 ADG-I Aircraft Space Requirements





BEECH 100
APRON TIE-DOWN AREA REQUIREMENT
8,745 SF
972 SY



BEECH 100
HANGAR STORAGE AREA REQUIREMENT
3,248 SF

0 30 60
SCALE IN FEET

SOURCE : URS, 2014

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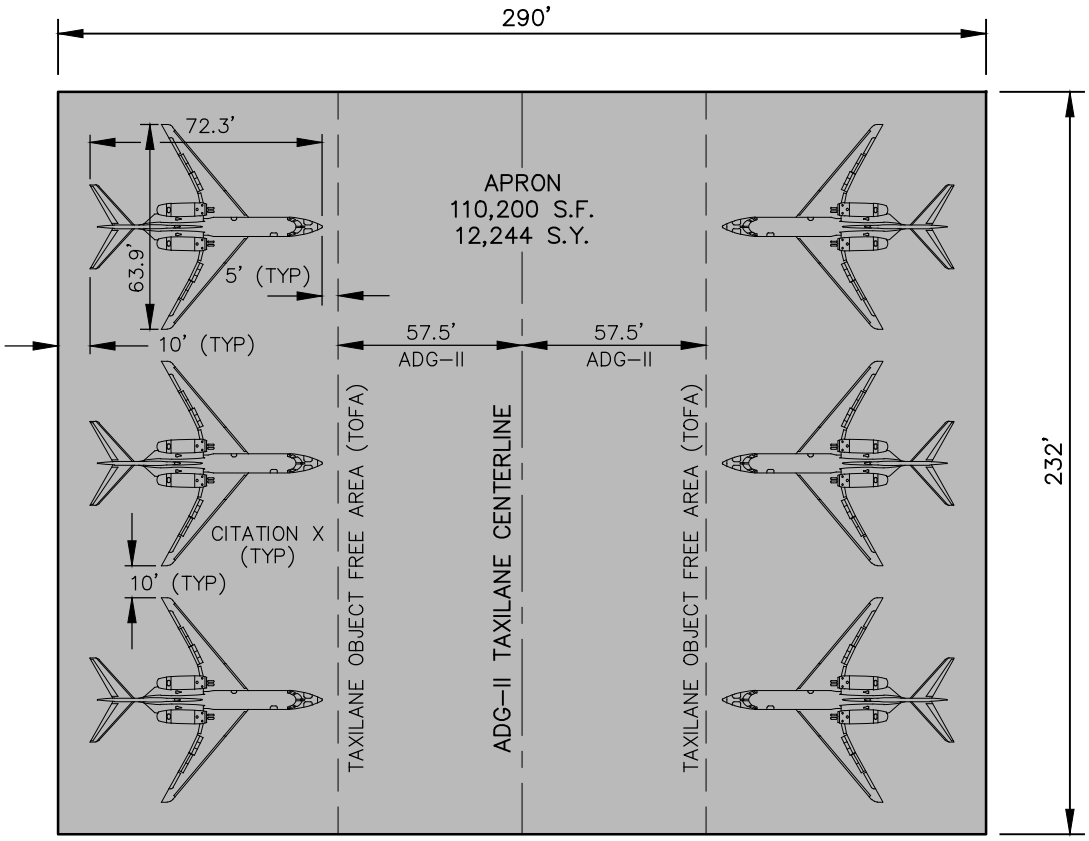
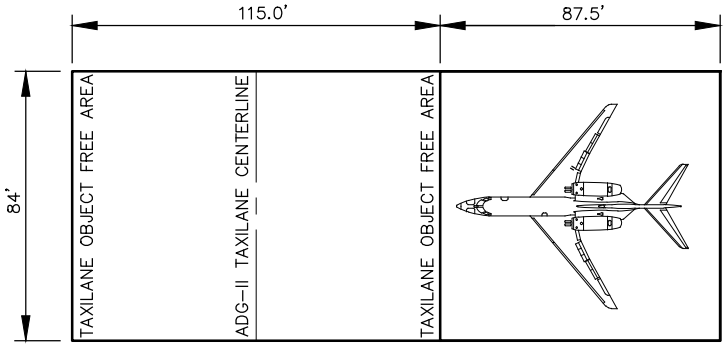
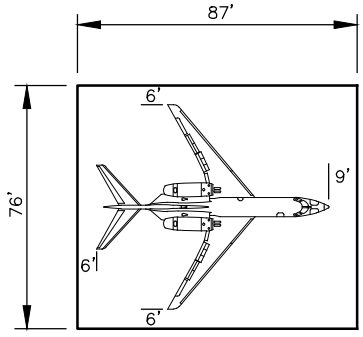
Figure 4-6 ADG-I Aircraft Space Requirements





CITATION X
APRON TIE-DOWN AREA REQUIREMENT
17,010 SF
1,890 SY



CITATION X
HANGAR STORAGE AREA REQUIREMENT
6,612 SF

0 30 60
SCALE IN FEET

SOURCE : URS, 2014

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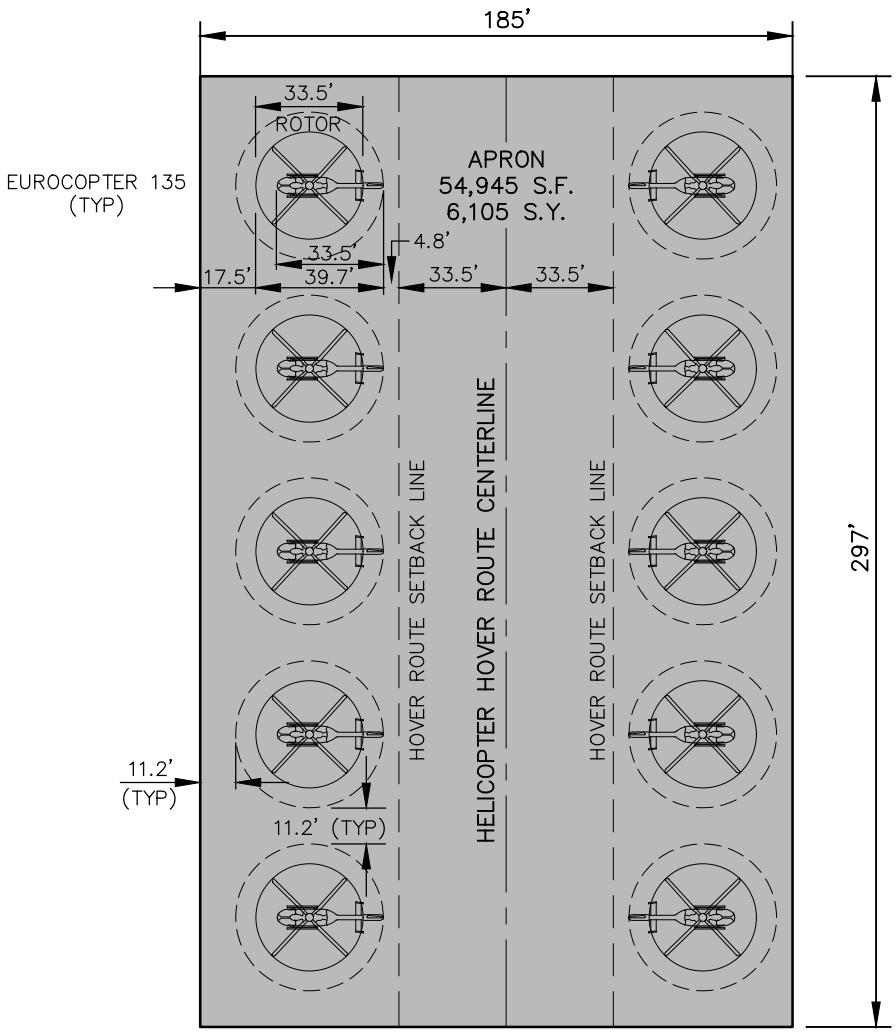
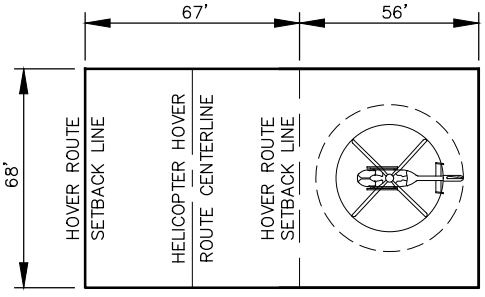
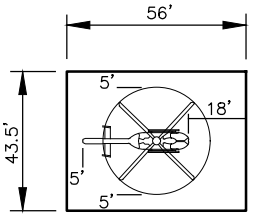
Figure 4-7 ADG-II Aircraft Space Requirements





EUROCOPTER 135
33.5' ROTOR DIAMETER
APRON TIE-DOWN AREA REQUIREMENT
6,418 SF
713 SY



EUROCOPTER 135
33.5' ROTOR DIAMETER
HANGAR STORAGE AREA REQUIREMENT
2,436 SF

0 30 60
SCALE IN FEET

SOURCE : URS, 2014

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Figure 4-8 Helicopter Space Requirements

Navigational Aids

Navigational Aids are used for airport approaches and allow pilots to navigate to the airport and runway ends. Runway 10-28 has a GPS, Runway End Identifier Lights (REILs), and a 2-Light Precision Approach Path Indicator (PAPI-2L) for non-precision approaches. The airport has an Automated Weather Observation System (AWOS-3), a rotating beacon, a lighted wind cone, and a segmented circle. The AWOS is over 10 years old and is being replaced in 2016. Other navigational aids are in good condition but should be monitored throughout the planning period for maintenance issues or if replacement is deemed necessary.

Windsock/Segmented Circle

PCM airport management maintains a lighted windsock and segmented circle located near the tie down area and Taxiway A. The windsock and segmented circle are in fair condition and are anticipated to adequately serve the airport through the foreseeable future with routine maintenance and upkeep.

4.1.1 Security Fencing

Security fencing at PCM is adequate and well maintained. However, several areas are currently being evaluated and are in need of replacement. A security and access control project management plan is currently being developed in support of these needs. Fencing should be monitored throughout the planning period.

4.9 Airport Support Facilities

This section addresses the General Aviation (GA) facility requirements based on current and projected levels of local and itinerant traffic.

General Aviation Terminal

The GA terminal at PCM was completed in 2000 and is 3,000 square feet. This includes a waiting area and pilot lounge, management and operations, public restrooms and concessions. There is public and employee parking located in front of the GA terminal building. If airport hangar and/or other support facilities are constructed, the general aviation terminal should be evaluated for increased demand needs.

Fueling Facilities

Based upon discussions with the sole FBO, the existing aircraft fuel storage facilities are adequate and sufficient. It is recognized, however, that although excess fuel storage capacity exists today, the need for additional storage capacity will occur as aircraft activity levels increase throughout the 20-year planning period. This existing capacity will diminish quickly as such time that the FBO fuel sales reach or exceed historical levels experienced prior to the 1997 Great Recession. The timing for the development of additional fuel storage capacity will most likely be driven by increased fuel sales, FBO-specific fuel pricing and other related business practices.

Airport Maintenance

PCM has one 17,368 square foot maintenance hangar, constructed before 1971, that is operated by the FBO, Plant City Airport Services. The offices within the maintenance hangar are in poor condition. In addition to this, there is also a 1,621 square foot operations and maintenance shop, constructed between 1982 and 1992. Maintenance facilities should be constructed as demand for such facilities arises. The size of these facilities cannot be pre-determined but will be developed as space, function, and location dictate.

Ground Access

Public airport access to PCM is provided by North Airport Road, which borders the airport to the north. The airport is located in close proximity to Interstate 4 (I-4) and can be reached by Branch Forbes Road, U.S. 92, and Turkey Creek Road. North Turkey Creek Road intersects with Airport Road. The airport's main entrance is located east of this intersection. To the east of the airport, Airport Road intersects with South Woodrow Wilson Street to the north, West Grant Street to the east, and Sydney Road to the south. The airport entrance is located one mile west of the intersection of these roads. Ground access is in good condition, although the City of Plant City and Hillsborough County has future plans to straighten Airport Road at the connection to Turkey Creek Road.

Automobile Parking

Automobile parking at PCM is adequate for current operational needs. It is provided at the terminal building. If new airport hangar and/or other support facilities are constructed, more parking will be required to meet anticipated increased demand.

4.10 Airport Security

The Transportation Security Administration (TSA) has developed guidance, in cooperation with the General Aviation (GA) community, to provide GA airport owners, operations, and users with guidelines and recommendations that address aviation security concepts, technology, and enhancements. These guidelines and recommendations are found within Information Publication A-001, *Security Guidelines for General Aviation Airports,* published in May 2004.

The TSA uses an airport characteristics measuring tool that includes airport location, runways, and based aircraft to assess the most appropriate security enhancements for the airport. Each airport is assigned a certain point value that is calculated considering the airport's location, number and types of based aircraft, runway length and surface characteristics, and number and types of aircraft operations. The airport's value is the compared to the TSA's recommended security features to evaluate whether additional security features may be appropriate. A point value of 29 was calculated for PCM, which means that all security features shown in the "25-44 Point Range" are recommended. **Table 4-13** lists TSA recommended security features and PCM's compliance with these features.

Table 4-12 Analysis of TSA Recommended Security Features					
TSA Recommended Security Feature	Point Range/Applicable Security Feature				PCM Status
	>45	25-44	15-24	0-14	
Fencing					☑
Hangars					☑
Closed Circuit Television (CCTV)					☒
Intrusion Detection System					☒
Access Controls		☑			☑
Lighting System		☑			☑
Personnel ID System		☑			☑
Vehicle ID System		☑			☑
Challenge Procedures		☑			☑
Law Enforcement Support		☑			☑
Security Committee		☑			☑
Pilot Sign-In/Out Procedures		☑			☑
Signs		☑			☑
Documented Security Procedures		☑			☑
Positive Passenger/Cargo ID		☑			☑
All Aircraft Secured		☑			☑
Community Watch Program		☑			☑
Contact List		☑			☑
Source: TSA Security Guidelines for General Aviation Airports, May 2004.					

Although PCM currently satisfies the security features suggested by TSA, it is recommended that the airport's older existing code-entry access control system be upgraded to a more secure proximity card system in the future. Since a higher level of administrative oversight is typically associated with such systems, HCAA will also need to evaluate its ability to administer the proximity system at that time. Currently, PCM has limited CCTV capability and the system is not connected to HCAA's centralized operations center. It is recommended that HCAA conduct an evaluation in the near term to determine the extent of additional camera coverage that is needed to support airport surveillance activities.

In recent years, HCAA has taken steps to improve protective lighting at the airport by adding additional lighting and converting existing lights to a light-emitting diode (LED) system. In the future, it is recommended that the security lighting system be connected to an emergency power source, when available. Also, LED lighting should be incorporated with planned hangar and apron expansion at PCM in the future.

4.11 Summary of Facility Needs

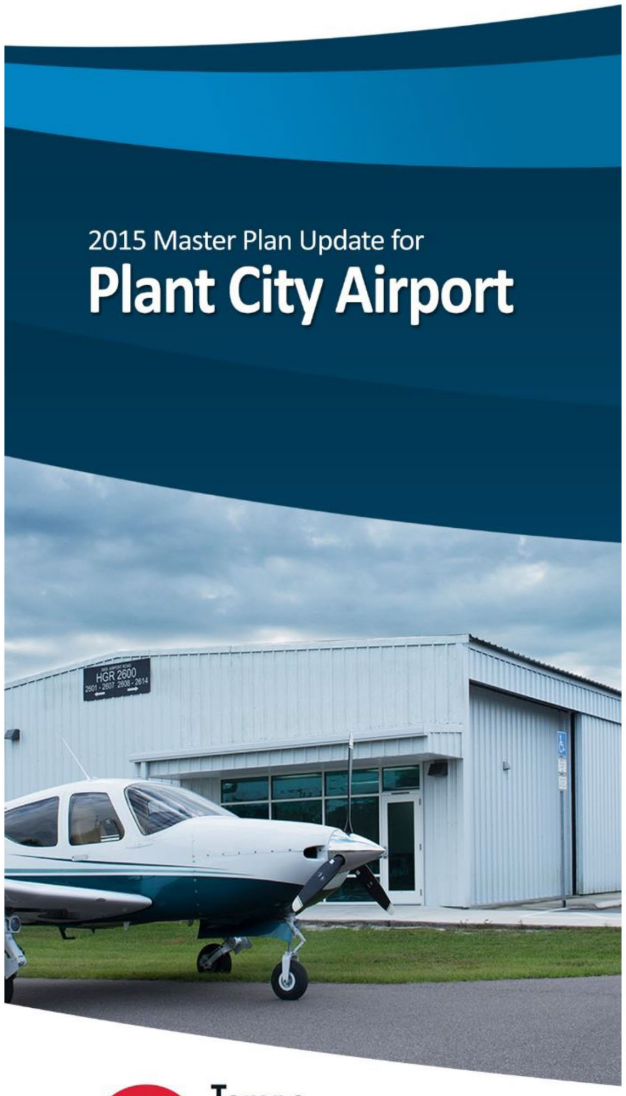
Table 4-13 identifies and summaries PCM's facility requirements. The following table presents recommendations to satisfy these facility requirements.

Table 4-13
Summary of Facility Requirements

Category	Requirements
Airfield Capacity and Configuration	No Improvements Recommended
Design Aircraft and Airport Reference Code (ARC)	King Air 200 – ARC B-I, Future ARC B-II
Runway Length	No Improvements Recommended
Runway Strength	No Improvements Recommended
Instrument Approaches	No Improvements Recommended
Runway Design Standards	Runway Shoulders Recommended Runway Blast Pads RSA changes for ARC B-II ROFA changes for ARC B-II Increased Runway to Taxiway Separation for ARC B-II
Taxiway Design Standards	Taxiway Shoulders Recommended Pavement Improvements to Taxiway Connectors
Airfield Lighting	No Improvements Recommended
Airfield Markings	No Improvements Recommended
Airfield Signage	No Improvements Recommended
Navigational Aids	No Improvements Recommended
Aircraft Apron	No Improvements Recommended
Based Aircraft Hangars (2033)	Additional Single-Unit Hangars
Airport Terminal	No Improvements Recommended
Airport Maintenance Facilities	No Improvements Recommended
Fueling Facilities	No Improvements Recommended
Automobile Access	No Improvements Recommended
Automobile Parking	No Improvements Recommended
Airport Security Analysis	Evaluate Deficiencies Based on Table 4-12

Source: URS, 2014.

Chapter 5.0
Airport Alternatives Analysis



Tampa International Airport

Hillsborough County Aviation Authority

5.0 Airport Alternatives Analysis

5.1 Background

This chapter presents the preliminary alternatives for the Plant City Airport (PCM). The purpose of the preliminary alternatives is to evaluate options for satisfying the airfield and landside facility requirements that were identified in the previous chapter. At PCM, the most significant airfield recommendation consists of upgrading the airfield from Runway Design Code (RDC) B-I (small aircraft) to RDC B-II in order to better accommodate the corporate turboprop traffic that frequently operates at the airport. The landside recommendations primarily include the provision of additional hangars, a consolidated fuel farm, and other terminal area corrections in conjunction with the upgrade of the airfield to RDC B-II. The preliminary alternatives are intended for discussion purposes between the various stakeholders including airport tenants, the Hillsborough County Aviation Authority (HCAA), and the public. The individual components of each preliminary alternative were evaluated to aid in the selection of a preferred alternative that represents the desired development plan for the 20-year planning period, which is presented in Chapter 6. For that reason, the preliminary alternatives should be viewed as flexible development plans that may be refined or combined to best satisfy the needs of the airport's stakeholders. They are intended to provide a clear understanding of the airport's possibilities and limitations for airfield and landside development.

- Runway Approach Analysis
- Airfield Alternative
- Airport Land Use Analysis
- Landside Alternative
- Airport Support Facilities
- Automobile Access

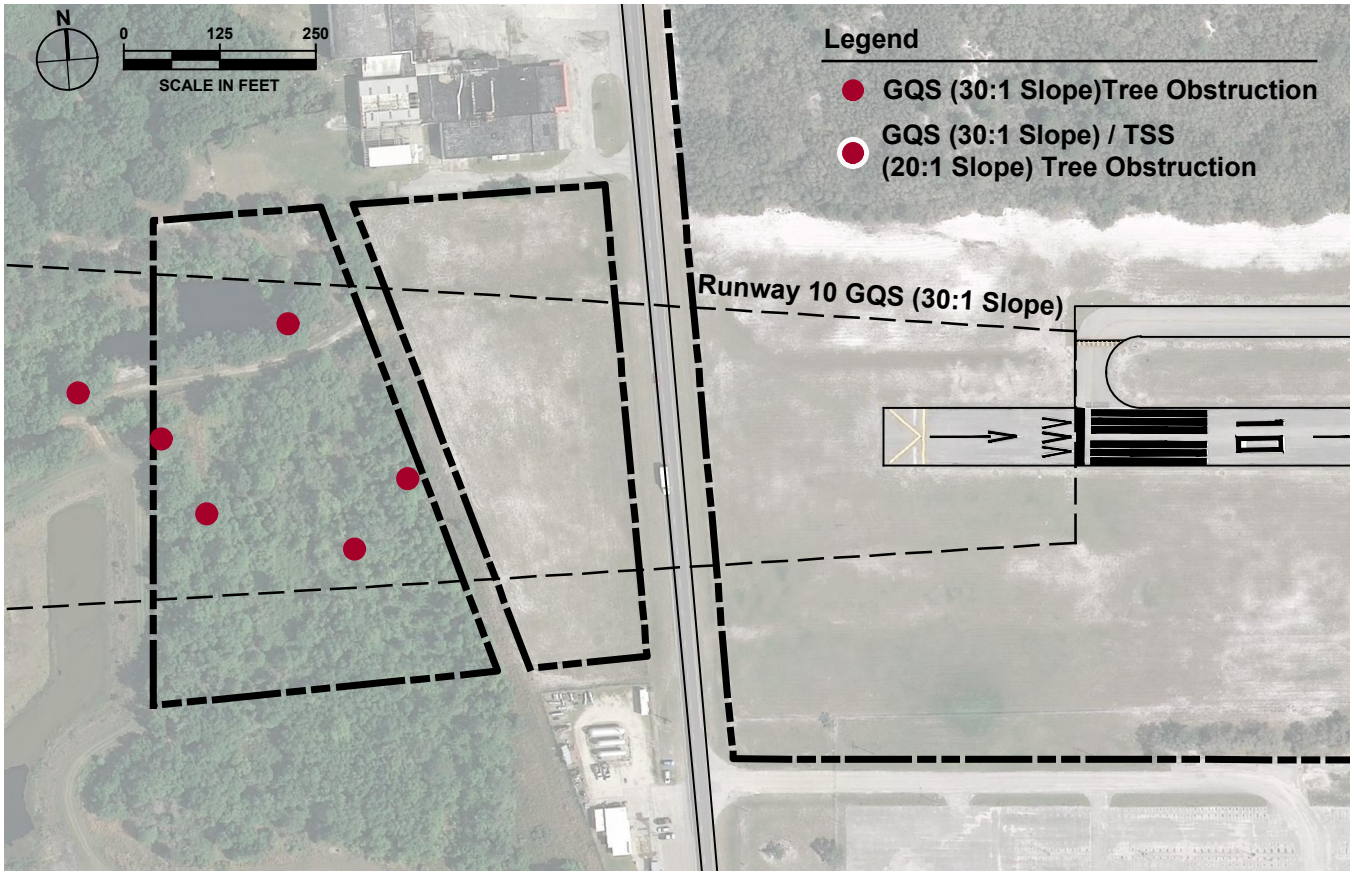
5.2 Runway Approach Analysis

As part of the airfield alternatives analysis, the associated instrument approach procedures were evaluated for each end of Runway 10-28. The analysis focused on identifying any existing or potential Threshold Siting Surface (TSS) obstructions. Unlike the Federal Aviation Regulations (FAR) Part 77 surfaces that are primarily used to adopt building height and land use restrictions around airports, the TSS is the surface that is evaluated to determine if one or more of the following actions are necessary.

- Obstacle clearing, marking, or lighting is necessary within the TSS.
- Displacement of the runway threshold is necessary because obstacles cannot be cleared from the TSS, which results in a shorter landing distance.
- Modification of the approach glide path and/or threshold crossing height is necessary.
- Prohibition of nighttime operations may be necessary unless an approved Visual Glide Slope Indicator (VGSI) is in use.

