Pompano Beach Airpark
Noise Contour Update Operational Data

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Submitted to:
City of Pompano Beach

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Section 1
Airport Physical Description

The Pompano Beach Airpark (PMP) serves all types of general aviation traffic ranging from small single-engine recreational and jet aircraft to the Goodyear Blimp. PMP is a public use airport owned and operated by the City of Pompano Beach, Florida. Flight training accounts for about 60% of the total operations at PMP. The airport provides a substantial economic impact to the local area by providing jobs and purchasing local goods and services.

PMP was constructed during World War II as a satellite training field serving the Naval Air Station located at what is now Fort Lauderdale-Hollywood International Airport. On August 29, 1947, the City of Pompano Beach obtained the Airport under the Surplus Property Act of 1944. Under the provisions of that law, property (such as the training field) conveyed to local governments must be used for aviation purposes or ownership reverts back to the FAA. The airports general location is shown in Figure 1.

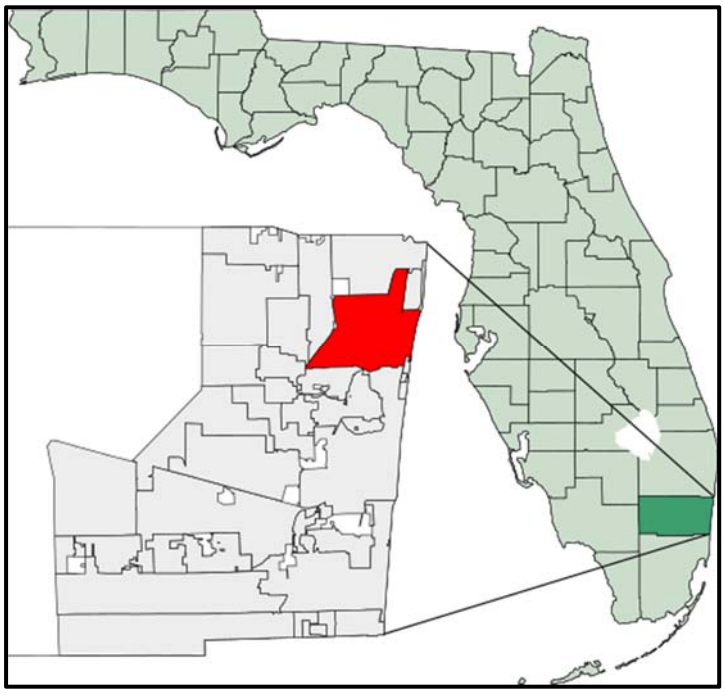

Figure 1. General Location Map

1.1 Airfield Charteristcs

The Airport's geographical location and geometry define its role within the aviation system, its relationship with the surrounding area, and the characteristics of its aviation activity. This section describes airport components that influence the airport's noise profile. The FAA's National Flight Data Center was the primary source of data for this section.

PMP has three runways, Runway 06-24, Runway 10-28, and Runway 15-33. Primary Runway 15-33 is 4,918 feet long and 150 feet wide. It is equipped with 4-light precision approach path indicators (PAPIs) and medium intensity runway lights. Global Positioning System (GPS) approaches are available on Runway 15-33. The Runway 15 landing threshold is displaced 500 feet and the Runway 33 landing threshold is displaced 340 feet. Runway 06-24 is 4,001 feet long and 150 feet wide. GPS approaches are also available on Runway 06-24. This runway is equipped with runway end identifier lights (REILs), 2-light PAPI, and medium intensity runway lights. Runway 10-28 is 3,502 feet long and 100 feet wide and is equipped with medium intensity runway lights, 2-light PAPI and REILs. There are no displaced landing thresholds for Runway 06-24 or 10-28.

There is one location off Taxiway F that has been identified as a preferred location for the arrival and departure of helicopter. The coordinates and elevation for this area off Taxiway F will be designated as a helipad for this noise analysis. For this study the helipad latitude is 26.247500, latitude is -80.113610 and the elevation is 18 feet. The airport's runway specifications are included on Table 1.

