FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

May 2026

Interim Report #1

McFARLAND JOHNSON

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FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

Chapter 1: Inventory

McFARLAND JOHNSON

1. INVENTORY

1.1. INTRODUCTION

This inventory chapter provides an overview of the Floyd Bennett Memorial Airport (GFL or the Airport), including its location and ownership, recent airport development, meteorological conditions, existing airport facilities, aviation activity, airspace and air traffic control, and land use and zoning. Please see the technical supplement in **Appendix A** for detailed definitions of FAA standards and a glossary of abbreviations used throughout this document.

This information was obtained through on-site investigations of the Airport, interviews with Airport personnel, and a review of published information as of November 2024. Information was also obtained from available planning documents and studies concerning the Airport and surrounding areas. The information presented in this chapter serves as the basis for the development of aviation forecasts as well as the baseline data to be used in Chapter 4, *Facility Requirements*.

This chapter is organized into the following sections:

- Introduction
- Goals of the Master Plan
- Airport Background
- Meteorological Conditions and Climate
- Existing Airport Facilities
- Aviation Activity
- Land Use and Zoning
- Airspace and Air Traffic Control
- Developable Land

1.2. GOALS OF THE MASTER PLAN

Generally, the goals of this Airport Master Plan Update are to provide guidelines for future airport development that will satisfy existing and future aviation demand in a financially feasible manner, while at the same time identifying the aviation-related environmental and socioeconomic issues that may exist in the community. This Airport Master Plan Update is a long-term (20-year) development view of the Airport.

Specifically, the issues that this Airport Master Plan Update will attempt to resolve include the following development issues:

1. Mission & Vision Statements – Through the Airport Master Plan Update process, the Airport and the Master Plan Advisory Committee (MPAC) will work together to create a vision statement and a mission statement. The purpose of these statements is to establish Warren County's desired direction for the airport.
2. Runway Length – The Airport Master Plan Update will consider and review existing and future requirements for runway length at the Airport. It will assess the current operating fleet, as well as the fleet anticipated to operate at the airport over the planning period, to identify a recommended future runway length.
3. Land Use Protections - Development within the vicinity of the airport, particularly related to the construction of solar energy facilities, may have a limiting factor on future opportunities to provide additional runway length at the Airport, even if not identified as necessary within this study. Recommendations for long-term protection of land will be assessed.
4. The update will consider the removal and/or installation of new structures, buildings, or other improvements and associated utilities relevant to the implementation of improvements identified in the plan. These projects could result from a review of existing or future airport design standards and facilities that will need to be relocated, or installed, to ensure compliance with those standards.
5. The plan will evaluate the need for new general aviation (GA), fixed base operator (FBO), and corporate hangar locations (number, minimum land requirements, apron locations, hangar types, and sizes, access roads, taxiways, etc.). A clear definition of each general aviation site and the types of development on each will be provided.
6. The analysis will include an evaluation of runway/taxiway configuration improvements to make the existing airfield more efficient and address any non-conforming design issues relative to FAA AC150-5300-13B, Change 1, *Airport Design*. The analysis will also include an evaluation of electronic, visual, and meteorological facilities for improved approach capabilities, including an upgrade to instrument approaches.
7. Environmental permitting requirements of the proposed development will be identified and reviewed to provide a better understanding of the actions that might be needed to implement the development recommendations.

1.3. AIRPORT BACKGROUND

1.3.1. Airport Location and Details

The Airport is located in Queensbury, New York, approximately two and a half miles northeast of the city of Glens Falls, New York. The Airport is approximately seven miles southeast of Lake George and adjacent to the six-million-acre Adirondack Park.

Warren County owns and operates the Airport and is designated as the Airport sponsor. The management and operations of the Airport are overseen by the Warren County Board of Supervisors and fall under the jurisdiction of its County Facilities Committee. The Board of Supervisors consists of twenty supervisors who represent the eleven towns of Warren County and the City of Glens Falls. The County Facilities Committee is one of 12 standing committees. The Airport is managed directly by the Department of Public Works (DPW), which is led by the superintendent of Public Works, an airport manager, and two maintenance employees.

The FAA airport reference point (ARP) coordinates identify the geometric center of the Airport at 43° 20' 29.356" north latitude and 73° 36' 37.107" west longitude, and the Airport includes approximately 628 acres.

Aviation-related businesses at the Airport include Rich Air, the FBO, and Leaf Air, the on-airport flight training provider.

1.3.2. Airport Classification and Level of Service

The FAA's National Plan of Integrated Airport Systems (NPIAS) identifies nearly 3,000 public-use airports that are included in the national system of airports. This includes the roles they serve, and the amounts and types of airport development eligible for federal funding through AIP over the next five years. The 2025-2029 NPIAS identifies GFL as one of 122 "national" airports, which comprise approximately four percent of GA airports. The FAA identifies National airports as those located in metropolitan areas, with high levels of aviation activity, and multiple turbine-engine and multi-engine aircraft.

The Airport does not have scheduled air carrier service and supports GA aircraft operations, however, it operates as a class IV airport under Code of Federal Regulations (CFR) Part 139 to provide higher safety and inspection standards for aircraft operators. The Part 139 certificate is issued under Part 139.401(a)(3), reserved for an airport that is a port of entry, designated international airport, landing rights airport, or user fee airport.

1.3.3. Airport Service Area

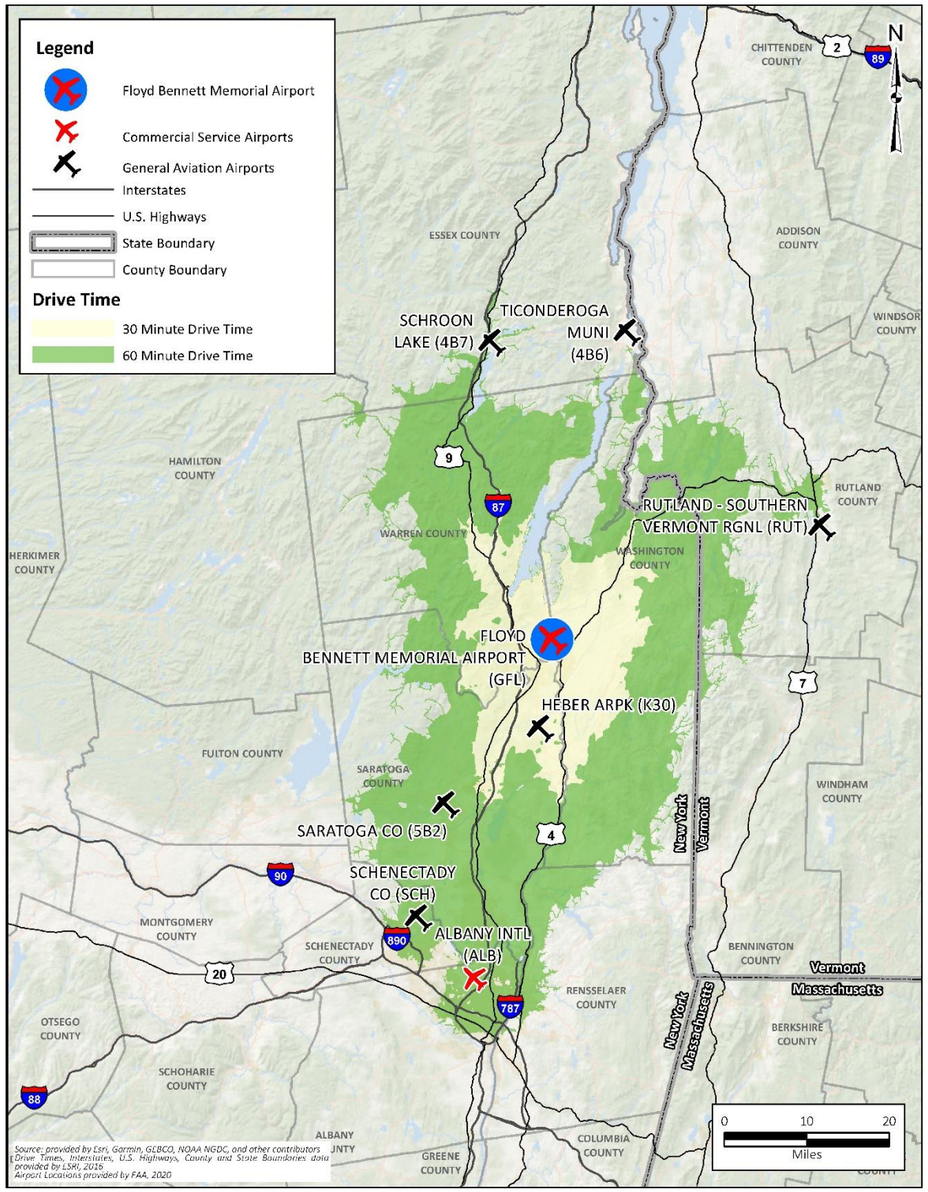
The Airport service area is comprised of areas within a 30- and 60-minute drive of the Airport. As identified in **Figure 1-1**, There are five GA airports within a 60-minute drive of the airport, and two commercial service airports (ALB and RUT). As shown in **Table 1-1**, three other airports have an instrument landing system (ILS) within a 60-minute drive time of GFL.

Table 1-1: GFL and Surrounding Paved Runway Airports

Airport	Runway(s)	Runway Length (ft.)	Based Aircraft	Instrument Approaches	Associated City	Distance from GFL (SM)
GFL	1-19; 12-30	5,000; 3,999	40	CAT 1 ILS	Queensbury, NY	---
K30	6-24	2,200	9	N/A	Gansevoort, NY	11
5B2	5-23; 14-32	4,699; 4,000	50	RNAV (GPS)	Saratoga Springs, NY	24
RUT	1-19; 13-31	5,304; 3,169	42	CAT 1 ILS	Rutland, VT	36
SCH	4-22; 10-28	7,001; 4,850	72	CAT 1 ILS	Schenectady, NY	37
4B7	16-34	3,000	1	N/A	Schroon Lake, NY	37
4B6	2-20	4,041	9	RNAV (GPS)	Ticonderoga, NY	38
ALB	1-19; 10-28	8,500; 7,200	84	CAT 1 ILS	Albany, NY	42

Source: FAA Airport Data and Information Portal (ADIP), 2025.

Figure 1-1:GFL Service Area



Source: McFarland Johnson, 2025

1.3.4. Airport History

According to the Warren County website,[2] the Airport was established as part of a network of airports to protect the US mainland from the threat of invasion during World War II. In late 1940, Col. Clarence B Coombs of the US Army Air Corps approached the Warren County Board of Supervisors with the idea to construct an airport in a location directly between New York City and Montreal, Canada. Suitable land was found in Queensbury, NY. Warren County appropriated $10,000 to purchase land upon which the Airport would be constructed, and the federal government appropriated $500,000 for the construction of the Airport. The US Army Corps of Engineers devised plans for the construction of Warren County Airport in January 1941. Construction of the Airport began in March 1941 with a 1,900-foot-long turf runway running north/south (now Runway 1-19), and there were plans to construct a second runway running northwest/southeast in the future.

In May 1941, construction began on the second, northwest/southeast runway (now Runway 12-30), as well as a 1,600-foot extension to Runway 1-19, which required extensive dredging and fill due to the swampiness of the area. At the same time, both runways were paved. By August 1941, large DC-3 aircraft were operating from the Airport.

In 1942, the first building was constructed to house the Airport caretaker, and additional funding was appropriated to purchase adjacent land.

In 1945, plans were made for an administration building, which was constructed for an estimated $101,799.00. A garage was also constructed for $15,000.

1.3.5. Previous Airport Master Plan Update

The last airport master plan update was completed in 2009. The update culminated in an update to the ALP set and the establishment of the Gulfstream G-IV with an aircraft approach category (AAC)/airplane design group (ADG) designation of "D-II" as the future design aircraft. The existing and future design aircraft was changed in 2011 to the Challenger 300 (AAC-ADG B-II). The stated objective was to "determine the extent, type, and schedule of improvements necessary to accommodate existing needs and future aviation demand at the airport."

1.3.6. Roadway Access

The Airport is accessible from the north and south via Interstate 87, which runs from New York City to the Canadian border. The Airport is accessed via Exit 19 to NY 254 East, which becomes Quaker Road to Ridge Road to Hicks Road to Queensbury Avenue, which runs along the eastern edge of the Airport.

1.3.7. Environmental Setting

The general setting within the airport operations area (AOA) consists of maintained grasslands, interspersed with paved airfield surfaces and buildings. Much of the surrounding airport property is forested wetlands. The surrounding community consists of commercial, agricultural, and light residential use. The majority of habitats identified on Airport property are common and secure within New York State; however, portions of the wetland on the southwest section of the parcel are considered Significant Natural Communities by the New York State Department of Environmental Conservation (NYSDEC) as a High-Quality Occurrence of Rare Community Type – Northern White Cedar Swamp and a Rare Community Type – Marl Fen. Further information regarding all aspects of the setting is included in Chapter 2, Environmental Inventory.

1.3.8. Socioeconomic and Demographic Data

The socioeconomics and demographics of the areas surrounding an airport can be precursors to the success of that airport. In the case of GFL, the following data points were reviewed to assess economic health and the potential for success of GFL. Comparisons are made to the United States as a whole, the state of New York, and Warren County, utilizing data sets from 2023.

Educational Attainment – While not a requirement to obtain a pilot license, most recreational pilots and the vast majority of commercial pilots have at least a bachelor's degree. Also, the prevalence of higher education degrees strongly correlates with a higher disposable income and higher spending power, which are requirements to support recreational flying. Many business owners who may utilize an airport like GFL in support of their business will also have at least a bachelor's degree, which will likely increase the chances of charter operations or even the likelihood of basing a corporate aircraft at GFL.

According to the US Census Bureau[4], among the population of Warren County that was 25 years and older, 37.3 percent have obtained a bachelor's degree or higher, compared to the US as a whole (36.2 percent) and NY state (40.6 percent). The prevalence of individuals with a higher education degree is higher than the US average and higher than in many other counties in Upstate New York. While the percentage of higher degrees in Warren County is lower than in NY state, this can likely be attributed to the population of New York City and the prevalence of higher degrees per capita in that area. Also, 15.8 percent of the population of Warren County who were 25 years or older have a graduate or professional degree, compared to 14.3 percent for the greater US, and 18.1 percent for NY state.

Mean and Median Income – Another metric to assess the economic health of a region, and the potential to support an airport are the mean and median incomes of the population.

According to the US Census Bureau, the mean income, or the average income of all families in Warren County was $117,882. This is greater than the mean income of all US families ($109,160), and slightly below the mean household income of NY state ($122,227). However, the mean incomes of NY families include the metropolitan area of New York and New Jersey (New York City and the surrounding counties) which greatly skews up these earnings amounts. Considering the NY-NJ Metropolitan Area mean income of families was $164,102, families of Warren County earning a mean income of $117,882 fare well compared to the state average.

Similar to the mean income, the median income is defined as the middle income of the total data set. For Warren County, the median income of $102,338 was nearly identical to the median income

[2] *History | Warren County. (n.d.). https://www.warrencountyny.gov/airport/history*

[4] U.S. Census Bureau, 2023 American Community Survey (ACS), https://data.census.gov/table, accessed January 2025.

of the state of New York ($102,038) and higher than the US median family income of $96,401.

With respect to income, the families of Warren County appear to be doing well compared to the US, and the state of NY, which would suggest that the local economy should be able to support the Airport.

Unemployment Rate – A lower number of unemployed workers who are willing and able to work equates to a more robust economy. According to the US Bureau of Labor Statistics, Warren County had an unemployment rate of 2.5 percent. This is half of NY state (5.00 percent) and nearly half of the US (4.30 percent) as a whole. Warren County's low unemployment rate signifies a healthy economy with high job availability, which are necessary components for a healthy airport.

Percent Below the Poverty Level – Like unemployment, the health of Warren County can be assessed by examining the percentage of those who have slipped below the poverty level. Again, according to the US Census Bureau, 10.10 percent of residents of Warren County were living below the set federal poverty level (FPL) threshold. When compared to the US as a whole (12.50 percent) and NY state (14.20 percent), Warren County had fewer residents per capita who live below the FPL.

Overall, these indicators show Warren County's economy has been strong in comparison to the US and NY state. The strong economy of Warren County bodes well for the health and prosperity of GFL.

1.4. METEOROLOGICAL CONDITIONS AND CLIMATE

1.4.1. Ceiling and Visibility

Meteorological data were obtained through the National Climatic Data Center (NCDC), consisting of 10 years of hourly observations and environmental conditions reported by the ASOS located at the Airport. This data was analyzed to explore the Airport's ceiling, visibility, and wind conditions. Over the last 10 years, the Airport was in visual flight rules (VFR) conditions approximately 74 percent of the time, and in IFR conditions approximately 26 percent of the time. VFR applies when the cloud ceiling is greater than 3,000 feet and the visibility is greater than five statute miles. Instrument flight rules (IFR) apply when ceilings are at 500 feet to less than 1,000 feet and/or the visibility is between one to less than three statute miles.

1.4.2. Wind Coverage

The orientation of runways is primarily a function of wind velocity and direction taken together with the ability of aircraft to operate under adverse conditions. The runway at an airport is aligned as closely as possible with the direction of the prevailing winds. The crosswind component is the vector of wind velocity and direction, which acts at an angle to the runway. Runway wind coverage refers to the percentage of time in which operations can safely occur given crosswind components. The FAA has established that the runway should provide acceptable crosswind conditions 95 percent of the time, based on different allowable crosswind components that are derived from the RDC for each runway. Wind coverage can be seen in **Figure 1-2**, and **Figure 1-3**. Under IFR and all-weather conditions, the 95 percent wind coverage is met for the primary runway.

1.4.3. Climate

Weather plays an important role in adequate planning for an airport. Temperature and wind are essential factors in determining runway length and orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud cover or other conditions. The hottest month of the year in Queensbury is July at 83.72 degrees Fahrenheit.[5] The month with the most snow in Queensbury is January, with 24 inches of snow.[6]

1.5. EXISTING AIRPORT FACILITIES

This section includes airside, landside, and support facilities. The airside facilities include runways and taxiways, while the landside is associated with the transition from air to ground transportation. Support facilities aid in the functioning of the airport. Existing conditions are shown in **Figure 1-4.**

1.5.1. Airside Facilities

1.5.1.1. Runways

The FAA classifies runways as either primary, crosswind, secondary, or additional. GFL has one primary runway, Runway 1-19. Runway data for the Airport can be found in **Table 1-2**. Per the 2020 Pavement Management Plan (PMP), the Runway 1-19 PCI was reported to be between 73 and 82 (out of 100 possible points) and in "satisfactory" condition. The FAA classifies Runway 12-30 at GFL as an additional runway as it does not meet the eligibility requirements to be classified as a crosswind, or a secondary runway.

Table 1-2: GFL Runway Data

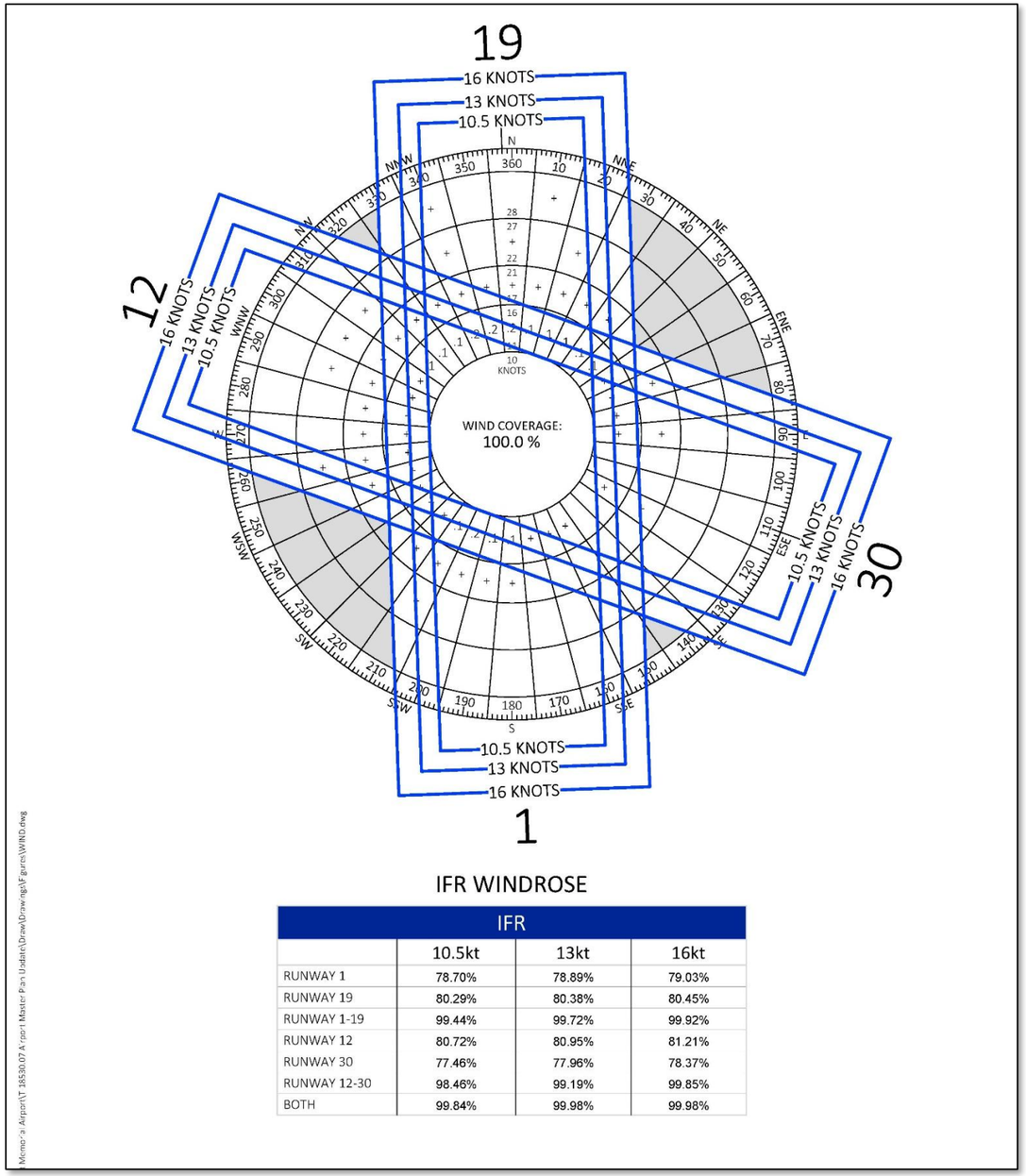
Runway	1 / 19	12 / 30
Surface	Asphalt, Grooved	Asphalt
Dimensions	5,000' x 150'	3,999' x 100'
Pavement Condition	Excellent	Good
Markings	Precision / Non-Precision	Non-Precision / Non-Precision
Visual Glide Path Angle	3° / 3°	3.85° / 3°
Lighting	HIRL	MIRL
Approach Minimums	1 SM / 1 SM	1¼ SM / 1 SM
Visual Approach Aids	MALSR - PAPI / PAPI	PAPI / PAPI
Instrument Approach Aids	ILS, LOC, GPS/ GPS	GPS / GPS
CFR Part 77 Category	PIR / C	C / C
PCR	635/F/F/X/T	436/F/B/X/T

Sources: FAA ADIP, effective October 31st, 2024, and McFarland Johnson analysis, 2025.