At PCM, there is a Localizer Performance with Vertical Guidance (LPV) approach published to each end of Runway 10-28. LPV approaches are non-precision approaches that provide both

horizontal and vertical guidance to aircraft via GPS. For each runway end, two different surfaces were evaluated: 1) the Glide Path Qualification Surface (GQS) associated with the LPV approaches that extend out from the runway thresholds at a slope of one foot vertical for every 30 feet horizontal, and 2) an Obstacle Clearance Surface (OCS) for runways that support instrument night operations that starts 200 feet beyond the threshold and extends out at a slope of one foot vertical for every 20 feet horizontal. As shown in **Figure 5-1**, there are clusters of trees that are obstructions to the GQS beyond each end of Runway 10-28 and the OCS beyond the Runway 28 end. Because the LPV approaches are currently available to each end of the runway, it is anticipated that any obstacles within the GQS have been mitigated through adjustments to the threshold crossing heights and/or through the availability of the Precision Approach Path Indicators (PAPI) that would provide aircraft with a clear glide path to the threshold. Although removal of GQS obstructions may be considered, many of which are on the airport property, the FAA typically encourages airports to clear OCS obstructions, of which there are six clusters located beyond the end of Runway 28.



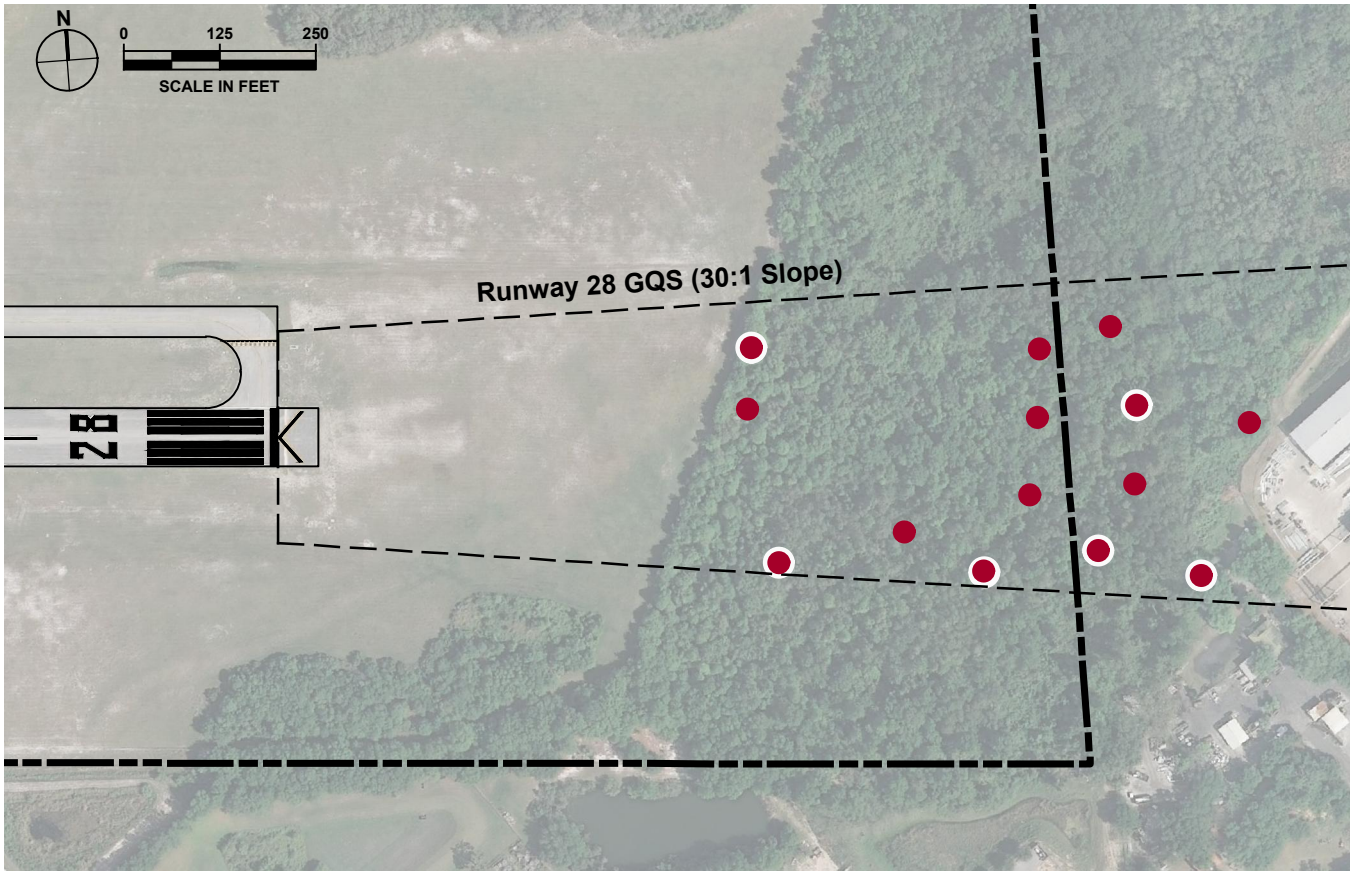


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Figure 5-1 Runway Approach Analysis

5.3 Airfield Alternative

The recommended airfield improvements at PCM are associated with the upgrade in the RDC from B-I (small aircraft) to RDC B-II. As shown in **Figure 5-2**, the RDC upgrade necessitates a relocation of parallel Taxiway A in order to better accommodate wider aircraft wingspans and an increase in the size of the Runway Protection Zones (RPZ) located beyond each end of Runway 10-28. The runway centerline to parallel taxiway centerline separation would increase from 150 feet currently to 240 feet under the RDC B-II scenario and the taxiway width would be 35 feet. As opposed to where Taxiway A currently ends at the Runway 10 threshold, the proposed parallel taxiway runs for the entire length of Runway 10-28. It was determined that aircraft could hold at the standard 200 foot separation from the runway centerline at the Runway 10 end without penetrating the TSS and GQS. If weather minimums for future approaches are decreased to less than ¾ of a mile then hold positions would need to be provided 250 feet from the centerline. As part of the proposed taxiway improvements, it is recommended that the two taxiway connectors that provide direct access between the runway and taxiway be removed. According to FAA AC 150/5300-13A, "such a configuration can lead to confusion when a pilot typically expects to encounter a parallel taxiway." Therefore, most of the impacts related to the relocated parallel taxiway would be to existing drainage features on the airport property. It is anticipated that minimal efforts would be necessary to provide standard Runway Safety Area (RSA) and Runway Object Free (ROFA) as part of the upgrade to RDC B-II, with the exception of the removal of a small portion of trees to the southeast of the Runway 28 end.

The RPZs beyond each runway end would increase in size from 8.035 acres currently to 13.77 acres and both ends would have portions that would encompass additional properties that are not owned or controlled by HCAA. To the west, both the Runway 10 approach RPZ and the Runway 28 departure RPZ would encompass additional off-airport property, as would the Runway 28 approach RPZ to the east. In order to obtain control over those properties, HCAA should acquire them or purchase easements for the portions within the RPZ. Although the RPZs to the west currently extend over Turkey Creek Road and the CSX rail right-of-way, it would be necessary to coordinate with the FAA to determine if additional off-airport impacts would be permissible to those transportation features. The airspace surrounding Runway 10-28 is already protected for the proposed RDC B-II upgrade through the Hillsborough County Airport Zoning Regulations.

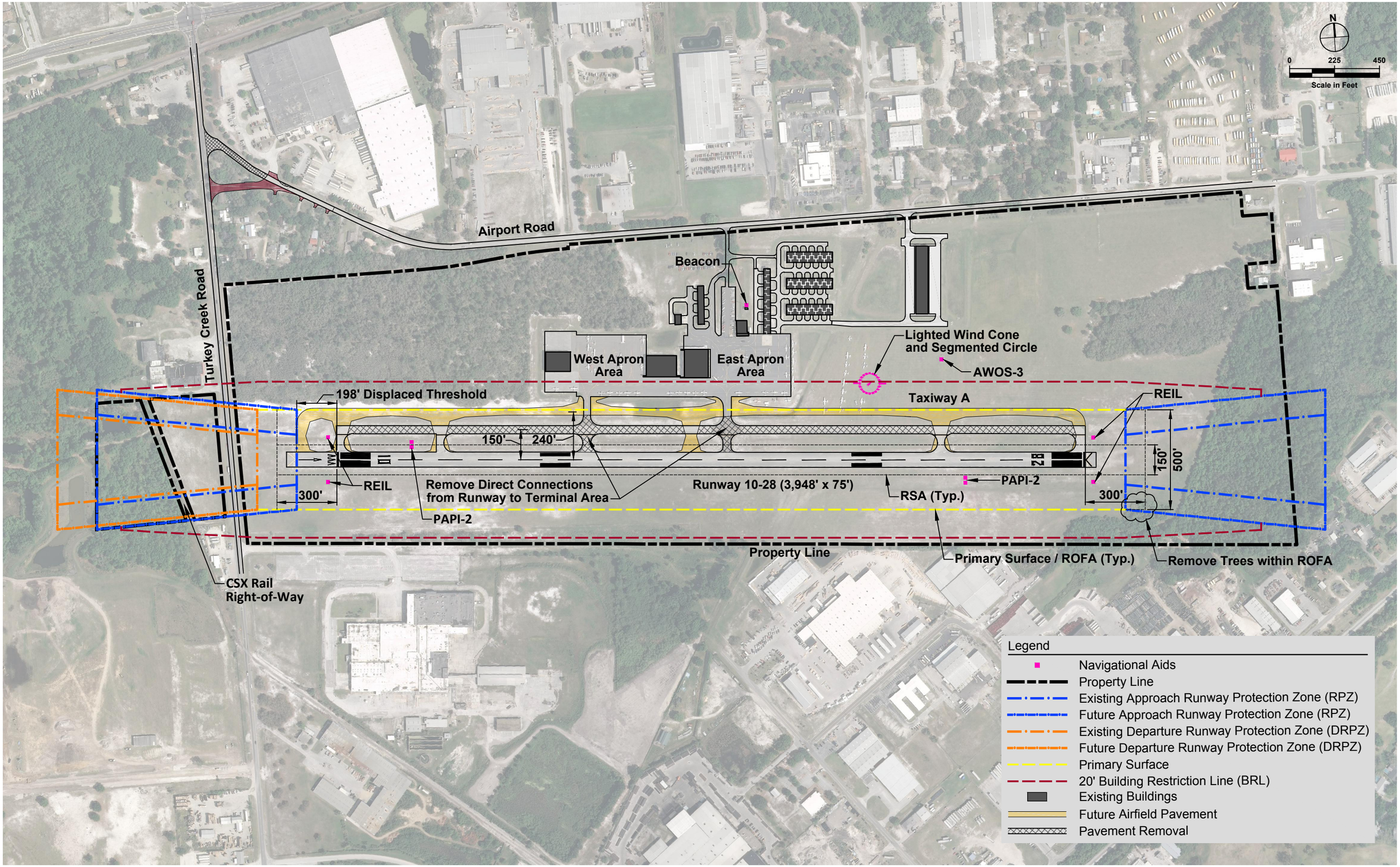

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Figure 5-2 RDC B-II Upgrade

5.4 Airport Land Use Analysis

Considering the airfield developments shown previously, the remaining vacant sections of the airport property were analyzed in terms of their potential use, aircraft and automobile access, and feasibility of development. The intent was to evaluate the highest and best use for the vacant parcels, as well as to determine if additional property should be acquired to accommodate the airport's growth initiatives. Furthermore, this land use analysis should provide the airport with a plan to maximize development opportunities on the property and to generate additional revenues. The information included in this analysis places priority on reserving as much space as possible for aviation development and expansion. The results of the Plant City Airport Strategic Business Plan, dated January 2016, should be viewed in conjunction with this analysis in order to determine practicable methods of encouraging both aviation and non-aviation development on the airport property. The parcels are illustrated in **Figure 5-3** and evaluated in **Table 5-1**.

Table 5-1
Airport Land Use Analysis

Landside Zone	Approximate Acreage	Potential Use	Access	Feasibility of Development
1	19.8 Acres	Non-Aviation/ Aviation Development	Vehicle access to this area could be provided from Airport Road or Turkey Creek Road. Airside access would be provided from Taxiway A.	To be developed as warranted by demand. Since this area is largely forested, the Department of Forestry should conduct a timber assessment to determine the potential for selling timber. Further development of this area will require an environmental assessment.
2	4.6 Acres	Aviation Development	Vehicle access would be provided from Airport Road. Airfield access would be provided via West Apron Area.	It is anticipated that this would be a logical site for expanding corporate aviation and maintenance facilities. Development of this area will require an environmental assessment.
3	4.6 Acres	Aviation Development	Open Space	This site contains a retention pond and should be left as open space.
4	5.6 Acres	Aviation Development	Vehicle access would be provided from Airport Road. Airfield access would be provided via taxilanes and East Apron Area connecting to Taxiway A.	It is anticipated that this would be a suitable site for expanding apron and T-hangar facilities. This area should also include improved access between the T-hangar development area and Taxiway A.
5	29.9 Acres	Aviation / Non-Aviation	Vehicle access would be provided from Airport Road. Airfield access would be provided via taxilanes connecting to Taxiway A.	It is anticipated that the eastern portions of this area would be the next logical site for expanding T-hangar facilities. The area along the south side of Airport Road is best suited for non-aviation development.

Source: Michael Baker International, Inc., 2015.

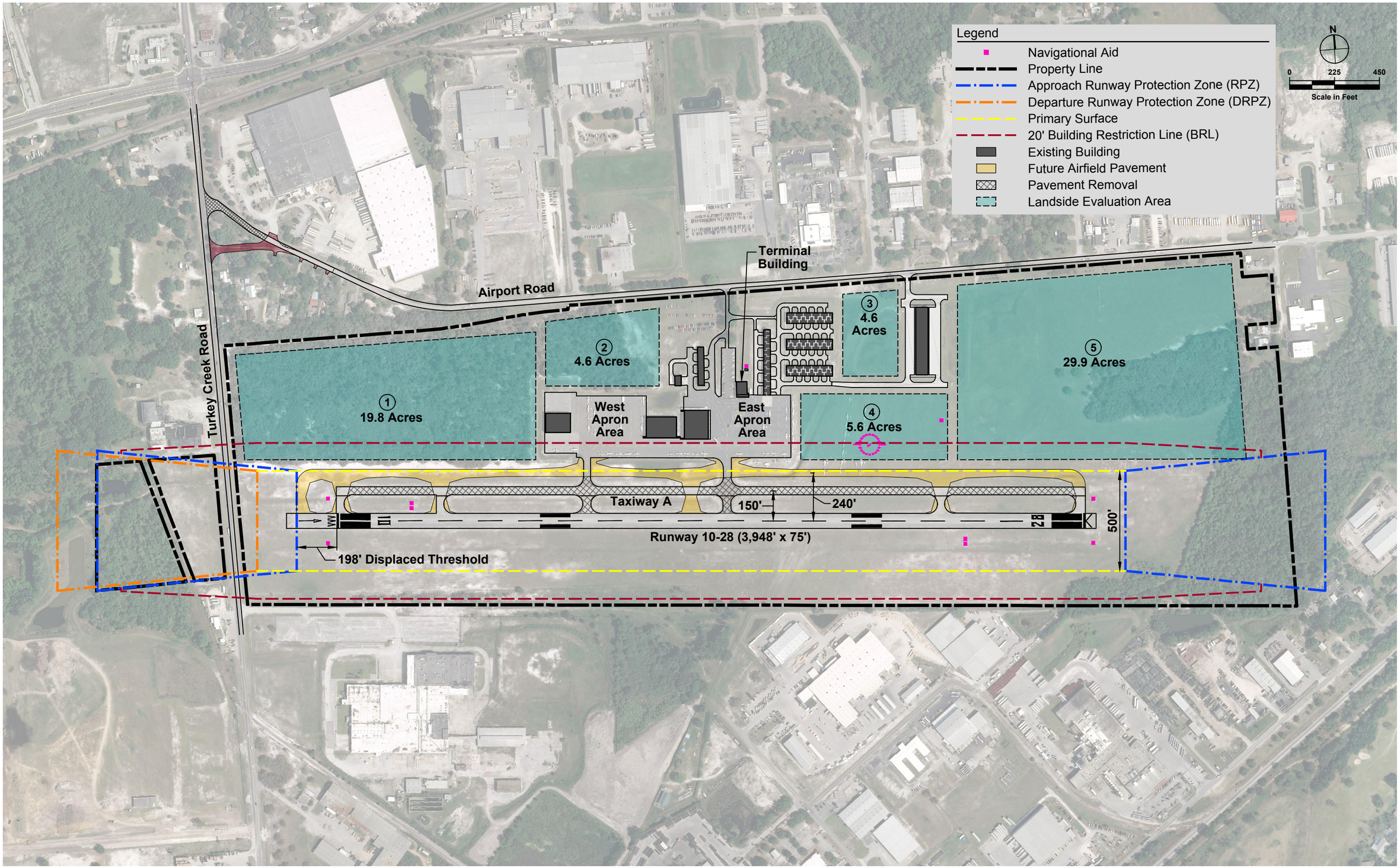

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Figure 5-3 Landside Evaluation Areas

5.5 Landside Alternative

The purpose of conducting the landside alternatives analysis is to show options for meeting the hangar, apron, and support facility requirements and also to illustrate the overall development potential of the airport from a conceptual standpoint. Many of the hangar dimensions that are discussed in this section are based on typical pre-fabricated facilities and/or typical sizes of corporate hangars.

Figure 5-4 illustrates a potential landside development alternative for the vacant sites along Runway 10-28. As shown, the proposed landside development is separated into two areas. The eastern half of the terminal area would include T-hangars and apron development designed to accommodate the airport's existing fleet of smaller general aviation aircraft (i.e., Airplane Design Group (ADG) I aircraft wingspans less than 49 feet). West of the terminal, the focus shifts towards the development of larger box and corporate hangars designed to accommodate larger aircraft (i.e., ADG II and lower aircraft wingspans less than 79 feet). Within the eastern landside development area, five additional T-hangar buildings are shown which would double the existing T-hangar storage capacity of the airport. The proposed 17,800 square yard apron expansion to the east would accommodate 50 or more aircraft tie-downs and improve the movement of aircraft between the T-hangars, apron area, and Taxiway A. However, the proposed apron expansion would require the relocation of the existing wind cone. Improvements within the eastern landside development area would also include a new rotating beacon, AWOS, and electrical vault facilities displaced by the proposed landside development.

Within the western landside development area, the construction of several corporate hangars could occur. The five corporate hangars shown are 62 feet wide by 65 feet deep and could store a small corporate aircraft. Additionally, a 10,000 square foot hangar, an 18,000 square foot hangar, and a 14,400 square foot hangar are shown to provide additional aircraft maintenance and storage capabilities in the future; however, removal of an aging T-hangar building and the airport maintenance facility would need to occur in order to construct hangars in the depicted locations. By relocating the fuel farm and airport maintenance facility to an area near Airport Road, space would become available to construct new hangar facilities and for parking larger general aviation aircraft (ADG II) in front of the terminal building. Automobile access and parking improvements are illustrated with the proposed landside development alternatives.

The area east of the future terminal area may be beneficial for non-aviation development (e.g. recreational, agricultural or industrial). Access to this area could be provided directly from Airport Road. The area immediately west of the future terminal area is reserved for future expansion of aviation facilities, as demand warrants. The area adjacent to Turkey Creek Road may be beneficial for future commercial development.

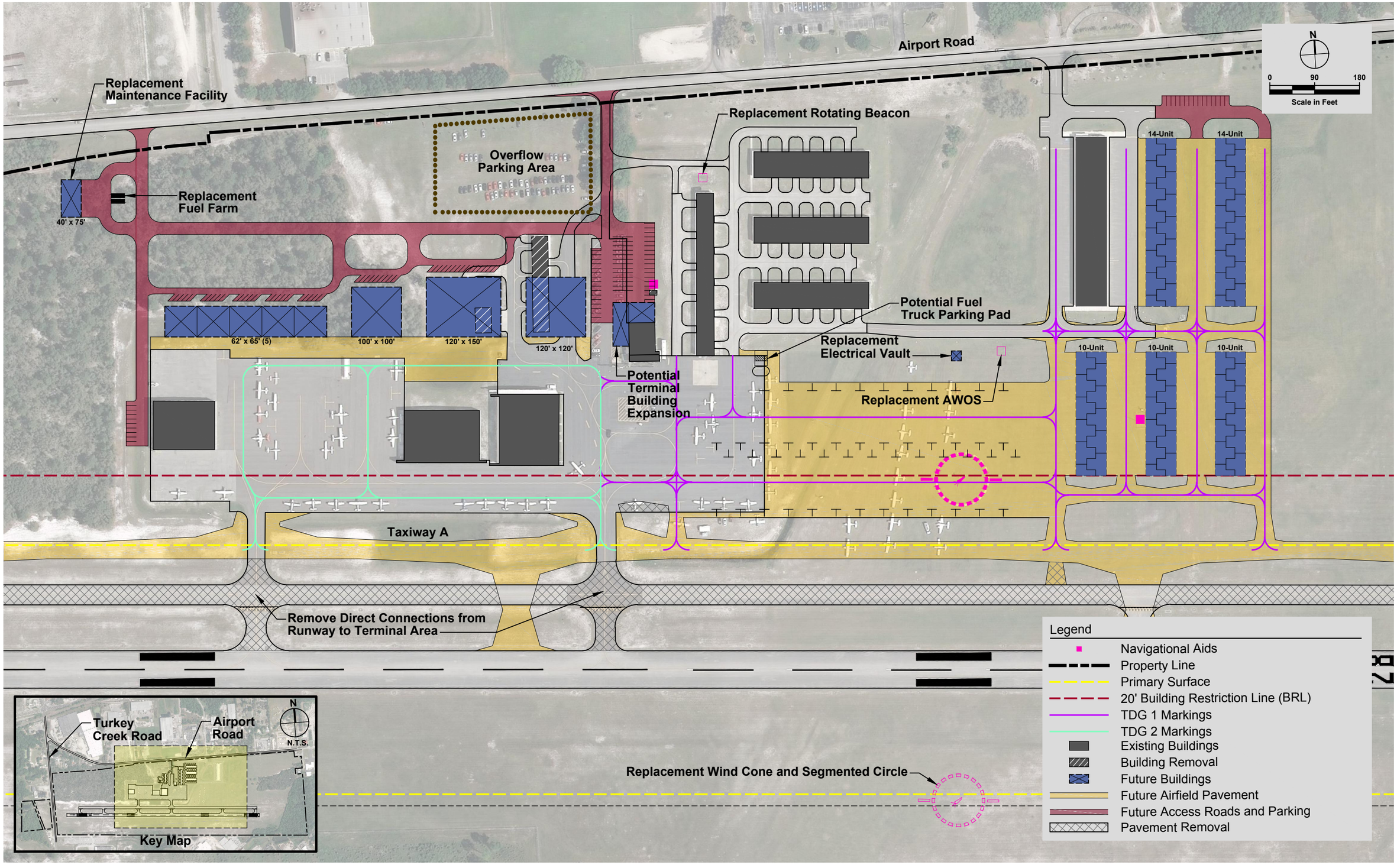

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Figure 5-4 Landside Development Alternative

5.6 Airport Support Facilities

The provision of support facilities was considered as part of the landside alternatives analysis. The main support facility improvements include the provision of a consolidated fuel farm facility and the replacement of other facilities in order to support continued landside development.

5.7 Automobile Access

This section describes the existing system of local roadways providing ground access to and from the airport. The existing roadway "section" design, routing and adjacent land uses are also described with associated discussions regarding HCAA's desire to maintain and improve ground access to the airport to accommodate existing and anticipated future airport-driven ground access demand. The airport has operated at its present location since 1948. Since that time, HCAA has made considerable financial investments and physical improvements to the landside and airside infrastructures and aviation support facilities that include, but were not limited to the lengthening of Runway 10-28 and the construction of a FBO/Terminal building, aircraft storage hangars and fuel storage facilities.

It is the expressed goal of HCAA to continue to develop the airport to accommodate and serve existing and anticipated increased future levels of demand of smaller/lighter recreational and commercial general aviation demand within of eastern and north portions of Hillsborough County throughout the 20-year planning period. The airport is currently and is anticipated to remain designated by HCAA and within the FAA's National Plan of Integrated Airport Systems (NPIAS) as a Basic General Aviation Airport.

Regional ground access to the airport is via Interstate 4, U.S. Highway 92, and State Roads 39, 60, and 574. Local access is via Turkey Creek Road from the east, Woodrow Wilson Street from the west and Sydney Road from the south. Direct frontage access from Airport Road. These roads are designed to accommodate the 30 mile per hour surface traffic volumes that are considered to be sufficient to accommodate the associated trip generation of the airport and the adjacent and surrounding land uses.

To improve the design and efficiency of the existing angled Airport Road and Turkey Creek Road intersection, the City has acquired a 100-foot wide right-of way adjacent and parallel to the airport' northern-most property boundary that will provide the opportunity to provide a 90-degree angled "T" intersection. This revised alignment of Airport Road may provide increased opportunity to develop on-airport aviation or commercial revenue-generating land leases within the airports northwest quadrant (refer to **Figure 5-5**).