Table 1 Summary of Existing Airport Characterists

Airport Elevation			**19.3 feet**			
Airport Reference Latitude			**26.24740080**			
Airport Reference Longitude			**-80.11120805**			
Runways	**06**	**24**	**10**	**28**	**15**	**33**
Dimensions	**4001 x 150**		**3502 x 100**		**4918 x 150**	
Surface Material	**Asphalt**		**Asphalt**		**Asphalt**	
End Elevation	**19.3′**	**12.9’**	**18.4′**	**10.5′**	**16.6′**	**12.8′**
Latitude	**26.243969**	**26.250645**	**26.245939**	**26.244659**	**26.254350**	**26.243595**
Longitude	**-80.116548**	**-80.106844**	**-80.116615**	**-80.106026**	**-80.115281**	**-80.106179**
Disp. Thresh	**NA**	**NA**	**NA**	**NA**	**500′**	**340′**
Glide Path Angle	**3.75°**	**3.5°**	**3.5°**	**3.5°**	**3°**	**3°**
Touch Down Zone Elv.	**19.3′**	**17.5′**	**18.4′**	**17.5′**	**16.6′**	**15.4′**
Thresh Crossing Hgt.	**42′**	**49′**	**41′**	**45′**	**39′**	**53′**

Source: FAA National Flight Data Center, 2015

Section 2
Forecast of Future Airport Activity

Forecasts of future levels of aviation demand form the basis for effective decision making in the airport planning process. These estimates are used to identify the need for new or expanded facilities. Forecasts are intended to be realistic, based upon the latest available data and information, be supported by study information, and provide sufficient justification for future projects.

The scope of this study calls for the use of the FAA's Terminal Area Forecast (TAF) and the Florida Department of Transportation's (FDOT) Florida Aviation System Plan (FASP) as the basis for forecasts of aviation activity at PMP. This section presents the projections of aviation demand identified in the FAA's Terminal Area Forecast (TAF) and the Florida Department of Transportation's (FDOT) Florida Aviation System Plan (FASP). Finally, the recommended forecast for use to analyze noise impacts are summarized.

2.1 Forecast Methodologies

Forecasts were analyzed for components of aircraft operational demand at the airport which includes total annual, local/itinerant, and aircraft mix. The forecasts were identified for the short-term planning horizon of five years (2020). Forecast data were collected from the TAF and FASP. The scope of work for this task required the comparison of projections from both sources; therefore, a full forecast was not developed. The methodologies of both sources are discussed here.

2.1.1 Terminal Area Forecast (TAF)

The TAF is the official forecast of aviation activity at FAA facilities. These forecasts are prepared to meet the budget and planning needs of FAA and provide information for use by state and local authorities and the aviation industry. The TAF includes forecasts for active airports in the National Plan of Integrated Airport System (NPIAS). The historical data and forecasts are located on an FAA's website. Aviation activity forecasts at FAA-towered and

contract towered airports are developed using historical relationships between airport activity measures and local and national factors influencing aviation activity.

The TAF assumes an unconstrained[1] demand for aviation services based upon local and national economic conditions as well as conditions within the aviation industry. However, if the airport historically functions under constrained conditions, the FAA forecast may reflect those constraints since they are embedded in historical data. Because military operations forecasts often have national security implications, the Department of Defense (DOD) provides only limited information on future military aviation activity.

- *The TAF forecast for 2020 predicts a 1.36% increase in operations over the planning period; a growth rate of approximately 0.27% annually.*

2.1.2 Florida Aviation System Plan (FASP)

The FDOT uses a similar approach to aviation forecasting. The FDOT uses FAA data as a source but also calculates projections based on data collected by field inspectors during the 5010 Airport Master Record update process. Because aviation is a large part of the transportation system in the state of Florida, FDOT relies heavily on aviation trends within the state of Florida, including high levels of flight training.

- *The FASP forecast for 2020 anticipates a 5.21% increase over the planning period; a growth rate of approximately 1.04% annually.*

Based upon the above observations, the FASP forecast annual airport operations growth rate would be recommended as the preferred forecast for the 2020 noise contour map.

[1] The forecast is not affected by the airport or air traffic control systems capacity to meet the demand.

Section 3
Operational Activity

3.1 Aircraft Operational Data

The data used in this Noise Contour Update are derived from several sources including records maintained by the FAA and Pompano Beach Airpark air traffic control. The INM noise computation process requires fundamental information about the number and types of aircraft that regularly use the airport, the runways used by each primary aircraft type, and flight tracks used for arrival and departure. Operational data key for the development of the noise exposure contours for PMP include total airport operations, average annual day operations, percent of day versus night[2] activity, and operations by aircraft type (fleet mix).

3.1.1 Existing Conditions 2015 and Five-year Forecast 2020 Activity Levels

Annual airport operations at PMP are recorded in the following categories: Itinerant and Local. Itinerant operations are divided into three categories: air taxi, general aviation, and military. Local operations are divided into two categories: civil and military. Local operations include those that remain within the airports traffic pattern, those simulating instrument approaches and those to and from airports and/or practice areas within a 20-mile radius. Itinerant operations are all operations originating from outside the local area and traffic pattern. Air Taxi operations are those conducted by operators licensed under FAR Part 135 to provide transportation services for people or cargo. Military operations are those conducted by the U.S. government.