[5] Reilly, W. (2021, November 30). DOT/FAA/TC-21/43, *Future Climate Scenarios for Runway Length: Assessment of Future Temperature and Precipitation Trends*.

[6] https://www.usclimatedata.com/climate/glens-falls/new-york/united-states/usny0568, accessed January 29, 2025.

Figure 1-2: GFL IFR Wind Coverage

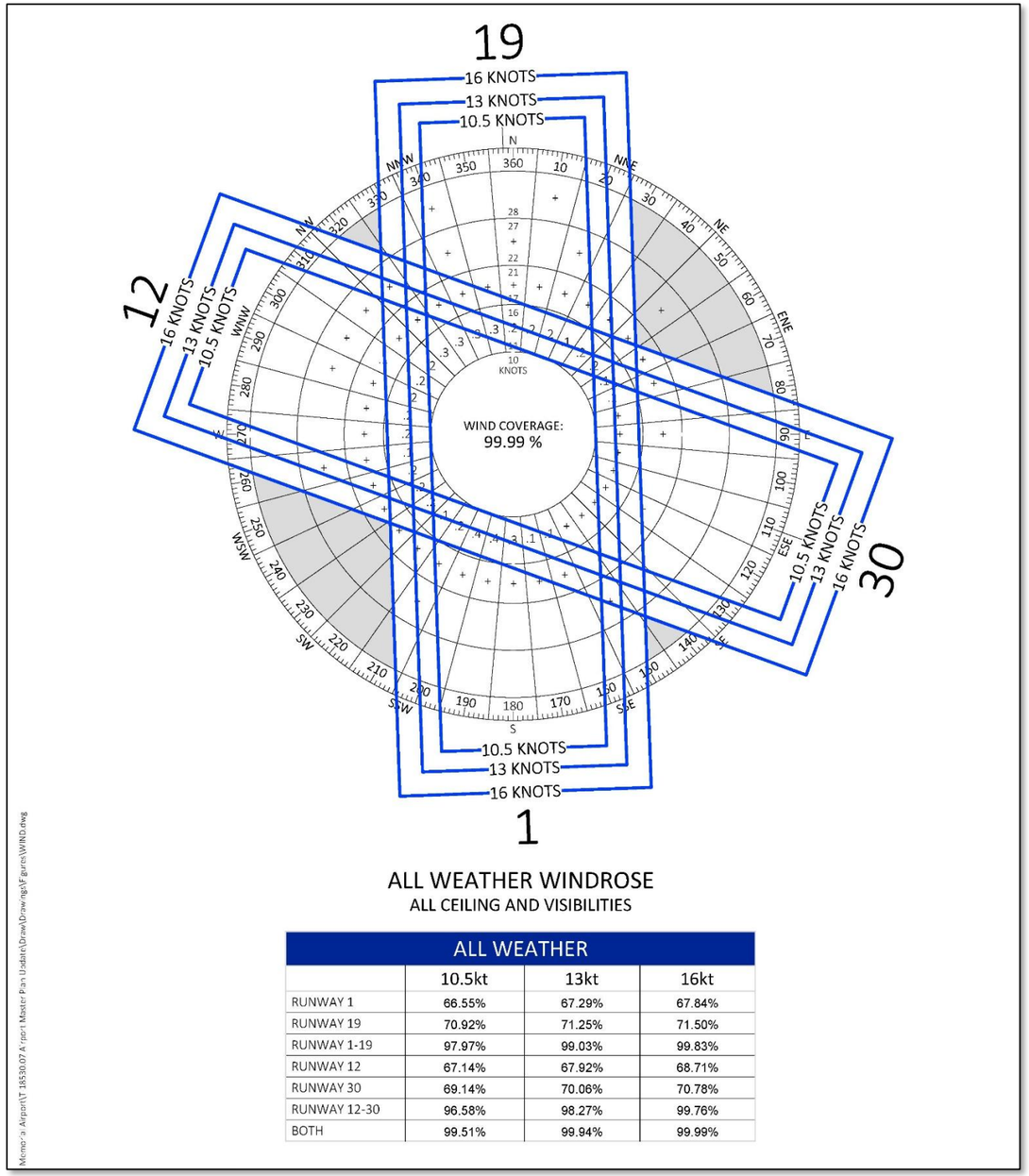


IFR WINDROSE

IFR			
	10.5kt	13kt	16kt
RUNWAY 1	78.70%	78.89%	79.03%
RUNWAY 19	80.29%	80.38%	80.45%
RUNWAY 1-19	99.44%	99.72%	99.92%
RUNWAY 12	80.72%	80.95%	81.21%
RUNWAY 30	77.46%	77.96%	78.37%
RUNWAY 12-30	98.46%	99.19%	99.85%
BOTH	99.84%	99.98%	99.98%

Source: GFL AWOS, and McFarland Johnson analysis, 2025.

Figure 1-3: GFL All-Weather Wind Coverage



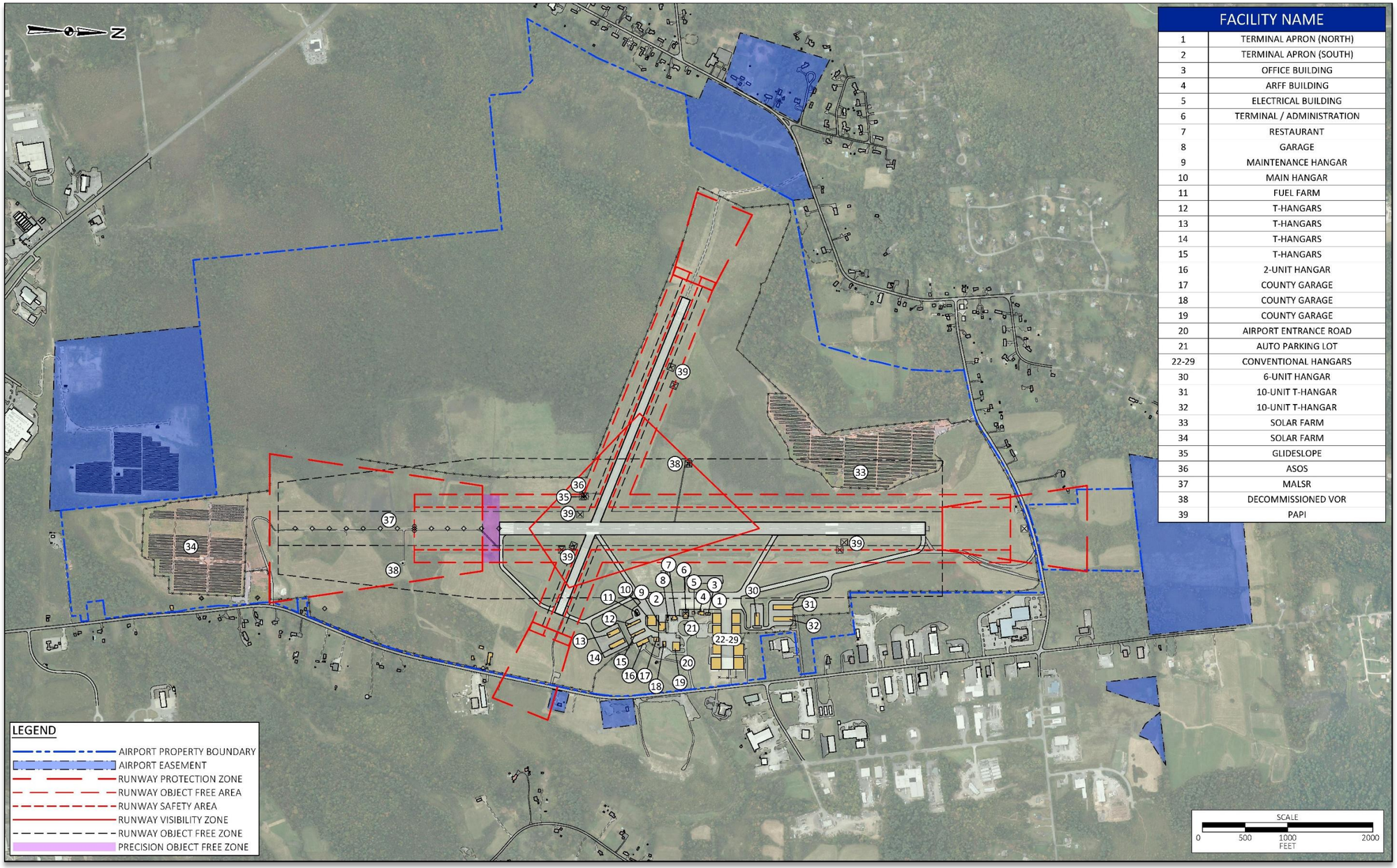
ALL WEATHER WINDROSE

ALL CEILING AND VISIBILITIES

ALL WEATHER			
	10.5kt	13kt	16kt
RUNWAY 1	66.55%	67.29%	67.84%
RUNWAY 19	70.92%	71.25%	71.50%
RUNWAY 1-19	97.97%	99.03%	99.83%
RUNWAY 12	67.14%	67.92%	68.71%
RUNWAY 30	69.14%	70.06%	70.78%
RUNWAY 12-30	96.58%	98.27%	99.76%
BOTH	99.51%	99.94%	99.99%

Source: GFL AWOS, and McFarland Johnson analysis, 2025.

Figure 1-4: GFL Existing Conditions



FACILITY NAME	
1	TERMINAL APRON (NORTH)
2	TERMINAL APRON (SOUTH)
3	OFFICE BUILDING
4	ARFF BUILDING
5	ELECTRICAL BUILDING
6	TERMINAL / ADMINISTRATION
7	RESTAURANT
8	GARAGE
9	MAINTENANCE HANGAR
10	MAIN HANGAR
11	FUEL FARM
12	T-HANGARS
13	T-HANGARS
14	T-HANGARS
15	T-HANGARS
16	2-UNIT HANGAR
17	COUNTY GARAGE
18	COUNTY GARAGE
19	COUNTY GARAGE
20	AIRPORT ENTRANCE ROAD
21	AUTO PARKING LOT
22-29	CONVENTIONAL HANGARS
30	6-UNIT HANGAR
31	10-UNIT T-HANGAR
32	10-UNIT T-HANGAR
33	SOLAR FARM
34	SOLAR FARM
35	GLIDESLOPE
36	ASOS
37	MALSR
38	DECOMMISSIONED VOR
39	PAPI

Source: McFarland Johnson, 2025.

Per the FAA Reauthorization Act of 2024, the runway is now further classified as a Legacy Crosswind Runway and will qualify for funding for future improvements, including rehabilitation or reconstruction efforts based on current design standards.[8] The pavement condition index (PCI) for Runway 12-30 is listed as 87-89, or in "good" condition, and the portion where it intersects with Runway 1-19 has a PCI of 75, or "satisfactory. Both runways have standard, left-hand traffic patterns.

1.5.1.2. Taxiways

There are five taxiways at GFL. Taxiways A, B, C, D, and E. Taxiway details can be found in the subsections below. All taxiways at GFL have all-new LED MITL.

Taxiway A

Taxiway A is an entrance/exit taxiway that provides access from the intersection of Taxiways B and C along the Terminal Apron to the approach end of Runway 19. It also provides access to the north T-hangars. Taxiway A is approximately 50 feet wide and is approximately 2,300 feet long. While Taxiway A is not parallel to Runway 1-19, it does meet the FAA definition of a parallel taxiway, in that pilots can get to either end of Runway 1-19. At the runway hold short marking on the north end of Taxiway A, the centerline of Taxiway A is approximately 287 feet from the centerline of Runway 1-19 and is approximately 770 feet from the Runway 1-19 centerline where it intersects Taxiway B and the Terminal Apron. The 2020 PMP listed the Taxiway A pavement as having a PCI of 78-83, and the northernmost portion, where it intersects Runway 1-19, with a PCI of only 67.

Taxiway B

Taxiway B is an entrance/exit taxiway that provides access to the Terminal Apron. It is 50 feet wide and approximately 800 feet long. The intersection of Taxiway B and Runway 1-19 is located approximately 1,760 feet from the approach end of Runway 19 and Taxiway B also has a non-standard condition of an acute angle at the runway-taxiway intersection, as noted in FAA AC 150/5300-13B, Change 1. The 2020 PMP listed Taxiway B as having two sections, an asphalt and a Portland cement concrete section, with PCI values of 29 and 70, respectively. There are plans underway to reconstruct Taxiway B as this report is being written.

Taxiway C

Taxiway C is an entrance/exit taxiway that provides access from the south end of the Terminal Apron to the intersection of Runway 1-19 and Runway 12-30. It is approximately 50 feet wide and approximately 800 feet long. Taxiway C provides direct apron to runway access, which is noted as a non-standard condition identified in FAA AC 150/5300-13B, Change 1. The 2020 Pavement Management Plan (PMP) listed the Taxiway C pavement as having a PCI of 76, with the portion connecting to the two runways as having a PCI of 67.

Taxiway D

Taxiway D is a small entrance/exit taxiway that provides access from the south side of the Terminal Apron to the approach end of Runway 30. It also provides access to the south T-hangar and apron. It is 40 feet wide and approximately 880 feet long. The 2020 PMP listed the PCI for Taxiway D as 76, or "satisfactory".

Taxiway E

Taxiway E connects the approach ends of Runway 30 and Runway 1. It is 40 feet wide and approximately 1,200 feet long. Taxiway E was recently reconstructed, and as such, the 2020 PMP listed the PCI of Taxiway E between 90 and 92.

1.5.2. Landside Facilities

Landside facilities include aircraft aprons, hangars, wildlife perimeter fencing, and utilities.

1.5.2.1. Aprons

There are four aircraft parking aprons at GFL. Most all of the aprons are listed in satisfactory or good condition except the northern portion of the Terminal Apron, with a PCI of 47 or "poor", and the pavement around the old T-hangars as having a PCI of 36 or "very poor". The Terminal Apron is bisected at approximately the Terminal Building into two aprons. The northern portion, which is constructed of Portland concrete cement and asphalt, is approximately 11,700 SY. The southern portion of the Terminal Apron is constructed of asphalt and is approximately 8,700 SY. The southern apron is designated as the transient aircraft tie-down area and has 16 tie-down spots. Taxiway A traverses the entirety of the Terminal Apron on the west side. The northern portion of the Terminal Apron is in the CIP to be rehabilitated in 2026.

The based aircraft tie-down apron is on the south end of the Airport, adjacent to the approach end of Runway 30, and is approximately 1,200 square yards (SY). There are four tie-down spots across two areas on the based aircraft apron. The apron was previously larger, however the Airport constructed two six-unit T-hangars on top of the tie-downs in recent years. There is a project in the Capital Improvement Plan (CIP) to design the rehabilitation of this apron in fiscal year 2028.

A fourth apron is located west of the Terminal Apron and taxilane. It is unmarked and approximately 4,900 SY.

1.5.2.2. Aircraft Hangars

There are eighteen aircraft hangars at the Airport, including seven T-hangars and 11 conventional hangars. Starting from the north, there is a cluster of three T-hangars accessed by Taxiway A and the north Terminal Apron. Two of the T-hangars have 10 units, and the southernmost has six units.

South of the T-hangars and north of the Terminal Building is a cluster of eight conventional hangars owned and operated by Rich Air. These hangars share a taxilane from the Terminal Apron.

South of the Terminal Building and the restaurant, there is a cluster of three conventional hangars and four T-hangars. Two of the T-hangars mentioned previously were constructed recently on top of the based aircraft apron. The remaining two T-hangars are older and scheduled for demolition to

[8] https://www.faa.gov/airports/aip/guidance_letters/R-PGL-25-01-Runway-Projects.

make room for newer, larger T-hangars. The existing conventional hangars and T-hangar units can be seen in **Table 1-3.**

1.5.2.3. Visual and Navigation Aids

All four ends of Runway 1-19 and 12-30 have a precision approach path indicator (PAPI), and Runway 1 also has a medium-intensity approach light system with runway alignment indicator lights (MALSR). Three of the four runway ends have a visual glide path angle of the PAPIs of 3°, and the Runway 12 PAPI has a visual glide path angle of 3.85°, presumably due to terrain obstructions approximately one-half nautical miles (NM) from the runway end. There is one primary wind cone in the infield southwest of the Terminal Building, and a secondary or supplemental wind cones at the ends of Runways 1, 12, and 30.

Table 1-3: Hangar Areas

Hangar	T-hangar Units	Conventional Hangar Square Feet (SF) (Approx.)
T-hangar 1 (Rich Air)	10	
T-hangar 2 (Rich Air)	10	
T-hangar 3 (County owned)	6	
Rich Air Hangar 1		10,500
Rich Air Hangar 2		10,500
Rich Air Hangar 3		10,500
Rich Air Hangar 4		8,900
Rich Air Hangar 5		10,500
Rich Air Hangar 6		15,000
Rich Air Hangar 7		15,000
Rich Air Hangar 8		15,000
Maintenance Hangar (County-owned – leased to FBO)		6,500
Main Hangar (County-owned – leased to FBO)		12,000
T-hangar 4 (County owned)	8	
T-hangar 5 (County owned)	8	
T-hangar 6 (County owned)	8	
T-hangar 7 (County owned)	6	
ESMI two-unit hangar		7,500
Total	**56**	**121,900**

Source: Airport management and McFarland Johnson analysis, 2025.

1.5.2.4. Lighting, Marking, and Signage

Runway 1-19 has medium intensity runway edge lighting (MIRL) and lighted runway distance remaining signs every 1,000 feet along the west side. Runway 1 has precision instrument markings, and Runway 19 has non-precision instrument markings. The runway markings have been listed in good condition as of the most recent inspection dated May 4, 2023. All of the taxiway lights have recently been upgraded to LED lights. Runway 12-30 has MIRL, and both ends have non-precision instrument markings. The most recent airfield inspection conducted by the FAA indicated all of the airport signage complies with FAA standards and is in good working order.

1.5.2.5. ASOS

GFL has an automated surface observing system (ASOS) that provides pilots with information on wind direction and velocity, visibility, sky condition, temperature, dew point, altimeter settings, precipitation type and intensity, and density altitude. It is located WSW of the Runway 1-19 and Runway 12-30 intersection. Per FAA Joint Order (JO) 6550-20C, *Siting Criteria for Automated Weather Observing Systems,* wind sensors must be mounted 30 to 33 feet above the average ground height within the critical area's 500-foot radius. All obstructions (vegetation, buildings, etc.) must be at least 15 feet lower than the height of the wind sensor within the 500-foot radius, and at least 10 feet lower than the height of the wind sensor from 500 to 1,000-foot radius. Visibility sensors require that forward and backscatter-type sensors have no obstructions (buildings, etc.) within a horizontal distance of 50 feet that would cause the surrounding air mass to be non-uniform in nature.

1.5.3. Instrument Approach Procedures

An instrument approach procedure is a set of predetermined maneuvers using electronic navigational or visual aids that assist pilots in locating and landing or departing from an airport, particularly in bad weather. GFL has five published instrument approach procedures. The approaches available are a precision approach to Runway 1, as well as an RNAV (GPS) approach with LPV, LNAV/VNAV, and LNAV minimums, and RNAV (GPS) approaches with LNAV minimums to the remaining runways. The lowest approach minimums for each approach can be seen in **Table 1-4**.

Table 1-4: GFL Approach Procedure Types and Minimums

Approach	Type	Minimums (ceiling AGL in feet - vis. NM)
ILS or LOC RWY 1	ILS or LOC only	200 – ½
RNAV (GPS) RWY 1	LPV	200 – ½
RNAV (GPS) RWY 19	LNAV	553 - 1
RNAV (GPS) RWY 12	LNAV	1232 – 1¼
RNAV (GPS) RWY 30	LNAV	695 - 1

Source: FAA ADIP, 2025.

1.5.4. Pavements

Per the 2020 PMP, at the time of the writing of that report, most all of the airport pavements were in satisfactory to good condition, except for Taxiway B and the pavements around the old T-hangars. There is currently a project planned for engineering design to reconstruct Taxiway B and the pavement around the T-hangars in 2025, with reconstruction planned for 2026.

1.5.5. Support Facilities

Airport support facilities include the Terminal/Administration Building, fueling facilities, maintenance equipment, snow removal equipment and storage, ARFF, vehicle parking, field maintenance facilities, and utilities.

1.5.5.1. Terminal/Administration Building

The terminal/administration building was originally constructed in 1946 and underwent major refurbishment in 1999 and 2008[9]. It is approximately 2,400 square feet and has two floors, a full basement, and an abandoned ATCT on the roof. The airside view of the Terminal Building can be seen in **Figure 1-5**. The first floor offers space for pilots, including a crew lounge and a lobby, as well as administrative space for the FBO, Rich Air. The second floor of the building offers administration space, a conference room, and some lease space for FAA navaid equipment. Lastly, there is a single-lane covered driveway along the front of the building so passengers can exit their vehicles and enter the building in inclement weather without getting wet.

Figure 1-5: GFL Terminal Building

Source: McFarland Johnson, 2021.

1.5.5.2. Former FBO Office

The former FBO office is located south of the terminal/administration building and is approximately 1,200 SF. This facility previously housed all FBO functions before being relocated to the terminal/administration building.

1.5.5.3. Maintenance Equipment

The Airport owns and operates several pieces of maintenance equipment that are all stored inside one of three garages. Equipment includes a Ford F550 dump-body truck, a Polaris Sportsman ATV, a Kawasaki Mule 2510, a Cat 246C skid steer with several attachments, a John Deere 6130D Tractor with several mowing attachments, a John Deere 3120 riding mower, a Kubota ZD-1211 riding mower, and a Ford 4630 tractor.

1.5.5.4. Snow Removal Equipment and Storage

As previously mentioned, there are three storage garages for all maintenance equipment and SRE. The three garages are approximately 2,000 SF, 2,900 SF, and 8,100 SF. Construction of the largest of the three garages was funded through the FAA, and the two smaller garages are used for storage.

SRE includes two Freightliner 114SD plow trucks with a front-mounted plow, wing plows, and spreaders, two brooms, one of which is a 2021 Oshkosh H-Series broom, and a Larue, two-engine self-propelled blower. Lastly, the Airport owns a John Deere 624K loader, which can be used for SRE and/or loading sand.

1.5.5.5. ARFF

The FAA classifies CFR Part 139 airports with an ARFF Index Rating. GFL has an ARFF Index Rating of "A", reserved for airports that serve air carrier aircraft less than 90 feet in length. To maintain the ARFF Index A status, the airport sponsor must meet equipment, training, and operational requirements. At a minimum, an ARFF Index A airport must have at least one Class I vehicle capable of discharging 100 gallons of water/AFFF, and 500 lbs. of dry chemical agent.

GFL currently has a KME Force Series - Class 4 ARFF Truck, which is capable of discharging 1,500 gallons of water, with 200 lbs. of AFFF, and 500 lbs. of dry chemical.