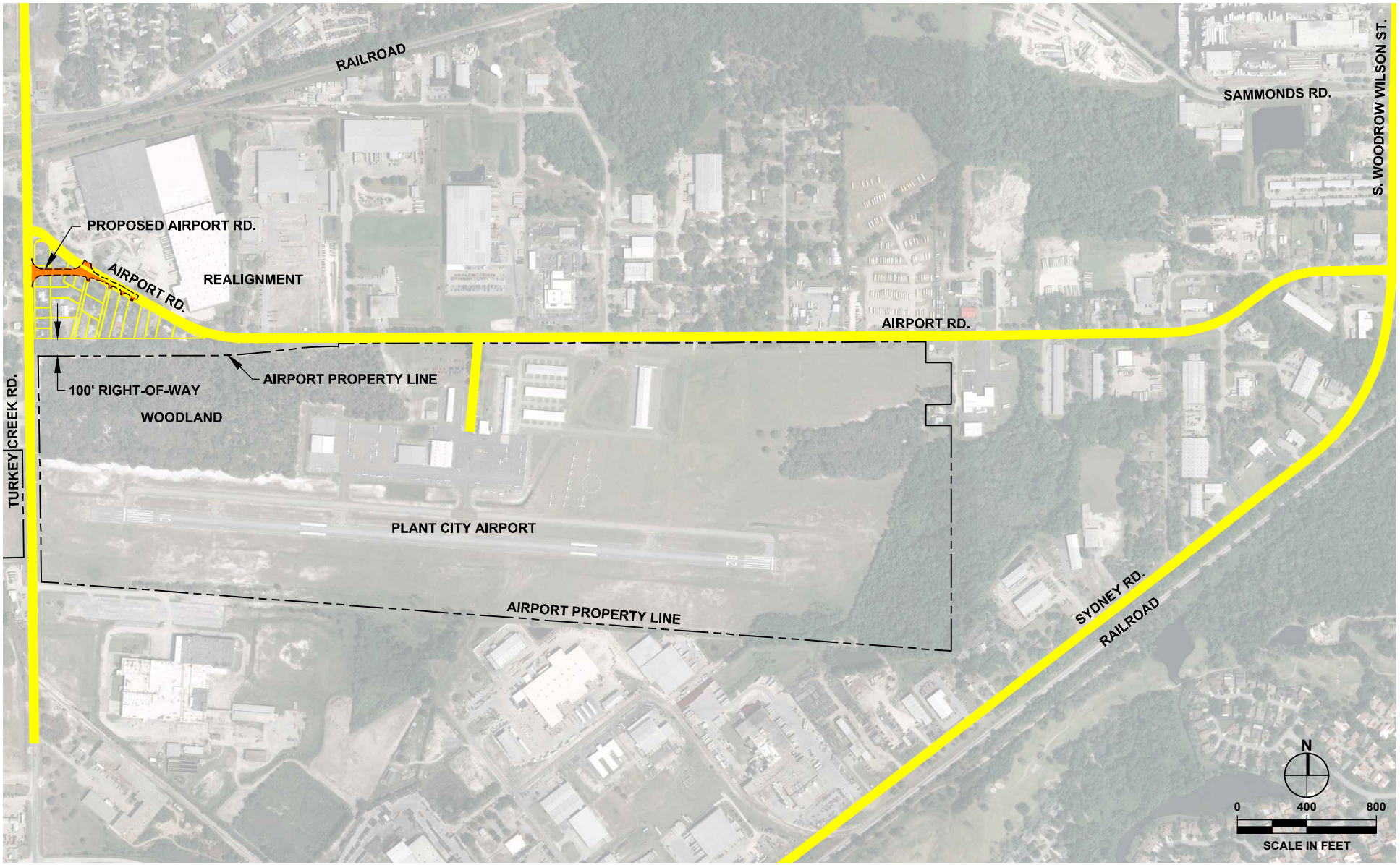
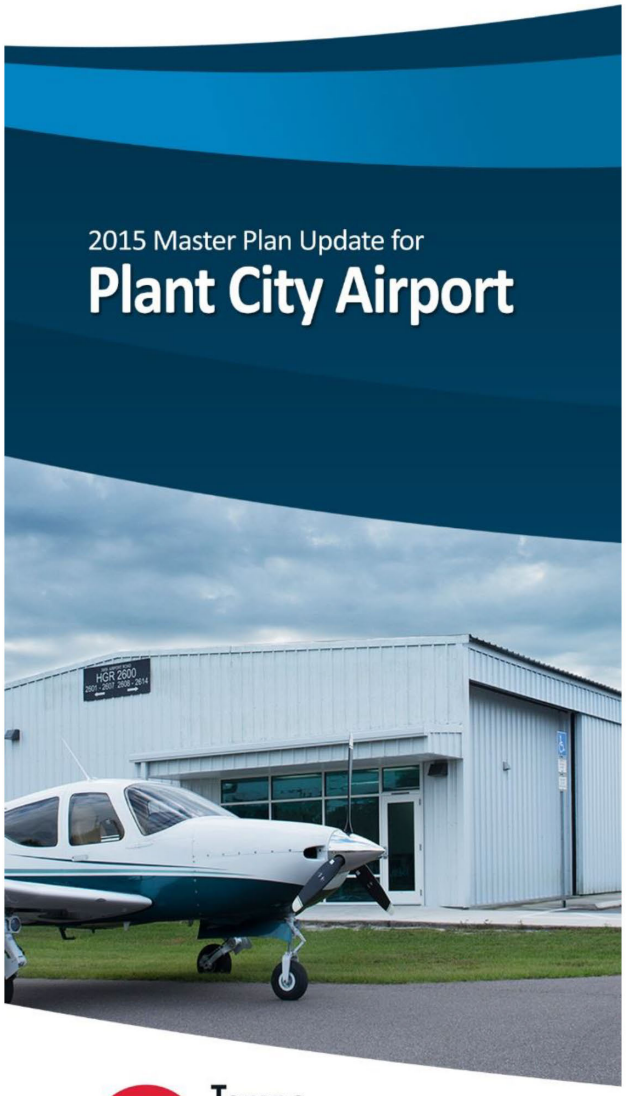


Figure 5-5 Existing Surface Access

Chapter 6.0
Refined Alternatives



Tampa International Airport

Hillsborough County Aviation Authority

6.0 Refined Alternatives

6.1 Background

The previous chapter presented the preliminary alternatives for PCM including upgrading the airfield to meet Runway Design Code B-II design standards, conforming to current FAA airfield design guidelines and the continued expansion of the airport's landside facilities (e.g., the development of hangars, non-aeronautical development opportunities, 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 improvements designed to support the landside development alternatives that were presented in the previous chapter. The primary airfield recommendations include fillet improvements associated with the taxiways that serve Runway 10-28, the relocation of parallel Taxiway A in order to better accommodate wider aircraft wingspans, the extension of the future Taxiway A to provide access to the end of Runway 10, and the relocation of taxiway connectors. These improvements are designed to meet current FAA design guidelines and provide a safer operating environment for some of the larger aircraft currently operating at PCM. A detailed listing of all airfield projects that are anticipated during the planning period is presented with the CIP.

The proposed landside improvements were tailored to meet future needs and support the highest and best use of airport property available for development. For this study, it was determined that less than half of the available airport property would be needed to support the demand for aeronautical development over the 20-year planning period. The development of the terminal area is focused on providing facilities that maximize aircraft storage capacity and revenue generating potential by developing a series of T-hangars, corporate/box hangars, and bulk hangar facilities. Facilities proposed within the eastern half of the terminal area are designed to accommodate the airport's existing fleet of smaller general aviation aircraft. The proposed development within this area includes the provision of 5 T-hangar buildings that would double the T-hangar storage capacity of the airport. In addition, a 17,800 square yard apron expansion would accommodate 50 or more aircraft tiedowns and improve the movement of aircraft between the T-hangars, apron area, and Taxiway A.

On the west side of the terminal, the preferred development concept focuses on a series of improvements designed to replace aging hangar and support facilities, promote larger hangars in support of business activities, and promote aeronautical development that is designed to accommodate larger general aviation aircraft. The western development area includes five box

hangars and three corporate/bulk hangars of varying sizes to support additional aircraft maintenance and storage capabilities in the future. By relocating the fuel farm and airport maintenance facility near Airport Road, more space is available for the proposed hangar development and for parking larger aircraft in front of the terminal building. Aircraft aprons, taxilanes and automobile access/parking improvements in support of the proposed landside development are incorporated into the preferred development concept.

Since aeronautical demand for the 20-year planning period and beyond can be accommodated with the development shown in the preferred alternative, the areas east and west of the future terminal area are reserved for non-aviation development (e.g. recreational, agricultural or industrial). Access the east side could be provided via Airport Road. The area immediately west of the future terminal area adjacent to Taxiway A is reserved for future expansion of aviation facilities, as demand warrants.

Recommended Capital Improvements

Table 6-1 summarizes the recommended capital improvements associated with the master plan projects only. The projects are presented in no particular order and can be seen in the key map in **Figure 6-2**. The following chapter of this study includes a detailed phasing and funding plan for the master plan recommendations, in addition to cost estimates and additional projects associated with the annual maintenance of facilities at PCM.

Table 6-1
Recommended Capital Projects

Figure 6-2 ID	Description	Project Details
A	T-Hangar	14 bay T-hangar & taxilane to E & road/parking
B	T-Hangar	14 bay T-hangar & road
C	T-Hangar	10 bay T-hangar
D	T-Hangars	2 10 bay T-hangars
E	Taxiway	Relocated Taxiway E & pavement demo
F	Tiedown Apron	New apron w/ approximately 50 tiedowns
G	Apron Expansion	To allow for future hangar development
H	Road	Partial road/parking for hangar
I	Fuel Farm	New fuel farm & road & removal of 3 USTs
J	Maintenance Facility	New airport maintenance facility
K	Road	Circulation road between east & west
L	Box Hangars	5 box hangars & road
M	Corporate Hangar	Hangar & road
N	Corporate Hangar	Hangar & road & building demo
O	Corporate Hangar	Hangar & building demo
P	Terminal Expansion	Terminal building & parking lot expansion
Q	Shade to T-Hangar	Add doors & panels to enclose 10 bay shade hangar
R	Bypass Taxiway	Bypass taxiway at Runway 28 end

Source: Michael Baker International, Inc., 2015.

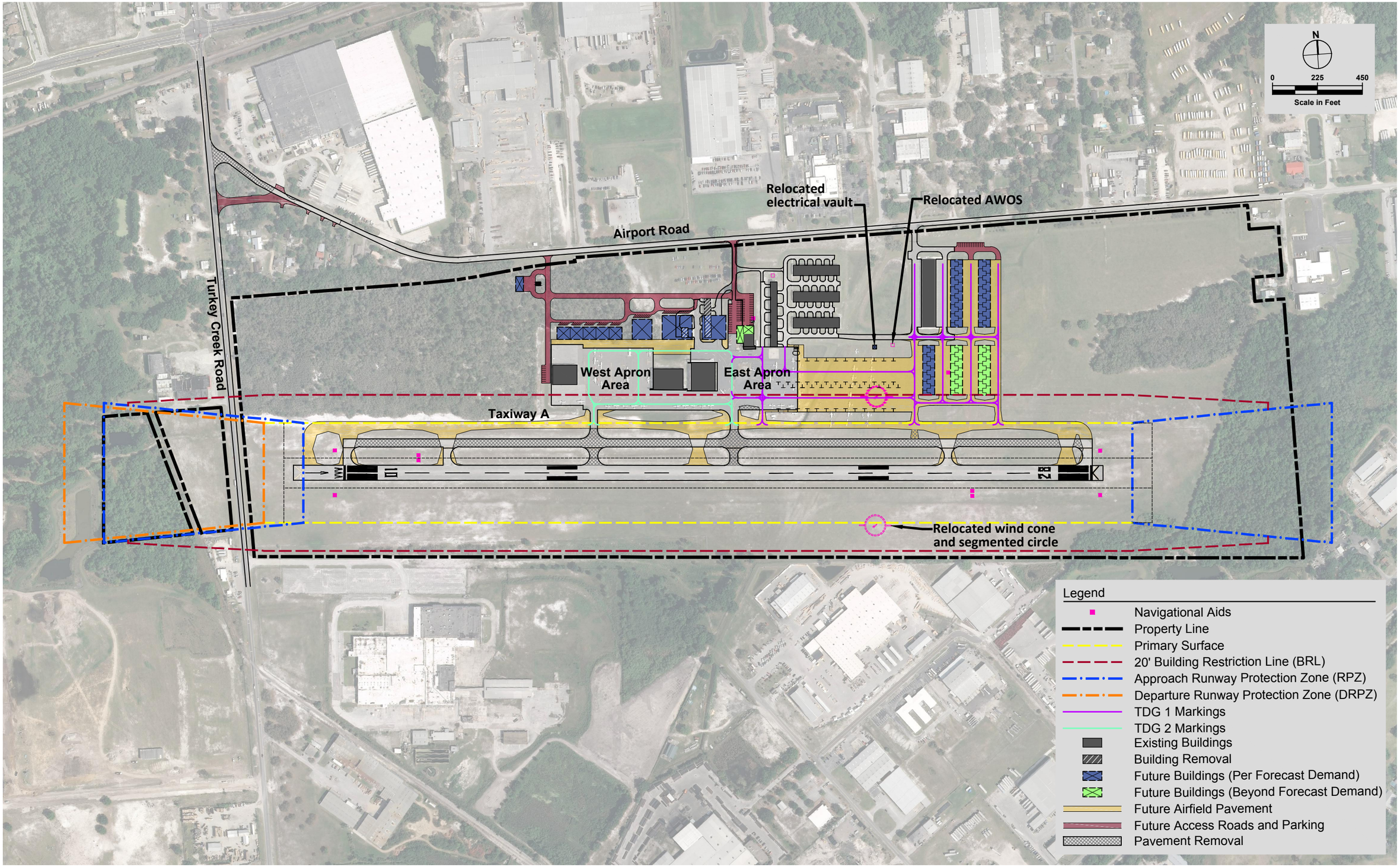


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Figure 6-1 Preferred Alternative

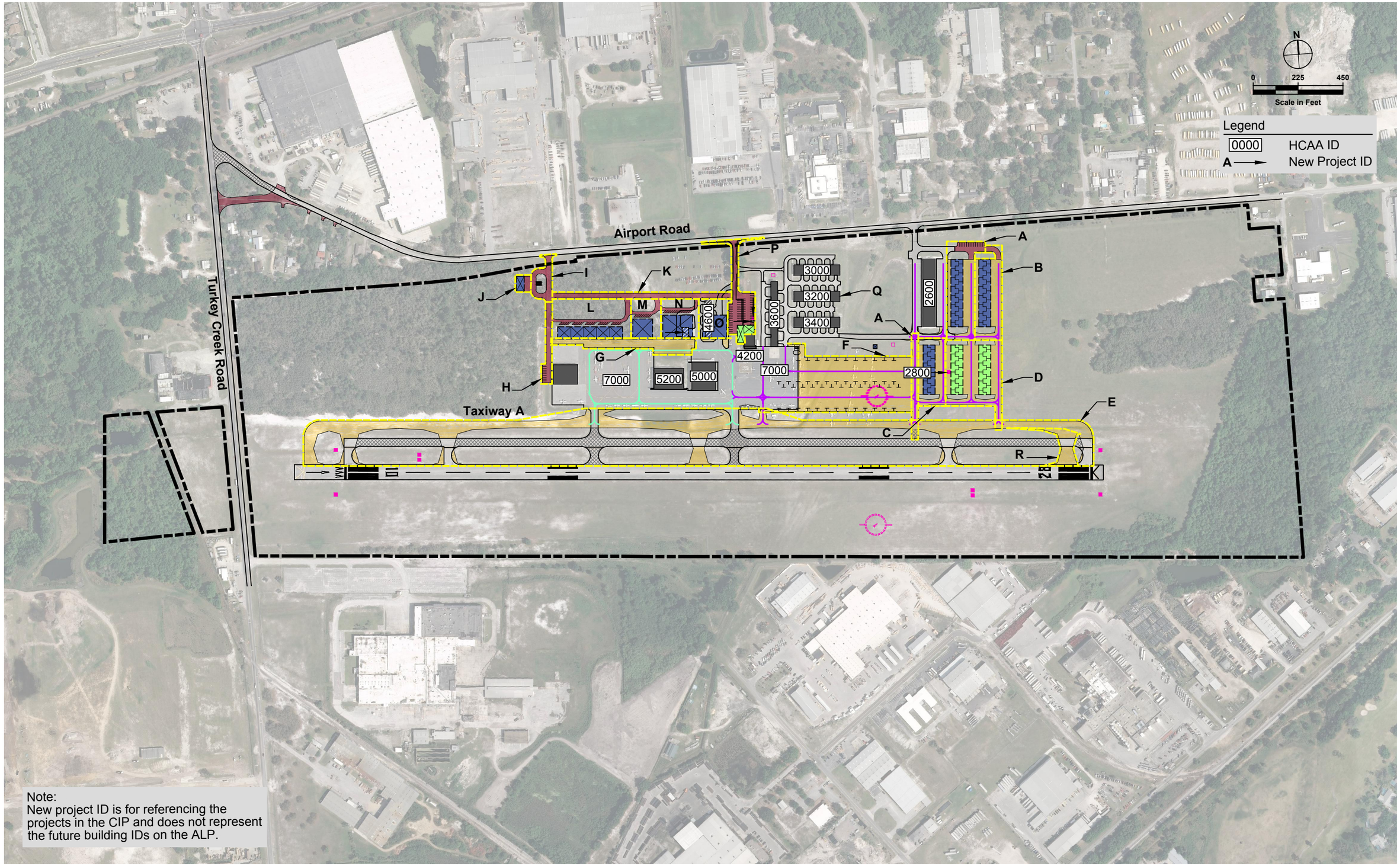

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Figure 6-2 Project Key Map

6.3 Noise Contours & 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. At the time of the noise analysis for PCM, INM was the FAA-accepted program for generating airport noise contours, but the FAA switched to the Aviation Environmental Design Tool (AEDT) program in May 2015. 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 PCM: 1) existing 2013 activity levels, fleet mix, and runway configuration, and 2) forecast 2033 activity levels, fleet mix, and runway configuration. The INM inputs in **Table 6-2** were derived from the fleet mix forecast in Table 3-14 and by reviewing historical flight records to identify aircraft models that commonly operate at PCM. 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 exception of a small portion of the 2033 contour that extends over Turkey Creek Road which is compatible land use. Therefore, the preferred airfield development and anticipated upgrade in the RDC from B-I (small aircraft) to B-II should not result in any significant noise impacts.

Because of the anticipated upgrade in the RDC, the RPZs beyond each end of Runway 10-28 would increase in size and would encompass additional incompatible land uses outside the airport property (refer to Figure 6-3). As discussed earlier in this study, the FAA recommends that airport owners own and control all property within RPZs, and therefore, easements are recommended within those portions of the existing and future RPZs that extend off the airport property. The FAA is slated to release guidance on land use compatibility within RPZs as part of an update to the Land Use Compatibility Advisory Circular (AC), but has released a memorandum named Interim Guidance on Land Uses Within a Runway Protection Zone that describes the information that airport sponsors need to submit to the FAA so that a determination can be made regarding potential incompatible land uses. Therefore, an analysis of the RPZs would be necessary prior to the RDC upgrade in order to determine if the FAA would require some type of mitigation measures for the new incompatible land uses. No other incompatible land use issues would be anticipated from the development of the preferred alternative. It is noted that the airspace surrounding Runway 10-28 is protected in accordance with HCAA Resolution 2010-54, Airport Zoning Regulations.

Table 6-2 Integrated Noise Model (INM) Inputs				
Aircraft Type	**Model**	**INM Code**	**2013 Operations**	**2033 Operations**
Single-Engine Piston	Cessna 182	CNA182	43,342	63,191
Multi-Engine Piston	Beechcraft Baron 58	BEC58P	2,469	3,367
Turboprop	Cessna Conquest	CNA441	54	500
Jet (Small)	Eclipse 500	ECLIPSE500	14	81
Jet (Medium)	Cessna 560XL	CNA560XL	14	81
Helicopter	Bell 407	B407	494	858
Source: Michael Baker International, Inc., 2015.				

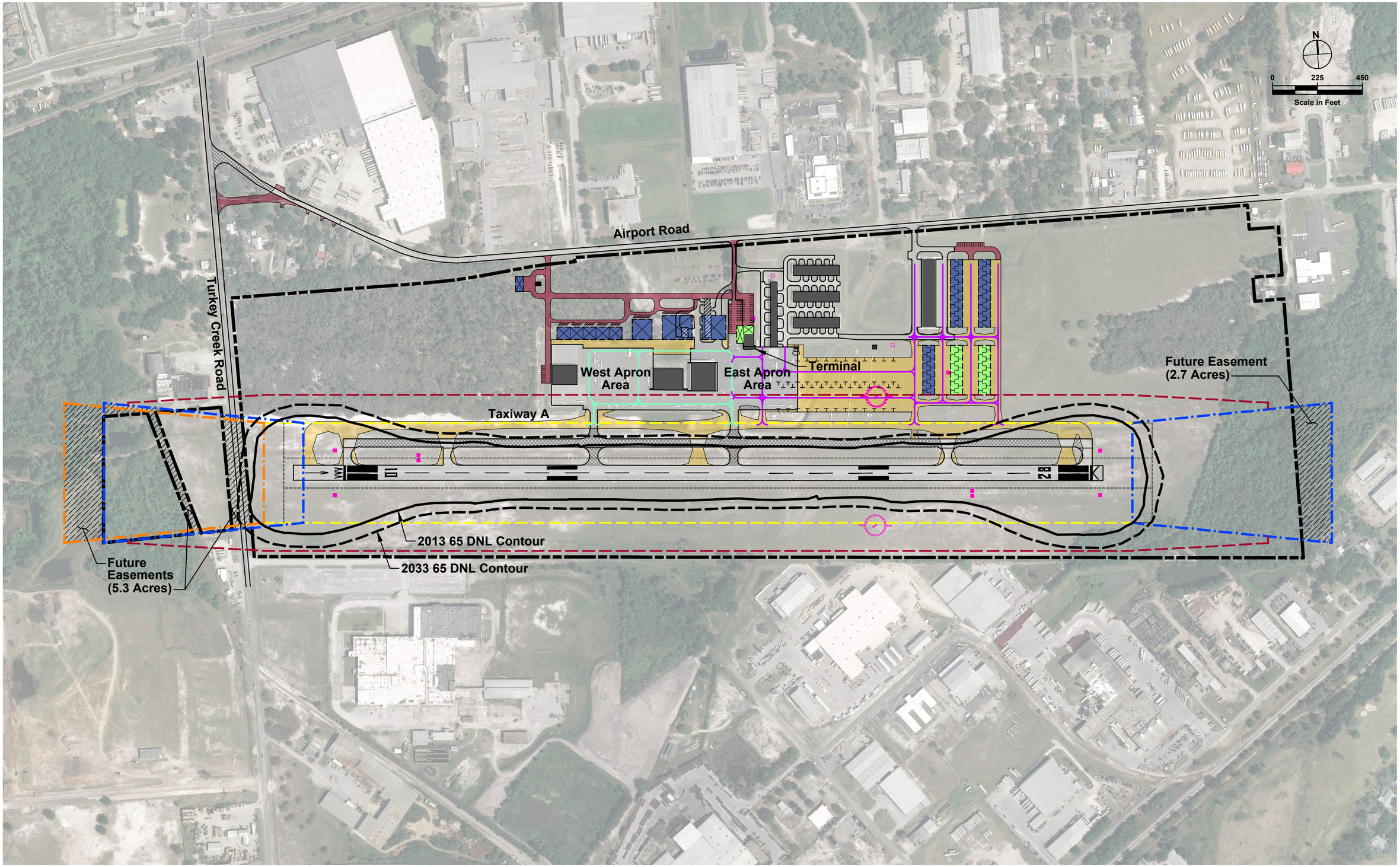

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Figure 6-3 Noise Use & Land Use Compatibility

6.4 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, and identify potential environmental impacts that would be expected as a result of implementation of those projects.

Potential NEPA Documentation

FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, provides the FAA policies and procedures that are implemented to ensure compliance with the requirements of the National Environmental Policy Act (NEPA) for FAA funded projects and lists the type of NEPA documentation required for each project type. Chapter 5 of FAA Order 1050.1F contains the list of the FAA's categorically excluded actions. Categorically excluded actions are those that meet the stated definition in 40 CFR 1508.4. These actions, under ordinary circumstances, do not require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) and do not individually or cumulatively have a significant effect on the environment. Chapter 3 of FAA Order 1050.1F provides a summary of requirements for Environmental Assessments and findings of no significant impact (FONSI). Chapter 3 explains that actions that normally require an EA include those actions that do not fall within the scope of one of FAA's Categorical Exclusions and actions that would normally be categorically excluded but involve at least one extraordinary circumstance. Chapter 3 also provides a list of 16 examples of types of actions that typically require an Environmental Assessment. Furthermore, Chapter 3 of Order 1050.1F states that an EIS is required when an action would result in significant effects to the quality of the human environment.