The split between local, itinerant, and military operations used for the FASP assumptions are 64.40% local, 35.36% itinerant, and 0.04% military. Military operations count for less than 1% of the total operations at PMP, therefore they will be represented under itinerant operations for noise modeling purposes. Table 2 summarizes 2015 and 2020 aircraft operations.

[2] Night is defined in the INM as the hours between 10:00 pm and 7:00 am).

Table 2. Total and Average Annual Day Aircraft Operations, Base Year 2015 and Five-Year Forecast 2020

Year	Total and Average Annual Day Aircraft Operations			
	Local	Itinerant	Military	Total
Existing Conditions 2015[3]	91,893	50,750	56	142,699
Average Annual Day	252	139	0	391
Five-Year Forecast 2020	96,680	53,394	59	150,133
Average Annual Day	265	146	0	411

Source: PMP ATCT Logs and FDOT FASP

3.1.2 Day/Night Activity

The FAA requires that airports use the DNL to describe noise exposure. Since DNL applies a ten-fold weighting to operations occurring at night (10 p.m. through 7 a.m.), the modeling inputs must address the day/night "split" of operations. The FAA's OPSNET data was used to determine the percentage off operations which occurred during nighttime hours in 2015. This data showed that approximately 3% of all operations occur at night, as shown Table 3.

Table 3. Day-Night Split of Operations

Time Period	Percent
Daytime (7 a.m. through 10 p.m.)	97%
Nighttime (10 p.m. through 7 a.m.)	3%
Total	**100%**

Source: OPSNET, 2015

3.1.3 Aircraft Fleet Mix

This delineation of operations by aircraft type is a vital data element of the INM. Aircraft operations by type of aircraft represent the Airport's operational fleet mix. The operational fleet mix is more difficult to estimate even with the use of the TAF and FASP. Neither source breakout the forecast by aircraft category or types. PMP tower records also do not breakout the aircraft types or categories. In the absence of that data, the 2008 Master Plan Update

[3] 2015 tower data covered January through November. December operations estimated to be 11,892.

was utilized to develop assumptions regarding the percentages applied to each aircraft type. The 2015-2020 Airport Master Plan Update documented operation in 5 primary categories:

- Single engine piston
- Multi engine piston
- Jets
- Turbo-prop
- Helicopters

Table 4 provides the aircraft fleet mix and percentages which will be used in the INM 7.0b software for existing conditions 2015 and five-year forecast 2020.

Table 4. Aircraft Fleet Mix

Aircraft Category	INM Aircraft Type	Actual Aircraft	% of Total Operations
Single Engine Piston	CNA172	Cessna 150/152; Cessna 172	65%
	CNA206	Cessna 182/RG; Cessna 205/210	
	GASEPF	Piper PA-20/28; Piper PA-38; RV-4; Cessna 120/140/203; Beech 24	
	GASEPV	Piper PA-28R; Piper PA-32/32R; Piper PA-46; Beech 33/35; Pilatus PC-12; Mooney; Cirrus SR-22	
Multi Engine Piston	BEC58P	Seminole/Seneca; Piper PA-23/24; Piper PA-30/31 Piper PA-34/39/44; Cessna 340; Cessna 421; Beech Baron 55/58; Cessna 414	15%
Multi Engine Turbo	CNA441	Piper PA-31T; Beech King Air 90; Beech King Air 300/350	6%
	PA42	Piper PA-42	
Jet	LEAR35	Hawker 800XP; Dassault Falcon 10	4%
	MU3001	Beechjet 400A	
	CIT3	Cessna 650	
Helicopter	R44	Robinson 44	10%
	R22	Robinson 22	

Source: FAA Based Aircraft Database and TFMSC Database, CDM

The INM contains a database of aircraft used to develop noise studies. Aircraft are selected and input into the INM based on the actual aircraft type and aircraft substitution criteria. There are many different types of general aviation aircraft operating in the U.S. and at Pompano Beach Airpark. In order to accommodate all of the various conditions and states of

aircraft performance, the FAA developed substitution criteria to use in the INM. Aircraft substitutions are based on common noise signatures, engine performance criteria, and other characteristics.

3.1.4 Runway Utilization

Wind and weather conditions are the primary factors that determine which runway will be utilized. For operational and safety reasons, aircraft takeoff and land into the wind. According to the FAA's wind analysis tool, overall wind conditions favor use of Runway 10-28. The air traffic control tower does not track runway utilization, however, assumptions have been provided in Table 5 to be used for the purpose of this noise contour update. Helicopter operations will be allocated to the dedicated location off Taxiway F.