The ARFF vehicle is stored in a two-bay ARFF station that is approximately 2,500 SF adjacent to the Terminal Building.

1.5.5.6. Office Building

Adjacent to the ARFF building is the office building constructed by Rich Air, which operates under an existing ground lease with GFL. The building spans approximately 2,500 SF and accommodates various administrative functions for Rich Air.

1.5.5.7. Vehicle Parking

Outside of the Terminal/administration building are two parking lots which can be utilized for passengers utilizing the terminal building, or for airport tenants. The larger parking lot northeast of the Terminal Building can support 67 vehicles, and the smaller parking lot to the southeast of the Terminal Building, in front of the restaurant, can support 32 vehicles for a total of 99 vehicle parking spaces. Additionally, aircraft owners can park their vehicles inside their hangars while they are out flying.

[9] *Floyd Bennett Memorial Airport Master Plan*, June 2009, C&S Engineers.

1.5.5.8. Restaurant

The restaurant is located south of the terminal/administration building and is approximately 4,700 SF. The restaurant has been available for lease since the previous tenant vacated during the COVID-19 pandemic. There is also a small metal building adjacent to the restaurant and shop, which was once the FBO office.

1.5.5.9. Utilities

The following utilities provide service to the Airport, and Airport management has reported there are no issues with the delivery of these utilities:

- Electric - National Grid
- Water/Sanitary Sewer – Town of Queensbury
- Internet – Charter Communications Holdings/Spectrum
- Telephone – Frontier Communications Group
- Natural Gas – Direct Energy Marketing, Inc.

1.5.5.10. Aviation Fueling Facilities

The Airport has two 12,000-gallon fuel tanks for 100LL and Jet A each. Rich Air operates the fuel tanks under the FBO contract and provides fueling service for Jet A, and the 100LL is self-serve. The fuel tanks are new as of 2017, when the previous, aging fueling system was replaced. The fuel tanks can be seen in **Figure 1-6**.

Figure 1-6: GFL Fuel Tanks

Source: McFarland Johnson, 2024

1.6. AVIATION ACTIVITY

Information on aviation activity was gathered from different sources. Based aircraft information and operational data on record with the FAA was verified to be correct by Airport management.

1.6.1. Based Aircraft and Annual Operations

The Airport has 42 based aircraft, consisting of one multi-engine aircraft, two jets, and 39 single-engine aircraft. Without an airport traffic control tower (ATCT), the number of annual operations is difficult to know, but the FAA Terminal Area Forecast (TAF) provides facility details for all US public-use airports and, for the last several years, has been reporting approximately 24,000 annual operations at GFL. GFL is currently in the process of procuring a system of aircraft counting to provide an accurate number of annual aircraft operations.

1.6.1.1. Existing Lease Agreements

According to Airport management, the Rich Air conventional hangars and the ESMI hangar at the Airport have a private ground lease with the Airport. The remainder of the hangars pay a monthly lease rate. Ground leases occur when the Airport leases the space for hangar development, and the Airport collects revenue for each lease. Each ground lease agreement is with the County of Warren.

1.6.1.2. Fixed Base Operator

Rich Air is a full-service FBO and provides the following services at the Airport to based and transient pilots:

- Jet A and 100LL Fuel
- Deicing
- Ground power unit
- Overnight parking
- Ramp parking
- Catering and concierge service
- Nitrogen and bulk oxygen
- Quick-turn service
- Pilot lounge
- Lavatory service

Additionally, Leaf Air provides flight training services at the Airport using a variety of single-engine Cessna aircraft.

1.7. LAND USE AND ZONING

When considering improvement projects that meet airport development goals, it is important early in the planning process to identify potential impacts on existing land uses on Airport property and in the surrounding area. This will help determine how potential airport projects will affect future land use and development patterns. This will enable a plan to integrate measures into future Airport development to avoid any potential land use conflicts and zoning issues when feasible. Land use elements such as noise, height restrictions and obstructions, and safety of persons and property on the ground are examined to provide guidelines for the compatibility of airport operations with the surrounding locale.

Figure 1-7 shows the zoning map for the Town of Queensbury. The Airport is zoned as CLI (Commercial Light Industrial). Across Queensbury Ave to the east lies the Town of Kingsbury, and the land adjacent to the Airport to the east is zoned as Park-Industrial-Commercial (PIC-75), which can be seen in **Figure 1-8**

- Moderate Density Residential (MDR) is located to the north and northeast of the Airport.
- Land Conservation (LC-10A) is located to the west of the Airport.
- Commercial Light Industrial (CLI) and Neighborhood Residential (NR) are located to the south and southwest of the Airport.
- PIC-75 is located directly east of the Airport, which is bordered by Residential Agricultural (RA-1A).

1.8. AIRSPACE AND AIR TRAFFIC CONTROL

There is no air traffic control tower at GFL. Airspace in the U.S. is classified as controlled, uncontrolled, or special use. A detailed explanation of different airspace classes can be found in **Appendix A,** Section A.2. The airspace surrounding GFL is Class E airspace from the surface up to 18,000 feet MSL.

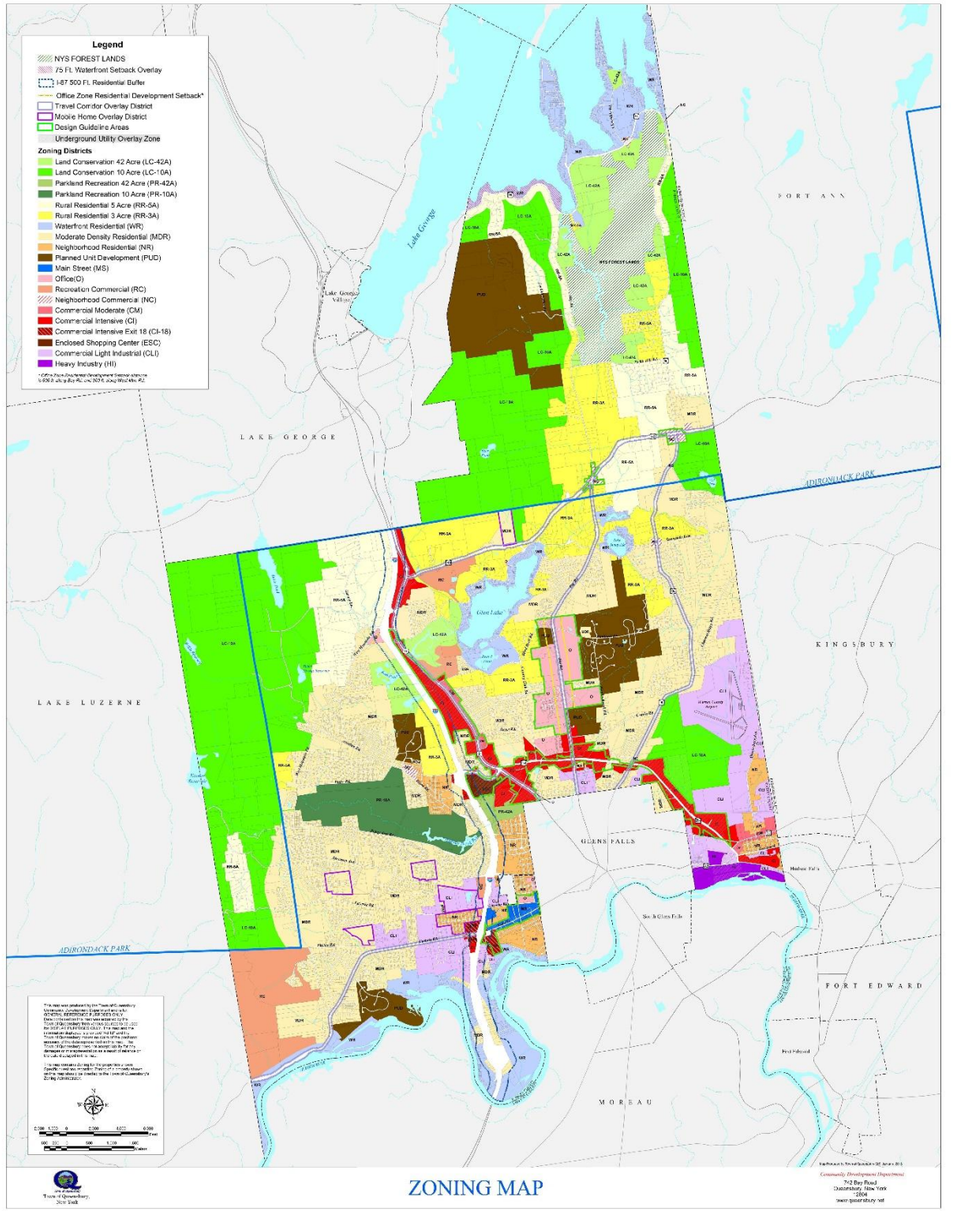
The closest Class C airport is Albany International Airport (ALB), approximately 36 NM to the southwest. The closest Class D airport is Lebanon Municipal Airport (LEB), approximately 60 NM NE in New Hampshire. The closest Class B airport is Boston Logan International Airport (BOS), approximately 129 NM SE in Massachusetts. An MOA, referred to as Chugs, is located due east of GFL, and another MOA, known as Tupper South, is located to the northwest of GFL. Both MOAs are used for military training activities. To view the airspace surrounding the Airport, refer to **Figure 1-9.**

1.9. DEVELOPABLE LAND

A review of potential aeronautical and non-aeronautical land uses is shown in **Figure 1-10**, which includes approximately 66 acres of potential aeronautical development east and west of Runway 1-19, and approximately 86 acres of non-aeronautical development, mostly on the southern portion of the Airport.

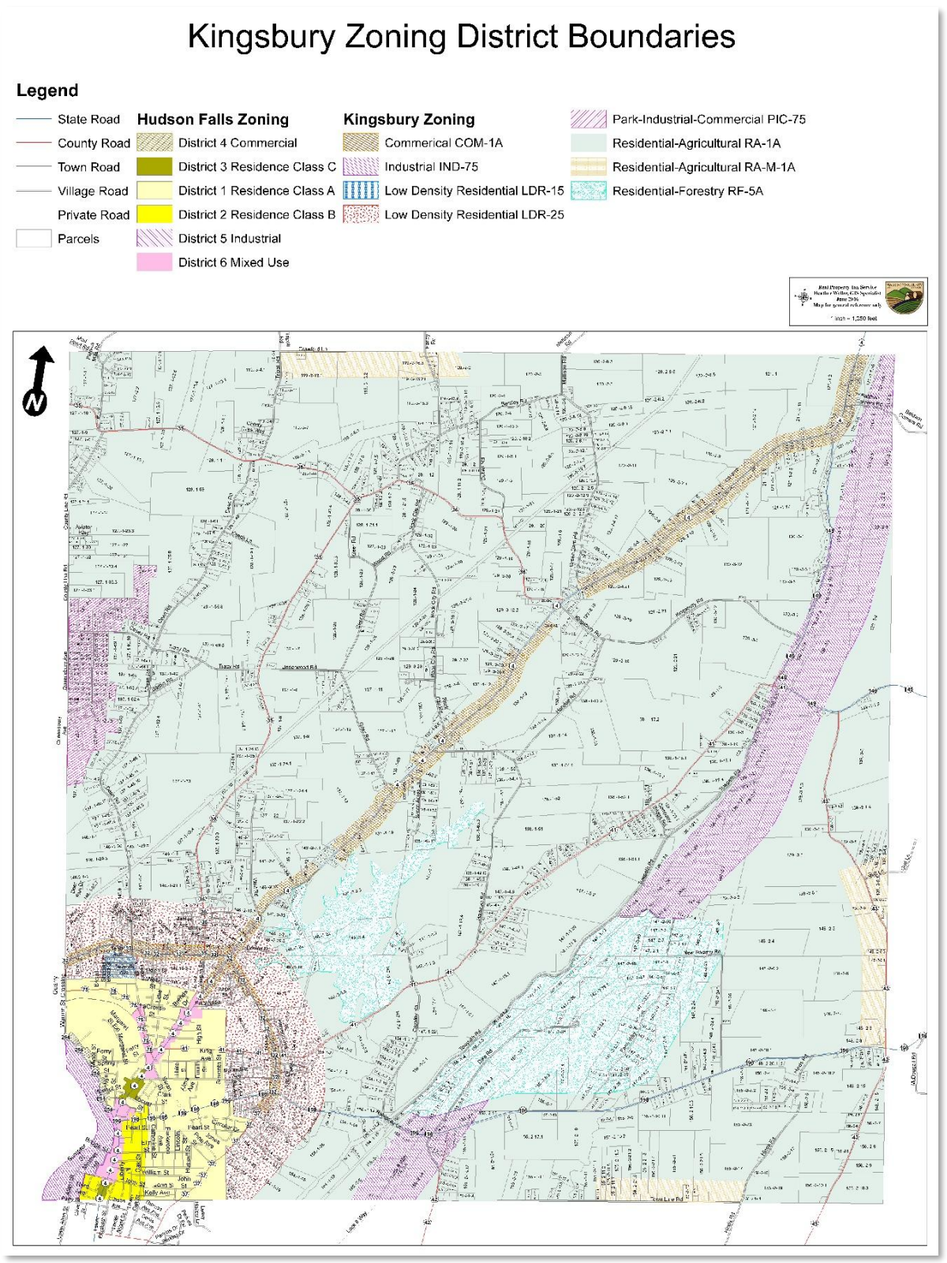
It should be noted that there are some wetlands and streams in some of these areas, which would need to be mitigated, and these areas are presented conceptually as ideas for the County to start thinking about future development. The area for aeronautical development adjacent to the Terminal Apron and south of the approach end of Runway 30 would be dependent on whether a parallel taxiway to Runway 1-19 at an FAA standard separation of 400 feet would be eligible and justified.

Figure 1-7: Queensbury Zoning Map



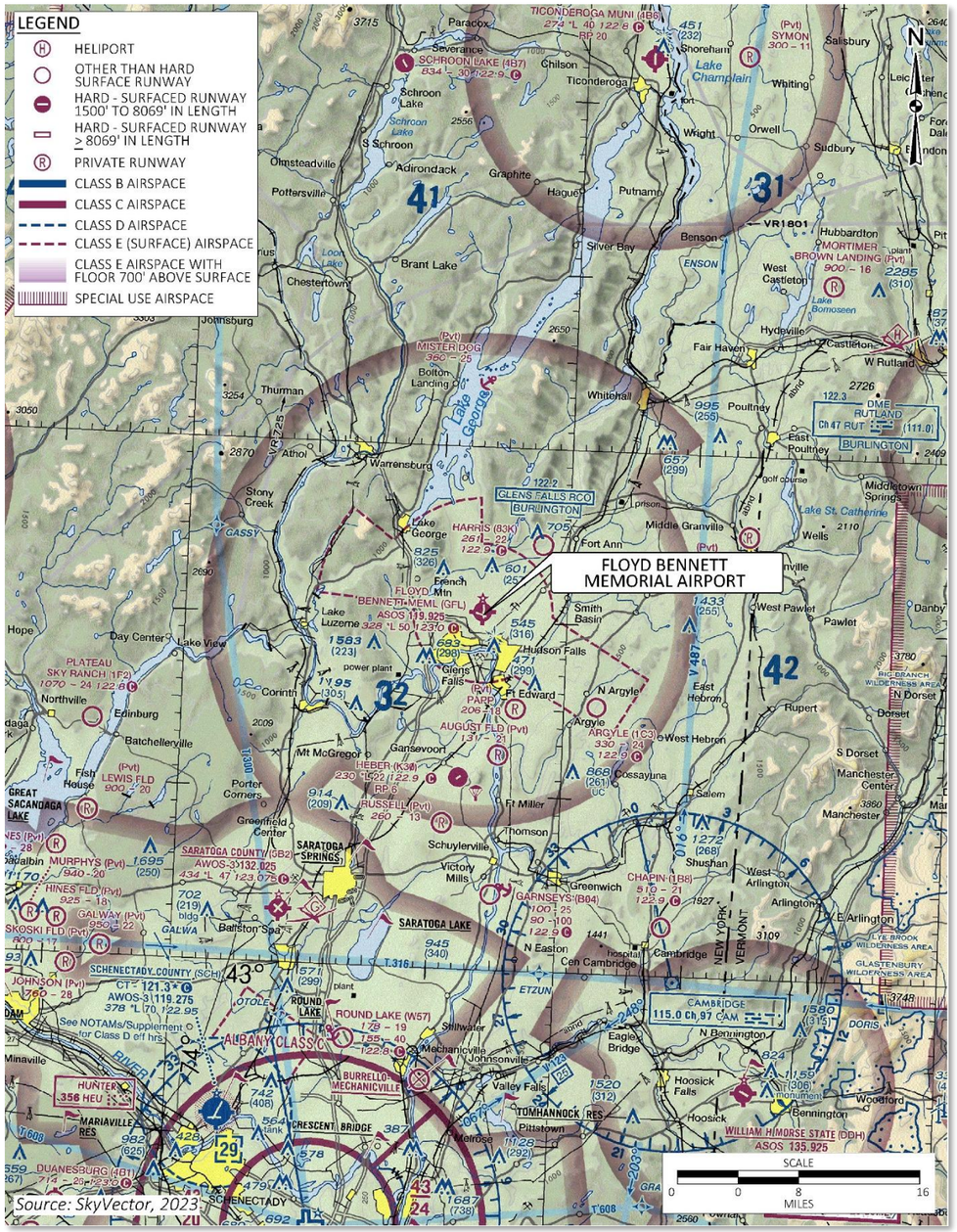
Source: Town of Queensbury, 2018.

Figure 1-8: Kingsbury Zoning Map



Source: Town of Kingsbury, 2016.

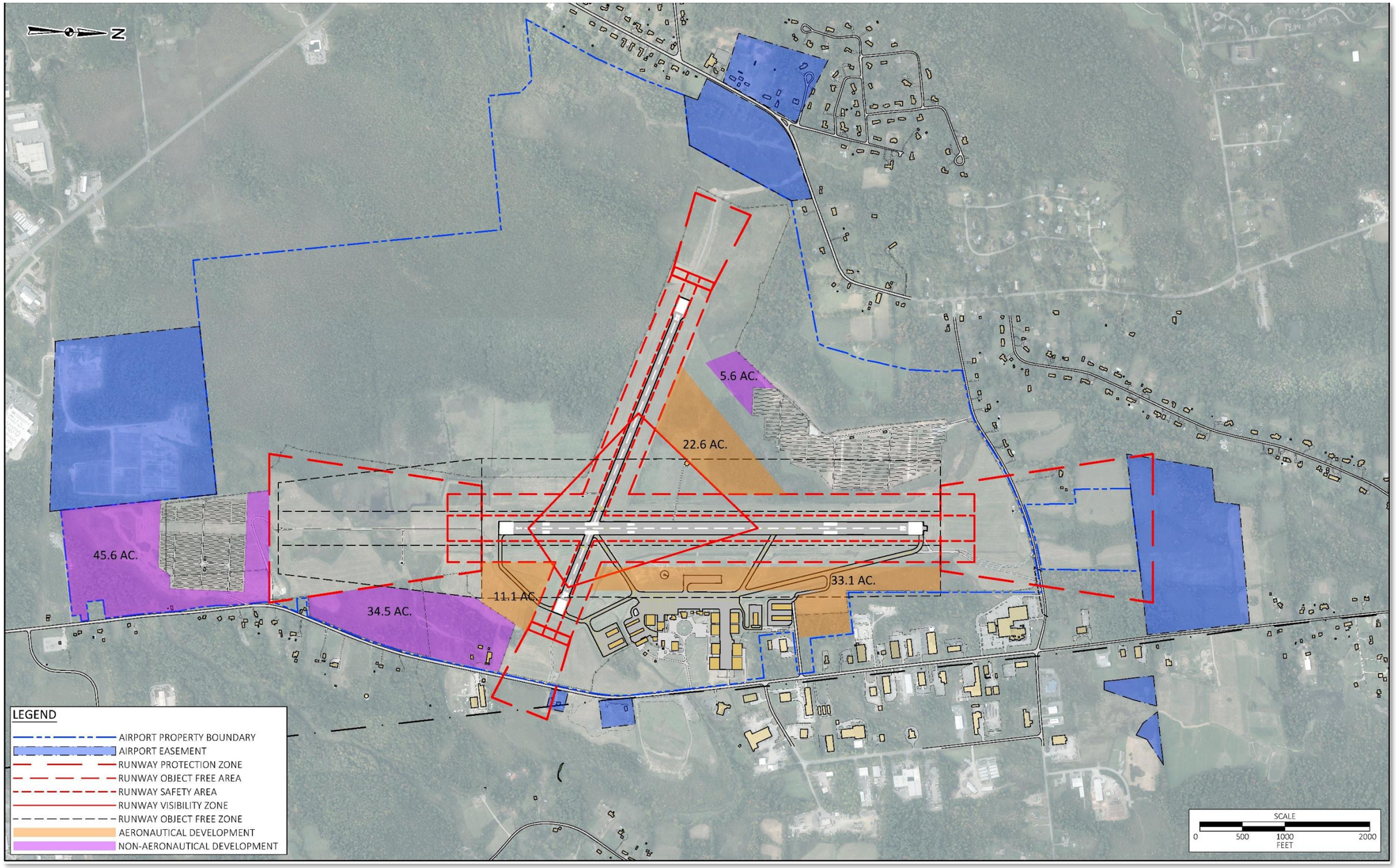
Figure 1-9: GFL Airspace



Source: SkyVector, 2023

Source: Skyvector, 2025.

Figure 1-10: Aeronautical and Non-Aeronautical Development Areas at GFL



Source: McFarland Johnson, 2025.

FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

Chapter 2: Environmental Inventory

McFARLAND JOHNSON

2. ENVIRONMENTAL INVENTORY

2.1. INTRODUCTION

The purpose of the environmental inventory chapter is to provide a summary of the environmental conditions and constraints at GFL. The inventory will provide documentation identifying environmental elements that may or may not need a more thorough evaluation for the Airport and the FAA to make a determination as to the need for an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) in the future. Information contained in this chapter was obtained through correspondence with regulatory agencies, research of existing environmental documents for the Airport, and through detailed field observations of the Airport and surrounding lands.

The National Environmental Policy Act (NEPA) of 1969 requires that all federal agencies consider the potential impacts their projects and policies have on the environment. The FAA, an agency of the United States Department of Transportation (USDOT), has issued Order 1050.1G, *Environmental Impacts: Policies and Procedures* (effective date June 30, 2025), which ensures all FAA actions comply with NEPA. The FAA has also issued Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* (effective date April 28, 2006). FAA Order 5050.4B guides NEPA compliance specifically for major federal actions at public-use airports. FAA Orders 5050.4B and 1050.1G identify specific environmental categories and corresponding thresholds of significance that must be considered in relation to a proposed action to determine whether a significant impact would result and, if so, determine what reasons would be appropriate to avoid or minimize the impact's effect.