All of the proposed projects in the Preferred Alternative are anticipated to meet NEPA requirements under a Categorical Exclusion.

Potential Environmental 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:

State Environmental Resource Permit (ERP)

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

1. The project proposes work in, on or over wetlands and surface waters.
2. The project proposes to construct more than 4,000 square feet of impervious or semi-pervious surface.
3. The project proposed has an area that is greater than 1 acre.
4. The project proposes impounding greater than 40-acre feet.
5. The project includes construction of a dam that is greater than 10 feet in height.
6. The project is part of a larger development plan.
7. The project is a modification of an existing permit.

National Pollutant Discharge Elimination System (NPDES) Permit for Construction Activity

An NPDES for Construction permit is required from the Florida Department of Environmental Protection (FDEP) if the project area is greater than 1 acre.

Florida Fish and Wildlife Conservation Commission Gopher Tortoise Conservation Permit

This permit may be required if a project is located in undeveloped uplands or other uplands that contain suitable habitat for gopher tortoises, i.e. contains gopher tortoise burrows.

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 or other Waters of the United States.

Environmental Protection Commission of Hillsborough County (EPC) permit to Perform Miscellaneous Activities in Wetlands (MAIW)

An EPC MAIW Permit is required for land alteration (including vegetation removal), surface water management, or construction in a wetland or surface water.

EPC Installation of Pollutant Storage Tank Systems and Storage Tank Registration

EPC is under contract with FDEP to regulate and inspect storage tanks containing petroleum or acids. Registration with the EPC is required for new fuel storage tanks.

Preferred Alternative Projects

The projects proposed for the preferred alternative were overlaid on a Florida Land Use, Cover and Forms Classification System (FLUCFCS) map and the most recent aerial photograph to determine if the proposed projects would potentially impact developed areas, wetlands, non-forested uplands, or 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; the section of FAA Order 1050.1F that each project falls under; and the regulatory permits that would be anticipated to be required to construct each project are listed in **Table 6-3**.

Projects with Potential Protected Species Impacts

Projects with potential protected species impacts are projects that are located on maintained and undeveloped forested and non-forested areas of the airport that have the potential to contain gopher tortoises and their habitat. The gopher tortoise is a listed species in the State of Florida and impact to this listed species and its habitat requires a Florida Fish and Wildlife Conservation Commission Gopher Tortoise Conservation Permit. Because these projects require land disturbance activities that will modify the existing surface water management system (stormwater drainage system), EPC MAIW permits are required for each project. An ERP permit is required for projects that have more than 4,000 square feet of impervious or semi-pervious surface subject to vehicular traffic, have greater than 9,000 square feet of impervious and semi-pervious area, have more than one acre of project area, are capable of impounding greater than 40 acre-feet of water, are part of

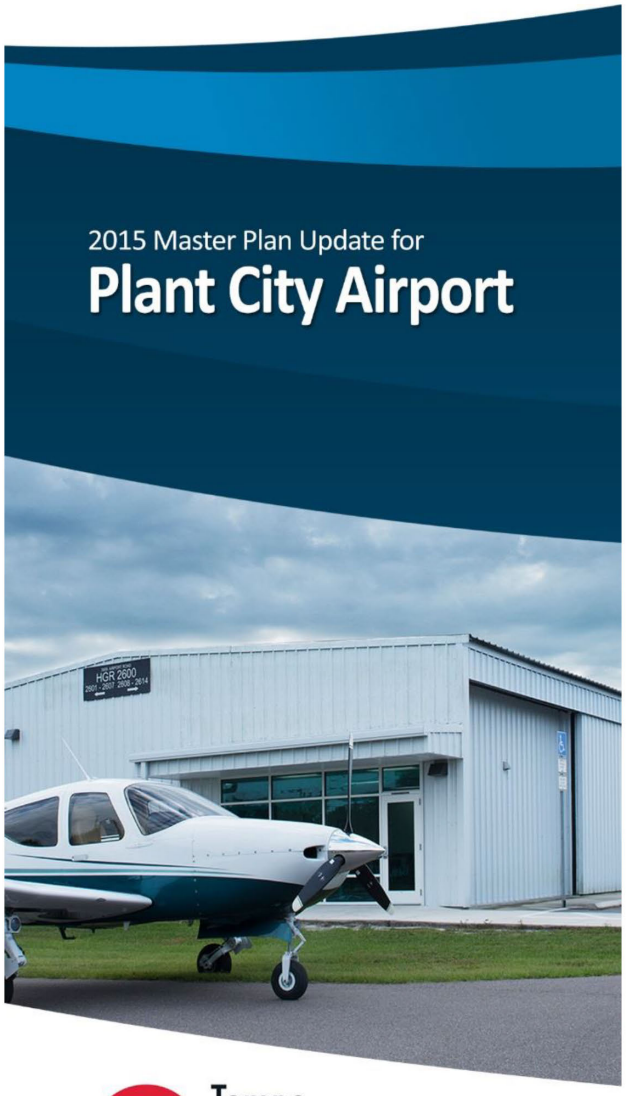
a larger plan of development, or modify an existing permit. Because the projects may be grouped together to form a larger project or may be a modification to an existing system that has an active ERP permit, it was assumed that these projects would require an ERP permit. In addition, the removal of old fuel tanks requires documented tank closures and the installation of new fuel tanks requires registration with EPC. All projects under this category are categorically excluded per FAA Order 1050.1F.

Table 6-3
Preliminary Environmental Review of Preferred Alternative - PCM

Project	Acreage	Noise	Air Quality	Wetland	Upland Forested	Protected Species	NEPA Documentation	1050.1F Reference	State Permit	Federal Permit	County Permit
14-bay T-Hangar & Taxilane to Taxiway E & Road/Parking	1.59	N	N	N	N	Potential	CatEx	5-6.4.f. 5-6.4.e. 5-6.4.a.	ERP, NPDES	None	MAIW
14-bay T-Hangar and Road	1.22	N	N	N	N	Potential	CatEx	5-6.4.f. 5-6.4.a.	ERP, NPDES	None	MAIW
10-bay T-Hangar	0.95	N	N	N	N	Potential	CatEx	5-6.4.f.	None	None	MAIW
2 10-bay T-Hangar Buildings	1.95	N	N	N	N	Potential	CatEx	5-6.4.f.	ERP, NPDES	None	MAIW
Relocated Taxiway E & Pavement Demolition	8.54	N	N	N	N	Potential	CatEx	5-6.4.e.	ERP, NPDES	None	MAIW
New Apron with ~50 Tiedowns	3.68	N	N	N	N	Potential	CatEx	5-6.4.e.	ERP, NPDES	None	MAIW
Apron Expansion for Future Hangar Development	0.83	N	N	N	N	Potential	CatEx	5-6.4.e.	ERP	None	MAIW
Parallel Road/Parking for Future Hangar Development	0.26	N	N	N	Y	Potential	CatEx	5-6.4.a.	ERP	None	MAIW
New Fuel Farm and Road & Removal of 3 USTs	0.26	N	N	N	Y	Potential	CatEx	5-6.4.u. 5-6.4.a.	ERP	None	MAIW
New Airport Maintenance Facility	0.14	N	N	N	Y	Potential	CatEx	5-6.4.f.	None	None	
Circulation Road Between East and West	0.51	N	N	N	Y	Potential		5-6.4.a.	ERP	None	MAIW
5 Box Hangars and Road	0.71	N	N	N	Y	Potential	CatEx	5-6.4.f. 5-6.4.a.	ERP	None	MAIW
Hangar and Road	0.34	N	N	N	Y	Potential	CatEx	5-6.4.f. 5-6.4.a.	ERP	None	MAIW
Hangar, Road and Building Demolition	0.57	N	N	N	N	Potential	CatEx	5-6.4.f. 5-6.4.a. 5-6.4.i.	ERP	None	MAIW
Hangar and Building Demolition	0.47	N	N	N	N	Potential	CatEx	5-6.4.f. 5-6.4.i.	ERP	None	MAIW
Terminal Building and Parking Lot Expansion	0.80	N	N	N	N	Potential	CatEx	5-6.4.h.	ERP	None	MAIW
Bypass Taxiway at Runway 28 End	0.28	N	N	N	N	Potential	CatEx	5-6.4.e	ERP	None	MAIW

Source: Michael Baker International, 2015.

Chapter 7.0 Implementation Plan



Tampa International Airport

Hillsborough County Aviation Authority

7.0 Implementation Plan

7.1 Background

The primary objective of this chapter is to analyze the financial feasibility of developing the projects included in the Capital Improvement Program (CIP) for PCM. The proposed financial plan was developed after evaluating the financial structure of PCM and identifying potential sources of revenue that may be available to fund capital improvement projects. The funding sources were then matched with projects over an estimated phasing schedule to determine the financial implications of undertaking the recommended capital improvements. The implementation plan presented herein describes the staging of proposed improvements and identifies various means of funding the improvements. It is the intent of this implementation plan to provide general financial guidance to HCAA for making policy decisions regarding the recommended development of the airport over the 20-year planning period. The information in this chapter presents a preliminary review of the CIP and financial structure of PCM. The business plan that was prepared in conjunction with this study provides more detailed recommendations for HCAA to consider to capture additional revenues from the operation and development of PCM and also identifies market opportunities.

7.2 Federal and State Funding Eligibility

The CIP identifies recommended projects and associated cost estimates for the 20-year planning period at PCM. FAA Order 5100.38C, Airport Improvement Program (AIP) Handbook, sets forth the official policy and procedures to be used in the administration of AIP grants. **Table 7-1** lists typical examples of eligible and ineligible AIP projects. Projects eligible for AIP funding at PCM may receive up to 90 percent of the project cost to be covered by the FAA with the Florida Department of Transportation (FDOT) and HCAA responsible for five percent each. HCAA receives $450,000 in entitlement funds from the FAA each year, which are spent on projects at PCM and Tampa Executive Airport (VDF). Those funds are mostly used for safety, pavement, lighting, and planning/design/environmental projects. If the airport is conducting a larger project that is more expensive, the FAA may provide additional discretionary funding.

The FDOT also has special funding programs that typically cover up to either 80 percent of the project cost for non-revenue generating projects or 50 percent of the project cost for revenue-generating projects. It is noted that these are typical funding shares, but the shares at PCM tend to vary widely based on the individual project, local commitment to conduct projects, and funding availability. Therefore, the shares in the airport's CIP do not necessarily follow a standard funding scenario.

Table 7-1 Examples of Eligible vs. Ineligible AIP Projects	
Eligible Projects	**Ineligible Projects**
Runway construction/rehabilitation	Maintenance equipment and vehicles
Taxiway construction/rehabilitation	Office and office equipment
Apron construction/rehabilitation	Fuel farms*
Airfield lighting	Landscaping
Airfield signage	Artworks
Airfield drainage	Aircraft hangars*
Land acquisition	Industrial park development
Weather observation stations (AWOS)	Marketing plans
NAVAIDs such as REILs and PAPIs	Training
Planning studies	Improvements for commercial enterprises
Environmental studies	Maintenance or repairs of buildings
Safety area improvements	
Airport layout plans (ALPs)	
Access roads only located on airport property	
Removing, lowering, moving, marking, and lighting hazards	
Glycol Recovery Trucks/Glycol Vacuum Trucks**	

Source: FAA AIP Overview, http://www.faa.gov/airports/aip/overview/, accessed September 4, 2015.
*May be eligible. Contact your local Airport District or Regional Office for more information.
**To be eligible, the vehicles must be owned and operated by the airport and meet the Buy American Preference specified in the AIP grant. Contact your local Airport District or Regional Office for more information.

In addition, the following must also apply for FAA to consider a project for AIP funding:
The project sponsorship requirements have been met.
The project is reasonably consistent with the plans of planning agencies for the development of the area in which the airport is located.
Sufficient funds are available for the portion of the project not paid for by the Federal Government.
The project will be completed without undue delay.
The airport location is included in the current version of the NPIAS.
The project involves more than $25,000 in AIP funds.
The project is depicted on a current airport layout plan approved by FAA.

7.3 Project Costs & Phasing

Project Costs

As shown in **Table 7-2**, a CIP and phasing plan were identified for the 20-year planning period that includes a mixture of the master plan recommendations and HCAA's detailed maintenance program. The CIP planning period is defined as 2015 through 2034. Each project within the CIP was assigned to a particular planning period or development phase (i.e., Phase 1, Phase 2, or Phase 3). The Phase 1 time period extends from 2015 to 2019, the Phase 2 period extends from 2020 to 2024, and the Phase 3 period spans the final 10 year timeframe from 2025 through 2034. A detailed breakdown of costs and phasing was produced for Phase 1 projects; however, the Phase 2 and 3 projects are listed in a more generalized order that should remain flexible. Although this study charts a course for planned development, it must be emphasized that the planning and development of an airport is a continuous process. The rehabilitation of existing facilities and development of new facilities must be predicated on sustained demand, which justifies the costs of improvements. As aviation demand may change at PCM and also specific project requirements and funding mechanisms may change, HCAA should consider the impact on the CIP and the potential need to modify certain elements of the Airport Layout Plan (ALP). For example, although HCAA has paid for hangar construction in the past, the current policy is only to pay for the infrastructure required to access new hangars and to have the actual facility to be privately paid for and constructed, which is why the largest share for future hangar developments is shown in the private column in Table 7-2. Because such policy changes tend to occur over time, they may have the impact not only on who is funding projects, but also on several of the airport's policy documents (e.g., minimum standards).

The estimated cost for each of the recommended airport improvements reflects a preliminary opinion of the probable implementation cost for the project. In addition to the estimated construction costs, anticipated fees for design, inspection, permitting, surveying, testing and administration were also included in the overall estimate where applicable. Each project cost is presented in the base year dollar value and therefore does not reflect unanticipated increases in labor and material costs or changes in environmental legislation. This is done for master planning purposes because the dates of project are generally identified in phases as opposed to specific years. In addition, a contingency was added to the overall costs of some projects to account for unforeseen variables. A detailed environmental analysis may be required to recognize the full scope of environmental and budgetary impacts associated with the proposed development. Some projects may also require mitigation measures to offset impacts to environmentally sensitive areas whereas others may require some level of environmental remediation based on conditions that may or may not have been identified as part of this study. For those reasons, it is important to note that the estimates shown are accurate based on the costs of labor, materials, and anticipated impacts calculated at the time of this writing. As such, it is important to revisit and update costs regularly to ensure that an accurate CIP is maintained.

Project Phasing

Since the airport's actual versus forecast activity levels may vary, it is important for the staging of proposed improvement projects remain sensitive to such variations. Some projects may take precedence over others, depending on their level of priority or due to the availability of funding. Thus, a list of prioritized improvements was established based upon the urgency of need, ease of

implementation, logic of project sequencing, and input from HCAA staff. The objective was to establish an efficient order for project development and implementation that meets or exceeds the forecasted aviation demands at PCM while meeting the needs expressed by HCAA staff and airport stakeholders.

The total cost of the 20-year CIP is estimated at $9,753,780 million in FAA investment (a combination of entitlement and discretionary funds), $3,268,278 million in state investment, $12,775,419 million in HCAA investment, and $23,274,470 million in private investment. Those figures include all studies, infrastructure improvements, and proposed construction costs necessary to achieve the developments shown in the CIP. The CIP for each period presents the improvements slated for implementation during the period, but it does not assume how financially feasible it will be for HCAA to undertake the projects or whether or not funding will be available. Table 7-2 also presents the maintenance intervals for projects.

The funding for many of the projects in Phase 1 has been pre-determined between HCAA, FAA, and FDOT, but can be subject to change on a case-by-case and annual basis. The Phase 2 projects include items that will be necessary based on the forecast demand and to provide anticipated maintenance activities. Many of the Phase 3 projects include routine maintenance and higher price private developments that would likely only be implemented as required by demand at the time. Unlike previous CIPs that have been developed for PCM, this CIP relies heavily on private investment to construct future hangars and also attempts to maximize the ability to obtain additional funds from the FAA and FDOT in the later phases (i.e., illustrates the maximum funding shares that could be received for eligible projects). This will allow HCAA to know the level of funding that may be available for eligible projects throughout the duration of the planning period assuming current authorization levels from the FAA and FDOT. The overall goal was to reduce HCAA's maintenance and development costs by taking advantage of potential funding opportunities and encouraging private facility development.

Consumer Price Index (CPI) Adjustment

The improvements shown in previous tables illustrate the facilities needed at PCM to meet the forecast demands through the end of the 20-year planning period and likely beyond as well. The cost estimates were determined in year 2015 dollars, so as time goes by the values should be reviewed to determine if any project cost adjustments have occurred. Although the costs for construction projects is highly variable due to the fluctuating cost of materials (e.g., asphalt, steel, and energy production), a reasonable estimate of future costs can be calculated by adjusting the 2015 costs by the appropriate Consumer Price Index (CPI) inflation factor. The Bureau of Labor Statistics (BLS) provides an online CPI inflation calculator that may be used to compare historical costs to present day cost and is available on this website (http://www.bls.gov/data/inflation_calculator.htm).

Table 7-2
Combined Capital Improvement Program for PCM (2015-2034+)

Phase	Facility	Year (if Assigned)	Figure 6-2 ID	Project Title	Estimated Cost	AIP Grants	FDOT Grants	HCAA Funds	Private Funds	AIP %	FDOT %	HCAA %	Private %	Maintenance Interval
1	5200	2015		Hangar 5200 Clean & Paint	$216,400	$150,000	$53,100	$13,300	$0	69.32%	24.54%	6.15%	0.00%	10
1	Trees	2016		RPZ & Approach Areas - Aerial & Tree Trimming	$209,500	$0	$26,300	$183,200	$0	0.00%	12.55%	87.45%	0.00%	3
1	AWOS	2016		AWOS Replacement	$282,800	$0	$100,000	$182,800	$0	0.00%	35.36%	64.64%	0.00%	20
1	Fence	2017		Perimeter Fence Replacement	$194,400	$150,000	$0	$44,400	$0	77.16%	0.00%	22.84%	0.00%	20
1	4600	2017		T-Hangar 4600 Clean & Paint	$114,200	$0	$91,400	$22,800	$0	0.00%	80.04%	19.96%	0.00%	10
1	5600	2017		Bulk Hangar 5600 Clean & Paint	$105,500	$94,900	$0	$10,600	$0	89.95%	0.00%	10.05%	0.00%	10
1	Fuel	2018		Fueling System Refurbishment	$40,200	$0	$0	$40,200	$0	0.00%	0.00%	100.00%	0.00%	3
1	Trees	2019		RPZ & Approach Areas - Aerial & Tree Trimming	$200,000	$0	$160,000	$40,000	$0	0.00%	80.00%	20.00%	0.00%	3
1	4200	2019		Terminal 4200 Rehab	$203,600	$0	$0	$203,600	$0	0.00%	0.00%	100.00%	0.00%	5
1	3200	2019		Shade Hangar 3200 Clean & Paint	$132,800	$0	$0	$132,800	$0	0.00%	0.00%	100.00%	0.00%	10
1	Maintenance Facility	2019	H, I, J	GA Maintenance Facility Modernization	$681,252	$0	$135,975	$545,277	$0	0.00%	19.96%	80.04%	0.00%	10
2	Taxilane	2020	A	Taxilane & Infrastructure	$412,529	$0	$0	$412,529	$0	0.00%	0.00%	100.00%	0.00%	20
2	2400	2020	A	T-Hangar Building 2400 Construction	$2,583,665	$0	$0	$0	$2,583,665	0.00%	0.00%	0.00%	100.00%	10
2	Terminal Apron	2020	T	Terminal Apron Overlay	$1,238,900	$450,000	$0	$788,900	$0	36.32%	0.00%	63.68%	0.00%	10
2	Taxilanes	2020		Taxilane Overlay	$546,000	$0	$0	$546,000	$0	0.00%	0.00%	100.00%	0.00%	10
2	3400	2020		T-Hangar 3400 Panels	$221,700	$0	$0	$221,700	$0	0.00%	0.00%	100.00%	0.00%	10
2	Fuel	2021	I	New Fuel Farm Construction	$421,338	$0	$337,070	$84,268	$0	0.00%	80.00%	20.00%	0.00%	15
2	Trees	2022		RPZ & Approach Areas - Aerial & Tree Trimming	$200,000	$0	$160,000	$40,000	$0	0.00%	80.00%	20.00%	0.00%	3
2	5000	2022		Maintenance Hangar 5000 Panels	$142,300	$0	$0	$142,300	$0	0.00%	0.00%	100.00%	0.00%	10
2	REIL	2022		REIL Replacement	$184,800	$0	$0	$184,800	$0	0.00%	0.00%	100.00%	0.00%	20
2	West Ramp	2022		West Ramp Sealcoat	$252,950	$0	$0	$252,950	$0	0.00%	0.00%	100.00%	0.00%	10
2	Access Roads	2022		Access Roads Sealcoat	$252,950	$0	$0	$252,950	$0	0.00%	0.00%	100.00%	0.00%	10
2	2600	2022		T-Hangar 2600 Clean & Paint	$188,700	$0	$0	$188,700	$0	0.00%	0.00%	100.00%	0.00%	10
2	Taxiway A	2023	E, R	Taxiway E Relocation & Bypass Connectors	$2,078,844	$1,870,960	$103,942	$103,942	$0	90.00%	5.00%	5.00%	0.00%	10
2	Runway 10-28	2023		Runway 10-28 Overlay	$1,921,800	$1,729,600	$0	$192,200	$0	90.00%	0.00%	10.00%	0.00%	10
2	Fuel	2024		Fueling System Refurbishment	$60,000	$0	$0	$60,000	$0	0.00%	0.00%	100.00%	0.00%	3
2	4200	2024		Terminal 4200 Rehab	$150,000	$0	$0	$150,000	$0	0.00%	0.00%	100.00%	0.00%	5
2	3600	2024		T-Hangar 3600 Clean & Paint	$172,200	$137,700	$0	$34,500	$0	79.97%	0.00%	20.03%	0.00%	10
2	3000	2024		T-Hangar 3000 Panels	$258,300	$162,300	$0	$96,000	$0	62.83%	0.00%	37.17%	0.00%	10
2	Taxilanes	2024		Taxilane Overlay	$3,092,600	$0	$0	$3,092,600	$0	0.00%	0.00%	100.00%	0.00%	10
2	Apron	MPU	G	Apron Expansion to Accommodate Corporate Hangars	$300,680	$270,612	$15,034	$15,034	$0	90.00%	5.00%	5.00%	0.00%	10
2	Hangars	MPU	L	5 Box Hangars on the Back Side of the Apron	$3,269,418	$0	$0	$91,355	$3,178,063	0.00%	0.00%	2.79%	97.21%	10
2	Road	MPU	K	Circulation Road Between the East & West	$197,103	$0	$157,682	$39,421	$0	0.00%	80.00%	20.00%	0.00%	10
2	Hangar	MPU	M	Corporate Hangar on the Back Side of the Apron (Westernmost)	$2,151,313	$0	$0	$42,562	$2,108,751	0.00%	0.00%	1.98%	98.02%	10
2	Generator	MPU		Generator	$30,000	$0	$0	$30,000	$0	0.00%	0.00%	100.00%	0.00%	15
2	Apron	MPU	F	New Tiedown Apron	$1,327,186	$1,194,467	$66,359	$66,359	$0	90.00%	5.00%	5.00%	0.00%	10
2	T-Hangar	MPU	B	14-Unit T-Hangar	$2,943,644	$0	$0	$288,209	$2,655,435	0.00%	0.00%	9.79%	90.21%	10
3	5200	2025		Bulk Hangar 5200 Clean & Paint	$214,100	$150,000	$0	$64,100	$0	70.06%	0.00%	29.94%	0.00%	10
3	Trees	2025		RPZ & Approach Areas - Aerial & Tree Trimming	$200,000	$0	$160,000	$40,000	$0	0.00%	80.00%	20.00%	0.00%	3
3	PAPI	2026		PAPI Replacement	$201,100	$180,900	$0	$20,200	$0	89.96%	0.00%	10.04%	0.00%	20
3	5600	2027		Bulk Hangar 5600 Panels	$223,000	$155,100	$0	$67,900	$0	69.55%	0.00%	30.45%	0.00%	10
3	Fuel	2027		Fueling System Refurbishment	$60,000	$0	$0	$60,000	$0	0.00%	0.00%	100.00%	0.00%	3
3	Wash Rack	2027		Aircraft Wash Rack Rehab	$283,000	$0	$186,000	$97,000	$0	0.00%	65.72%	34.28%	0.00%	20
3	Trees	2028		RPZ & Approach Areas - Aerial & Tree Trimming	$200,000	$0	$160,000	$40,000	$0	0.00%	80.00%	20.00%	0.00%	3
3	Signs	2028		Monument Sign Replacement	$135,400	$0	$0	$135,400	$0	0.00%	0.00%	100.00%	0.00%	20
3	4200	2029		Terminal 4200 Rehab	$150,000	$0	$0	$150,000	$0	0.00%	0.00%	100.00%	0.00%	5
3	3200	2029	Q	Shade Hangar 3200 Enclosure	$314,526	$0	$0	$314,526	$0	0.00%	0.00%	100.00%	0.00%	10
3	Maintenance Facility	2029		Airport Maintenance Facility Clean & Paint	$125,000	$0	$0	$125,000	$0	0.00%	0.00%	100.00%	0.00%	10
3	Fuel	2030		Fueling System Refurbishment	$60,000	$0	$0	$60,000	$0	0.00%	0.00%	100.00%	0.00%	3
3	Terminal Apron	2030		Terminal Apron Sealcoat	$299,634	$269,671	$14,982	$14,982	$0	90.00%	5.00%	5.00%	0.00%	10
3	Taxilanes	2030		Taxilane Sealcoat	$250,000	$225,000	$12,500	$12,500	$0	90.00%	5.00%	5.00%	0.00%	10
3	3400	2030		T-Hangar 3400 Clean & Paint	$216,490	$0	$0	$216,490	$0	0.00%	0.00%	100.00%	0.00%	10
3	Trees	2031		RPZ & Approach Areas - Aerial & Tree Trimming	$200,000	$0	$160,000	$40,000	$0	0.00%	80.00%	20.00%	0.00%	3
3	4200	2032	P	Terminal 4200 Expansion	$2,051,136	$0	$1,025,568	$1,025,568	$0	0.00%	50.00%	50.00%	0.00%	5