Table 5. Runway Utilization Rates

Fleet	Runway	Percent Use (%)	Runway End Use (%)
Single-Engine and Multi-Engine Piston	15-33	50%	15 = 30%
			33 = 20%
	06-24	16%	06 = 10%
			24 = 6%
	10-28	34%	10 = 28%
			28 = 6%
Turboprop	15-33	50%	15 = 30%
			33 = 20%
	06-24	16%	06 = 10%
			24 = 6%
	10-28	34%	10 = 28%
			28 = 6%
Jet	15-33	70%	15 = 40%
			33 = 30%
	06-24	30%	06 = 20%
			24 = 10%
	10-28	0%	10 = 0%
			28 = 0%

Source: Master Plan Update

3.1.5 Flight Track Descriptions

Flight tracks are a critical modeling input. They represent the centerlines of corridors by which aircraft fly into, out of, and around the airport. Figures 2 through 4 depict the noise modeling flight tracks to be used in this study, by type of operation (arrival, departure, and touch-and-go). These tracks were developed by using modified data from the 2008 Master Plan Update and helicopter flight tracks developed during the helicopter ingress/egress study.

Figure 2. Touch and Go Flight Tracks

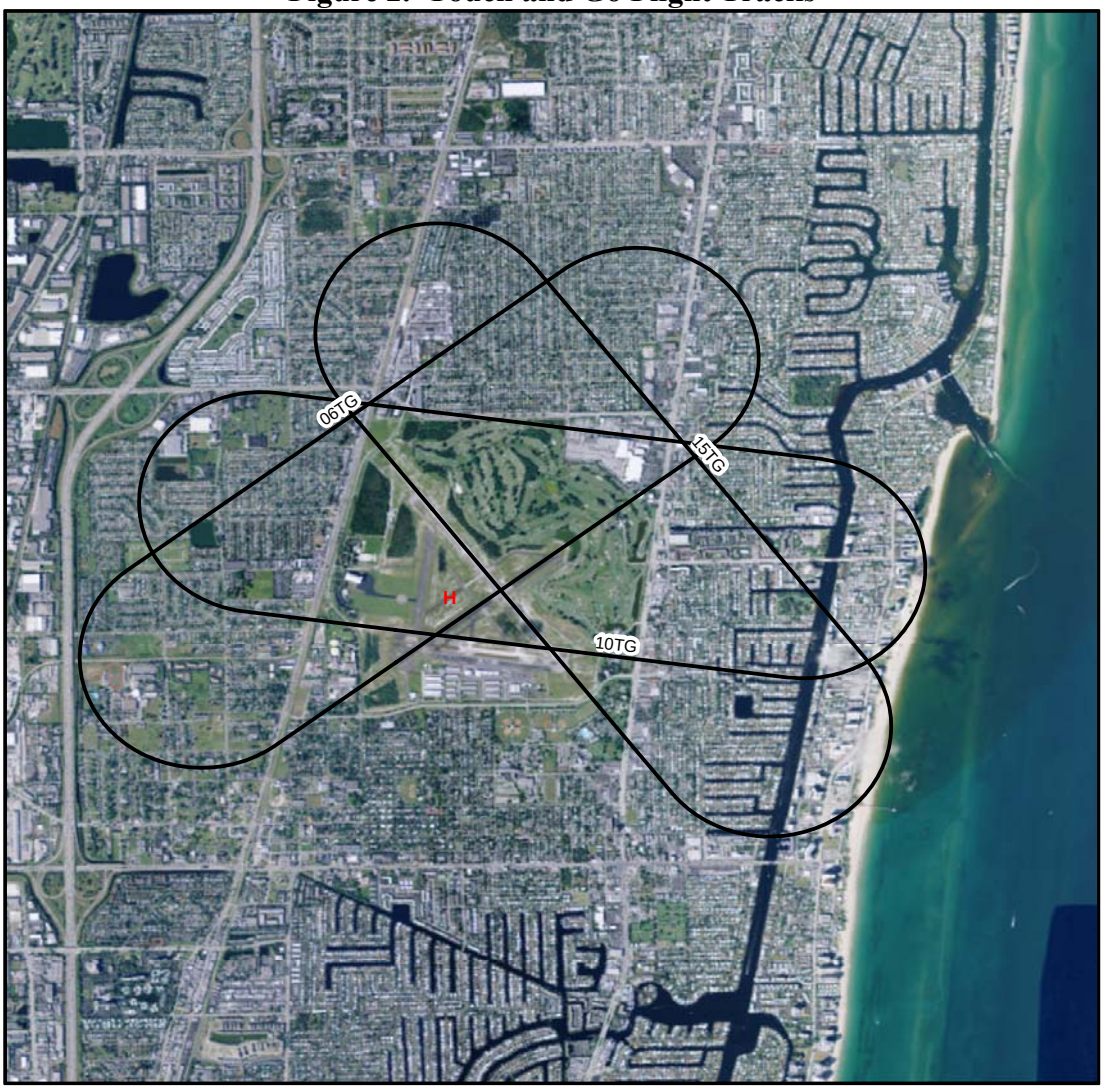

Figure 3. Arrival Flight Tracks

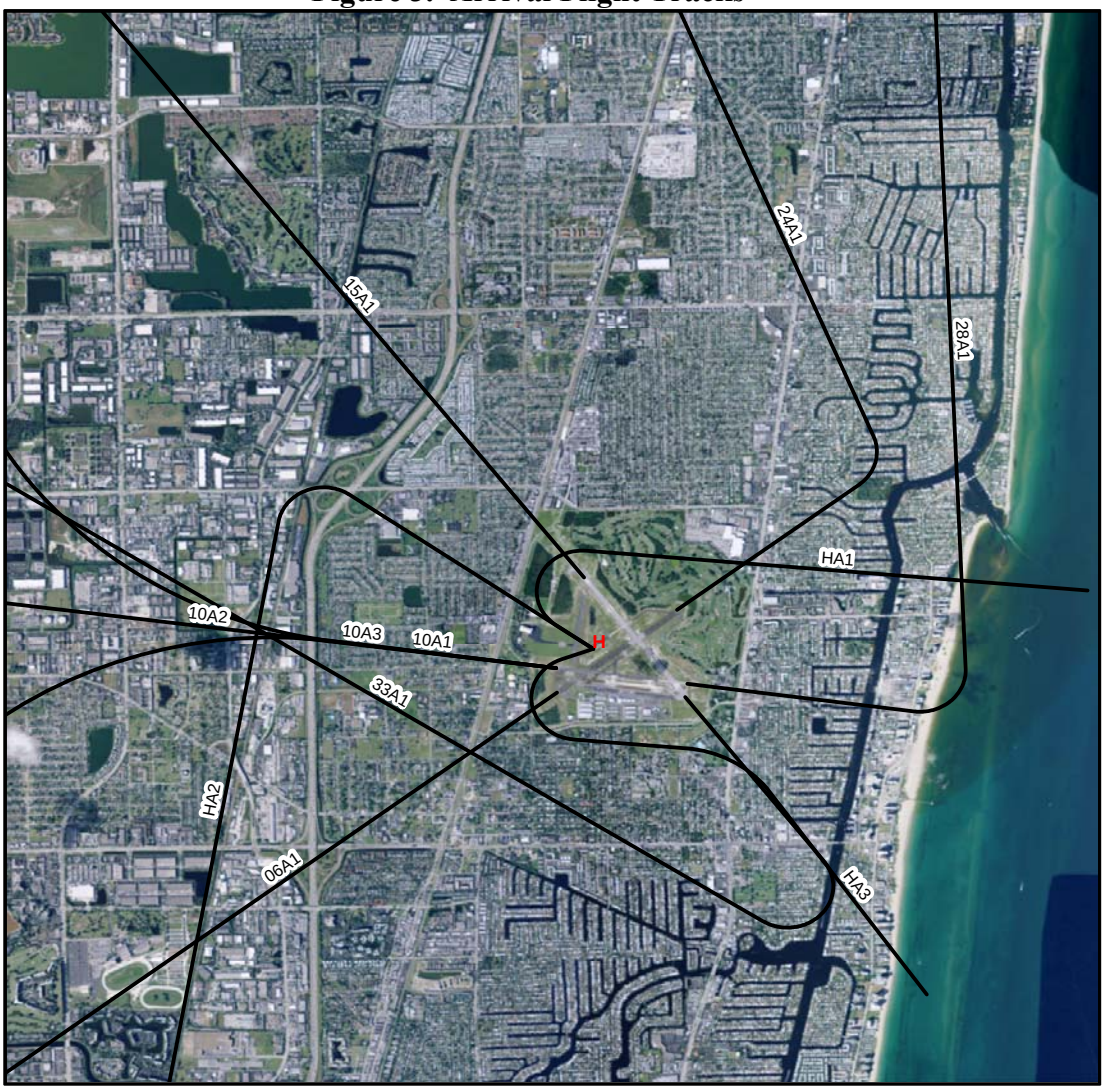

Figure 4. Departure Flight Tracks