The operation and development of an airport have the potential to affect both on-airport and neighboring land uses and natural and human environments, which are of fundamental concern in the airport planning process. Therefore, it is important to identify the resources and potential impacts on the environment and the surrounding community during the initial stages of the planning process. This allows airport planners and engineers to incorporate measures in accordance with federal, state, and local rules and regulations to avoid, minimize, or mitigate potential impacts to the environment.

Environmental resource categories (outlined in Table 7-1 of FAA Order 5050.4B and Section 1.2(b)(1) of FAA Order 1050.1G) were examined, and the following describes each of the environmental categories at the Airport:

2.2. AIR QUALITY

The Airport is located in Warren County. According to FAA Order 1050.1G *Desk Reference* and FAA Order 5050.4B, impacts to air quality must be considered as part of the environmental analysis under NEPA. Potential effects of future projects are evaluated against the National Ambient Air Quality Standards (NAAQS), as promulgated by the United States Environmental Protection Agency (USEPA) under the Clean Air Act (CAA). The USEPA website lists the National Ambient Air Quality Standards (NAAQS) for all six of the principal air pollutants – ozone (O_3), carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), particulate matter (PM), and sulfur dioxide (SO_2). Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The CAA also requires federal agencies to ensure that actions proposed to occur in a designated nonattainment or maintenance area conform to the appropriate State Implementation Plan (SIP), also known as General Conformity.

USEPA designates air quality in Warren County as being in attainment with the current NAAQS for all criteria pollutants.[1] Since the area is designated as in attainment with the current USEPA air quality standards, the General Conformity Rule does not apply.

Per FAA's "Air Quality Procedures for Civilian Airports and Air Force Bases, no "NAAQS" (or general air quality analysis) is needed, if forecast aircraft activity levels are below 1.3 million passengers and less than 180,000 annual aviation operations for commercial service airports; or less than 180,000 annual aviation operations for general aviation airports, which is the case at GFL.

2.3. BIOLOGICAL RESOURCES

Biological resources refer to the various types of flora (plants) and fauna (fish, birds, reptiles, amphibians, mammals, etc.), including state and federally listed threatened and endangered species, in a particular area. It also encompasses the habitats supporting the various flora and fauna, including rivers, lakes, wetlands, forests, and other ecological communities. Airport projects can affect these ecological communities and thereby affect vegetation and wildlife populations.

2.3.1 Ecological Communities

The majority of the habitat within the AOA consists of maintained grasslands, interspersed with paved airfield surfaces and buildings. Much of the surrounding Airport property is forested wetland. The surrounding community consists of commercial, agricultural, and light residential use. The majority of habitats identified on Airport property are common and secure within New York State; however, portions of the wetland on the southwest section of the Airport property are considered a Significant Natural Communities by the New York State Department of Environmental Conservation (NYSDEC) as a High-Quality Occurrence of Rare Community Type – Northern White Cedar Swamp and a Rare Community Type – Marl Fen. Further information regarding the ecological communities and state and federally regulated waterways and wetlands is presented in **Appendix B** and **Section 2.12.2**.

2.3.2 Flora and Fauna

Common species within the AOA include Kentucky bluegrass (*Poa pratensis*), red fescue (*Festuca rubra*), meadow fescue (*Schedonorus pratensis*), common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), hedge bedstraw (*Galium mollugo*), English

[1] https://www3.epa.gov/airquality/greenbook/ancl.html, accessed June 12, 2025.

plantain (*Plantago lanceolata*), and birdsfoot trefoil (*Lotus corniculatus*).

Based on site observations, and the habitats on and adjacent to the Airport, common bird species on and around Airport property include red-winged blackbird (*Agelaius phoeniceus*), Canadian goose (*Branta canadensis*), mallard duck (*Anas platyrhynchos*), wild turkey (*Meleagris ocellata*), ring-billed gull (*Larus delawarensis*), song sparrow (*Melospiza melodia*), savannah sparrow (*Passerculus sandwichensis*), turkey vulture (*Cathartas aura*) European starling (*Sturnus vulgaris*), American crow (*Corvus brachyrhynchos*), killdeer (*Charadrius vociferus*) and American kestrel (*Falco sparverius*). The Airport property also contains a mix of habitats that are supportive of a variety of grassland, shrubland, and woodland bird species.

Mammal species utilizing the AOA likely include small mammals such as short-tailed shrew (*Blarina brevicauda*), meadow vole (*Microtus pennsylvanicus*), and deer mice (*Peromyscus spp.*), as well as medium-sized mammals such as woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), striped skunk (*Mephitis mephitis*), North American beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus),* red fox (*Vulpes vulpes*), and coyote (*Canis latrans*). The Airport's unfenced outparcels, located to the north and south of the AOA, support the same species, as well as other common mammal species such as eastern grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and white-tailed deer (*Odocoileus virginianus*).

2.3.3 Threatened and Endangered Species

The Endangered Species Act (ESA) directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, titled "Interagency Cooperation," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Endangered species are those that are in danger of extinction throughout their range or a significant portion of their range. Threatened species are those that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Candidate species are species for which the United States Fish and Wildlife Service (USFWS) has sufficient information on the biological vulnerability and threats to support issuance of a proposal list, but issuance of a proposed rule is currently precluded by higher priority listing actions. Candidate species do not receive substantive or procedural protection under the ESA. However, USFWS does encourage federal agencies and other appropriate parties to consider these species in the planning process.

New York State regulation 6 NYCRR Part 182 prohibits the take or engagement in any activity that is likely to result in a "take" of any State-listed threatened or endangered species. Species listed as endangered in New York are native species in imminent danger of extirpation or extinction in New York or are species listed as endangered by the United States Department of the Interior. Species listed as threatened in New York are native species that are likely to become an endangered species within the foreseeable future in New York. Species listed as species of special concern are native species that are at risk of becoming threatened in New York. Fauna classified as species of special concern do not qualify as either endangered or threatened, but have been determined by the NYSDEC to require some measure of protection to ensure that the species does not become threatened in the future. Species of special concern are considered "protected wildlife" under Article 11 of the Environmental Conservation Law (ECL).

Consultations with the USFWS and the NYSDEC were initiated to determine the existence of any recorded observations in the vicinity of the Airport for federally- or state-listed threatened or endangered flora or fauna. A Resources list from the USFWS was obtained on February 11, 2025, and is included in **Appendix B**. The list indicates that there is the potential for two federally listed endangered mammals, including the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). Two proposed species were also included: the proposed endangered tricolored bat (*Perimyotis subflavus*) and the proposed threatened monarch butterfly (*Danaus plexippus*). The NYSDEC's Environmental Resource Mapper (ERM) was queried on May 14, 2025. In accordance with procedure, the rare plant/animal layer did not reveal the presence of any species within or adjacent to the Airport. The IPaC Resources List and ERM are included in **Appendix B**.

In accordance with FAA CertAlert No. 06-07, *Requests by State Wildlife Agencies to Facilitate and Encourage Habitat for State-Listed Threatened and Endangered Species and Species of Special Concern on Airports*, the Airport should not consider any request by state agencies to adopt habitat management techniques that may increase wildlife hazards and be inconsistent with safe Airport operations. As specific Airport development alternatives are identified and considered, the potential to affect state or federally-listed rare, threatened, and endangered species will be reassessed on an individual basis and in consultation with the NYSDEC, USFWS, and FAA.

2.4. DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F) RESOURCES

Section 4(f) of the Department of Transportation Act of 1966 protects publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic sites of national, state, or local significance from development unless there are no feasible alternatives. The potential for Section 4(f) resources was evaluated through project area field views, review of existing airport studies, available mapping, and published sources. There are no publicly owned parks, recreation areas, wildlife, or waterfowl refuges on Airport property. The closest potential Section 4(f) resource to the limits of the Airport is Meadowbrook Preserve, which is located approximately 1.3 miles from the Airport. It is not anticipated that there will be any potential adverse impact on any publicly owned park or recreation areas, wildlife, and waterfowl refuge of national, state, or local significance, or land of a historic site.

An impact on historic sites of national, state, or local significance on or near the Airport may be considered a use under Section 4(f). There are two historic sites, the Asa Stower House and the Sanford House, located northwest of the Airport property. As specific developments are identified and analyzed as part of this Master Plan and through future NEPA and SEQR documentation requirements, their potential to affect historic resources or other resources protected under Section 4(f) will be assessed on an individual basis.

2.5. FARMLANDS

The Farmland Protection Policy Act (FPPA), 7 CFR Part 658, authorizes the United States Department of Agriculture (USDA) to develop criteria for identifying the effects of federal programs on the conversion of farmland to nonagricultural uses. For purposes of the FPPA, farmland refers to soils classified as prime farmland, unique farmland, and land of statewide or local importance. According

to the U.S. Natural Resource Conservation Service (NRCS) Web Soil Survey, accessed on February 11, 2025, the majority of the Airport is considered farmland of statewide importance or as prime farmland. However, no areas are actively being farmed on the Airport property. USDA Form AD-1006, *Farmland Conversion Impact Rating,* may be necessary for proposed projects that may impact prime farmland soils that have not been previously disturbed for past airport development. The FPPA does not apply to land already committed to "urban development or water storage." The AOA is considered land already committed to airport utilization and development and would not be subject to the FPPA regulations.

Article 25-AA of the New York State Agricultural and Markets Law, Section 305(4), protects farmlands by requiring a notice of intent and public review procedure for the acquisition of more than one acre from any actively operated farm in an Agricultural District or a cumulative total of more than ten acres in any Agricultural District. Neither the Airport nor the surrounding parcels are located within an Agricultural District. **Figure 2-1** depicts farmland and soils in relation to the Airport.

2.6. HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

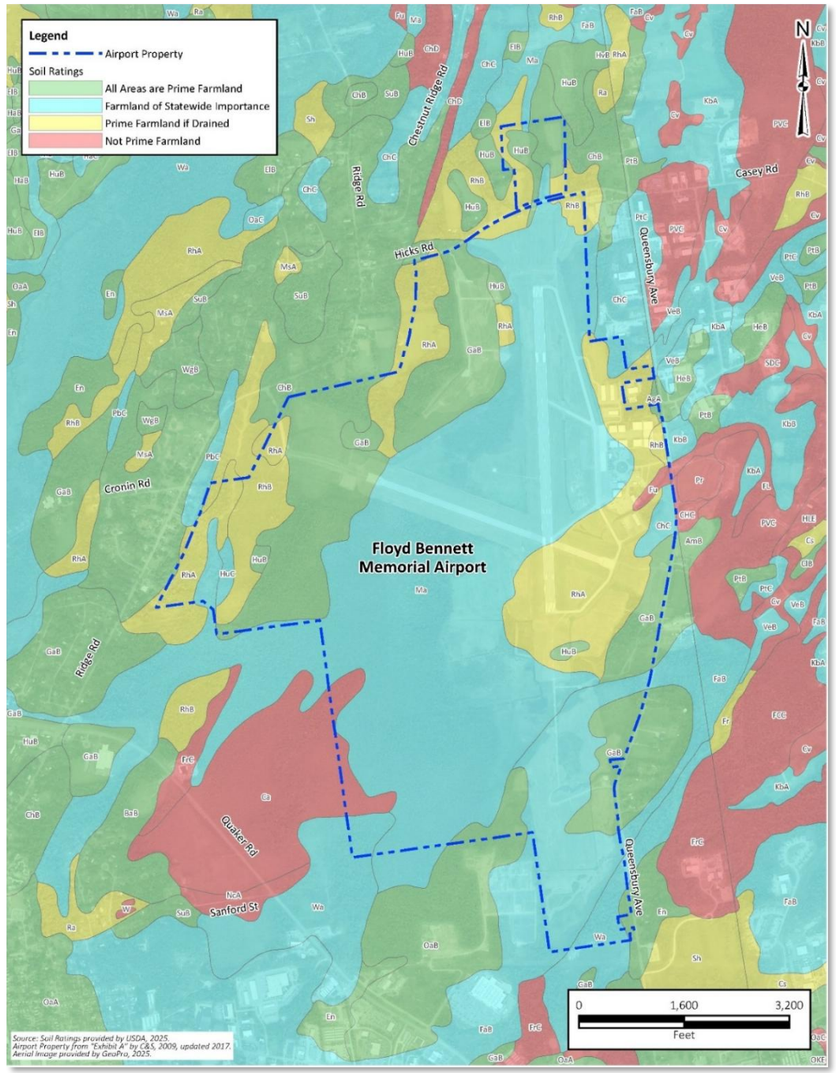
2.6.1 Hazardous Materials

A site visit was conducted in May 2025. Visual conditions, such as surface staining and stressed or dead vegetation and structures, devices, or objects typically associated with hazardous substances, were not observed during the site visit.

Hazardous Waste/Contaminated Material (HWCM) desktop screening was conducted to evaluate the presence of HWCM on or in the vicinity of Airport property. The Environmental Protection Agency (EPA) EnviroMapper Online Database and the DECinfo locator were accessed on May 14, 2025. The Airport is currently listed in the State Superfund Program as a Class P Site (potential Registry site), which indicates that there is a potential for concern about site contamination, but it is preliminary in nature and unverified since the DEC's investigation is not yet complete. The Airport is also classified as a petroleum bulk storage facility (Site Number: 5-600860)[2] and has tanks at the site that are described below.

There is an ongoing investigation of per-and polyfluoroalkyl substances (PFAS) impacts at the Airport (NYSDEC Site Code 557024).[3] The PFAS impacts have likely originated from the Airport's historical and ongoing use, as well as the storage of Aqueous Film Forming Foam (AFFF). The airport currently has an input-based, E-One Ecologic Foam Test System cart for foam testing, which eliminates the need for AFFF discharges to the environment for testing purposes. Also, impacts are likely due to the migration of PFAS impacts from the northeast upgradient property (NYSDEC Site Code 558042).[4] A Site Characterization Report conducted by HRP dated March 3, 2025, reported PFAS impacts in the surface water, sediment, soil, and groundwater at the Airport. In addition to the on-site use of PFAS in AFFF at the airport, PFAS

Figure 2-1: Soils and Farmlands



Sources: USDA and McFarland Johnson, 2025.

[2] https://appfactory.dec.ny.gov/DERExternalSearch/BulkStorageSearch, accessed June 12, 2025.

[3] https://appfactory.dec.ny.gov/DERExternalSearch/ERDDetails?CameFromList=false&SiteCode=557024, accessed June 12, 2025.

[4] https://appfactory.dec.ny.gov/DERExternalSearch/ERDDetails?CameFromList=false&SiteCode=558042, accessed June 12, 2025.

impacts from an adjacent industrial site are migrating south and west onto the Airport and into the stream adjacent to both properties. The stream runs from the east to the south of the Airport. It was determined that the PFAS impacts originating from the Airport are not migrating off-site due to the hydrogeology of the subsurface,including a clay layer. **Figure 2-3** depicts the locations of AFFF usage and storage, petroleum products, the location of the industrial facility, and associated streams and ditches on Airport property.

The Airport has four above-ground storage tanks (ASTs). Two 12,000-gallon tanks for Jet Fuel A (Tank #220) and 100 LL aviation fuel for aircraft fueling (Tank #230), a 250-gallon tank storing used motor oil (Tank #FBO-1), and a 240-gallon tank storing unleaded gasoline for a generator (Tank #190). Each tank is located in an impervious area and has secondary containment. These details were confirmed during a site visit. The fuel tanks for aircraft fueling are shown in **Figure 2-2**.

Figure 2-2: GFL Fuel Tanks

Source: McFarland Johnson, 2025.

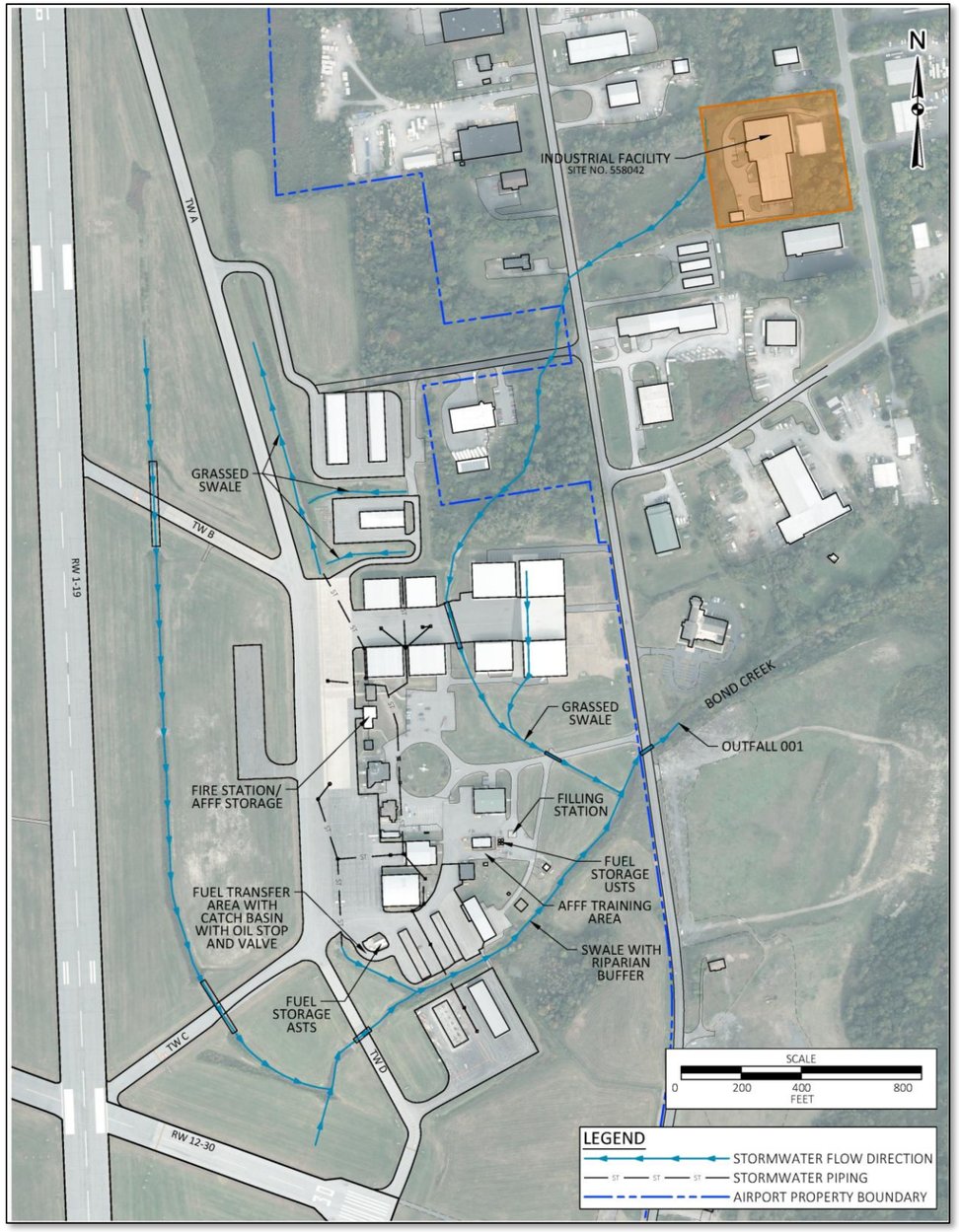
Five NYSDEC-reported spills have occurred on Airport property. The spills cases have been closed and are summarized in **Table 2-1** below.

Table 2-1: NYSDEC Reported Closed Spills on Airport Property

NYSDEC Spill Number	Date Opened	Date Case Closed	Spill Details
9310964	12/7/1993	7/16/1998	Gasoline Spill
9814746	3/3/1999	6/8/1999	Tank Test Failure - Diesel
9902681	6/8/1999	12/16/2002	Jet Fuel – Tank Overfill
1908991	12/13/2019	3/18/2020	Jet Fuel
2107697	11/19/2021	8/30/2024	Jet Fuel

Source: NYSDEC Spill Incidents Database, as reviewed February 11, 2025.

Figure 2-3: Hazardous Materials, Petroleum Products, and Drainage



Source: McFarland Johnson, 2025.

2.6.2 Solid Waste

An increase in the number of Airport users and activity may increase the quantity of refuse generated. However, any increase in solid waste attributable to development at the Airport is expected to be negligible and will not overburden the capacity of local solid-waste facilities. No capacity constraints are identified, and all projects will be required to meet applicable solid waste permit conditions and regulations. The Airport's solid waste is sent to the Colonie Landfill located 46 miles away in Cohoes, NY. No capacity constraints are identified, and all projects will be required to meet applicable solid waste permit conditions and regulations.

2.6.3 Pollution Prevention

Pollution may also arise during construction activities. Construction activities may produce temporary environmental impacts such as dust, soil erosion, and potential impacts on water quality. Potential pollution sources during construction can be effectively mitigated through the incorporation of appropriate erosion and sediment control, stormwater management, fuel and chemical storage, and handling best management practices during the design and construction of the project. All construction plans, specifications, and permits will be in accordance with local, state, and federal regulations regarding noise, dust, erosion, borrow areas, and disposal areas.

The Airport has a Spill, Prevention, Control, and Countermeasure (SPCC) Plan, which describes measures implemented to prevent petroleum discharges from occurring, and to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge. The SPCC was prepared to meet the requirements of Title 40, Code of Federal Regulations, Part 112 (40 CFR part 112). The plan is updated regularly in compliance with state and federal regulations.

2.6.4 Stormwater

Airport development projects may potentially affect surface and groundwater quality. The implementation of stormwater management measures, designed to avoid or minimize the impacts on water quality during a project's construction and operation phase, is required for many types of development projects. If one or more acres of land are disturbed during construction, a State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities, issued by the NYSDEC, is required. During the construction period, erosion and sediment control measures would be implemented, as prescribed in the Stormwater Pollution Prevention Plan (SWPPP), to avoid or minimize impacts on water quality. As part of the SWPPP, all SPDES permit sites must develop an Erosion and Sediment Control Plan (ESCP) to control stormwater discharge during the construction phase. The ESCP consists of temporary and permanent BMPs intended to reduce erosion, control siltation and sedimentation, and ensure that sediment-laden water does not leave the site. The Airport also has a site-wide SWPPP according to Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, and is updated regularly in compliance with state and federal regulations.

2.7. HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

According to 36 CFR Part 800, a historic property is "any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NHRP)." The National Historic Preservation Act (NHPA) Section 106 requires that federal agencies, such as the FAA, consider the effects of their actions on historic properties via consultation with the State Historic Preservation Office (SHPO).

The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) online Cultural Resources Information System (CRIS) indicates several areas are considered archaeological buffer areas, which are shown shaded in blue on **Figure 2-4**. In addition, there are two buildings listed on the National Register, the Asa Stower House and the Sanford House, that are located approximately 0.3 miles to the northwest of the Airport property. These areas are shown outlined in red, in **Figure 2-4.**

The presence of archaeological sites on or adjacent to Airport property may affect the development of project alternatives, and as required by NEPA and SEQR, specific project documentation will be provided to SHPO for evaluation prior to any future project undertakings. Two areas of the Airport property are located within the Archaeological buffer areas in **Figure 2-4.**

2.8. LAND USE

Existing land use and zoning are discussed in detail in Chapter 1, Section 1.7.