Table 7-2
Combined Capital Improvement Program for PCM (2015-2034+)

Phase	Facility	Year (if Assigned)	Figure 6-2 ID	Project Title	Estimated Cost	AIP Grants	FDOT Grants	HCAA Funds	Private Funds	AIP %	FDOT %	HCAA %	Private %	Maintenance Interval
3	5000	2032		Maintenance Hangar 5000 Clean & Paint	$125,000	$0	$0	$125,000	$0	0.00%	0.00%	100.00%	0.00%	10
3	West Ramp	2032		West Ramp Overlay	$1,527,800	$1,375,020	$76,390	$76,390	$0	90.00%	5.00%	5.00%	0.00%	10
3	2600	2032		T-Hangar 2600 Panels	$350,000	$0	$0	$350,000	$0	0.00%	0.00%	100.00%	0.00%	10
3	Taxiway A	2033		Taxiway A Sealcoat	$500,000	$450,000	$25,000	$25,000	$0	90.00%	5.00%	5.00%	0.00%	10
3	Fuel	2033		Fueling System Refurbishment	$60,000	$0	$0	$60,000	$0	0.00%	0.00%	100.00%	0.00%	3
3	Runway 10-28	2033		Runway 10-28 Sealcoat	$469,500	$422,550	$23,475	$23,475	$0	90.00%	5.00%	5.00%	0.00%	10
3	Hangar	MPU	N	Corporate Hangar on the Back Side of the Apron (Middle)	$3,255,916	$0	$0	$52,597	$3,203,319	0.00%	0.00%	1.62%	98.38%	10
3	Hangar	MPU	O	Corporate Hangar on the Back Side of the Apron (Easternmost)	$2,737,018	$0	$0	$27,865	$2,709,153	0.00%	0.00%	1.02%	98.98%	10
3	Planning	MPU		Master Plan Update	$350,000	$315,000	$17,500	$17,500	$0	90.00%	5.00%	5.00%	0.00%	10
3	T-Hangar	MPU	C	10 Unit T-Hangar	$2,189,415	$0	$0	$230,927	$1,958,488	0.00%	0.00%	10.55%	89.45%	10
3	T-Hangar	MPU	D	10 Unit T-Hangar	$2,672,170	$0	$0	$233,372	$2,438,798	0.00%	0.00%	8.73%	91.27%	10
3	T-Hangar	MPU	D	10 Unit T-Hangar	$2,672,170	$0	$0	$233,372	$2,438,798	0.00%	0.00%	8.73%	91.27%	10
				Total All	**$49,071,947**	**$9,753,780**	**$3,268,278**	**$12,775,419**	**$23,274,470**					
				Total Phase 1 (2015-2019)	$2,380,652	$394,900	$566,775	$1,418,977	$0					
				Total Phase 2 (2020-2024)	$24,598,920	$5,815,639	$840,088	$7,417,279	$10,525,914					
				Total Phase 3 (2034+)	$22,092,375	$3,543,241	$1,861,415	$3,939,164	$12,748,556					
				Previous HCAA CIP Total (Dated 6-10-2015)	$32,669,400	$4,410,500	$4,126,600	$24,132,300	$0					
				Previous HCAA CIP Horizon 1	$4,516,000	$394,900	$339,500	$3,781,600	$0					
				Previous HCAA CIP Horizon 2	$17,693,000	$2,629,600	$3,601,100	$11,462,300	$0					
				Previous HCAA CIP Horizon 3	$10,460,400	$1,386,000	$186,000	$8,888,400	$0					
				Difference Total	50.21%	121.15%	-20.80%	-47.06%						
				Difference Horizon 1 (Previous to New)	-47.28%	0.00%	66.94%	-62.48%						
				Difference Horizon 2 (Previous to New)	39.03%	121.16%	-76.67%	-35.29%						
				Difference Horizon 3 (Previous to New)	111.20%	155.65%	900.76%	-55.68%						
				Difference Total (New to Previous)	$16,402,547	$5,343,280	-$858,322	-$11,356,881	$23,274,470					
				Difference Horizon 1 (New to Previous)	-$2,135,348	$0	$227,275	-$2,362,623	$0					
				Difference Horizon 2 (New to Previous)	$6,905,920	$3,186,039	-$2,761,012	-$4,045,021	$10,525,914					
				Difference Horizon 3 (New to Previous)	$11,631,975	$2,157,241	$1,675,415	-$4,949,236	$12,748,556					

Source: Michael Baker International, Inc., 2015.

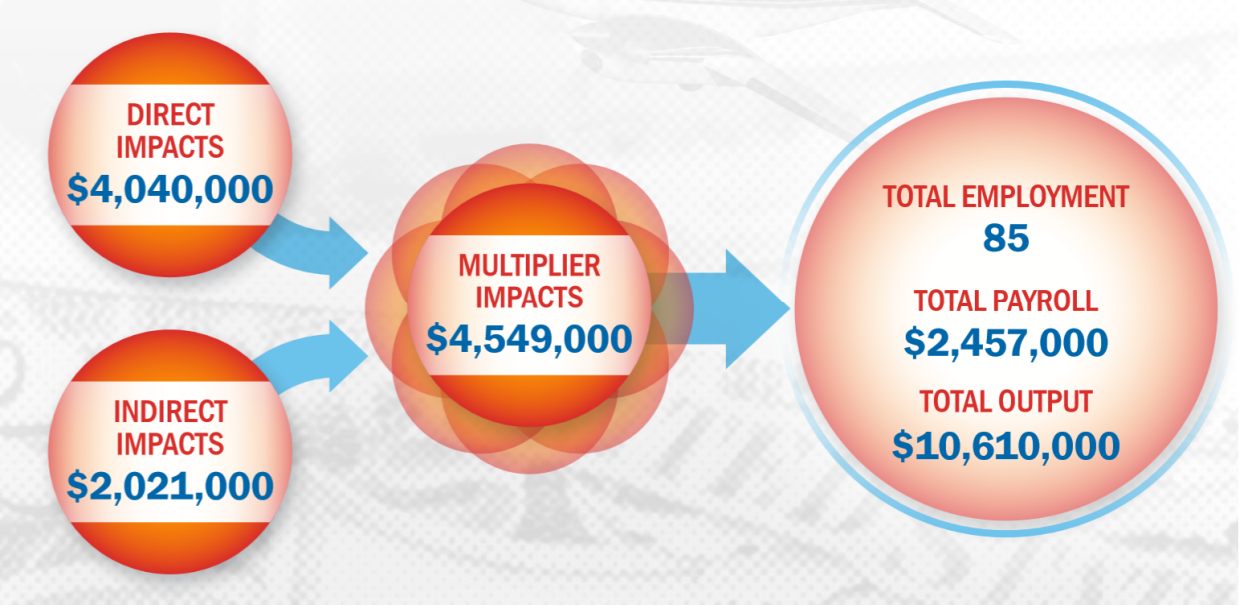
7.4 Airport Financial Structure

This section presents the historical revenues and expenses that were generated from HCAA's operation of PCM, as well as a forecast of revenues and expenses and a projection of annual cash outlays that will be required by HCAA after capital improvements are accounted for. The information in this chapter represents baseline conditions only and does not include strategies for increasing the revenues of PCM or decreasing HCAA's annual investment into the airport. Such strategies are considered in the business plan that was conducted in conjunction with this study.

Historical & Forecast Revenues & Expenses

In the most recent fiscal year ending September 30, 2014, PCM generated $135,894 in revenues for PCM. Principle sources of revenue include space rental, reimbursements for utilities, and a fuel flowage fee of $0.05 per gallon. During the same fiscal year, HCAA expenses were $294,200, which resulted in a gross profit of ($158,306). That negative gross profit is prior to the consideration of HCAA's annual contributions for capital improvements, which as previously shown in Table 7-2, can be several hundred thousand dollars to several million dollars per year. Assuming a status quo scenario in which no major policy or revenue-enhancing changes are implemented, PCM would likely continue to operate in a deficit between 2015 and 2019 (refer to **Table 7-3**). It is not uncommon for general aviation airports to operate in a deficit and many airport sponsors are willing to contribute funds for their operations and maintenance because of their importance to the overall economy and aviation system. For example, the August 2014 Florida Statewide Aviation Economic Impact Study Update indicates that PCM results in a total annual employment of 85 positions and a total annual output of $10,610,000 (refer to **Figure 7-1**). Therefore, the airport is an asset to the local economy that produces several hard-to-quantify benefits that are not discernable from a profit and loss statement. However, unlike many airport sponsors which are taxation authorities (e.g., cities and counties), HCAA does not collect any taxes associated with the total output of the airport (from businesses that are created because of the airport, sales of goods and services, employment, and other property development). HCAA must therefore allocate funds that are generated from revenues at Tampa International Airport (TPA) to cover losses and pay for capital improvements at PCM.

Figure 7-1
Annual Economic Impact of PCM



Source: FDOT Florida Statewide Aviation Economic Impact Study Update, August 2014.

Annual Capital Outlays

The bottom rows of Table 7-3 identify HCAA's annual cost for capital projects and the total capital outlays that can be expected between 2015 and 2019. After operating costs and capital costs are accounted for, HCAA can be expected to outlay between $172,038 and $1,093,552 per year during that time. Opportunities for enhancing revenues and reducing expenses are presented in the business plan.

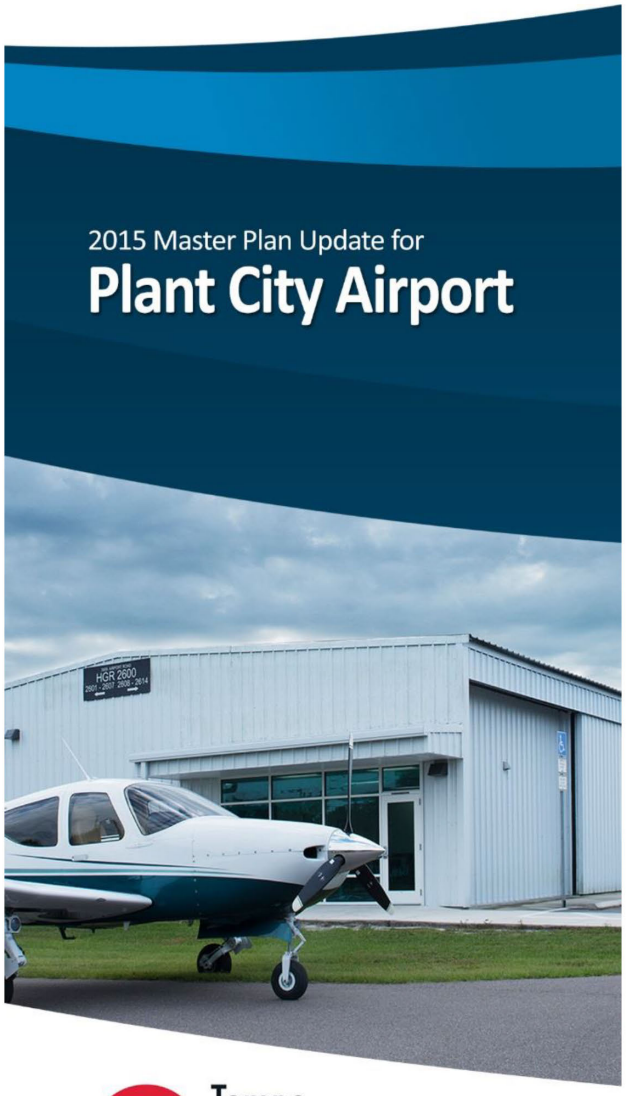
7.5 Summary

As presented in Table 7-2, the total cost of the airport's CIP is anticipated to be $49,071,947 between 2015 and 2034, with HCAA contributions totaling $12,775,419 during that time. It must be reiterated that the proposed CIP, including the sequence of project development and anticipated funding, is preliminary in nature and may change based on a variety of factors; however, the projects in Phase 1 are more likely to occur in the order shown because of prior funding arrangements with FAA and FDOT. Unlike previous CIPs that have been developed for PCM, this CIP shows all future hangar construction as being privately funded and subsequently may require some policy changes on behalf of HCAA to make that possible and affordable for prospective developers. Furthermore, this CIP attempts to maximize the funding that may be available from FAA and FDOT in future years, thereby reducing the outlay that may be required by HCAA. The overall goal was to capitalize on other funding and development opportunities in an effort to make the airport more financially self-sustainable. The business plan explores these concepts in greater detail.

Table 7-3 Historical & Forecast Revenues & Expenses for PCM															
Item	**Actual Revenue & Expenses for Fiscal Year Ending September 30**					**Projected Revenue & Expenses for Fiscal Year Ending September 30**					**Average Annual Growth**		**CPI**		**Operations**
	2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2010-2014**	**2014-2019**	**2015**	**2016-2019**	**Growth**
Operating Revenues															
Fuel Flowage	$4,261	$4,742	$4,211	$4,342	$3,195	$3,247	$3,300	$3,353	$3,407	$3,463	-6.9%	1.6%	NA	NA	1.6%
FBO Concessions	$121,940	$119,628	$140,198	$122,278	$125,162	$125,538	$128,049	$130,610	$133,222	$135,886	0.7%	1.7%	0.3%	2.0%	
Other GA Revenue	$5,431	$5,732	$5,471	$6,640	$7,537	$7,560	$7,711	$7,865	$8,022	$8,183	8.5%	1.7%	0.3%	2.0%	
Total Operating Revenue	**$131,632**	**$130,103**	**$149,879**	**$133,260**	**$135,895**	**$136,345**	**$139,059**	**$141,828**	**$144,652**	**$147,532**	**0.8%**	**1.7%**			
Direct Operating Expenses															
Salaries & Benefits	$108,027	$96,392	$85,603	$103,453	$119,784	$120,143	$122,546	$124,997	$127,497	$130,047	2.6%	1.7%	0.3%	2.0%	
Contracted Maintenance	$38,875	$62,382	$48,850	$64,549	$57,909	$58,082	$59,244	$60,429	$61,638	$62,870	10.5%	1.7%	0.3%	2.0%	
Supplies & Materials	$19,623	$18,735	$19,605	$21,163	$35,634	$35,741	$36,456	$37,185	$37,929	$38,687	16.1%	1.7%	0.3%	2.0%	
Utilities	$51,491	$51,341	$59,708	$58,995	$49,924	$50,074	$51,075	$52,097	$53,139	$54,201	-0.8%	1.7%	0.3%	2.0%	
Insurance	$9,235	$9,776	$9,491	$10,700	$10,100	$10,130	$10,333	$10,540	$10,750	$10,965	2.3%	1.7%	0.3%	2.0%	
Other Expenses	$3,998	$5,129	$5,976	$4,377	$4,117	$4,129	$4,212	$4,296	$4,382	$4,469	0.7%	1.7%	0.3%	2.0%	
Total Direct Operating Expenses	**$231,250**	**$243,755**	**$229,233**	**$263,238**	**$277,467**	**$278,300**	**$283,866**	**$289,543**	**$295,334**	**$301,241**	**4.7%**	**1.7%**	**0.3%**	**2.0%**	
Administration Expense Allocation	**$12,806**	**$13,444**	**$15,361**	**$14,946**	**$16,733**	**$16,783**	**$17,119**	**$17,461**	**$17,810**	**$18,167**	**6.9%**	**1.7%**	**0.3%**	**2.0%**	
Gross Profit (Before Capital Outlays)															
Gross Profit Before Capital Outlays	**($112,424)**	**($127,097)**	**($94,715)**	**($144,924)**	**($158,306)**	**($158,738)**	**($161,925)**	**($165,176)**	**($168,493)**	**($171,875)**	**-8.9%**	**1.7%**			
Total Capital Outlays															
Capital Outlays	**Only Forecast Information is Provided**					**$13,300**	**$366,000**	**$77,800**	**$40,200**	**$921,677**					
Gross Profit After Capital Outlays						**($172,038)**	**($527,925)**	**($242,976)**	**($208,693)**	**($1,093,552)**					

Source: PCM Business Plan.

Chapter 8.0
Airport Layout Plan



Tampa International Airport

Hillsborough County Aviation Authority

8.0 Airport Layout Plan

8.1 Introduction

The purpose of an approved Airport Layout Plan (ALP) is to serve as the blueprint for future airport development. One condition of accepting and utilizing grant funding for airport improvement projects is to maintain an updated ALP. For the Plant City Airport (PCM), the updated development recommendations presented in this study are pictorially summarized in the ALP drawing set and include the preferred concepts for airfield development, landside facility development, and other reserved areas for non-aviation use. The ALP drawing set represents a scaled, graphic presentation of the airport's 20-year development program, thereby providing the airport with a feasible improvement plan that would increase the capability and safety of aircraft operations, promote compatibility with existing and proposed developments, and further upgrade the airport to effectively serve the anticipated demands of general aviation and corporate aircraft traffic. The drawings depict the recommendations of this study with regard to aviation development for the short, intermediate, and long-term planning periods.

The dimensional information provided in the drawings demonstrates compliance with minimum airport design standards established by federal, state, and local authorities. The ALP Drawing Set was developed in accordance with the guidance outlined in Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6, Airport Master Plans, AC 150/5300-13A, Airport Design, FAA ARP Standard Operating Procedure (SOP) 2.0, Standard Operating Procedure for FAA Review and Approval of Airport Layout Plans and other supporting circulars and orders.
The ALP drawing set includes the following individual drawing sheets which are provided at the end of this chapter in reduced-size format:

- Title Sheet (Sheet 1)
- Airport Data Sheet (Sheet 2)
- Airport Layout Plan Drawing (Sheet 3)
- Airport Airspace Drawing (Sheet 4)
- Inner Portion of the Approach Surface Drawings (Sheets 5 and 6)
- Runway Departure Surface Drawings (Sheet 7)
- Terminal Area Drawings (Sheet 8)
- Land Use Drawing (Sheet 9)
- Exhibit "A" Property Map (Stand-Alone Document)

8.2 Title Sheet (Sheet 1)

The Title Sheet serves as the introduction to the ALP drawing set. It includes the airport name, a location map, vicinity map, and an index of drawings included in the ALP drawing set. Also highlighted on the Title Sheet are the project name, sponsor's name, and the FAA grant number.

8.3 Airport Data Sheet (Sheet 2)

The Airport Data Sheet summarizes key elements that are depicted on the Airport Layout Plan Drawing such as airport coordinates, runway end elevations, runway high and low points, and true

azimuths for each runway. Supplemental tables, as required by the FAA ALP Review Checklist, are depicted on the Airport Data Sheet including the airport data table and runway data table.

8.4 Airport Layout Plan Drawing (Sheet 3)

The Airport Layout Plan Drawing, also referred to as the ALP, depicts all existing facilities and proposed developments planned over the 20-year planning period at PCM. These plans are reviewed by and must be approved by the FAA prior to authorizing federal funding for future improvement projects. The ALP provides clearance and dimensional information required to show conformance with applicable FAA design standards as outlined in FAA AC 150/5300-13A, Airport Design. The ALP also reflects planned changes to physical features on the airport property and critical land use changes near the airport property that may impact navigable airspace or the ability of the airport to operate. The features of the ALP include, but are not limited to: the runway, taxiways, lighting, navigational aids, terminal facilities, hangars, other airport buildings, aircraft parking areas, automobile parking, and airport access elements.

Key dimensional criteria for Runway 10-28 was based on Runway Design Code (RDC) B/I/5000 (SMALL) for existing conditions and B/II under the future condition. The RDC and other runway approach factors are used to determine the physical characteristics of the runways (e.g., length, width, and strength), taxiway widths, and dimensions for the Runway Safety Area (RSA), Runway Object Free Area (ROFA), Building Restriction Line (BRL), clearance areas around navigational aids, etc.

8.5 Airport Airspace Drawing (Sheet 4)

Federal Aviation Regulations (FAR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, prescribes airspace standards, which establish criteria for evaluating navigable airspace. Airport imaginary surfaces are established relative to the airport runways and types of approaches they provide. The size of each imaginary surface is based on the runway category with respect to the existing and proposed visual, non-precision, or precision approaches for that runway. The slope and dimensions of the respective approach surfaces are determined by the most demanding, existing or proposed, approach for each runway. For Runway 10-28 at PCM, the dimensions of the imaginary surfaces are applicable to the non-precision GPS approaches with one mile horizontal visibility minimums to each runway end.

Primary Surface – A rectangular area symmetrically located about the runway centerline and extending a distance of 200 feet beyond each runway end. Its elevation is the same as the nearest point along the runway edge. The primary surface for Runway 10-28 is 500 feet wide.

Horizontal Surface – An oval shaped, flat area situated 150 feet above the published airport elevation of 152.7 feet Above Mean Sea Level (AMSL) at PCM. Its dimensions are determined by connecting 10,000-foot arcs starting 200 feet beyond the future runway ends. The horizontal surface elevation for PCM is 302.7 feet AMSL.

Conical Surface – A sloping area whose inner perimeter conforms to the shape of the horizontal surface. It extends outward for a distance of 4,000 feet measured horizontally, and slopes upward at a 20:1 ratio. At PCM, the conical surface extends upward to an elevation of 502.7 feet AMSL.

Transitional Surface – A sloping area beginning at the edges of the primary and approach surfaces and sloping upward and outward at a ratio of 7:1.

Approach Surface – This surface begins at the ends of the primary surface and slopes upward at a predetermined ratio while at the same time flaring out horizontally. The width and elevation of the inner ends conform to that of the primary surface, while the slope, length, and outer width are determined by the runway service category and existing or proposed instrument approach procedures.

8.6 Inner Portion of the Approach Surface Drawings (Sheets 5 and 6)

The Inner Portion of the Approach Surface Drawings show both plan and profile views of the approach surfaces beyond each runway end. The purpose of these drawings is to locate and document existing objects which represent obstructions to navigable airspace within the existing and proposed approach slopes for each runway. Additionally, the drawings show the ground profile and terrain features along the extended centerline of each runway end.

Any controlling structures, such as roadways, natural ground elevations, and trees, are also shown on the Inner Portion of the Approach Surface Drawings, if applicable. Additionally, fixed objects located along the extended runway centerlines are also illustrated on the sheets to provide an indication of the relative distance to the approach surfaces. As applicable, obstructions to navigable airspace are listed in an obstruction data table along with a recommended action for each obstruction.

8.7 Runway Departure Surfaces Drawing (Sheet 7)

The Runway Departure Surfaces Drawing consists of large scale plan views of departure surfaces for all runway ends at PCM. The Departure Surfaces Drawing depicts the ground contour along the extended runway centerline plus any significant natural or non-natural objects located along the extended runway centerline and also provides a top elevation for those objects. Commonly shown objects include buildings, roads, ditches, and trees. Surface penetration and disposition information is included in the associated obstruction data tables.

8.8 Terminal Area Drawing (Sheets 8)

The Terminal Area Drawings presents an enlarged view of the Fixed Base Operator (FBO) area and hangar areas adjacent to each runway at PCM and therefore provides additional dimensional details such as apron areas (existing and proposed) that are not easily visible on the ALP. These drawings denote the short and long-term developments and improvements within the vicinity of the FBO complex at PCM and also illustrates many of the surrounding landside development recommendations. Existing and proposed automobile access and parking improvements are also included.