2.9. NATURAL RESOURCES AND ENERGY SUPPLY

The use of energy supplies and natural resources is closely linked to the construction of airport improvements and operations. Energy and natural resources are relatively abundant in northeastern New York, and planned growth at the Airport is not of sufficient magnitude to alter regional energy demand or limit natural resource availability. Current utilities at the Airport are in good condition with no existing supply constraints.

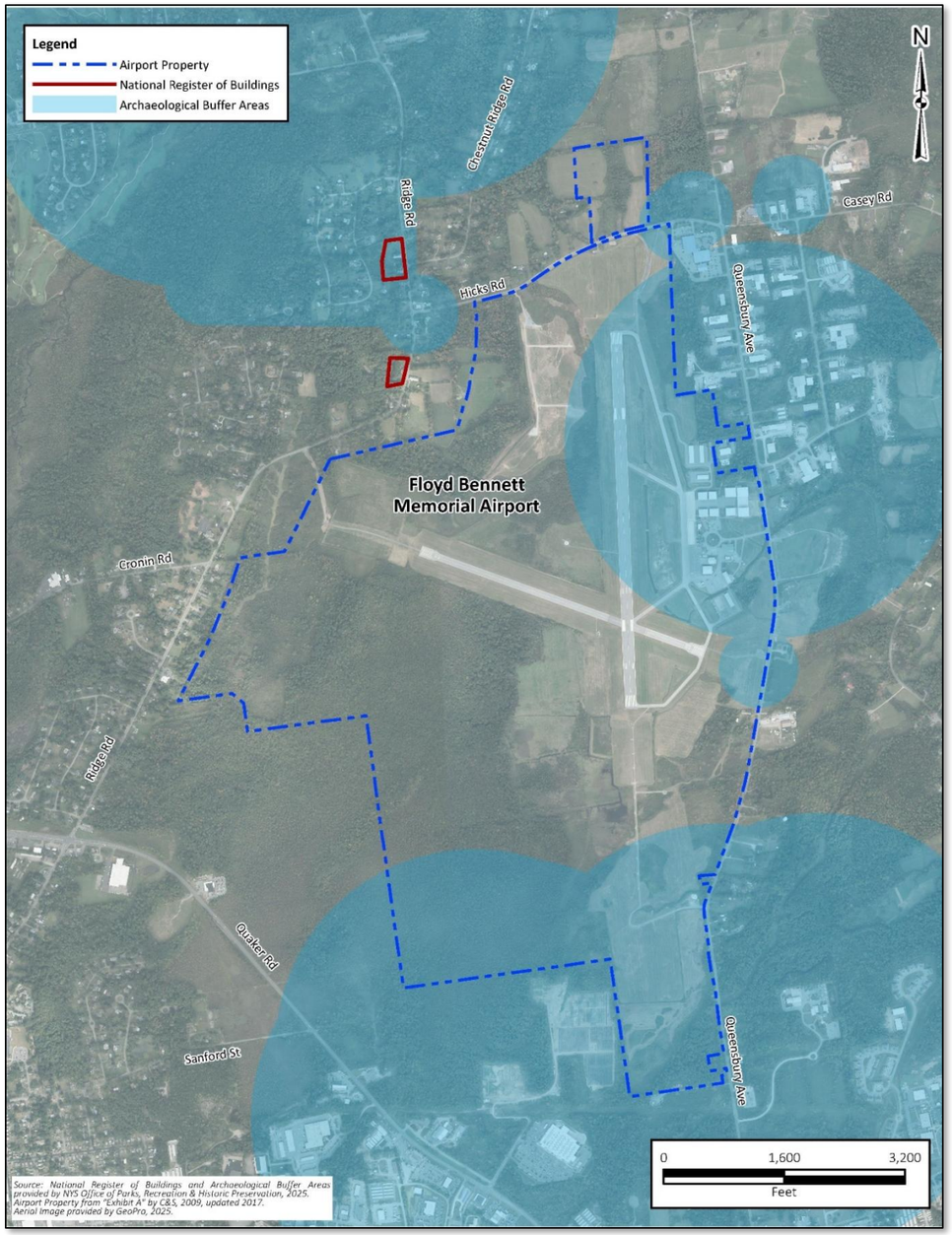
2.10. NOISE AND NOISE-COMPATIBLE LAND USE

Aircraft noise emissions, inherent to the operation of an airport, can adversely impact land use compatibility between an airport and surrounding properties, particularly in the presence of noise-sensitive receptors. It is important to predict any change in noise levels associated with airport development, to determine the significance, if any, of the impact on noise-sensitive land uses. Abatement measures can then be incorporated into airport development plans to avoid or minimize the impacts.

To evaluate the noise impacts of aviation activity on surrounding areas, the FAA has developed the Aviation Environmental Design Tool (AEDT). This computer model calculates cumulative aircraft noise at ground level expressed in decibels (dB), using the Day-Night Average Level (DNL). The DNL is the average daily noise level, with an additional 10 dB weight for nighttime aircraft operations. Decibels are measured in A-weighted units, which approximate the range of human hearing. The FAA considers the 65 dB DNL level to be the threshold of impact for noise-sensitive areas.

For comparison purposes, the typical ambient noise level in suburban residential areas is 55 dB DNL. The noise table, in **Appendix B,** describes the Day-Night average noise levels (DNL, dBA) that are used by the FAA to evaluate land use compatibility with respect to airports.

Figure 2-4: Historical and Archaeological



Source: NYS Office of Parks, Recreation & Historic Preservation, 2025; McFarland Johnson, 2025.

A review of aerial photography, along with land use and zoning maps of the area, indicates that there are noise-sensitive areas surrounding GFL, as there are residential areas located about half a mile in each cardinal direction. An analysis of noise exposure will be included as part of this study to update the noise contours and provide insight into future noise impacts. Noise exposure contours for the future airfield configuration will be prepared assuming the 20-year aircraft activity levels, aircraft fleet mix, and runway utilization based on the preferred airfield development scenario. The resulting noise contours will be depicted on the land use plan in the resulting ALP set.

2.11. LIGHT EMISSIONS AND VISUAL EFFECTS

2.11.1 Light Emissions

Airport improvements may include the installation of additional lighting or a change in the location of lighting on Airport property to accommodate the construction of the infrastructure improvements. These installations can alter the existing lighting conditions both on-airport and in the vicinity of an airport. Light emissions can be a concern for nearby residents in neighborhoods adjacent to an airport that could be directly impacted by a change in lighting.

Further analysis will be required during the NEPA and SEQR process to ensure that potential light emission effects of Airport development projects do not significantly negatively affect adjacent landowners.

2.11.2 Visual Resources and Character

The Airport is located between primarily residential and commercial areas, serving as a transition between these uses. There are no buildings, sites, traditional cultural properties, or other natural or manmade landscape features that are visually important or have unique characteristics in the vicinity of the Airport. Any potential development at the Airport would be in character with this transition in land use and would not negatively affect the visual character of the surrounding area.

2.12. WATER RESOURCES

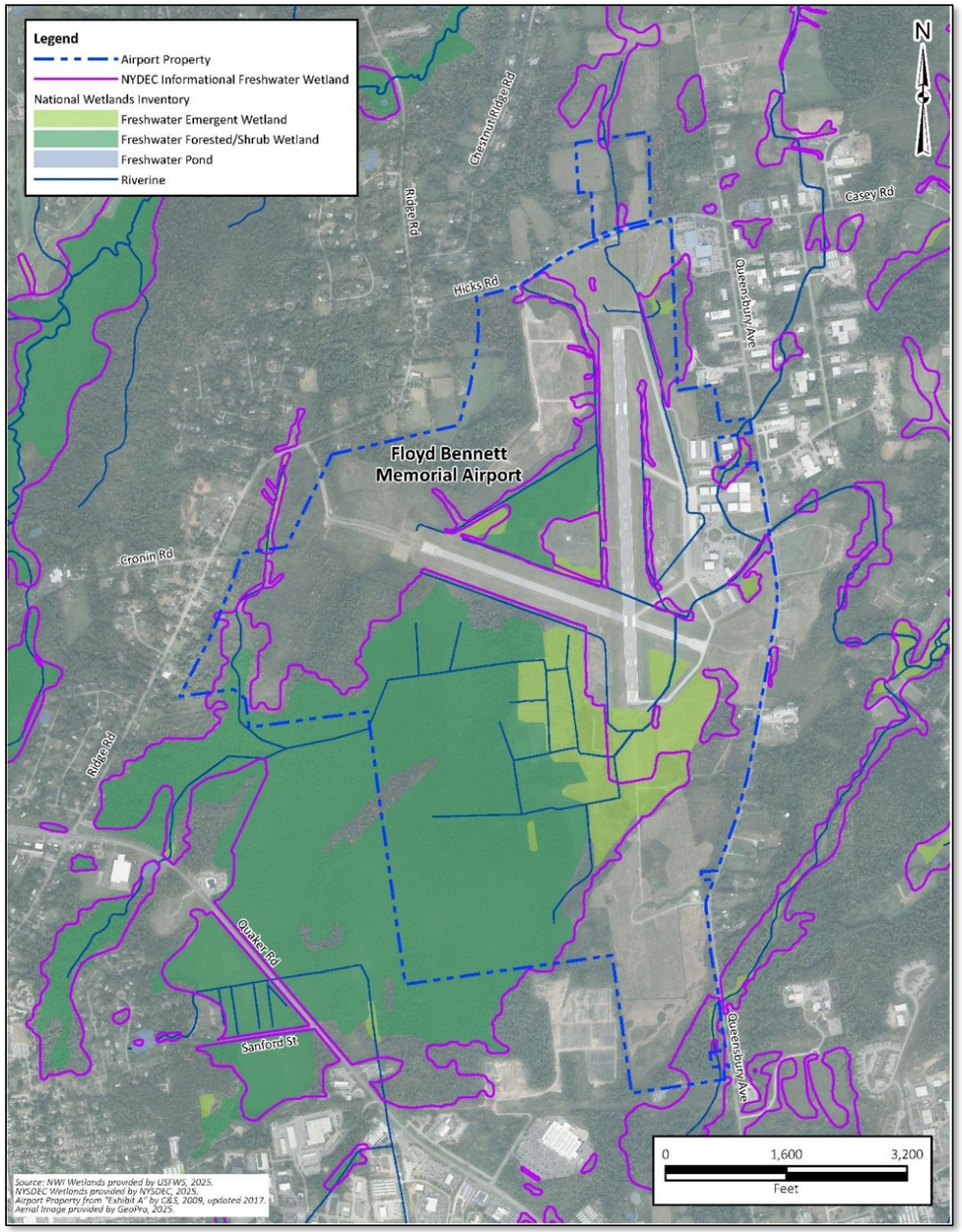
This section discusses potential effects on water resources, including groundwater, wetlands, surface waters (streams, rivers, ponds, and lakes), and floodplains. The water resources surrounding the Airport, as indicated on the NYSDEC Environmental Resource Mapper, are depicted on **Figure 2-5.**

2.12.1 Groundwater

Groundwater on Airport property flows generally to the east/southeast towards the Hudson River Tributary and the Hudson River. Groundwater is approximately four feet below the ground surface. A review of publicly available property records indicates there are five private water wells within a ¼ mile radius, and 17 private water wells are within a ½ mile radius of Airport property.

The EPA Sole Source Aquifer (SSA) program was established under the Safe Drinking Water Act (SDWA). According to the EPA, an SSA is defined as one that supplies at least 50 percent of the drinking water for its service area, and wherein there are no reasonably available alternative drinking water sources should the aquifer become contaminated. The SSA program allows for EPA review of federally funded projects that have the potential to affect designated SSAs and their source areas.

Figure 2-5: GFL Wetlands



Source: USFWS and McFarland Johnson, 2025.

as nutrient-poor wetland types. According to the 2015 wetland delineation, there are two marl fen communities, 0.90 acres and 0.08 acres in size, south of RW 1. Both communities can be classified as Class I wetlands and are designated as Critical Environmental Areas (CEAs). As such, these marl fens fall under the Class I Wetland and Regional Significance jurisdictional criteria for wetlands of unusual importance, as designated by the NYSDEC, and are state protected. These wetlands will likely have larger regulated adjacent areas, up to 300 feet for nutrient-poor wetlands and 800 feet for vernal pools productive to amphibian breeding. Impacts will require a permit mandating the avoidance and mitigation of wetland disturbance. Further, for a permit to be issued, the benefits gained by the proposed action must outweigh the wetland benefits lost. Compensatory mitigation may be required if significant impacts occur. This may prove difficult in the instance of a marl fen. A Jurisdictional Determination should be completed to determine the extent of protection NYSDEC deems appropriate to these areas.

The National Wetland Inventory (NWI) online tool was also used as an overview resource to identify mapped wetlands at the Airport. This is a preliminary tool, prior to the development of any specific projects, a formal wetland delineation in accordance with the 1987 United States Army Corps of Engineers *Wetlands Delineation Manual* (1987 USACE Manual) and 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (2012 Regional Supplement)* would be required. As shown in **Figure 2-5**, there are NYSDEC and NWI wetlands on Airport property.

The vegetation within wetlands throughout the property was dominated by Morrow's honeysuckle (*Lonicera morrow*), red osier dogwood (*Swida sericea*), broadleaf cattail (*Typha latifolia*), Bebb's willow (*Salix bebbiana*), common reed (*Phragmites australis*), sphagnum sp., field horsetail (*Equisetum arvense*), and green ash (*Fraxinus pennsylvanica*).

2.12.2 Surface Waters

USACE regulates water bodies under Section 10 of the Rivers and Harbors Appropriation Act (RHA) that are considered to be a traditionally navigable waterway (TNW) as defined specifically there within. The USACE also regulates water bodies through Section 404 of the CWA that have a direct surficial connection to a TNW as defined in Section 10 of the RHA or a TNW as defined in Section 404 of the CWA. These waterbodies are known as Waters of the U.S. (WOTUS).

The NYSDEC regulates activities in water bodies that are "protected streams" or "Navigable Waters of the State" under Article 15 of the Environmental Conservation Law (ECL). Waters in New York State are assigned a classification based on their existing or expected best usage. The classification of AA or A is assigned to waters used as a source of drinking water. Classification B indicates the best usage for swimming and other contact recreation, but not for drinking water. Classification C is for waters supporting fisheries. The lowest classification is D. Waters, with a classification of A, B, or C may also have a standard of (T) or (TS), indicating the capacity to support trout or trout spawning. Streams and small water bodies located in the course of a stream that is designated as C (T) or higher (i.e., C (T), C (TS), B, or A) are collectively referred to as "protected streams." "Navigable Waters of the State" are defined as all lakes, rivers, streams, and other bodies of water in the state that are navigable in fact or upon which vessels with a capacity of one or more persons can be

operated notwithstanding interruptions to navigation by artificial structures, shallows, rapids, or other obstructions, or by seasonal variations in capacity to support navigation.

Bond Creek has been identified by the NYSDEC ERM on Airport property. Bond Creek is considered a WOTUS as it is a tributary of the Hudson River, a TNW. Bond Creek is a Class C stream with C Standards and is non-navigable within Airport property; therefore, it is not a regulated stream by NYSDEC. Vegetation along the creek was dominated by Morrow's honeysuckle (*Lonicera morrow*), red osier dogwood (*Swida sericea*), broadleaf cattail (*Typha latifolia*), Bebb's willow (*Salix bebbiana*), and tall meadow rue (*Thalictrum pubescens*). Bond Creek, due to its location, functions as a drainage ditch for the impervious surfaces of the Airport. The creek runs underneath multiple taxiways via culverts and leads out of the airport to the east of the property, via Outfall 001.

Projects that have no practicable alternatives to avoid direct impacts on Bond Creek will require a Section 404 permit from the USACE. The USACE issues activity-specific Nationwide Permits (NWP) for stream disturbances meeting specific conditions. If a proposed project does not meet the conditions of any of the Nationwide Permits, a USACE Letter of Permission (LOP) or Standard Permit will be required before any work that causes disturbance in or near protected streams can commence. Compensatory stream mitigation may be required as a permit condition depending on the specific details of the proposed project(s).

Section 401 of the CWA provides states with the authority to ensure that federal agencies do not issue permits or licenses that violate their water quality standards. The NYSDEC implements Section 401 compliance through a certification process called Water Quality Certification (WQC). The NYSDEC has issued blanket WQCs for many of the nationwide permits (NWPs), provided certain special conditions are met. Individual WQCs are required from the NYSDEC for USACOE letters of permission (LOPs), Standard Permits, and for those NWPs where the NYSDEC has not issued blanketed WQCs, and on projects qualifying for an NWP, but where the blanket WQC special conditions cannot be met.

Future proposed projects will take measures in design and construction to avoid, minimize, or mitigate any possible adverse direct impacts to regulated surface water resources to the degree possible. The use of Best Management Practices (BMPs) during construction projects will minimize indirect impacts to regulated surface water resources at the Airport.

2.12.3 Wild and Scenic Rivers

Those rivers that meet the appropriate qualifications are designated Wild, Scenic, or Recreational Rivers according to the National Wild and Scenic Rivers Act (Public Law 90-542) and are administered by the U.S. Department of the Interior, National Park Service (NPS). The NPS has compiled and maintains a Nationwide Rivers Inventory (NRI) of river segments that potentially qualify for inclusion in the National Wild and Scenic River System. A river's classification in the NRI is dependent upon the presence of significant outstanding remarkable values (ORV). The NPS serves as a liaison to determine whether a proposed action could affect a National Wild and Scenic River or an NRI segment. Bond Creek and the Hudson River are not listed as a Wild and Scenic River and do not have an NRI.

2.12.4 Floodplains

Executive Order 11988, Floodplain Management, directs all federal agencies to avoid the direct and indirect support of floodplain development wherever there is a practicable alternative. Floodplains are low-lying land areas typically associated with bodies of water that are likely to become inundated during a flooding event. Floodplains serve an important function in retaining storm waters to protect against downstream flooding, property damage, and potential loss of life.

The area or magnitude of a floodplain will vary according to the magnitude of the storm event, as determined by the storm interval occurrences. For example, a five-year storm has a magnitude that can be expected once every five years. The Federal Emergency Management Agency (FEMA) utilizes a 100-year storm interval for flood preparation. Flooding related to a 100-year storm statistically has a one percent chance of occurring during any given year. The 100-year period has been selected as having special significance for floodplain management because it is the maximum level of flooding that can reasonably be expected and planned for during a project's expected life span.

According to the Flood Insurance Rate Map (FIRM) panels depicting the Airport (FIRMs 360879 0027B), the majority of the southern portion of the Airport property associated with the wetland area is classified as Zone B (See **Figure 2-6**). Zone B has a flooding chance of between the 100 and 500-year storms. The remainder of the Airport property, including the AOA, is classified as Zone C, an area of minimal flooding. No floodways are identified on GFL property.

As specific Airport developments are identified and analyzed as part of this Master Plan and through future NEPA and SEQR documentation requirements, their potential to encroach upon a FEMA-defined floodplain will be evaluated.

2.13. AIRPORT RECYCLING, REUSE, AND WASTE REDUCTION

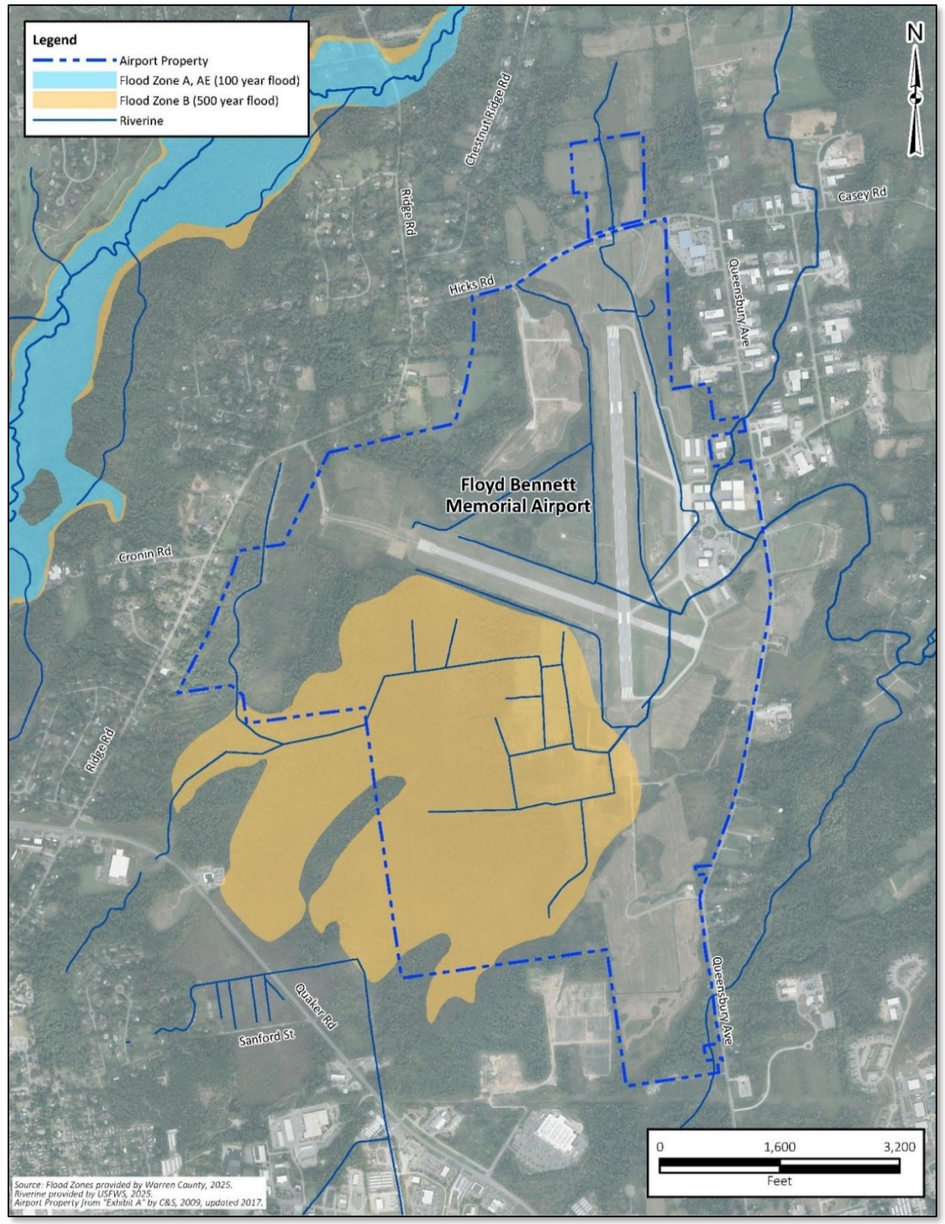
Solid waste management is an issue of importance to both the Airport and Warren County. This Recycling, Reuse, and Waste Reduction Plan (RRWR Plan or the Plan) addresses waste materials management at GFL by:

- Reviewing existing recycling, waste reduction, and reuse policies and facilities at GFL.
- Analyzing the opportunities, costs, and benefits of initiating or expanding these efforts; and
- Recommending goals and/or initiatives to establish, operate, and maintain an airport recycling, reuse, and waste reduction program, in compliance with FAA guidance.