8.9 Land Use Drawing (Sheet 9)

The Land Use Drawing designates various sectors of the property for specific uses and also shows an aerial view of the land surrounding PCM. Additionally, the 2013 and 2033 noise contours developed as a component of this study have been superimposed on the drawing to ensure that appropriate aviation-compatible zoning is maintained. The FAA has established national guidelines for land use compatibility related to airport-generated noise impacts. In most cases, noise sensitive land uses are considered incompatible if they are exposed to Day-Night Average Sound Levels (DNL) of 65 decibels or higher, unless noise mitigation measures are undertaken.

8.10 Exhibit "A" Property Map (Stand-Alone Document)

In order to comply with FAA grant requirements, airport owners must demonstrate that they hold "good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired." In order to meet the FAA's grant assurances, a sponsors' title must be free and clear of any reversionary interest, lien, easement, lease, or other encumbrance that would create undue risk that might deprive the sponsor of control or possession, interfere with its use for public airport purposes, or make it impossible for the sponsor to carry out the obligations and covenants in the grant agreement. Per Appendix 4 of AC 150/5100-17, satisfactory evidence of title is demonstrated through the development of an Exhibit "A" Airport Property map which is accompanied by an attorney's title opinion which is often referred to as the Exhibit "C".

For this effort, a boundary survey was integrated with newly acquired title search data and reflected on a stand-alone map which complies with the FAA's most recent guidance – Standard Operating Procedure (SOP) for FAA Review of Exhibit "A" Airport Property Inventory Maps (ARP SOP 3.00).

The purpose of the drawing and associated tables is to identify how property and easements have been acquired in the past as well as to illustrate properties and easements that should be obtained in the future as necessary to accommodate the proposed development plan.

8.11 Summary

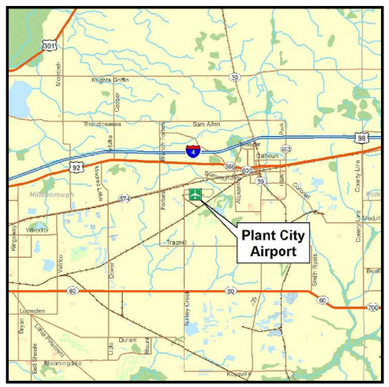
The ALP Drawing Set is intended to depict PCM's capital development program in graphical form. Prior to incorporating the developments herein, preliminary plans were presented to the Hillsborough County Aviation Authority (HCAA) Board, Master Plan Committee, FAA, and to the public for their review and approval. Thus, this plan set accurately reflects the goals and intentions of airport management and the adjacent community throughout the 20-year planning period.

AIRPORT LAYOUT PLAN SET

PLANT CITY AIRPORT

PLANT CITY, FLORIDA

LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

NOTE:
DO NOT SCALE DRAWINGS. ACTUAL SIZE MAY HAVE BEEN MODIFIED DURING REPRODUCTION.

AUGUST 2017

PREPARED FOR:
HILLSBOROUGH COUNTY AVIATION AUTHORITY

Tampa International Airport

PREPARED BY:

URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462

IN ASSOCIATION WITH:

Michael Baker INTERNATIONAL

HILLSBOROUGH COUNTY AVIATION AUTHORITY

BOARD MEMBERS

ROBERT I. WATKINS - CHAIRMAN

GARY W. HARROD - VICE CHAIRMAN

BRIGADIER GENERAL CHIP DIEHL - TREASURER

MAYOR BOB BUCKHORN - ASSISTANT SECRETARY, ASSISTANT TREASURER

COUNTY COMMISSIONER VICTOR D. CRIST - SECRETARY

CHIEF EXECUTIVE OFFICER

MR. JOSEPH LOPANO

DRAWING INDEX

NOTE: PROPERTY MAP INFORMATION INCORPORATED INTO STAND-ALONE EXHIBIT "A" PROPERTY MAP, DATED 6/24/2015

Drawing Number: 1

REVISIONS			
NO.	DESCRIPTION	DATE	BY

CONSTRUCTION DATA

PRIME CONTRACTOR

MAJOR SUBCONTRACTORS AND/OR SUPPLIERS

WORK: COMMENCED _____ , COMPLETED _____

COST: BID $_____ FINAL $_____

PROJECT ENGINEER/INSPECTORS:

ALL CONSTRUCTION PERFORMED UNDER THIS CONTRACT WAS COMPLETED IN SUBSTANTIAL CONFORMITY WITH THE DRAWINGS, NOTES AND SPECIFICATIONS CONTAINED IN THESE PLANS, ALL CHANGES FROM THE PLANS AS BID, HAVE BEEN NOTED TO THE BEST OF OUR KNOWLEDGE.

(CERTIFIED) _____ PROJECT ENGINEER _____ DATE

FEDERAL AVIATION ADMINISTRATION

APPROVED _____ DATE _____

FLORIDA DEPT. OF TRANSPORTATION

APPROVED _____ DATE _____

HILLSBOROUGH COUNTY AVIATION AUTHORITY
TAMPA, FLORIDA

APPROVED _____ DATE _____

A/E - CONSULTANT
CITY, STATE

SUBMITTED _____ DATE _____
P.E. No. _____

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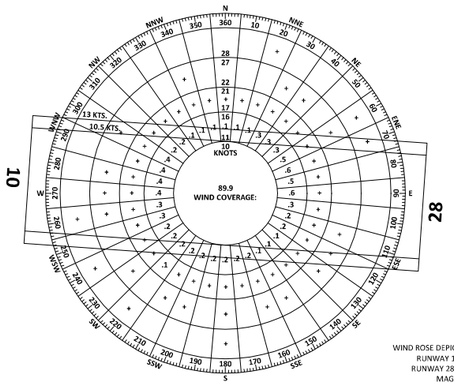
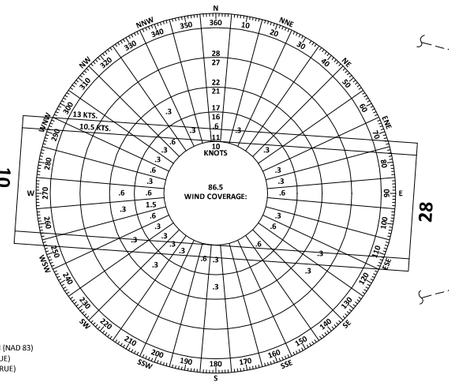


ALL WEATHER WIND ROSE

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT		
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS
ALL-WEATHER	10/28	96.94	98.49	74,253



IMC WEATHER WIND ROSE

METEOROLOGICAL CONDITION	RUNWAY	RUNWAY WIND COVERAGE BY PERCENT		
		10.5 KNOTS (12 MPH)	13 KNOTS (15 MPH)	OBSERVATIONS
IMC (LOWEST MIN.)	10/28	95.51	97.51	340

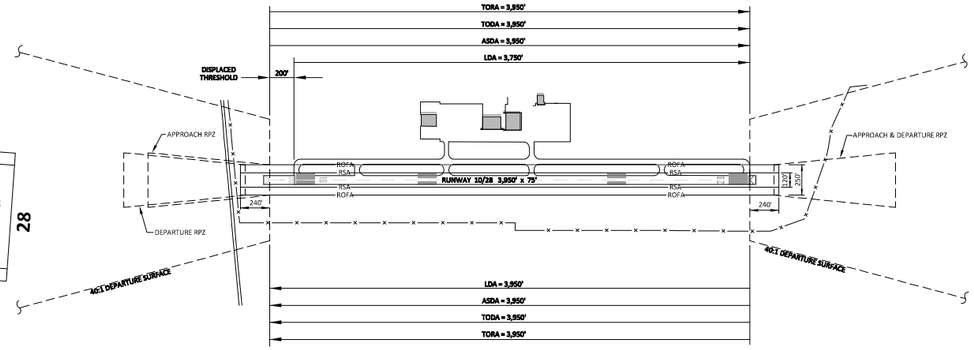
WIND ROSE DEPICTED RELATIVE TO TRUE NORTH (NAD 83)
RUNWAY 10 ORIENTATION: 94°12'18" (TRUE)
RUNWAY 28 ORIENTATION: 274°12'39.6" (TRUE)
MAGNETIC DECLINATION: 5°30' W

SOURCES:
U.S DEPARTMENT OF COMMERCE; NATIONAL CLIMATIC DATA CENTER (NCDC) ASHEVILLE, NORTH CAROLINA, SURFACE OBSERVATION DATA OBTAINED FOR WEATHER STATION: LAKELAND LINDER REGIONAL AIRPORT
STATION NO.: 722119, LAKELAND LINDER REGIONAL AIRPORT
RECORD PERIOD: 2004-2013
SURFACE OBSERVATION DATA COMPILED BY URS, 2014.

NOTES:
1. THIS GRAPHICAL CHART PLOTS, FOR THE DATA PERIOD LISTED, THE RECORDED OCCURRENCES (IN PERCENT) OF WIND BY DIRECTION AND SPEED WHILE THE RECTANGULAR BOXES REPRESENT THE MAXIMUM ACCEPTABLE CROSSWIND COMPONENTS OF 10.5, AND 13 KNOTS FOR THE RUNWAY BASED ON ARC B-II AIRCRAFT DESIGN AND CROSSWIND LIMITATIONS. THE AIRFIELD COVERAGE CAPABILITY IS THUS DETERMINED BY TOTALING ALL OCCURRENCES FALLING WITHIN THE RECTANGLE.
2. RUNWAYS ARE NUMBERED USING MAGNETIC HEADINGS WHILE WIND DATA IS PRESENTED USING TRUE HEADINGS. THEREFORE, THERE IS A 5°30' W DIFFERENCE BETWEEN THE RUNWAY HEADINGS AND THE WIND ROSE HEADINGS.

RUNWAY DATA TABLE

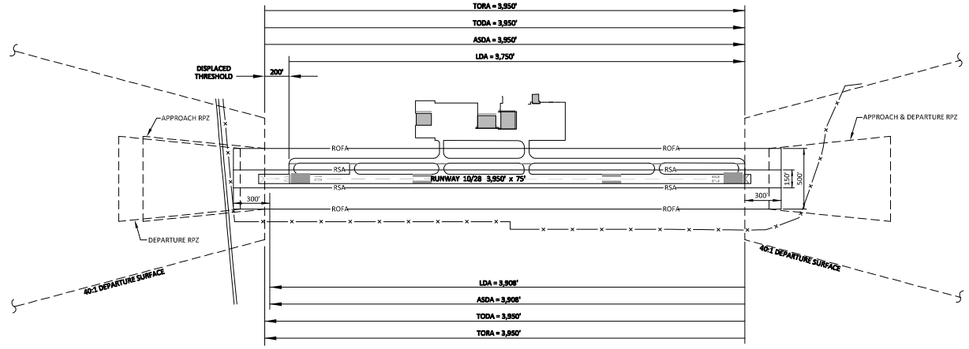
ITEM		RUNWAY 10/28 EXISTING		RUNWAY 10/28 FUTURE	
RUNWAY LENGTH/WIDTH (FT.)		3,950/75		SAME	
APPROACH REFERENCE CODE (APRC)		B/I/(S)/5000 (1 MI.)		B/II/5000 (1 MI.)	
DEPARTURE REFERENCE CODE (DPRC)		B/I/(S)		B/II	
RUNWAY DESIGN CODE (RDC)		B/I/(S)/5000		B/II/5000	
CRITICAL DESIGN AIRCRAFT		BEECHCRAFT KING AIR F90		BEECHCRAFT KING AIR 200	
EFFECTIVE GRADIENT (%) / (MAXIMUM) (%)		0.351/(0.48)		SAME	
% WIND COVERAGE (ALL WEATHER)		96.94 (10.5 KTS.)		98.49 (13 KTS.)	
RUNWAY PAVEMENT	STRENGTH (000 lbs.)	21 SG		SAME	
	PCN	7/F/C/X/T		SAME	
	SURFACE TYPE/FRICTION	ASPHALT		SAME	
MAXIMUM RUNWAY ELEVATION (ABOVE MSL)		152.7		SAME	
RUNWAY LIGHTING		MIRL		SAME	
RUNWAY MARKING		NON-PRECISION		SAME	
RUNWAY ENDS		10	28	10	28
END ELEVATIONS (NAVD 88) (MSL)		151.52	137.94	SAME	SAME
END COORDINATES (NAD 83)	LATITUDE	28°00'01.99248"N	27°59'59.12340"N	SAME	SAME
	LONGITUDE	082°10'09.90280"W	082°09'25.95656"W	SAME	SAME
DISPLACED THRESHOLD ELEVATIONS (NAVD 88) (MSL)		151.80	N/A	SAME	SAME
DISPLACED THRESHOLD COORDINATES (NAD 83)	LATITUDE	28°00'01.84739"N	N/A	SAME	SAME
	LONGITUDE	082°10'07.67754"W	N/A	SAME	SAME
DATUM	HORIZONTAL	NAD83	NAD83	SAME	SAME
	VERTICAL	NAVD88	NAVD88	SAME	SAME
RUNWAY PROTECTION ZONE (RPZ)	LENGTH	1,000'	1,000'	1,000'	1,000'
	WIDTH-INNER/OUTER	250'/450'	250'/450'	500'/700'	500'/700'
APPROACH LIGHTING		NONE	NONE	SAME	SAME
RUNWAY TOUCH DOWN ZONE ELEVATIONS (MSL)		152.7	152.6	SAME	SAME
C.F.R. PART 77 IMAGINARY AIRSPACE SURFACES	APPROACH CATEGORY	NON-PRECISION	NON-PRECISION	SAME	SAME
	APPROACH SURFACE SLOPES	20:1	20:1	34:1	34:1
RUNWAY DEPARTURE SURFACE		YES	YES	SAME	SAME
THRESHOLD SITING SURFACE		YES	YES	SAME	SAME
NAVAIDS	ELECTRONIC NAVIGATION AIDS	GPS	GPS	SAME	SAME
	VISUAL APPROACH AIDS	PAPI-2/REILS	PAPI-2/REILS	SAME	SAME
TYPE OF INSTRUMENT APPROACH		RNAV(GPS)	RNAV(GPS)	SAME	SAME
TYPE OF SURVEY REQUIRED		VERTICALLY GUIDED	VERTICALLY GUIDED	SAME	SAME
APPROACH VISIBILITY MINIMUMS		1 MILE	1 MILE	SAME	SAME
RUNWAY SAFETY AREA (RSA) W=WIDTH BRE=BEYOND RUNWAY END		W=120' BRE=240'		W=150' BRE=300'	
RUNWAY OBJECT FREE AREA (ROFA) W=WIDTH BRE=BEYOND RUNWAY END		W=250' BRE=240'		W=500' BRE=300'	
RUNWAY OBSTACLE FREE ZONE (OFZ) W=WIDTH BRE=BEYOND RUNWAY END		W=250' BRE=200'		W=400' BRE=200'	



EXISTING DECLARED DISTANCES

DECLARED DISTANCES

RUNWAY	TORA	TODA	ASDA	LDA
10 (EXISTING)	3,950'	3,950'	3,950'	3,750'
28 (EXISTING)	3,950'	3,950'	3,950'	3,950'
10 (FUTURE)	3,950'	3,950'	3,950'	3,750'
28 (FUTURE)	3,950'	3,950'	3,908'	3,908'



FUTURE DECLARED DISTANCES

TAXIWAY DATA TABLE

TAXIWAY	WIDTH	T.S.A	T.O.F.A.	LIGHTING
A (EXISTING)	40'	49'	89'	MITL
A (FUTURE)	35'	79'	131'	MITL
TDG (EXISTING)	1A			
TDG (FUTURE)	2			

AIRPORT DATA TABLE

		EXISTING	FUTURE
AIRPORT REFERENCE CODE		B-I (SMALL)	B-II
MEAN MAX. TEMPERATURE - HOTTEST MONTH		91.0° (JULY)	SAME
ESTABLISHED AIRPORT ELEVATION (NAVD 88)		152.7 (MSL)	SAME
AIRPORT NAVIGATIONAL AIDS		ROTATING BEACON	SAME
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	LATITUDE	28°00'00.558"N	SAME
	LONGITUDE	082°09'47.930"W	SAME
MISCELLANEOUS FACILITIES		AWOS	SAME
AIRPORT REFERENCE CODE		B-I/(S)	B-II
CRITICAL AIRCRAFT		BEECHCRAFT KING AIR F90	BEECHCRAFT KING AIR 200
MAGNETIC VARIATION		5°30'W	ANNUAL RATE OF CHANGE 0°6'W / YR.
DATE OF MAGNETIC VARIATION		01/01/2015	SAME
NPIAS ASSET - USE/ROLE/SERVICE LEVEL		PU/LOCAL/GA	SAME
AIRPORT ACREAGE (EXHIBIT "A", 6/24/15)		194.705 AC.	SAME

SURVEY MONUMENTS

DESIGNATION	TYPE	LATITUDE	LONGITUDE	ELEVATION
PLANTPORT	PACS	28°00'01.27230" N	082°09'46.49303" W	148.66
PLANTPORT AZ MK	SACS	28°00'02.63981" N	082°10'06.75277" W	150.78
0018	SACS	28°00'00.00130" N	082°09'26.89216" W	136.70

MODIFICATION TO STANDARDS

NONE TO DATE

NOTES:

1. ALL ELEVATIONS ARE IN FEET (MSL).
2. HORIZONTAL DATUM NAD83, VERTICAL DATUM NAVD88.
3. DRAWING PREPARED IN FLORIDA STATE PLANE, WEST (0902), US FOOT.
4. BASE DRAWING UPDATED USING AERIAL PHOTOGRAPHY FLOWN IN 2014.
5. GQS (LPV) TREE PENETRATIONS ON RUNWAY 10 AND 28.

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

FAA DISCLAIMER

THE CONTENTS OF THIS PLAN DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

FDOT AVIATION AND SPACEPORTS OFFICE ACCEPTANCE

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

FAA APPROVAL BLOCK

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

REVISIONS | BY | DATE

URS Corporation Southern 7650 West Courtney Campbell Causeway Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME: MASTER PLAN UPDATE PLANT CITY AIRPORT Plant City, FLORIDA

SHEET TITLE: AIRPORT DATA SHEET

HCAA NO.: 6255 14
FDOT NO.: 415780-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number: 2

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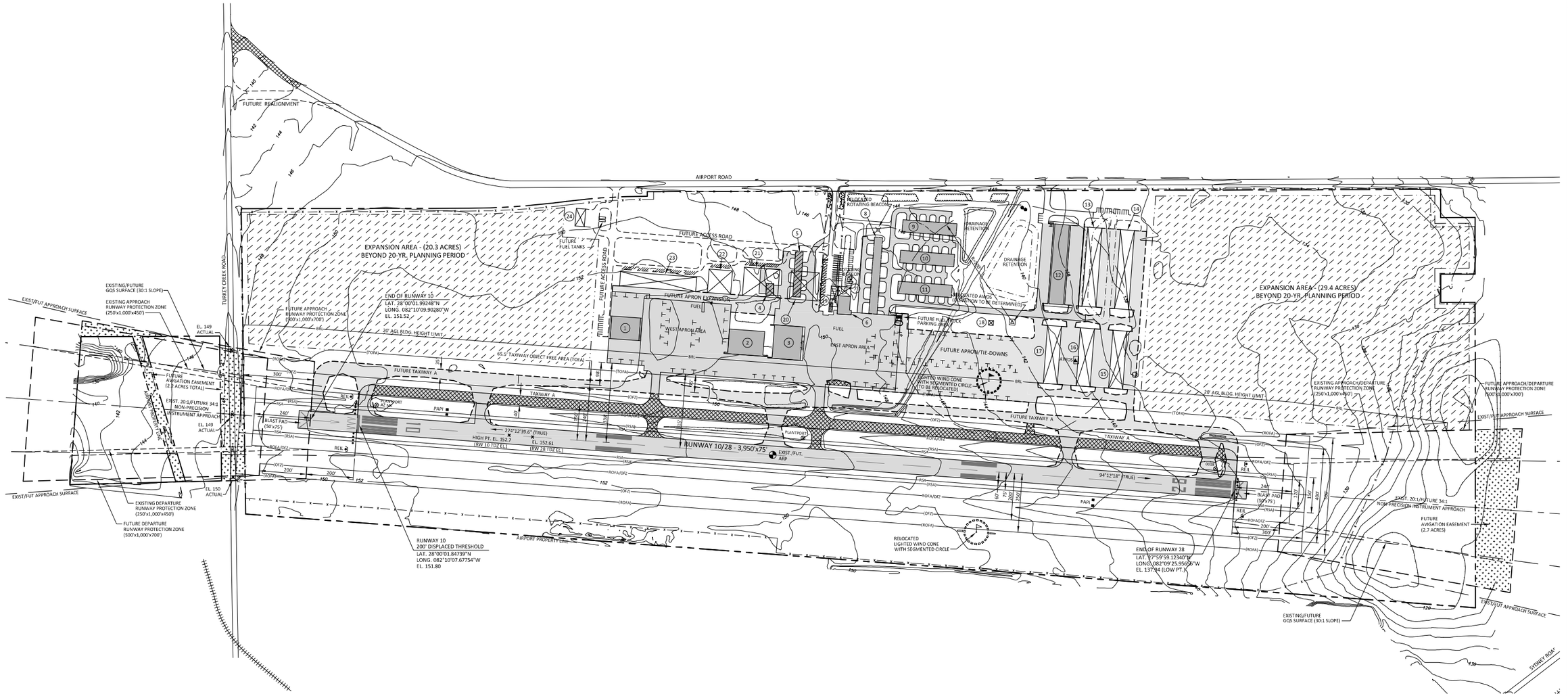

BUILDING/TENANT INDEX

NO.	BLDG. I.D. NO.	DESCRIPTION	ELEVATION (FT.) M.S. (ESTIMATED)
1	5600	BULK HANGAR	177.00
2	5200	BULK HANGAR	168.88
3	5000	FBO MAINTENANCE HANGAR/BULK HANGAR	162.50
4	4800	OPERATIONS AND MAINTENANCE SHOP (TO BE REMOVED)	162.59
5	4600	ENCLOSED HANGAR (6 UNITS) (TO BE REMOVED)	162.43
6	4200	TERMINAL BUILDING	160.88
7	4000	ELECTRICAL VAULT (15'x10')	161.51
8	3600	ENCLOSED HANGAR (10 UNITS)	164.07
9	3000	ENCLOSED HANGAR (10 UNITS)	163.40
10	3200	SHADE HANGAR (10 UNITS)	163.12
11	3400	ENCLOSED HANGAR (10 UNITS)	163.35
12	2600	ENCLOSED HANGAR (14 UNITS)	160.00
13	TBD	FUTURE T-HANGAR (14 UNITS)	TBD
14	TBD	FUTURE T-HANGAR (14 UNITS)	TBD
15	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
16	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
17	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
18	TBD	FUTURE ELECTRICAL VAULT	TBD
19	TBD	FUTURE TERMINAL EXPANSION	TBD
20	TBD	FUTURE HANGAR (120'x120')	TBD
21	TBD	FUTURE HANGAR (150'x120')	TBD
22	TBD	FUTURE HANGAR (100'x100')	TBD
23	TBD	FUTURE HANGAR (5 UNITS)	TBD
24	TBD	FUTURE AIRPORT MAINTENANCE FACILITY (75'x40')	TBD

LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		N/A
AIRFIELD PAVEMENT		
BUILDINGS		
ROADS & PARKING		
FENCE	x x x	xx xx xx
RUNWAY SAFETY AREA	RSA	(RSA)
RUNWAY OBJECT FREE AREA	ROFA	(ROFA)
TAXIWAY OBJECT FREE AREA	N/A	(TOFA)
OBSTACLE FREE ZONE	OFZ	(OFZ)
BUILDING RESTRICTION LINE	BRL	N/A
PAVEMENT TO BE REMOVED	N/A	
EXPANSION AREA	N/A	
AWOS CRITICAL AREA EASEMENT	N/A	
AVIGATION EASEMENT	N/A	
PAPI		N/A
REIL		N/A
THRESHOLD LIGHTS		N/A
WIND CONE		
AIRPORT REFERENCE POINT (ARP)		N/A
AIRPORT CONTROL STATION		N/A
ROTATING BEACON		
AWOS		

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AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

FDOT AVIATION AND SPACEPORTS OFFICE ACCEPTANCE

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

FAA APPROVAL BLOCK

LAT/LONG VALUES TRUE NORTH

MAGNETIC DECLINATION = 5°30' WEST (5.5°) WEST
(JANUARY 2015)
ANNUAL RATE OF CHANGE:
0°6' (0.1°) WEST/YEAR

200 0 200
GRAPHIC SCALE IN FEET

BY	REVISIONS	DATE

URS Corporation Southern
3010 Gulf Coast Blvd
Cardinal Causeway
Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME
MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