2.13.1 Federal Airport Waste Management Plans and Policies

The U.S. Congress passed the FAA Modernization and Reform Act of 2012 (FMRA or the Act), which amended Title 49 of the U.S. Code (U.S.C.). The Act included several changes to the AIP, two of which related to recycling, reuse, and waste reduction at airports. Section 132(b) of the Act expanded the definition of airport planning to include "developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable state and local recycling laws, including the cost of a waste audit."

Figure 2-6: Floodplain Map



Source: Flood Zones provided by Warren County, USFWS, 2025, Airport Property from "Exhibit A" by C&S, 2009, updated 2017.Source: Warren County, 2025.

Section 133 of the Act added a provision that requires airports that are updating their master plan to address issues relating to solid waste recycling at the airport. This includes:

- Assessing the feasibility of municipal solid waste recycling at the Airport,
- Minimizing the generation of solid waste at the airport,
- Documenting operation and maintenance requirements,
- Reviewing waste management contracts, and
- Identifying the potential for cost savings or the generation of revenue.

As defined by Congress, "recycling" refers to any program, practice, or opportunity to reduce the amount of waste disposed of in a landfill. This includes reuse and waste reduction as well as the recycling of materials.

The FAA issued a Memorandum dated September 30, 2014, *Guidance on Airport Recycling, Reuse, and Reduction Plans*, to guide the preparation of airport RRWR plans as an element of an airport master plan or airport master plan update, within a sustainability planning document, or as a stand-alone document. The guidance is immediately applicable to all federally obligated airports, which include GFL.

2.13.2 Overview of Existing Airport Recycling, Reuse, and Waste Management

Warren County has a contract with County Waste & Recycling to provide recycling and trash pickup Airport administration, and one hauler collects Airport-generated recycling and trash pickup once a week. Trash and recycling are separated into separate compartments on the hauler.

Recycling is transferred to the Clifton Park Transfer Station and then transferred to the Sierra Processing, where all recycling is separated upon arrival.

There is no formalized recycling plan for Rich Air, which is the FBO at GFL, and they arrange for their own waste hauling and management.

According to the Town of Queensbury, the following recycling options are available:

- Plastics-Numbers one through five must be clean, no flowerpots, oil or anti-freeze containers, no aluminum foil or cans
- Tin and aluminum cans-Must be clean
- Clear glass-Must be clean, lids can go with tin cans
- Colored glass-Must be clean lids that can go with tin cans
- Newspaper & flyers-Must be clean and dry, no paper or plastic bags
- Corrugated cardboard-Must be dry, neatly flattened. No pizza boxes, cardboard tubes, waxed cardboard, Styrofoam, or plastic packing material; boxes should be flattened before coming to the transfer station
- Magazines, junk mail, and office paper-Must be dry, no paper or plastic bags, cardboard, manila envelopes, or hardcover books
- Household batteries-Must be loose, no containers or bags

2.13.3 Existing Waste Sources

Discussions with Airport management confirm that they currently utilize two 95-gallon receptacles—one designated for trash and the other for recycling. These are serviced weekly by County Waste & Recycling. Additionally, construction and demolition (C&D) waste can be separated and transported to the Clifton Park Transfer Station. This disposal option is available to GFL as an additional service.

Areas within the Airport property can be divided into how much control the Airport has over the generation and disposal of waste. The three levels of control are:

- Areas where the Airport has direct control of waste management.
- Areas where the Airport has no direct control but can influence waste management, and
- Areas where the Airport has no control or influence over waste management

2.13.4 Direct Control Areas

Table 2-2 lists the areas where the Airport has direct control over how waste is generated and collected. The Airport has direct control over the terminal building and offices, the maintenance buildings, and any Airport maintenance vehicles or operations.

2.13.5 No Direct Control or Influences Areas

Areas where the Airport has no direct control or influence can be excluded from the Airport's recycling plan. Rich Air, which is a tenant and the only FBO at the Airport, arranges its own waste and recycling. Also, T-hangar tenants must arrange for the small amounts of waste that may be generated from the storage and use of aircraft.

Table 2-2: Waste Generation and Control at GFL

Area	Waste Generated	Control
Area 1: Terminal Building and Offices	Paper, plastic, aluminum cans, trash	Direct Control
Area 2: Field Maintenance and Activities	Paper, plastic, aluminum cans, trash, general waste, possibly used oil, and vehicle parts	Direct Control
Area 3: Rich Air	Paper, plastic, aluminum cans, trash, deplaned waste, possibly used oil, and aircraft parts	No Direct Control or Influence

Source: Airport management, 2025.

2.13.6 Recommendation

Enhancing the Airport's recycling, reuse, and waste reduction programs should be a focal point for the Airport moving forward. An airport recycling and waste minimization program helps reduce the Airport's environmental footprint in the community it serves and provides Airport users with an opportunity to recycle away from home.

Different areas within an airport facility can have different collection strategies. The decision about what type of collection system is best for a facility or specific areas requires an understanding of passenger and employee behavior and the value of the recyclables if comingled or separated. When the Airport undertakes any future construction projects, it is recommended to separate C&D waste. This can be facilitated by coordinating with County Waste & Disposal to provide a dedicated C&D receptacle as needed.

FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

Chapter 3: Forecasts

McFARLAND JOHNSON

3. FORECASTS

3.1. INTRODUCTION

Forecasts of aviation demand are key in airport planning and provide a basis for determining the type, size, and timing of aviation facility development. Consequently, these forecasts influence the following analyses that are to be performed during the planning process. Further analyses of how the forecast determines what facilities and services are needed at the Airport will be presented in Chapter 4, *Facility Requirements*.

Forecasting future activity involves both quantitative and qualitative considerations. The forecasting approach in this analysis identifies several methodologies to project future aviation demand, applies those methodologies to each forecast area of interest, and identifies a preferred forecast of activity growth at the Floyd Bennett Memorial Airport (GFL or the Airport).

GA activity is determined by several factors, including, but not limited to, the size and per-person income of the local population, corresponding business activities, the cost of flying/storing aircraft, services available at a particular airport, whether the airport is seasonal, and the number of based aircraft. This chapter provides forecasts of aviation demand for the 20-year planning period from 2025 to 2044 using a baseline year of 2024 for both operations and based aircraft. The projections of aviation activity provide a basis for insight into the type, size, and timing of aviation facility development in the future.

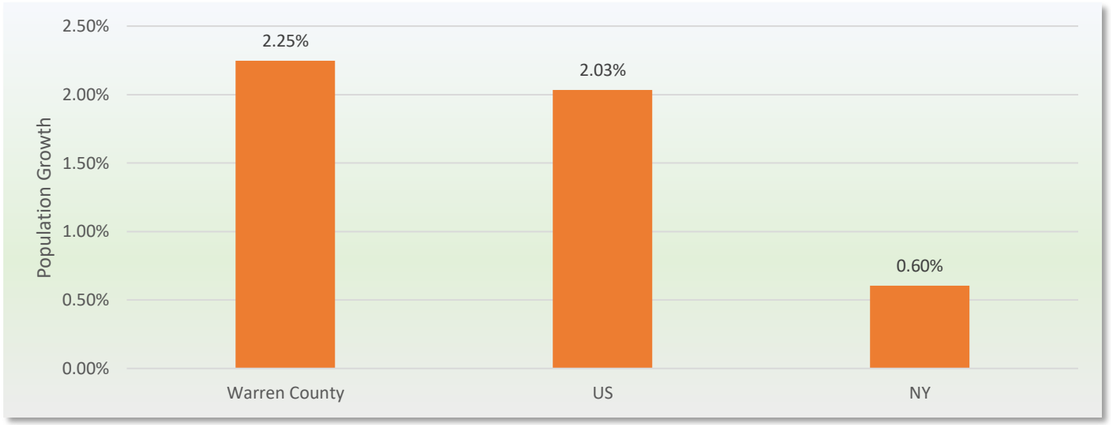
This chapter is organized into the following sections:

- Introduction
- Previous Airport Forecasts
- Industry Trends
- Air Taxi Operations
- General Aviation (GA) Operations
- Military Operations
- Helicopter Operations
- Based Aircraft
- Aircraft Fleet Mix
- Annual Instrument Approach Operations
- Peaking Characteristics
- Forecast Summary
- Summary and Comparison to the *FAA Aerospace Forecast Fiscal Years 2025–2045*
- Critical Aircraft

3.1.1. Local Economic Conditions

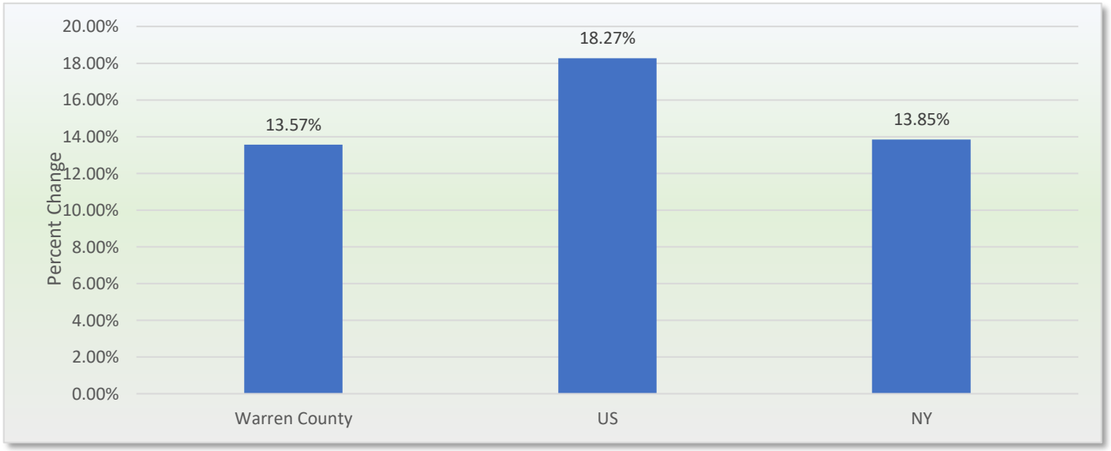
Growing populations with strong employment and personal income conditions typically result in growth in the surrounding area. As such, airports in strong economies are typically beneficiaries of good economic conditions. Changes from 2019 to 2023 (pre-COVID-19 vs. post-COVID-19) in population and median income for the US, New York, and Warren County can be seen in **Figure 3-1** and **Figure 3-2**, respectively.

Figure 3-1: Comparison of Population Change (2019-2023)



Source: US Census, 2025.

Figure 3-2: Comparison of Median Income (2019-2023)



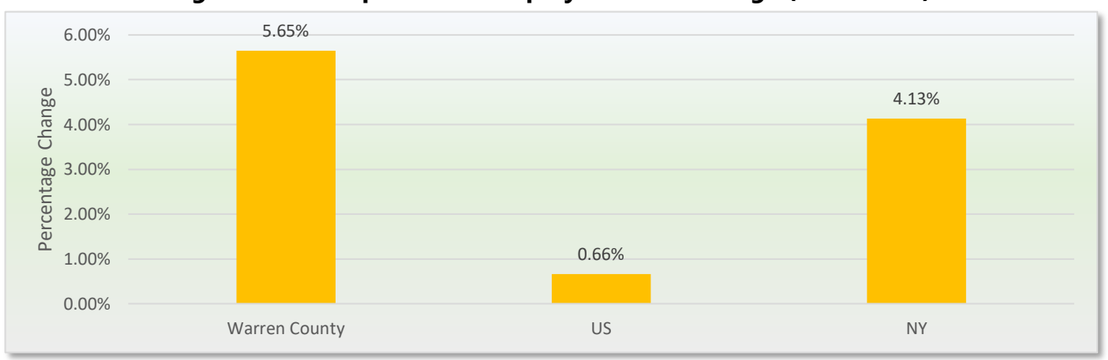
Source: US Census, 2025.

As shown in the charts above, when comparing Warren County to the US and New York, in two of the three categories, Warren County shows faster growth when comparing 2019 to 2023. From 2019 to 2023, Warren County performed better than the state of New York and the US on population growth. However, Warren County's median income growth was less than the US growth, and negligibly less than the state of New York's growth. Similarly, when comparing the percent change of people employed in 2019 versus 2023, Warren County has shown a better recovery from the COVID-19 pandemic than the state of New York or the US as a whole, as seen in **Figure 3-3**.

The growth in employment and population, and the strong recovery from the COVID-19 pandemic

in Warren County, indicate that we should expect to see increases in the number of operations and based aircraft. These economic indicators show that the economy in Warren County is strong and growing, which bodes well for the future of aviation in the area.

Figure 3-3: Comparison of Employment Percentage (2019-2023)



Source: US Census, 2025.

3.2. PREVIOUS AIRPORT FORECASTS

This section presents previously developed forecasts for context.

3.2.1. 2009 Airport Master Plan Update

The 2009 *Airport Master Plan Update* forecasted a nearly 15 percent total increase in based aircraft, and a nearly 28 percent increase in aircraft operations from 2010 to 2020. The summary of the forecast can be seen in **Figure 3-4**.

Figure 3-4: 2009 Airport Master Plan Demand Forecast Summary

TABLE 3-9
DEMAND FORECAST SUMMARY

Aviation Demand Element	1999	2005	2010	2020
Based Aircraft	61	69	74	85
Annual Operations				
GA Local	16,262	18,392	20,812	26,664
GA Itinerant	20,698	23,408	26,488	33,936
Military	500	500	500	500
TOTAL	**37,500**	**42,300**	**47,800**	**61,100**
Design Hour Operations	21	23	26	34
Annual Instrument Approaches	2,886	3,260	3,689	4,727

Source: C&S Engineers, Inc.

Source: Airport Master Plan by C & S Engineers, Inc. 2009.

Neither the based aircraft nor the aircraft operations at the Airport have performed to the forecast of the 2009 *Airport Master Plan Update* (AMPU). Reviewing the FAA Terminal Area Forecast (TAF), which is the only record of operations and based aircraft over time, the number of based aircraft has increased by 7.5 percent from 2010 to 2020, and the number of aircraft operations has decreased by 45 percent over the same time period.

3.2.2. 2018 New York State Airport System Plan

In 2018, the New York State Department of Transportation (NYSDOT) completed an update to the *State Airport System Plan* (SASP). The plan is a comprehensive analysis of the system of airports in New York to determine where deficiencies may exist to be addressed, and to determine the financial responsibility of NYSDOT in maintaining the system of airports.

The plan forecasts that GFL will see an increase in the number of based aircraft by one from 2015 to 2020, and by one more by 2025 for a total of 58 based aircraft. This represents an average annual growth rate (AAGR) of 0.35 percent. Also, the plan forecasts the number of aircraft operations to increase from 19,950 in 2020 to 20,300 in 2025, which is also an AAGR of 0.35 percent. The summary of the forecast can be seen in **Table 3-1**.

Table 3-1: NYSDOT SASP Forecast for GFL

Based Aircraft				Aircraft Operations			
2015	2020	2025	AAGR	2015	2020	2025	AAGR
56	57	58	0.35%	19,600	19,950	20,300	0.35%

Source: NYSDOT SASP, 2018.

3.2.3. FAA Terminal Area Forecasts (TAF)

The FAA publishes a TAF for all public-use airports in the US. The TAF includes historical and forecast data, including enplanements, operations, and based aircraft. The operations data is further broken down into itinerant and local. The operations and based aircraft forecast levels for 2025 through 2031 in the current TAF can be seen in **Table 3-2**. Per the TAF, total operations and based aircraft at the airport are expected to remain flat over the five-year planning period. Only the next five years of the TAF are shown, as the TAF forecasts the same numbers through 2050.

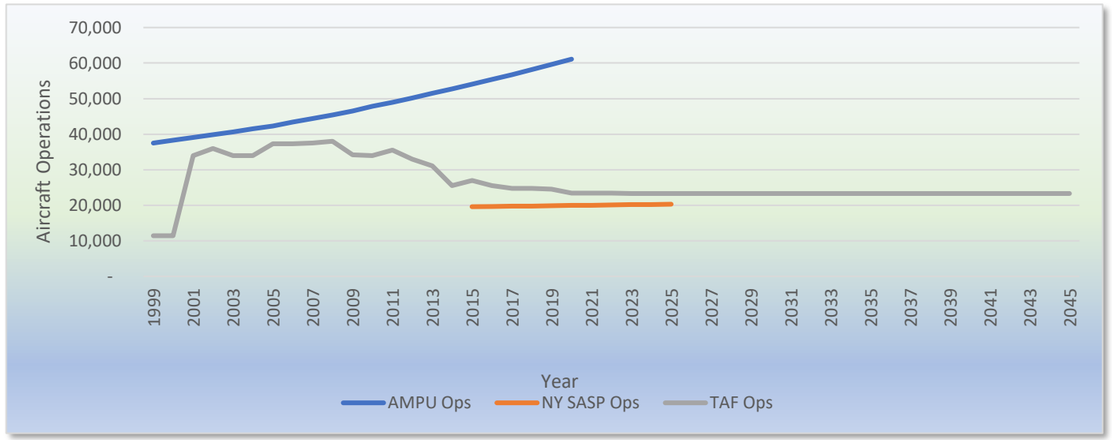
The comparison between the forecast operations and based aircraft of the AMPU, NYSASP, and TAF can be seen graphically in **Figure 3-5** and **Figure 3-6**.

Table 3-2: FAA TAF Forecast

	Itinerant Operations				Local Operations		Total Ops.	Based Aircraft
	Air Carrier	Air Taxi	GA	Military	GA	Military		
2025	0	7,709	5,372	467	9,811	0	23,359	45
2026	0	7,709	5,372	467	9,811	0	23,359	45
2027	0	7,709	5,372	467	9,811	0	23,359	45
2028	0	7,709	5,372	467	9,811	0	23,359	45
2029	0	7,709	5,372	467	9,811	0	23,359	45
2030	0	7,709	5,372	467	9,811	0	23,359	45

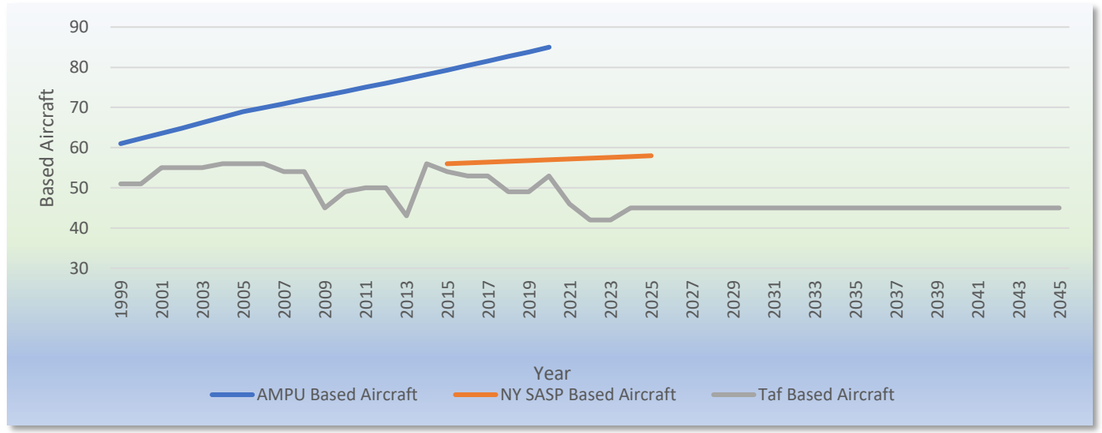
Source: FAA TAF 2025.

Figure 3-5: Operations Forecast Comparison



Sources: AMPU by C&S 2009, NYSDOT SASP 2018, FAA TAF 2025.

Figure 3-6: Based Aircraft Forecast Comparison



Sources: AMPU by C&S 2009, NYSDOT SASP 2018, FAA TAF 2025.

3.2.4. FAA Aerospace Forecast Fiscal Years 2025–2045

Lastly, the FAA publishes an annual report on the trends in the US aviation industry known as the *FAA Aerospace Forecast Fiscal Years 2025–2045*. It examines all aspects of the US aviation industry and provides forecasts for metrics such as US airline operations, GA operations and fleet, commercial space operations, and fuel consumption forecasts, among others.

One of the elements of the *FAA Aerospace Forecast Fiscal Years 2025–2045* is the forecast for the number of active GA and air taxi aircraft, which can be seen in **Table 3-3**.

Table 3-3: FAA Aerospace Forecast Fiscal Years 2025–2045 Active GA and Air Taxi Aircraft

ACTIVE GENERAL AVIATION AND AIR TAXI AIRCRAFT

	FIXED WING						ROTORCRAFT						TOTAL GENERAL		
	PISTON			TURBINE											
AS OF DEC. 31	SINGLE ENGINE	MULTI-ENGINE	TOTAL	TURBO PROP	TURBO JET	TOTAL	PISTON	TURBINE	TOTAL	EXPERI-MENTAL**	LIGHT SPORT AIRCRAFT**	OTHER	AVIATION FLEET	TOTAL PISTONS	TOTAL TURBINES
2025	126,690	11,580	138,270	11,100	17,505	28,605	2,955	7,465	10,420	30,425	3,285	4,595	215,600	141,225	36,070
2030	125,265	11,275	136,540	11,425	20,235	31,660	3,100	8,340	11,440	31,190	3,865	4,710	219,405	139,640	40,000
2035	124,340	11,085	135,425	11,935	23,335	35,270	3,230	9,290	12,520	32,325	4,500	4,765	224,805	138,655	44,560
2040	123,800	10,950	134,750	12,660	26,565	39,225	3,335	10,285	13,620	33,475	5,180	4,800	231,050	138,085	49,510
2044	123,845	10,925	134,770	13,350	29,210	42,560	3,415	11,085	14,500	34,415	5,730	4,835	236,810	138,185	53,645
2045	123,925	10,925	134,850	13,540	29,865	43,405	3,435	11,280	14,715	34,670	5,870	4,840	238,350	138,285	54,685
Avg Annual Growth															
2010-24	-0.7%	-2.2%	-0.8%	1.2%	2.8%	2.1%	-1.4%	0.8%	0.1%	1.4%	-5.0%	-1.7%	-0.3%	-0.8%	1.8%
2024-25	-0.3%	-0.6%	-0.3%	0.6%	2.9%	2.0%	0.9%	2.3%	1.9%	0.4%	3.5%	3.3%	0.3%	-0.3%	2.1%
2025-35	-0.2%	-0.4%	-0.2%	0.7%	2.9%	2.1%	0.9%	2.2%	1.9%	0.6%	3.2%	0.4%	0.4%	-0.2%	2.1%
2025-45	-0.1%	-0.3%	-0.1%	1.0%	2.7%	2.1%	0.8%	2.1%	1.7%	0.7%	2.9%	0.3%	0.5%	-0.1%	2.1%

* Source: 2001-2010, 2012-2023, FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.
**Experimental Light-sport category that was previously shown under Sport Aircraft is moved under Experimental Aircraft category, starting in 2012.
Note: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

Source: FAA Aerospace Forecast Fiscal Years 2025–2045, 2025.