SHEET TITLE
AIRPORT LAYOUT PLAN DRAWING

HCAA NO.: 6255 14
FDOT NO.: 415760-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number:
3

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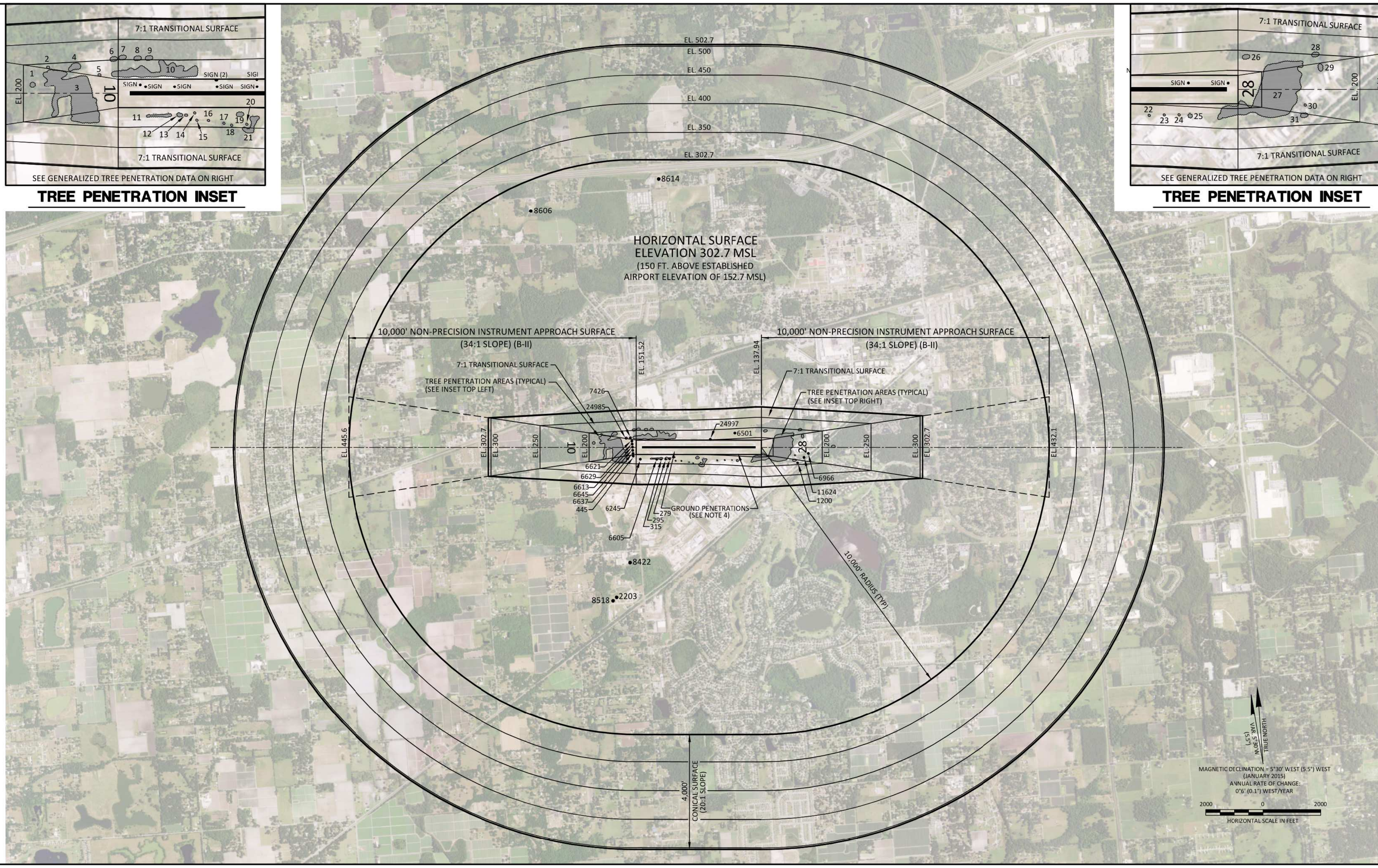
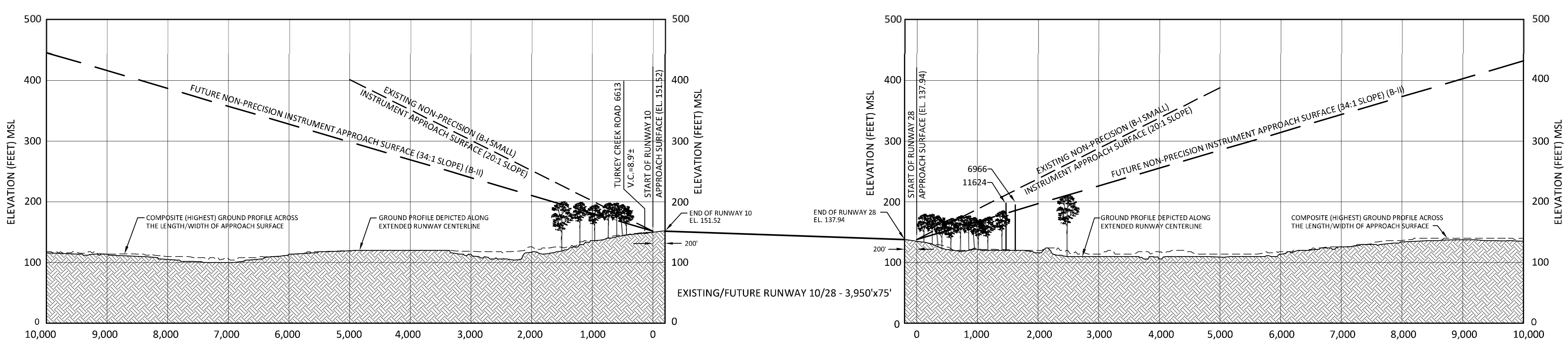


RUNWAY 10/28 PLAN VIEW



RUNWAY 10/28 PROFILE VIEW

OBSTRUCTION DATA TABLE

RW End Aprc/Trans/Horiz	Object ID No.	Object Description	Object Elevation [MSL]	P77 Surface Penetrated	P77 Surface Penetration (Feet)	Existing / Proposed Disposition of Obstruction
HORIZ	2203	TOWER	318.00	HORIZ	15.30	LIGHT
HORIZ	8422	CELL TOWER	305.76	HORIZ	3.06	LIGHT
HORIZ	8518	ANTENNA	305.58	HORIZ	2.88	LIGHT
HORIZ	8606	ANTENNA	404.96	HORIZ	102.26	LIGHT
HORIZ	8614	ANTENNA	307.08	HORIZ	4.38	LIGHT
RW10 APRC	6613	PRIMARY ROAD	164.34	RW10 APRC	8.90	NONE
RW10 APRC	6621	PRIMARY ROAD	163.78	RW10 APRC	7.78	NONE
RW10 APRC	6629	PRIMARY ROAD	163.88	RW10 APRC	8.15	NONE
RW10 APRC	6637	PRIMARY ROAD	164.88	RW10 APRC	10.00	NONE
RW10 APRC	6645	PRIMARY ROAD	164.52	RW10 APRC	9.37	NONE
RW28 APRC	6966	POLE	194.76	RW28 APRC	8.98	LIGHT
RW28 APRC	11624	POLE	197.78	RW28 APRC	16.49	LIGHT
TRANS	6245	POLE	189.08	TRANS	14.38	LIGHT
TRANS	6501	ANTENNA	184.56	TRANS	6.16	LIGHT
TRANS	6605	POLE	186.32	TRANS	10.50	LIGHT
TRANS	7426	POLE	185.68	TRANS	21.04	LIGHT
TRANS	279	POLE	182.00	TRANS	8.50	LIGHT
TRANS	295	POLE	185.00	TRANS	10.52	LIGHT
TRANS	315	POLE	185.00	TRANS	9.89	LIGHT
TRANS	445	RD (N)	165.00	TRANS	4.88	NONE
TRANS	1200	POLE	200.00	TRANS	9.70	LIGHT
TRANS	24985	POLE	174.00	TRANS	10.07	LIGHT
TRANS	24997	TOWER	158.00	TRANS	6.14	LIGHT

SOURCE:
OBSTRUCTION SURVEY:
Aerometric, April 3-5, 2014
Compiled by URS, July 2015

GENERALIZED TREE PENETRATION DATA

GROUPING	RANGE OF PENETRATION
1	3 FT.
2	11 FT.
3	1 FT. - 24 FT.
4	3 FT. - 13 FT.
5	4 FT.
6	LESS THAN 1 FT.
7	4 FT.
8	2 FT. - 9 FT.
9	4 FT.
10	1 FT. - 34 FT.
11	11 FT. - 23 FT.
12	17 FT. - 23 FT.
13	14 FT.
14	13 FT.
15	1 FT.
16	8 FT.
17	5 FT. - 8 FT.
18	2 FT.
19	33 FT. - 38 FT.
20	12 FT.
21	1 FT. - 23 FT.
22	8 FT.
23	5 FT.
24	4 FT.
25	18 FT. - 20 FT.
26	1 FT - 2 FT.
27	1 FT. - 24 FT.
28	3 FT.
29	1 FT. - 5 FT.
30	1 FT.
31	3 FT.
32	1 FT.

LEGEND
GENERALIZED TREE PENETRATION AREA APPROACH / TRANSITIONAL SURFACE

NOTES:

1. LOCAL ZONING IS CODIFIED AND ENFORCED VIA HCAA RESOLUTION 2017-37, AIRPORT ZONING REGULATIONS, UNDER THE PROVISIONS OF CHAPTER 333, FLORIDA STATUTES AND CHAPTER 2003-370, LAWS OF FLORIDA AS ADOPTED ON JUNE 1, 2017 FOR TPA, PCM, TPF AND VDF.
2. AIRPORT-INDUSTRIAL DISTRICT "M-AP" ESTABLISHED BY PLANT CITY.
3. SEE AIRPORT HEIGHT ZONING MAP "ZONE "A".
4. MULTIPLE SURVEYED GROUND PENETRATIONS OF 2.4 FT. OR LESS IN THE PRIMARY SURFACE AND 2.6 FT. OR LESS IN THE TRANSITIONAL SURFACE.
5. MULTIPLE SURVEYED AIRFIELD SIGNS PENETRATE PRIMARY SURFACE AND ARE SHOWN ON TREE PENETRATION INSETS.
6. THE VERTICAL CLEARANCE (V.C.) OVER ROADS PER CODE OF FEDERAL REGULATIONS IS 17 FEET FOR INTERSTATE HIGHWAYS, 15 FEET FOR ANY OTHER PUBLIC ROADWAY, AND 10 FEET FOR A PRIVATE ROAD. THE VERTICAL CLEARANCE OVER A RAILROAD IS 23 FEET.
7. VERTICAL CLEARANCES (V.C.) FOR ROADS/RAILROADS ARE CALCULATED USING THE ELEVATION OF THE ROAD/RAILROAD AT THAT POINT MEASURING VERTICALLY TO THE INTERSECTION OF THE SPECIFIC SURFACE. ROAD ELEVATIONS ARE ESTIMATED.
8. BASE MAP IS FROM 7.5° USGS QUADANGLE MAPS DATED 2014.

HORIZONTAL SCALE IN FEET
VERTICAL SCALE IN FEET

REVISIONS | DATE | BY

URS Corporation Southern
Tampa, FL

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME: MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

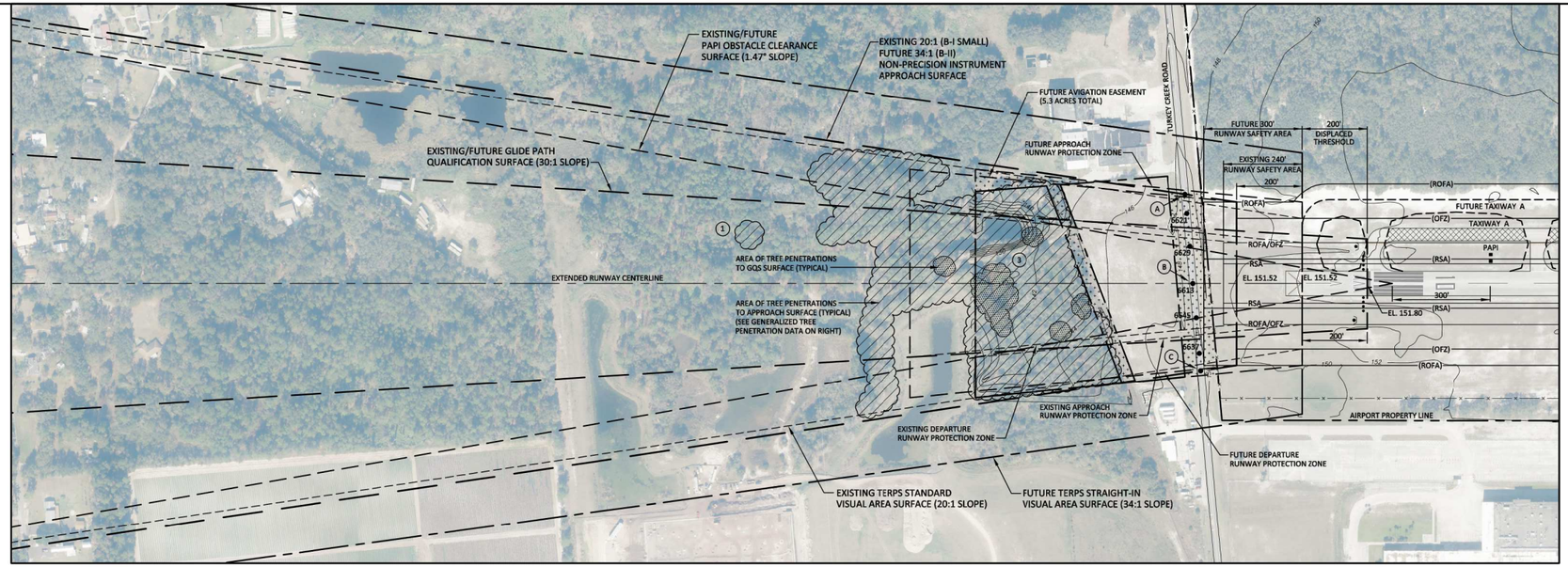
SHEET TITLE: AIRPORT AIRSPACE DRAWING

HCAA NO.: 6255 14
FDOT NO.: 415760-1

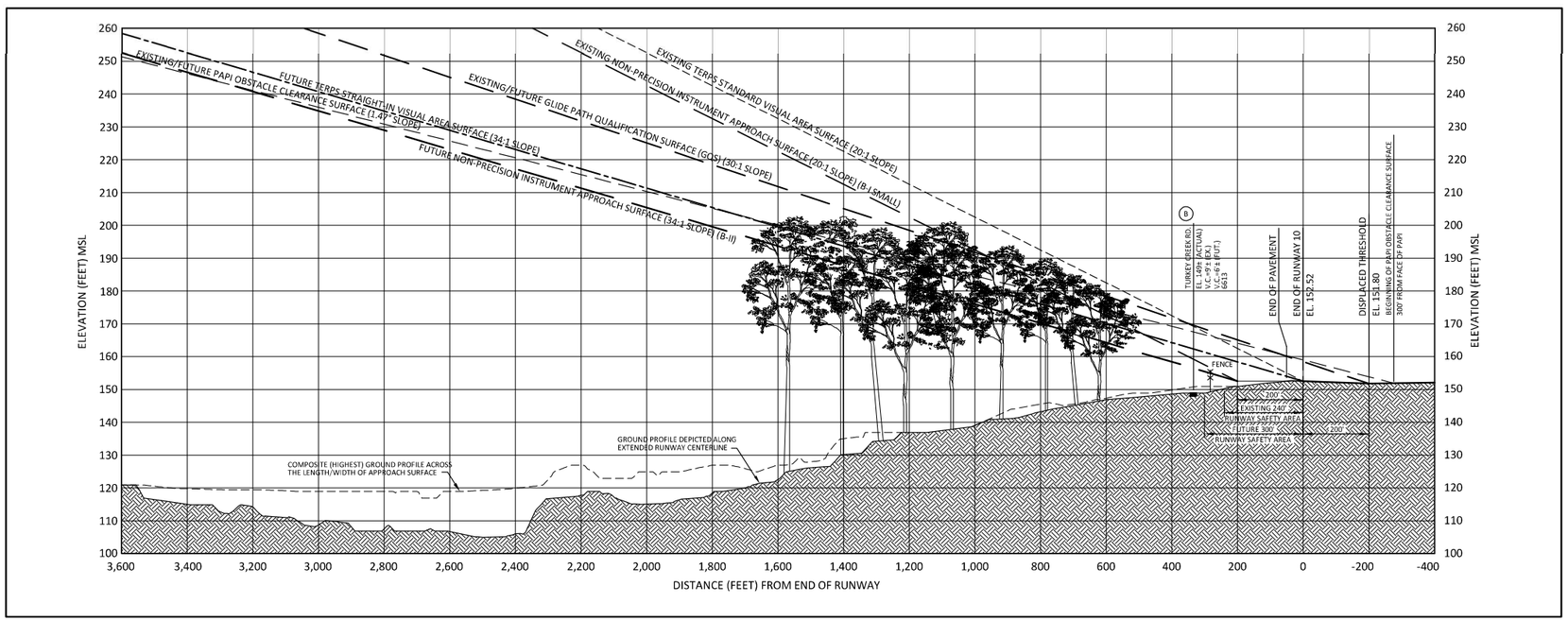
DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number: 4

S:\Projects_APPLAN\HCAA GA Master Planning Pursuit 0713\HCAA GA Master Plan Update\HCAA digital files\HCAA GA Base files\ALP Sets\PCM_04_AIRSPACE.dwg Modified: Aug 07, 2017 - 11:02am Plotted: Aug 08, 2017 - 9:59am bob.morris



RUNWAY 10 INNER APPROACH SURFACE PLAN VIEW



RUNWAY 10 INNER APPROACH SURFACE PROFILE VIEW

OBSTRUCTION DATA TABLE

RW End	Object ID No.	Object Description	Object Elevation (MSL)	Approach Surface Penetration (Feet)	Existing / Proposed Disposition of Obstruction	Triggering Event
RW10	6613	PRIMARY ROAD	164.34	8.90	NONE	FUT. B-II
RW10	6621	PRIMARY ROAD	163.78	7.78	NONE	FUT. B-II
RW10	6629	PRIMARY ROAD	163.88	8.15	NONE	FUT. B-II
RW10	6637	PRIMARY ROAD	164.88	10.00	NONE	FUT. B-II
RW10	6645	PRIMARY ROAD	164.52	9.37	NONE	FUT. B-II

SOURCE:
OBSTRUCTION SURVEY:
Aerometric, April 3-5, 2014
Compiled by URS, July 2015

NOTES:

1. LOCAL ZONING IS CODIFIED AND ENFORCED VIA HCAA RESOLUTION 2010-54, AIRPORT ZONING REGULATIONS, UNDER THE PROVISIONS OF CHAPTER 333, FLORIDA STATUTES AND CHAPTER 2003-370, LAWS OF FLORIDA AS ADOPTED ON MARCH 1, 2010 FOR TPA, PCM, TPF AND VDF.
2. AIRPORT-INDUSTRIAL DISTRICT "MA-P" ESTABLISHED BY PLANT CITY.
3. SEE AIRPORT HEIGHT ZONING MAP "ZONE "A".
4. THE VERTICAL CLEARANCE (V.C.) OVER ROADS PER CODE OF FEDERAL REGULATIONS IS 17 FEET FOR INTERSTATE HIGHWAYS, 15 FEET FOR ANY OTHER PUBLIC ROADWAY, AND 10 FEET FOR A PRIVATE ROAD. THE VERTICAL CLEARANCE OVER A RAILROAD IS 23 FEET.
5. VERTICAL CLEARANCES (V.C.) FOR ROADS/RAILROADS ARE CALCULATED USING THE ELEVATION OF THE ROAD/RAILROAD AT THAT POINT MEASURING VERTICALLY TO THE INTERSECTION OF THE SPECIFIC SURFACE. ROAD ELEVATIONS ARE ESTIMATED.
6. BASE IS FROM AERIAL PHOTOGRAPHY FLOWN IN 2014.

GENERALIZED TREE PENETRATION DATA

GROUPING	RANGE OF PENETRATION
1	3 FT.
3	1 FT. - 24 FT.

LEGEND
- TREE PENETRATION AREA - APPROACH SURFACE
- TREE PENETRATION AREA - GQS SURFACE
- FUTURE AVIGATION EASEMENT
- PAVEMENT TO BE REMOVED

CFR PART 77
APPROACH SURFACE
ROAD CLEARANCES

(A) TURKEY CREEK ROAD
EL. 149± (ACTUAL)
V.C.=10' (EX.) (5' PENETRATION)
V.C.=7' (FUT.) (8' PENETRATION)

(B) TURKEY CREEK ROAD
EL. 149± (ACTUAL)
V.C.=9' (EX.) (6' PENETRATION)
V.C.=6' (FUT.) (9' PENETRATION)

(C) TURKEY CREEK ROAD
EL. 150± (ACTUAL)
V.C.=7' (EX.) (8' PENETRATION)
V.C.=5' (FUT.) (10' PENETRATION)

MAGNETIC DECLINATION = 5°30' WEST (5.5°) WEST
(JANUARY 2015)
ANNUAL RATE OF CHANGE:
0°6' (0.1°) WEST/YEAR

HORIZONTAL SCALE IN FEET
VERTICAL SCALE IN FEET

BY	REVISIONS	DATE

URS Corporation Southern
7650 W. Courtney
Campbell Causeway
Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME
MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

SHEET TITLE
INNER PORTION OF THE
APPROACH SURFACE DRAWING
RUNWAY 10

HCAA NO.: 6255 14
FDOT NO.: 415760-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number:
5