While the numbers of single- and multi-engine piston aircraft are expected to decline over the planning period, the numbers of turboprop, turbojet, rotorcraft, experimental, and light sport aircraft are all expected to increase (1.0%, 2.7%, 1.7%, 0.7%, and 2.9%, respectively) over the planning period. Overall, the GA fleet in the US is expected to grow by 0.5 percent over the next 20 years.

This forecast bodes well for GFL as the Airport is growing in an area that is thriving, and the Airport is capable of accommodating these diverse aircraft types. Also, the growth in turbine-powered aircraft bodes well for the Airport as these aircraft typically consume more fuel than piston-engine aircraft, which can translate to increased fuel sales and increased revenue for the County.

3.3. INDUSTRY TRENDS

3.3.1. Industry Influences

There have been dramatic changes to GA over the past decade. Similar cycles of boom and bust over the decades have shaped GA into what it is today. With a healthy blend of recreational flying, flight training, and air taxi operations, GFL is well situated to weather the changes in the industry. Also, Glens Falls is a tourist destination, and close access to the Lake George area should mean steady growth of GA activity at the Airport over the planning period.

Aircraft Fleet Mix – As previously mentioned, the growth in GA is expected to be in larger corporate turbine-engine aircraft and helicopters. Challenges to recreational flying have strained the light-GA market, and the FAA continually forecasts a decline in single-engine piston aircraft ownership. The GA market ownership model is shifting away from single-owner aircraft and more into flying clubs and co-ownership or fractional ownership of aircraft.

Pilot Supply – In recent years, impacts associated with a reduced number of pilots entering the aviation industry have become apparent. Regulatory changes requiring 1,500 hours of experience for first officers have added to an increasingly expensive training process. These are compounding

factors that will likely increase the severity of this labor issue in the coming years. Some industry groups have also identified a similar shortage of qualified aircraft mechanics as well. The continually increasing cost of flight training, aircraft ownership, and aviation fuel has had the effect of pricing many middle-class aviation enthusiasts out of the market, particularly for recreational flying.

Fuel Prices – Over the past 10 years, the aviation industry has demonstrated its sensitivity to fuel prices and the associated impact on operational cost and ultimately on aviation demand. On average, fuel represents approximately one-third of the cost of commercial aviation activity. Thus, during spikes in fuel prices, like in 2008 and 2022, the impacts on both supply and demand are tremendous. Advancements in fuel technology are expected to help reduce industry price-sensitivity to fuel, but fuel prices will likely continue to be a key influencer for aviation activity for some time.

No airport or airline is immune to the effects of increasing fuel prices. Airports like GFL, which are mostly reliant on vacation travelers with disposable income, may be more affected than other airports that either rely heavily on business travelers or that can support small businesses.

Electric Aircraft - To counter the high cost and uncertainty associated with fuel, several aircraft manufacturers have begun investing in the development of all-electric aircraft. The prospects that are furthest along in the development phase are predominantly aircraft with nine seats or fewer. It is unclear how this new technology will develop, particularly for GA, however the implementation of Advanced Air Mobility is expected to alter the landscape of aviation in the coming decades as the adoption of electric aircraft takes hold. Also, it is anticipated that once electric aircraft are readily available for mass production, it is anticipated that flight schools utilizing electric aircraft for flight training will be early adopters of this new technology.

3.4. AIR TAXI OPERATIONS

Air taxi operations include regional and commuter activity and commercial applications within GA, such as Federal Aviation Regulations (FAR) Part 135 charter activity.

3.4.1. Historical Air Taxi Operations

The FAA TAF keeps data on itinerant air taxi operations going back to 1990. The most recent 34 years of the TAF were analyzed, yielding a compound annual growth rate (CAGR) of 2.81 percent. There was a sharp increase in air taxi operations from 2014 to 2017, and then a slight decline since 2019, attributed to a post-COVID-19 recovery economy. Overall, GFL air taxi and commuter operations are close to their historical high, as can be seen graphically in **Figure 3-7**.

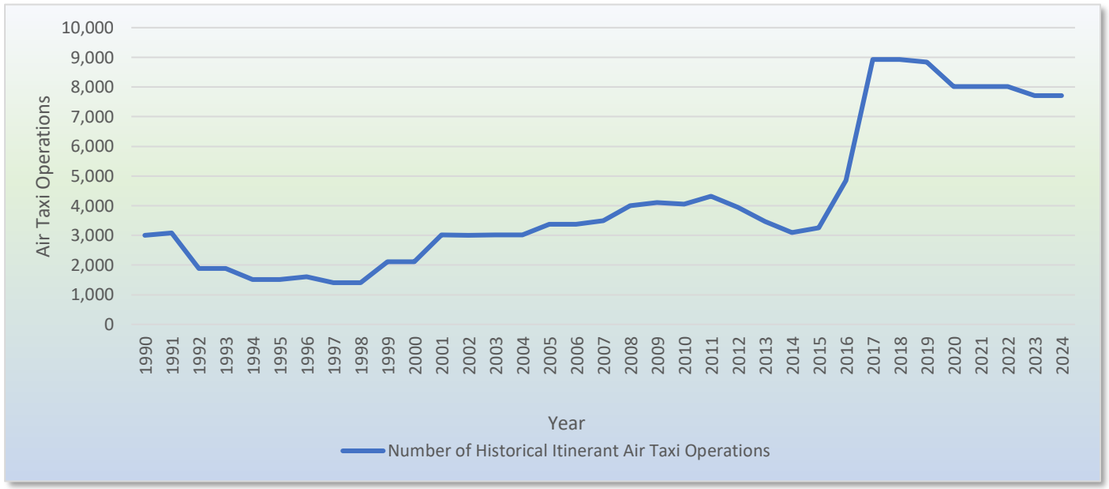
3.4.2. Air Taxi Operations Forecast

Itinerant air taxi operations have generally increased over the past 10 years at GFL, with a CAGR of 2.72 percent. Given the health of the local economy and the recent population growth, it is safe to assume the itinerant air taxi operation will continue to grow throughout the planning period at the historical CAGR of 2.72 percent.

3.5. GENERAL AVIATION (GA) OPERATIONS

GA operations are defined as all aviation activity that is not commercial service or military. GFL has an active GA community, and the following sections detail the historical and forecast GA operations.

Figure 3-7: Historical Air Taxi Operations



Source: FAA TAF, 2025.

Using a baseline number of 7,709 operations from the FAA TAF (2025), the number of air taxi operations through the forecast period can be seen in **Table 3-4**.

Table 3-4: Forecast of Itinerant Air Taxi Operations at GFL

Year	Air Taxi Operations
2025	7,709
2030	8,814
2035	10,078
2040	11,522
2045	13,174

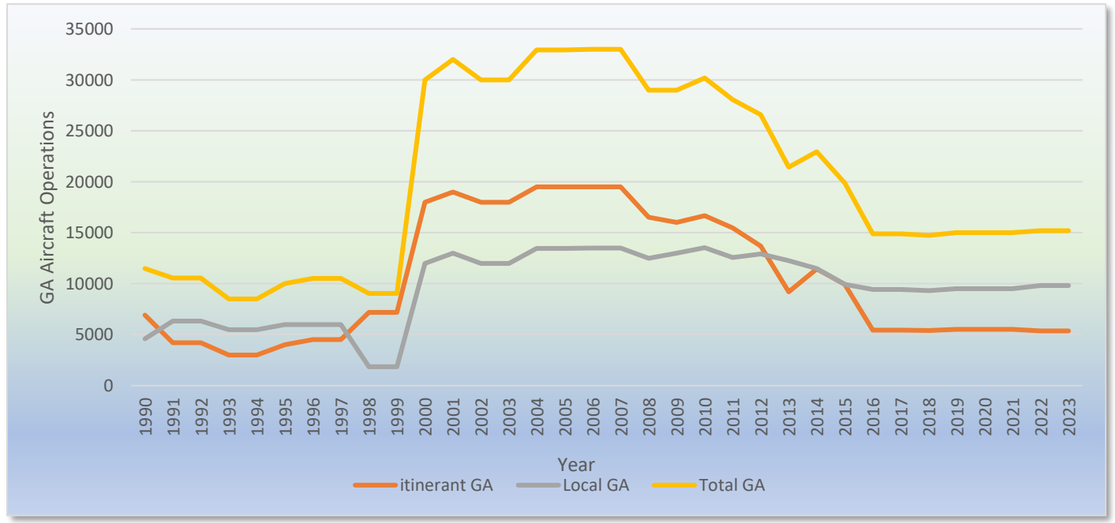
Sources: FAATAF 2025 and McFarland Johnson analysis 2025.

3.5.1. Historic General Aviation Aircraft Operations

According to the TAF, GA operations at GFL have fluctuated over the past 34 years, with a sharp increase from 1999 to 2000, followed by a significant decline between 2007 and 2016. The COVID-19 pandemic caused a notable drop in total GA operations, particularly among itinerant flights, while local GA operations—those within 20 miles of the airport—experienced a slight uptick.

GA aircraft operations have grown at GFL over the past 34 years. The CAGR of historic GA operations at the Airport is 1.24 percent, and historical GA operations can be seen in **Figure 3-8**.

Figure 3-8: Historical GA Operations at GFL



Source: FAA TAF, 2025.

3.5.2. General Aviation Operations Forecast

The forecast of GA operations at GFL can be seen in **Table 3-5**. By applying the historical CAGR of 1.24 percent for total aircraft operations to the 2025 GA operations at the Airport over the twenty-year planning period, the Airport would expect to see 19,411 total GA operations in 2045.

Table 3-5: GFL Forecast GA Operations

Year	Local GA Operations	Itinerant GA Operations	Total GA Operations
2025	9,811	5,372	15,183
2030	10,432	5,712	16,144
2035	11,093	6,074	17,167
2040	11,796	6,459	18,255
2045	12,543	6,868	19,411

Source: McFarland Johnson analysis, 2025.

Although the 1.24 percent CAGR of GA operations exceeds the 0.4 percent growth rate projected for total GA operations in the *FAA Aerospace Forecast Fiscal Years 2025–2045*, it remains lower than the forecasted 2.0 percent growth for turbines and 1.7 percent growth for rotorcraft. These two sectors are expected to drive the most growth at GFL throughout the planning period.

Also, the nationwide operations forecast of 0.4 percent in the *FAA Aerospace Forecast Fiscal Years 2025–2045* is much lower than the same analysis conducted through the FAA TAF for various regions of the country. For example, the 20-year forecast CAGR of aircraft operations for the state of NY from 2025 to 2045 is 0.91 percent, and the same comparison for the Northwest Mountain Region is 1.13 percent. This same calculation varies from as low as 0.34 percent (Central Region) up to 1.16% (Florida), so it is expected that some areas are forecast to fare better than the US as a whole.

3.6. MILITARY OPERATIONS

Military operations comprise a small portion of the overall operations at GFL. There are no known records of the types of military aircraft that operate at GFL; however, the fixed base operator (FBO) at GFL, Rich Air, reported that most of the military operations are UH-60 Blackhawk helicopters.

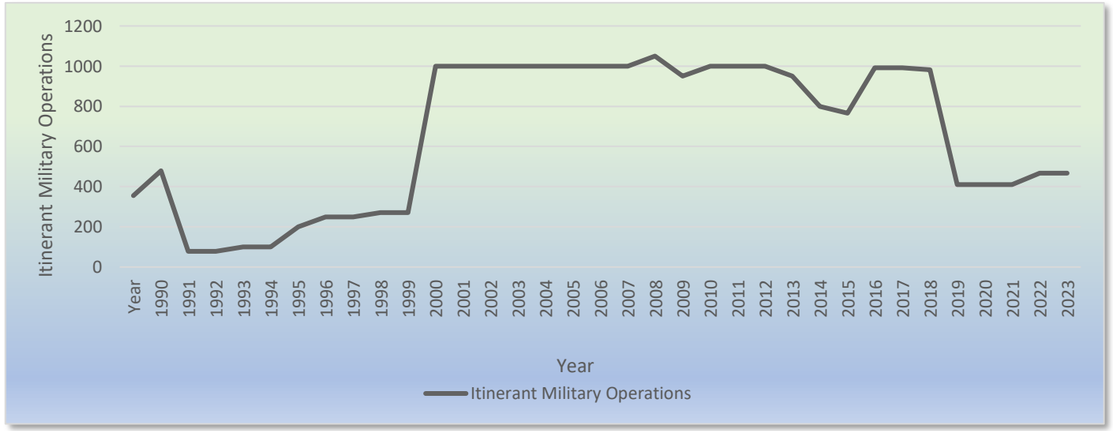
3.6.1. Historic Military Operations

Over the past 34 years, military operations have only accounted for an average of approximately three percent of GFL's total operations. The military operations counts at GFL can be seen graphically in **Figure 3-9**.

3.6.2. Military Operations Forecast

Over the past 34 years at GFL, itinerant military operations have averaged 659 per year, establishing this figure as the baseline for 2025 military operations. Given the relatively low number of military operations compared to total airport activity, predicting long-term trends remains challenging. As a result, the forecast assumes the number of military operations at the Airport to remain steady at 659 operations per year.

Figure 3-9: GFL Historical Military Annual Operations



Source: FAA TAF, 2025.

3.7. HELICOPTER OPERATIONS

Rich Air provided helicopter operations data from 2024. The bulk of helicopter operations were conducted by the New York State Police, and a handful of additional helicopter operations are conducted annually by medical transport operators. Additionally, the New York Army National Guard conducts helicopter operations into GFL. The military operations have been excluded from

this helicopter operations analysis, as it is presumed they have already been accounted for in Section 3.6 above. According to the FBO, there were a total of 99 helicopter operations at GFL in 2024, which will be used as the baseline number since it is the last full year of recorded helicopter operations.

According to Table 29 of the *FAA Aerospace Forecast Fiscal Years 2025–2045*, the number of hours flown by rotorcraft from 2025 through 2045 is expected to increase at an average annual growth of 2.1 percent. As such, the number of helicopter operations into GFL is also expected to increase at an average annual rate of 2.1 percent, up to 153 operations in 2045. The forecast numbers of helicopter operations into GFL over the planning period can be seen in **Table 3-6**.

Table 3-6: Forecast Helicopter Operations at GFL

Year	Helicopter Operations
2025	101
2030	112
2035	124
2040	138
2045	153

Sources: FAA TAF, and McFarland Johnson analysis, 2025.

3.8. BASED AIRCRAFT

As New York state has no aircraft registration requirements, the definition of based aircraft aligns with the FAA's definition of based aircraft. For an aircraft to be based at an airport, it must have some sort of agreement with the airport sponsor for the storage of the aircraft, it must be based at the airport for more than six months per year, it must be operational, or capable of taking off and landing, and it must have a valid FAA airworthiness certificate.

3.8.1. Historic Based Aircraft

The number of based aircraft at GFL has fluctuated over the decades according to the TAF. There appears to have been a peak of 106 aircraft in 1996, and the current number of based aircraft is 49, according to Airport management. Some important context here is that in 2006, the National Based Aircraft Inventory Program kicked off, which changed the way airports counted based aircraft. Prior to 2006, most airports likely inflated their based aircraft counts, which may account for the sudden decline in based aircraft at GFL.

Over the past 34 years, the TAF has shown a CAGR of 9.76 percent; however, the FAA TAF forecasts a zero percent growth rate through 2045 and beyond. Through the period of 1999 and 2020, the 2009 AMPU forecasted a CAGR of 2.08 percent for based aircraft. Lastly, the NYSDOT SASP forecasted a CAGR of 0.35 percent from 2015 through 2025.

3.8.2. Based Aircraft Forecast

The Airport has been going through a hangar construction phase for the past five to seven years, and it is expected to continue. There have been two new T-hangars constructed on the south end of the Airport, and Rich Air has constructed four new conventional hangars to accommodate demand. The airport manager has also reported that the old T-hangar is in the process of demolition and replacement with a six-unit T-hangar, and Rich Air currently has approval for an additional three conventional hangars. Additionally, plans are in place to rehabilitate the tie-down apron. The Airport has a hangar wait list with 19 individuals on it. The planned robust development at the Airport, coupled with a strong and growing local economy, suggests the number of based aircraft will continue to grow throughout the planning period.

To forecast the number of based aircraft, the growth rates from the *FAA Aerospace Forecast Fiscal Years 2025–2045* have been applied to each aircraft type. Additionally, six light aircraft have been added to the inventory in the short term to fill the new T-hangar, and an additional five light aircraft have been added within 10 years to be based on the rehabilitated tie-down apron. Given the bullish forecast from the *FAA Aerospace Forecast Fiscal Years 2025–2045* on turboprop and turbojet aircraft, the Airport can expect to see an additional four turbine-engine aircraft throughout the planning period (one turboprop and three jets). In total, the Airport can expect to see 14 additional based aircraft in the next 20 years. The based aircraft forecast can be seen in **Table 3-7**.

Table 3-7: GFL Forecast Based Aircraft

Year	Based Aircraft
2025	49
2030	56
2035	62
2040	63
2045	65

Source; McFarland Johnson analysis, 2025.

3.9. AIRCRAFT FLEET MIX

Although the *FAA Aerospace Forecast Fiscal Years 2025–2045* shows a decline in single-engine aircraft, the planned development at the Airport is expected to grow the number of light GA aircraft. This expectation is validated by the current hangar wait list, which has 19 individuals on it waiting for a hangar to base at the Airport. Also, based on the percentages of growth for turbine-engine aircraft and rotorcraft in the *FAA Aerospace Forecast Fiscal Years 2025–2045,* three additional jets and one additional turboprop aircraft are forecast to be based at the Airport in the next 20 years. Using the Airport's current fleet mix and the assumption of the future based aircraft fleet mix, **Table 3-8** presents the forecast of based aircraft by aircraft type for the Airport.

Table 3-8: Forecast Fleet Mix

	2025		2030		2035		2040		2045		AAGR
Single	41	83.7%	46	82.6%	51	81.6%	51	80.4%	51	79.0%	1.15%
Multi	1	2.0%	2	3.5%	2	3.1%	2	3.0%	2	2.9%	5.00%
Turboprop	3	6.1%	3	5.7%	3	5.3%	3	5.5%	4	5.7%	1.65%
Jet	4	8.2%	5	8.2%	5	8.4%	6	9.4%	7	10.6%	0.41%
Rotor	0	0.0%	0	0.0%	1	1.6%	1	1.7%	1	1.8%	5.00%
Total	49	100%	56	100%	62	100%	63	100%	65	100%	-

Source: McFarland Johnson analysis, 2025.

3.10. ANNUAL INSTRUMENT OPERATIONS

The FAA publishes data for all US airports that details the number of instrument procedures conducted. The Traffic Flow Management System Counts (TFMSC) is an FAA database that can be queried using a number of criteria, including date ranges, specific airports, aircraft types, etc. The database tracks the number of itinerant instrument operations and is a useful tool for tracking instrument operations and discerning trends. One drawback of the TFMSC is that if a pilot cancels their IFR clearance prior to arriving at their destination airport, it is not counted in the TFMSC, so it does not capture all instrument operations.

According to the TFMSC, the number of instrument operations into GFL has been declining slightly over the past decade. From a peak in 2015 of over 2,900 instrument operations, to a low point of just over 1,650 in 2020, likely due to the COVID-19 pandemic. The number of instrument operations over the past decade from the TFMSC can be seen graphically in **Figure 3-10**.

Figure 3-10: Historic GFL Annual Instrument Operations

Source: TFMSC, 2025.

3.10.1. Instrument Operations Forecast

The Airport has not seen the number of instrument operations since the peak in 2015. However, there has been a slight uptick in recent years. The CAGR from 2022 to 2024 has seen a 1.58 percent increase, and given the strength of the local socioeconomics and economy, coupled with the forecast growth in turbine-engine aircraft, it is likely this trend will continue. As such, the Airport can expect the number of instrument operations to be back up to 2014 levels of approximately 2,600 annual operations in 2045. **Table 3-9** shows the forecast growth of instrument operations during the planning period.

3.11. PEAKING CHARACTERISTICS

An operations forecast provides a good overview of activity at an airport, but does not consider the facility's capacities. Facility requirements are not driven by annual demand but rather by the capacity shortfalls and delays experienced during times of peak operational activity. Therefore, this Master Plan provides forecasts for the peak month, average day peak month (ADPM), and the peak hour of the ADPM. The values for these metrics were calculated using the methodology in FAA AC 150/5360-13A, *Airport Terminal Planning*, except for the peak month calculation. Airport peaking characteristics were calculated using the assumptions in the following sections.

Table 3-9: Forecast Annual Instrument Operations

Year	Instrument Operations
2025	1,910
2030	2,065
2035	2,234
2040	2,416
2045	2,613

Source: McFarland analysis, 2025.

3.11.1. Peak Month

The peak month is defined as the month with the highest level of activity during the calendar year. Instrument operations data from the TFMSC over the past 10 years were used to identify the peak month. In the case of GFL, the peak month is July. Using the past 10 years of instrument data from TFMSC, the peak month of July accounts for 17 percent of the annual operations, and this factor is applied to the forecast number of operations to calculate the number of operations that occur in the peak month.

3.11.2. Average Day Peak Month (ADPM)

The ADPM is defined as the average day within the peak month, determined by dividing the peak month operations by the number of days within the peak month (in this case, 31). The ADPM is designated as the "design-day." With 3,976 operations in July of 2025, this would result in 128 design-day operations. Similarly, 5,680 operations in the peak month of July 2045 would result in 183 design-day operations.

3.11.3. Peak Hour

This level of operation is defined as the peak hour within the design day. Studies of airport traffic patterns have shown that peak-hour demand typically falls within 8–12 percent of peak-day traffic. As such, a conservative assumption of 10 percent of the design day operations has been chosen for the number of peak hour operations. GFL can expect to see 13 peak hour operations today and 18 peak hour aircraft operations in 2045.

3.11.4. Itinerant Split

An important distinction to consider in peak hour planning of airport facilities, particularly the use of the terminal building and itinerant parking, is the number of itinerant peak hour operations. Local pilots and their passengers are less likely to utilize the terminal building or itinerant apron, and as such should be considered separately from the needs of the itinerant users of the Airport. By applying the historical average of itinerant operations, compared to total aircraft operations of 61 percent, we can calculate the peak hour itinerant operations for later facility planning.

The peaking characteristics of GFL are shown in **Table 3-10**.

Table 3-10: GFL Operations Peaking Characteristics

Year	Peak Month	ADPM	Peak Hour	Peak Hour Itinerant
2025	3,976	128	13	8
2030	4,338	140	14	9
2035	4,739	153	15	9
2040	5,185	167	17	10
2045	5,680	183	18	11

Source: McFarland Johnson analysis, 2025.

3.12. FORECAST SUMMARY

Table 3-11 presents a summary of the aviation demand forecasts developed for GFL over the next 20 years that are detailed throughout this chapter. These forecasts are considered realistic and will be used further to develop the facility requirements in the next chapter.