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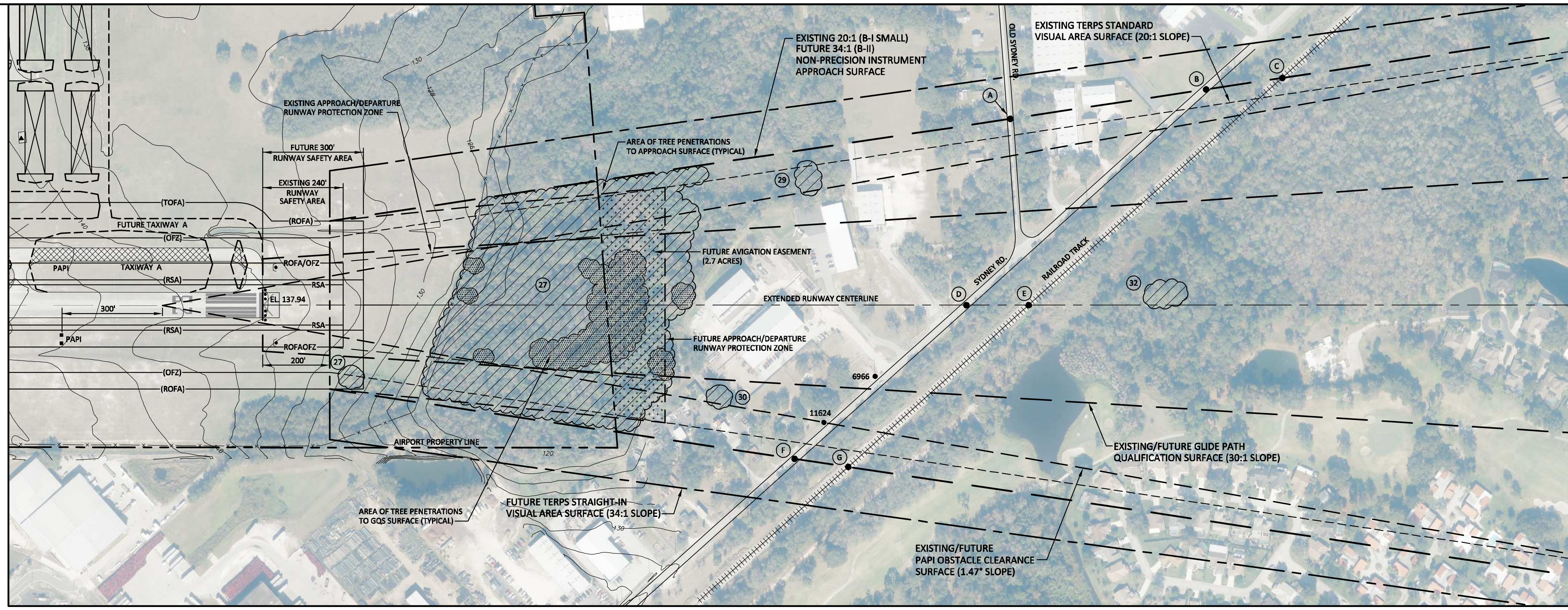
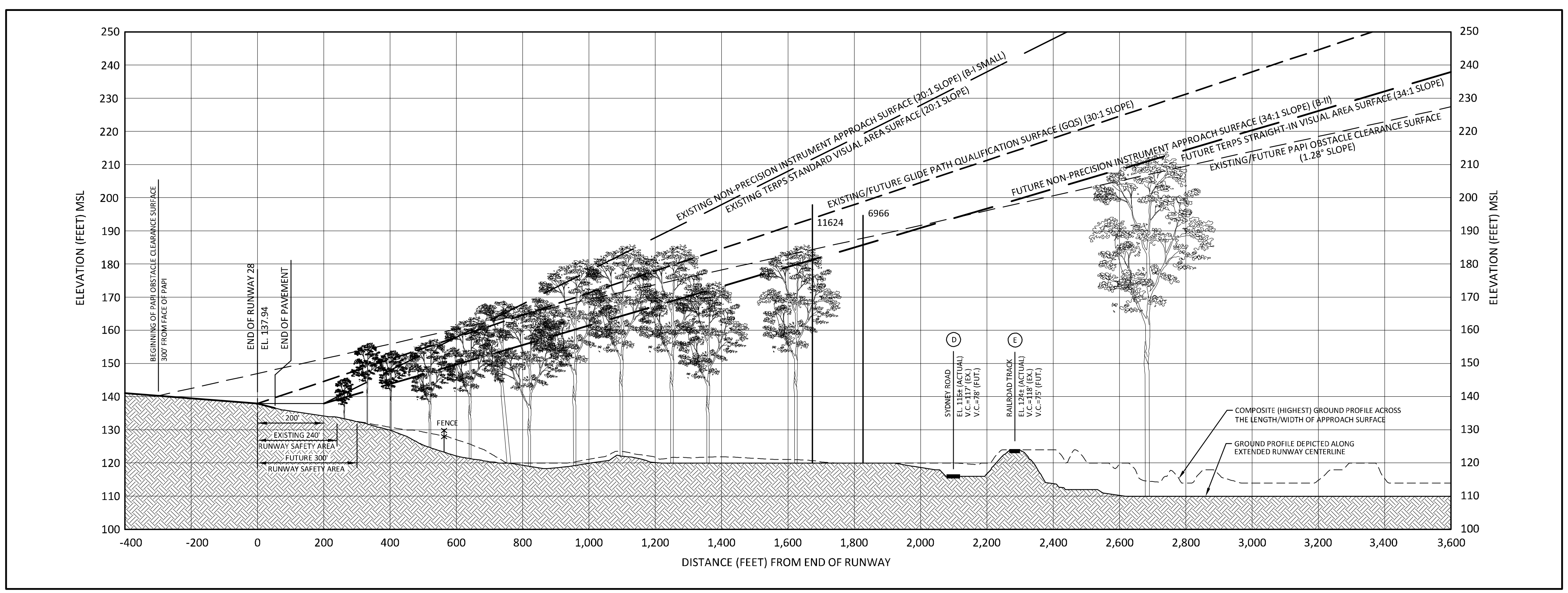


RUNWAY 28 INNER APPROACH SURFACE PLAN VIEW



RUNWAY 28 INNER APPROACH SURFACE PROFILE VIEW

OBSTRUCTION DATA TABLE

RW End	Object ID No.	Object Description	Object Elevation [MSL]	Approach Surface Penetration (Feet)	Existing / Proposed Disposition of Obstruction	Triggering Event
RW28	6966	POLE	194.76	8.98	LIGHT	FUT. B-II
RW28	11624	POLE	197.78	16.49	LIGHT	FUT. B-II

SOURCE:
OBSTRUCTION SURVEY:
Aerometric, April 3-5, 2014
Compiled by URS, July 2015

NOTES:

1. LOCAL ZONING IS CODIFIED AND ENFORCED VIA HCAA RESOLUTION 2010-54, AIRPORT ZONING REGULATIONS, UNDER THE PROVISIONS OF CHAPTER 333, FLORIDA STATUTES AND CHAPTER 2003-370, LAWS OF FLORIDA AS ADOPTED ON MARCH 1, 2010 FOR TPA, PCM, TPF AND VDF.
2. AIRPORT-INDUSTRIAL DISTRICT "MA-P" ESTABLISHED BY PLANT CITY.
3. SEE AIRPORT HEIGHT ZONING MAP "ZONE "A".
4. THE VERTICAL CLEARANCE (V.C.) OVER ROADS PER CODE OF FEDERAL REGULATIONS IS 17 FEET FOR INTERSTATE HIGHWAYS, 15 FEET FOR ANY OTHER PUBLIC ROADWAY, AND 10 FEET FOR A PRIVATE ROAD. THE VERTICAL CLEARANCE OVER A RAILROAD IS 23 FEET.
5. VERTICAL CLEARANCES (V.C.) FOR ROADS/RAILROADS ARE CALCULATED USING THE ELEVATION OF THE ROAD/RAILROAD AT THAT POINT MEASURING VERTICALLY TO THE INTERSECTION OF THE SPECIFIC SURFACE. ROAD ELEVATIONS ARE ESTIMATED.
6. BASE IS FROM AERIAL PHOTOGRAPHY FLOWN IN 2014.

GENERALIZED TREE PENETRATION DATA

GROUPING	RANGE OF PENETRATION
27	1 FT. - 24 FT.
29	1 FT. - 5 FT.
30	1 FT.
32	1 FT.

LEGEND

- TREE PENETRATION AREA - APPROACH SURFACE
- TREE PENETRATION AREA - GQS SURFACE
- FUTURE AVIGATION EASEMENT
- PAVEMENT TO BE REMOVED

CFR PART 77
APPROACH SURFACE
ROAD CLEARANCES

(A) OLD SYDNEY ROAD
EL. 120± (ACTUAL)
V.C.=119' (EX.)
V.C.=78' (FUT.)

(B) SYDNEY ROAD
EL. 120± (ACTUAL)
V.C.=149' (EX.)
V.C.=95' (FUT.)

(C) RAILROAD TRACK
EL. 120± (ACTUAL)
V.C.=160' (EX.)
V.C.=102' (FUT.)

(D) SYDNEY ROAD
EL. 116± (ACTUAL)
V.C.=117' (EX.)
V.C.=78' (FUT.)

(E) RAILROAD TRACK
EL. 124± (ACTUAL)
V.C.=118' (EX.)
V.C.=75' (FUT.)

(F) SYDNEY ROAD
EL. 123± (ACTUAL)
V.C.=84' (EX.)
V.C.=56' (FUT.)

(G) RAILROAD TRACK
EL. 123± (ACTUAL)
V.C.=92' (EX.)
V.C.=60' (FUT.)

MAGNETIC DECLINATION = 5°30' WEST (5.5°) WEST
(JANUARY 2015)
ANNUAL RATE OF CHANGE:
0°6' (0.1°) WEST/YEAR

HORIZONTAL SCALE IN FEET: 200 0 200
VERTICAL SCALE IN FEET: 20 0 20

PROJECT NAME: MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

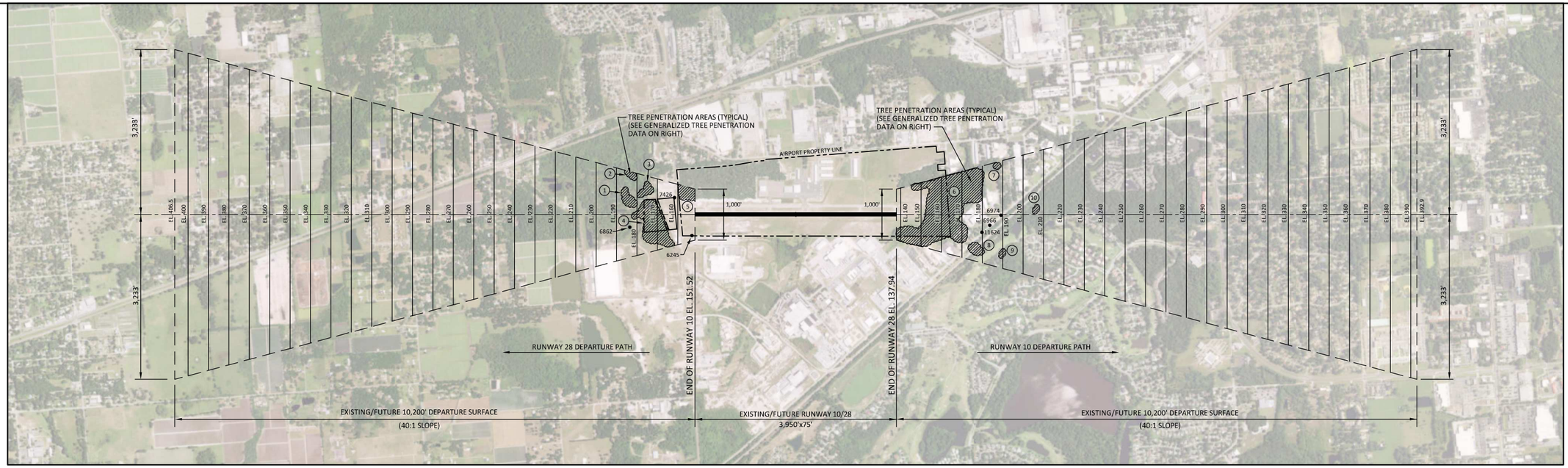
SHEET TITLE: INNER PORTION OF THE
APPROACH SURFACE DRAWING
RUNWAY 28

HCAA NO.: 6255 14
FDOT NO.: 415760-1

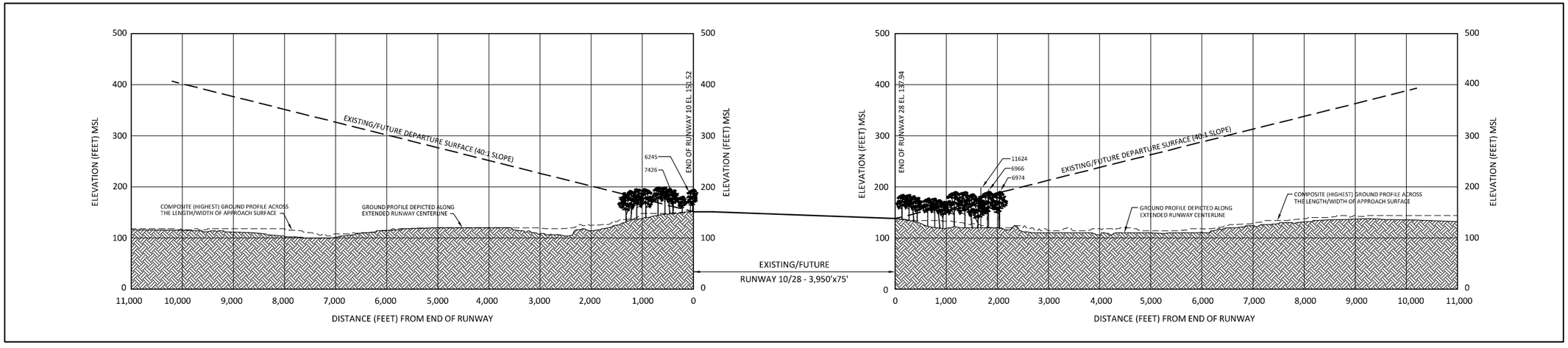
DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number: 6

REVISIONS | DATE | BY
URS Corporation Southern
7650 West Courtney
Campbell Causeway
Tampa, FL 33607-1462
Michael Baker INTERNATIONAL
Tampa International Airport



RUNWAY 10/28 DEPARTURE SURFACE PLAN VIEW



RUNWAY 10/28 DEPARTURE SURFACE PROFILE VIEW

NOTES:

1. LOCAL ZONING IS CODIFIED AND ENFORCED VIA HCAA RESOLUTION 2010-54, AIRPORT ZONING REGULATIONS, UNDER THE PROVISIONS OF CHAPTER 333, FLORIDA STATUTES AND CHAPTER 2003-370, LAWS OF FLORIDA AS ADOPTED ON MARCH 1, 2010 FOR TPA, PCM, TPF AND VDF.
2. AIRPORT-INDUSTRIAL DISTRICT "MA-P" ESTABLISHED BY PLANT CITY.
3. SEE AIRPORT HEIGHT ZONING MAP "ZONE "A".
4. BASE MAP IS FROM 7.5" USGS QUADANGLE MAPS DATED 2014.

GENERALIZED TREE PENETRATION DATA

GROUPING	RANGE OF PENETRATION
(1)	1 FT. - 6 FT.
(2)	0 FT. - 13 FT.
(3)	0 FT. - 23 FT.
(4)	0 FT. - 27 FT.
(5)	7 FT. - 46 FT.
(6)	1 FT. - 45 FT.
(7)	5 FT.
(8)	3 FT. - 11 FT.
(9)	1 FT. - 2 FT.
(10)	1 FT. - 7 FT.

LEGEND

TREE PENETRATION AREA - DEPARTURE SURFACE

OBSTRUCTION DATA TABLE

RW End	Object ID No.	Object Description	Object Elevation [MSL]	Departure Surface Penetration (Feet)	Existing / Proposed Disposition of Obstruction	RW End	Object ID No.	Object Description	Object Elevation [MSL]	Departure Surface Penetration (Feet)	Existing / Proposed Disposition of Obstruction
RW10	6245	POLE	189.08	36.01	LIGHT	RW28	6966	POLE	194.76	11.16	LIGHT
RW10	6862	TREE	193.84	0.40	TRIM OR REMOVE	RW28	6974	POLE	191.96	2.85	LIGHT
RW10	7426	POLE	185.68	24.08	LIGHT	RW28	11624	POLE	197.78	17.99	LIGHT

SOURCE:
OBSTRUCTION SURVEY:
Aerometric, April 3-5, 2014
Compiled by URS, July 2015

MAGNETIC DECLINATION = 5°30' WEST (5.5') WEST (JANUARY 2015)
ANNUAL RATE OF CHANGE: 0°6' (0.1') WEST/YEAR

HORIZONTAL SCALE IN FEET (1000 0 1000)

VERTICAL SCALE IN FEET (100 0 100)

REVISIONS | BY | DATE

URS Corporation Southern
7650 W. Courtney Campbell Causeway
Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME
MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

SHEET TITLE
RUNWAY DEPARTURE SURFACES
PLAN AND PROFILE
RUNWAY 10/28

HCAA NO.: 6255 14
FDOT NO.: 415780-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number: 7

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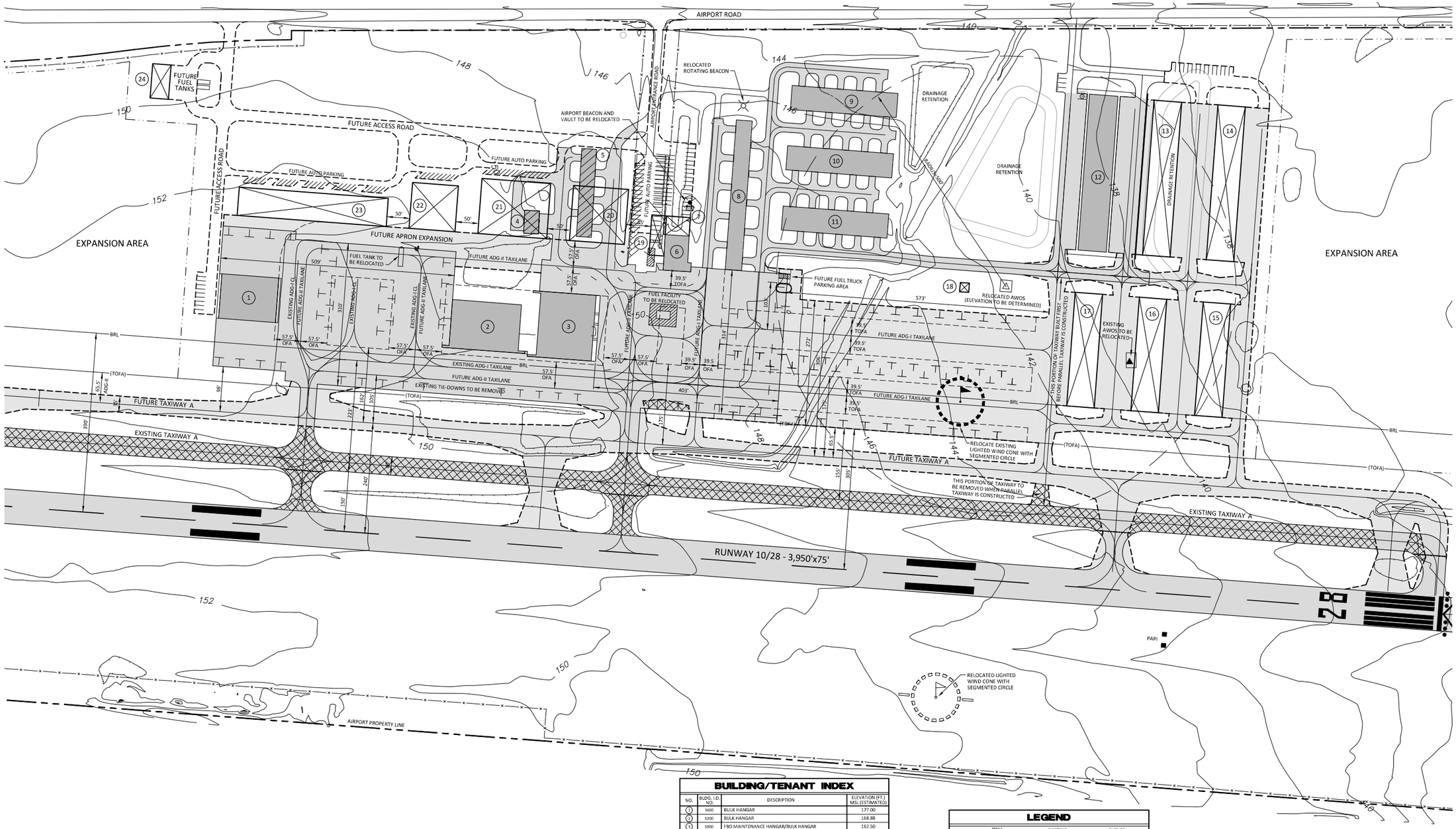

BUILDING/TENANT INDEX

NO.	BLDG. I.D. NO.	DESCRIPTION	ELEVATION (FT.) MSL (ESTIMATED)
1	5600	BULK HANGAR	177.00
2	5200	BULK HANGAR	168.88
3	5000	FBO MAINTENANCE HANGAR/BULK HANGAR	162.50
4	4800	OPERATIONS AND MAINTENANCE SHOP (TO BE REMOVED)	162.59
5	4600	ENCLOSED HANGAR (6 UNITS) (TO BE REMOVED)	162.43
6	4200	TERMINAL BUILDING	160.88
7	4000	ELECTRICAL VAULT (15'x10')	161.51
8	3600	ENCLOSED HANGAR (10 UNITS)	164.07
9	3000	ENCLOSED HANGAR (10 UNITS)	163.40
10	3200	SHADE HANGAR (10 UNITS)	163.12
11	3400	ENCLOSED HANGAR (10 UNITS)	163.35
12	2600	ENCLOSED HANGAR (14 UNITS)	160.00
13	TBD	FUTURE T-HANGAR (14 UNITS)	TBD
14	TBD	FUTURE T-HANGAR (14 UNITS)	TBD
15	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
16	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
17	TBD	FUTURE T-HANGAR (10 UNITS)	TBD
18	TBD	FUTURE ELECTRICAL VAULT	TBD
19	TBD	FUTURE TERMINAL EXPANSION	TBD
20	TBD	FUTURE HANGAR (120'x120')	TBD
21	TBD	FUTURE HANGAR (150'x120')	TBD
22	TBD	FUTURE HANGAR (100'x100')	TBD
23	TBD	FUTURE HANGAR (5 UNITS)	TBD
24	TBD	FUTURE AIRPORT MAINTENANCE FACILITY (75'x40')	TBD

LEGEND

ITEM	EXISTING	FUTURE
AIRPORT PROPERTY LINE		N/A
AIRFIELD PAVEMENT		
ROADS & PARKING		
BUILDINGS		
FENCE		
TAXIWAY OBJECT FREE AREA	N/A	(TOFA)
BUILDING RESTRICTION LINE	BRL	
PAVEMENT TO BE REMOVED	N/A	
AWOS CRITICAL AREA	N/A	
PAPI		N/A
REIL		N/A
THRESHOLD LIGHTS		N/A
WIND SOCK		
ROTATING BEACON		
AWOS		

LEGEND
MAGNETIC DECLINATION = 5°30' WEST (5.5°) WEST (JANUARY 2015)
ANNUAL RATE OF CHANGE: 0°6' (0.1°) WEST/YEAR
100 0 100
GRAPHIC SCALE IN FEET

BY	REVISIONS	DATE

URS Corporation Southern
7650 West Courtney
Campbell Courtney
Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME
MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

SHEET TITLE
TERMINAL AREA DRAWING

HCAA NO.: 6255 14
FDOT NO.: 415760-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number:
8

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RAILROAD RIGHT-OF-WAY
DR. MARTIN LUTHER KING JR. RD.
RIGHT-OF-WAY
RAILROAD RIGHT-OF-WAY
RIGHT-OF-WAY
FUTURE ACCESS ROAD
AIRPORT ROAD
FUTURE ACCESS ROAD
EXPANSION AREA
(20.3 ACRES)
(BEYOND 20-YEAR PLANNING PERIOD)
FUTURE APRON EXPANSION
WEST APRON AREA
EAST APRON AREA
FUTURE APRON/TIE-DOWNS
EXPANSION AREA
(20.3 ACRES)
(BEYOND 20-YEAR PLANNING PERIOD)
FUTURE AVIGATION EASEMENT
(3.3 ACRES TOTAL)
TURKEY CREEK ROAD
FUTURE TAXIWAY A
TAXIWAY A
FUTURE TAXIWAY A
TAXIWAY A
RSA
RUNWAY 10/28 - 3,950'x75'
65 DNL
65 DNL
10
28
FUTURE AVIGATION EASEMENT
(2.6 ACRES TOTAL)
AIRPORT PROPERTY LINE
FUTURE AVIGATION EASEMENT
(2.7 ACRES)
CHURCH
STONEY RD.
RIGHT-OF-WAY
RIGHT-OF-WAY
RAILROAD TRACKS
STONEY RD.

SOURCES:
ON-AIRPORT LAND USE : MICHAEL BAKER, INTL., 7/2015
OFF-AIRPORT LAND USE : HILLSBOROUGH COUNTY PROPERTY APPRAISER 5/26/2015, COMPILED BY URS 7/2015

NOTES:
1. LOCAL ZONING IS CODIFIED AND ENFORCED VIA HCAA RESOLUTION 2010-54, AIRPORT ZONING REGULATIONS, UNDER THE PROVISIONS OF CHAPTER 333, FLORIDA STATUTES AND CHAPTER 2003-370, LAWS OF FLORIDA AS ADOPTED ON MARCH 1, 2010 FOR TPA, PCM, TPF AND VDF.
2. AIRPORT-INDUSTRIAL DISTRICT "MA-P" ESTABLISHED BY PLANT CITY.
3. SEE AIRPORT HEIGHT ZONING MAP "ZONE "A".

LEGEND

- AOA
- TERMINAL AREA
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- RECREATIONAL
- AGRICULTURAL
- FUTURE EXPANSION AREA (BEYOND 20-YEAR PLANNING PERIOD)
- FUTURE AVIGATION EASEMENT
- RELOCATED AWOS CRITICAL AREA
- VACANT
- 65 DNL — 2013 65 DNL NOISE CONTOUR
- 65 DNL — 2033 65 DNL NOISE CONTOUR
- EXISTING BUILDING
- FUTURE BUILDING
- FUTURE PAVEMENT
- PAVEMENT TO BE REMOVED

AWOS (5.5°) TRUE NORTH

MAGNETIC DECLINATION = 5°30' WEST (5.5°) WEST
(JANUARY 2015)
ANNUAL RATE OF CHANGE:
0°6' (0.1°) WEST/YEAR

300 0 300
HORIZONTAL SCALE IN FEET

BY
REVISIONS
DATE

URS Corporation Southern
3034 S. Rocky Point Drive
Caldwell Courtesy
Tampa, FL 33607-1462

Michael Baker INTERNATIONAL

Tampa International Airport

PROJECT NAME
MASTER PLAN UPDATE
PLANT CITY AIRPORT
Plant City, Florida

SHEET TITLE
LAND USE DRAWING

HCAA NO.: 6255 14
FDOT NO.: 415780-1

DESIGNED: MJK
DRAWN: RJM
CHECKED: MLT
DATE: AUGUST 2017

Drawing Number:
9

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