Table 3-11: Aviation Demand Forecast Summary

	Baseline	Forecast			
	2025	2030	2035	2040	2045
Operations					
Air Taxi	7,709	8,814	10,078	11,522	13,174
GA Itinerant	5,372	5,712	6,074	6,459	6,868
GA Local	9,811	10,432	11,093	11,796	12,543
Military	659	659	659	659	659
Helicopter	101	112	124	138	153
Total	**23,652**	**25,730**	**28,029**	**30,574**	**33,397**
Based Aircraft					
Single-Engine	41	46	51	51	51
Multi-Engine	1	2	2	2	2
Turboprop	3	3	3	3	4
Jet	4	5	5	6	7
Rotor	0	0	1	1	1
Total	**49**	**56**	**62**	**63**	**65**
Peaking					
Peak Hour	13	14	15	17	18
Peak Hour Itinerant	8	9	9	10	11

Source: McFarland Johnson analysis, 2025.

3.13. COMPARISON TO THE FAA AEROSPACE FORECAST FISCAL YEARS 2025–2045

To estimate future aviation demand, this analysis employs multiple analytical techniques to explore various potential scenarios. A preferred forecast is selected after considering relevant subjective factors. Accordingly, the forecast presented herein integrates several methodologies. Industry-standard forecasting methods have been reviewed in developing the GFL forecast, which is compared to the *FAA Aerospace Forecast Fiscal Years 2025–2045* in **Table 3-12.** Current operations at the airport are less than 90,000 operations annually and are not expected to exceed 90,000 operations in the foreseeable future.

Table 3-12: GFL and FAA Aerospace Forecast Fiscal Years 2025–2045 Comparison

	Actual	Forecast			
	Baseline	2030	2035	2040	2045
FAA Aerospace Forecast Fiscal Years 2025–2045					
Total Operations	23,652	24,448	25,400	26,529	27,860
Based Aircraft	49	49	51	52	53
Master Plan Forecast					
Total Operations	23,652	25,730	28,029	30,574	33,397
Based Aircraft	49	56	62	64	65
Percent Difference from FAA Aerospace Forecast Fiscal Years 2025–2045					
Total Operations	0%	5.1%	9.8%	14.2%	18.1%
Based Aircraft	0%	**11.9%**	**20.1%**	20.1%	20.2%

Source: FAA Aerospace Forecast Fiscal Years 2025–2045, and McFarland Johnson analysis, 2025.
Note: Figures in bold are outside of FAA approval criteria.

The FAA standard for forecast approval at non-towered airports is for a forecast to be within 10 percent of the *FAA Aerospace Forecast Fiscal Years 2025–2045* in a five-year period, and 15 percent in a 10-year period. On the other hand, since the Airport is not anticipated to have 90,000 annual operations or more within the planning period, the growth is not impacting capacity.

The *FAA Aerospace Forecast Fiscal Years 2025–2045* for general aviation operations and based aircraft utilizes growth (or decline) percentages in an attempt to predict where the US aviation industry will be in the coming years. As such, it is a top-down, big-picture assessment. The forecast this Master Plan presents is a bottom-up forecast that considers national growth, but also local interest in building hangars, and the strength of the local economy. Despite the very slight deviations from the *FAA Aerospace Forecast Fiscal Years 2025–2045* for based aircraft and the FAA criteria for approval, the Master Plan forecast is considered realistic and consistent with local conditions.

3.14. CRITICAL AIRCRAFT

FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, provides guidance for determining the current and future critical aircraft for the Airport. The critical aircraft represents the most demanding aircraft or group of aircraft with similar characteristics that regularly use the Airport. The FAA defines "regular use" as 500 or more annual operations, excluding touch-and-go operations. The critical aircraft determinations use one year of historical operations data from the FAA TFMSC. While this source does not capture 100 percent of Airport activity, particularly local operations and those not filing formal flight plans, the database does provide an understanding of Airport activity and should be relatively accurate with respect to the more complex aircraft that are more likely to fly under a filed IFR flight plan.

The designation of the critical aircraft guides important planning metrics such as runway and taxiway

widths and separations, the dimensions of safety-critical areas such as runway safety areas and runway object free areas, etc.

3.14.1. Critical Aircraft Determination

The Runway Design Code (RDC) for a particular runway has three components and is used in airport planning. It is derived from the features of critical aircraft, coupled with the best available instrument approach minimums for that runway. The first component, depicted by a letter (A through E), is the Aircraft Approach Category (AAC) and relates to aircraft approach speed (operational characteristics) as seen in **Table 3-13**. Aircraft with an AAC of "A" have slower approach speeds, while aircraft that are assigned a higher AAC have faster approach speeds. The second component, depicted by a Roman numeral (I through VI), is the Airplane Design Group (ADG) and relates to the aircraft wingspan and/or tail height (physical characteristics), whichever is more restrictive, as seen in **Table 3-14**. The third component relates to the visibility minimums for the runway in question, and is expressed by Runway Visual Range (RVR) values in feet, as seen in **Table 3-15**.

Table 3-13: Aircraft Approach Category (AAC)

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: FAA AC 150/5300-13B, Airport Design, 2024.

Table 3-14: Airplane Design Group (ADG)

Group	Tail Height (and/or)	Wingspan
I	< 20′	< 49′
II	20′ - < 30′	49′ - < 79′
III	30′ - < 45′	79′ - < 118′
IV	45′ - < 60′	118′ - < 171′
V	60′ - < 66′	171′ - < 214′
VI	66′ - < 80′	214′ - < 262′

Source: FAA AC 150/5300-13B, Airport Design, 2024.

Table 3-15: Visibility Minimums

RVR (feet)	Flight Visibility Category (SM)
5,000	Not lower than 1 mile
4,000	Lower than 1 mile but not lower than ¾ mile (APV ≥ 3/4 but < 1 mile)
2,400	Lower than 3/4 mile but not lower than 1/2 mile (CAT-I precision approach (PA))
1,600	Lower than 1/2 mile but not lower than 1/4 mile (CAT-II PA)
1,200	Lower than 1/4 mile (CAT-III PA)

Source: FAA AC 150/5300-13B, Airport Design, 2024.

3.14.2. Runway 1-19 Critical Aircraft

Existing – With no airport traffic control tower (ATCT) and no aircraft operations counting devices implemented at GFL, the TFMSC is the best tool to determine regular use of the critical aircraft. FAA AC 150/500-17 allows for the selection of a composite critical aircraft using a grouping of aircraft with similar characteristics. As shown in **Table 3-16**, analysis of the 2025 aircraft operations in the TFMSC database revealed 526 AAC-ADG C-II or higher operations at GFL. The combined 526 operations of AAC-ADG C-II or C-III establish regular use by C-II aircraft, and as such, the existing RDC of Runway 1-19 is C-II-2400, as Runway 1 has minimums as low as ½ statute mile (SM).

Future – While operations by larger aircraft have increased over the past few years, there is no data to suggest that the number of C-III aircraft operations will continue to grow As such, it is forecast that the future Runway 1-19 RDC will remain unchanged.

Table 3-16: GFL TFMSC 2025 Operations

	C-II Ops.	C-III Ops.	Total
F900 - Dassault Falcon 900	100		100
GA5C - G-7 Gulfstream G500		96	96
CL30 - Bombardier (Canadair) Challenger 300	94		94
CL35 - Bombardier Challenger 300	84		84
GLEX - Bombardier BD-700 Global Express		68	68
CL60 - Bombardier Challenger 600/601/604	44		44
H25B - BAe HS 125/700-800/Hawker 800	40		40
Grand Total 2025 Operations			**526**

Source: FAA TFMSC, 2026.

3.14.3. Runway 12-30 Critical Aircraft

As a runway with minimums not lower than 1 SM, it is expected that the bulk of the aircraft operations would remain in the AAC-ADG of A-I to B-II range. Absent conclusive data that would point to regular use of Runway 12-30 by aircraft larger than A/B-I, it is assumed that the existing and future critical aircraft for Runway 12-30 will be in the A/B-I category, with an RDC of A/B-I-5000. This would be representative of an aircraft similar to the Cessna 172/182, Piper Cherokee, Diamond DA40 Diamond Star, etc.

3.14.4. Taxiway Design Group (TDG)

Finally, like the critical aircraft, the design TDG for the Airport is the most demanding aircraft or group of aircraft with similar characteristics that have 500 or more annual operations at the Airport. At GFL, the 2024 TFMSC operations show over 500 operations of aircraft that have a TDG-2A or larger (2, 2A, 2B, and 3). The historical TDG operations at the Airport are depicted in **Table 3-17**.

Therefore, the existing taxiway design standard at the Airport is TDG-2A. Based on the low numbers of aircraft larger than TDG-2A, it is not anticipated that the Airport will exceed 500 annual TDG-2A operations within the planning period. The designation of a TDG of 2A for the Airport is consistent

with the TDG of the future critical aircraft for Runway 1-19, and the existing and future critical aircraft for Runway 12-30.

Table 3-17: Historic Normalized TDG Operations 2019-2023

TDG	2A	2B	3	5	Total (TDG-2+)
2019	426	36	2	3	467
2020	296	35	1	11	343
2021	465	28	0	1	494
2022	411	34	0	0	445
2023	397	96	0	0	493
2024	**475**	**108**	**3**	0	**586**

Source: FAA TFMSC, 2025.

FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

Appendix A:
Technical Supplement

McFARLAND JOHNSON

A. TECHNICAL SUPPLEMENT

A.1. Purpose and Introduction

In addition to the chapters of the Master Plan, the objective of this Technical Supplement is to define more complex elements of airport design, steps of the master plan process, and planning considerations that affect the Floyd Bennett Memorial Airport (GFL).

Airport Planning looks at the fundamentals of how airports are planned and constructed, with a focus on runway design, terminal design, environmental requirements of airport projects, and the basic understanding of many features and functions of the airport. The last objective of airport planning is where this supplement aims to provide additional technical detail. The supplement is organized into the following subsections:

The technical supplement is informed by various forms of guidance, including the project team's experience, Advisory Circulars (ACs) issued by the Federal Aviation Administration, including AC 150/5300-13B Change 1, *Airport Design*, and various other state and federal laws that pertain to the design of airport facilities.

This supplement includes numerous subjects organized into the following sections:

Section	Title
A.1	Purpose and Introduction
A.2	Airspace
A.3	Runway/Taxiway Design Group Classification
A.4	Glossary of Terminology

A.2. Airspace

Airspace in the United States is classified as controlled, uncontrolled, or special use. Controlled airspace is a generic term that covers the different classifications of airspace (Class A, Class B, Class C, Class D, and Class E) and defined dimensions within which air traffic control (ATC) service is provided to IFR and VFR flights in accordance with the airspace classification. Uncontrolled airspace includes areas where ATC has neither authority nor responsibility to control aircraft. According to the Aeronautical Information Manual (AIM), special use airspace consists of airspace where activities must be confined because of their nature, or where limitations are imposed upon aircraft operations that are not part of the confined activities. Special use or restricted airspace is depicted on aeronautical charts unless it is the result of a controlled-firing area. Special use areas are typically due to military training facilities. Descriptions of the airspace classifications can be seen in **Table A-1**.

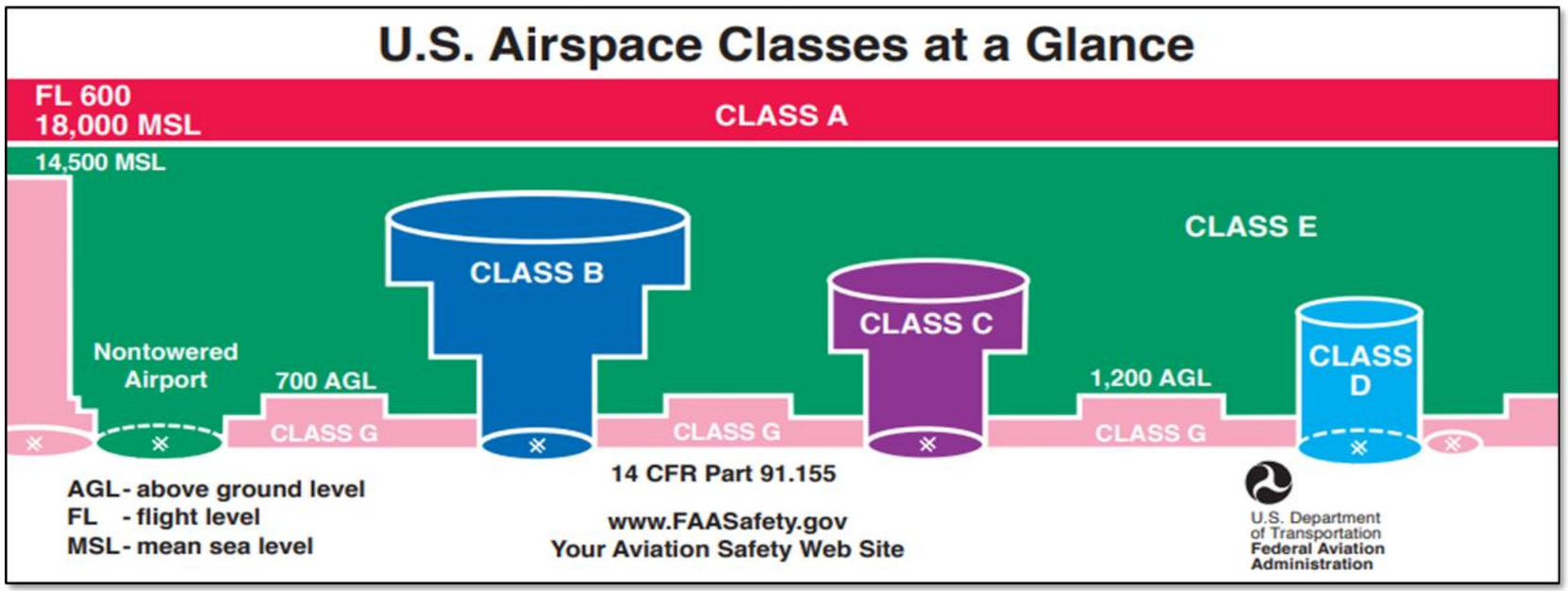
Figure A-1 provides a graphical and tabular explanation of FAA airspace classes.

Table A-1: Airspace Classifications

Airspace Class	Description
Controlled	
A	Class A airspace covers the entire United States and encompasses all airspace from 18,000 feet to 60,000 feet above mean sea level (AMSL). Aircraft flying in Class A airspace must operate under IFR, including filing flight plans.
B	Requires ATC clearance before operating an aircraft within this airspace. All aircraft are subject to IFR or Controlled Visual Flight Rules (CVFR). Class B airspace surrounds the nation's busiest airports and has the appearance of an upside-down multi-tier cake that funnels aircraft traffic toward the airport. Generally, the airspace is within a 20 nautical mile (NM) radius and up to 10,000 feet MSL. Boston Logan International Airport (BOS) is the closest airport to GFL, surrounded by Class B airspace (approximately 130 NM SE).
C	The FAA has established Class C airspace at approximately 120 airports around the country that have significant levels of IFR traffic. Class C airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high-performance, passenger-carrying aircraft at major airports. To fly inside Class C airspace, an aircraft must have a two-way radio, an encoding transponder, and established communication with the ATC facility. Aircraft may fly below the floor of the Class C airspace or above the Class C airspace ceiling without establishing communication with ATC. The Albany International Airport is the closest airport to GFL, surrounded by Class C airspace (approximately 36 NM SSW)
D	Class D airspace extends upward to an altitude of 2,500 feet above the airport elevation (charted in MSL) and is within a five-statute mile radius. Aircraft must maintain two-way radio communication with the control facility while operating in this airspace. Schenectady County Airport (SCH) is the closest airport to GFL, surrounded by Class D airspace (approximately 32.5 NM SW)
E	Class E airspace includes all the controlled airspace that is not classified as A, B, C, or D. Class E airspace has no special restrictions with regard to pilot qualifications or aircraft equipment rules. Nevertheless, it is still controlled airspace, implying that aircraft can be provided with ATC services. GFL is located within Class E airspace.
Uncontrolled	
G	Uncontrolled airspace covers all remaining airspace. VFR minimums apply in this airspace. This includes all low-level airspace below 700 feet or 1,200 feet AGL, and it extends up to 14,500 feet MSL in remote areas without airport traffic.

Source: FAA, Pilots Handbook of Aeronautical Knowledge, Chapter 15.

Figure A-1: FAA Airspace Classifications



Airspace Class	Entry Requirement	Pilot Certificate or Rating	Two-Way Communication	Altitude Decoding Transponder	VFR Min. Visibility Below 10,000 MSL	VFR Min. Visibility 10,000 MSL and Above	VFR Cloud Clearance Below 10,000 MSL	VFR Cloud Clearance 10,000 MSL and Above
A	ATC Clearance	Instrument	Yes	Yes	N/A	N/A	N/A	N/A
B	ATC Clearance	Private Certificate or student with endorsement	Yes	Yes within 30 nm of the class B primary airport[1]	3 miles	3 miles	Clear of Clouds	Clear of Clouds
C	VFR: Radio Contact IFR: Clearance	Student Certificate	Yes	Yes within C space and above lateral limits of C space[1]	3 miles	3 miles	500 below 1,000 above 2,000 horizontal	500 below 1,000 above 2,000 horizontal
D	VFR: Radio Contact IFR: Clearance	Student Certificate	Yes	No unless required by other airspace	3 miles	3 miles	500 below 1,000 above 2,000 horizontal	500 below 1,000 above 2,000 horizontal
E	VFR: None IFR: Clearance	Student Certificate	IFR only	No unless required by other airspace	3 miles	5 miles	500 below 1,000 above 2,000 horizontal	1,000 below 1,000 above 1 mile horizontal
G	None	Student Certificate	No	No unless required by other airspace	Day: 1 mile Night: 3 miles	5 miles[2]	500 below 1,000 above 2,000 horizontal [2]	1,000 below 1,000 above 1 mile horizontal [2]

[1] An altitude decoding transponder is required above 10,000 MSL.
[2] When flying 1,200 AGL or below: DAY: 1 mile visibility clear of clouds; NIGHT: 3 miles visibility, 500 below, 1,000 above, 2,000 horizontal.

02/11

Source: FAA Safety Website, www.FAASafety.gov.

A.3. Runway/Taxiway Design Group Classification

A.3.1. Runway Design Code (RDC)

The RDC signifies the design standards to which a runway will be built. Airport design first requires selecting the Runway Design Code and then applying the airport design criteria associated with the RDC, which is predicated on the design aircraft (typically the largest aircraft to utilize a runway). This code then enables airport designers to design a runway that will satisfy the operational requirements of the selected critical aircraft and ensure that all separation and safety requirements are satisfied.

This document provides criteria for grouping aircraft into runway design codes. The RDC consists of a letter representing an AAC, which is based on approach speed, a number representing an ADG, which is based on tail height and/or wingspan, and a number representing the visibility minimums associated with the runway (based on corresponding runway visual range (RVR) values in feet). RDC components are classified as seen in **Table A-2**.

Table A-2: RDC Components

Aircraft Approach Category (AAC)	
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
Airplane Design Group (ADG)	
Group	**Tail Height (and/or) Wingspan**
I	< 20′ // < 49′
II	20′ - < 30′ // 49′ - < 79′
III	30′ - < 45′ // 79′ - < 118′
IV	45′ - < 60′ // 118′ - < 171′
V	60′ - < 66′ // 171′ - < 214′
VI	66′ - < 80′ // 214′ - < 262′
Visibility Minimums (VIS)	
RVR (FT)	**Flight Visibility Category (statute mile)**
VIS	Visual Approaches
4000	Lower than 1 mile but not lower than ¾ mile (APV ≥ 3/4 but < 1 mile)
2400	Lower than 3/4 mile but not lower than 1/2 mile (CAT-I PA)
1600	Lower than 1/2 mile but not lower than 1/4 mile (CAT-II PA)
1200	Lower than 1/4 mile (CAT-III PA)

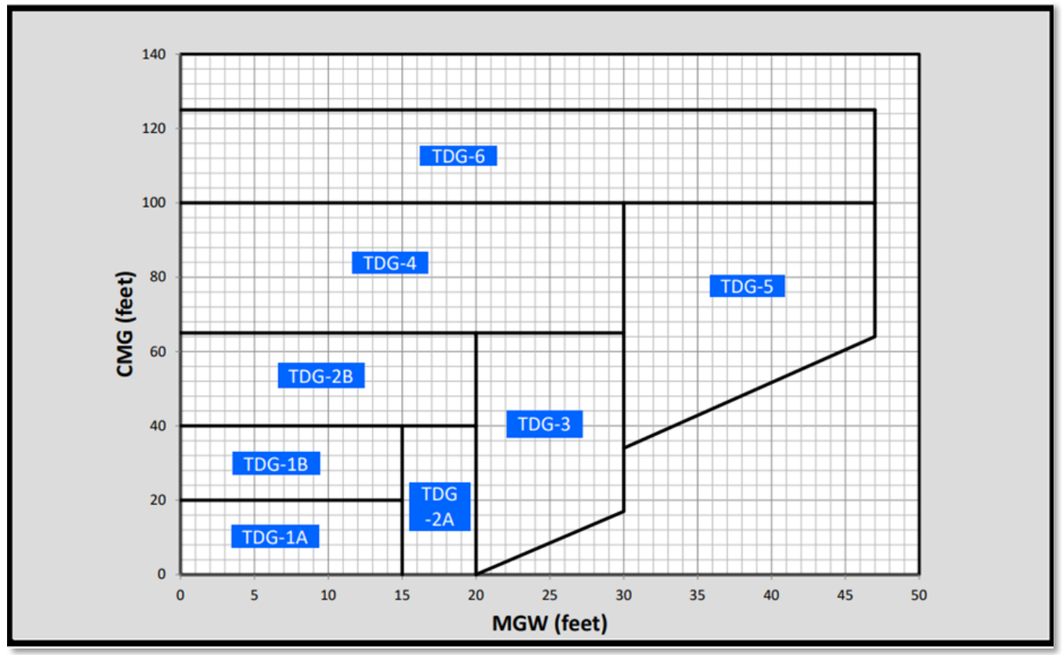
Source: FAA AC 150/5300-13B, Change 1, March 31, 2022.

A.3.2. Taxiway Design Group (TDG)

A taxiway is a defined path located in the Movement Area[1] and is used for aircraft to move from one point on the airport to another. Unlike the RDC, which is based on an airport's critical aircraft's approach speed, wingspan, and tail height, taxiway design is dictated based on another code that dictates taxiway design, known as the TDG. TDG guidance is based on several factors, including aircraft width, the dimensions of the aircraft undercarriage (which includes the aircraft's overall Main Gear Width, MGW, and the Cockpit to Main Gear Distance, CMG), and runway to taxiway and taxiway/taxilane separation requirements. TDGs can be seen graphically in **Figure A-2**.

Planning standards for taxiways include taxiway width, taxiway safety areas, taxiway object free areas, taxiway shoulders, taxiway gradient, and for parallel taxiways, the distance between the runway and taxiway centerlines. The dimensions of each standard vary based on the identified ADG and taxiway design group for each taxiway. The ADG is based on the wingspan and tail height of an aircraft, while the TDG is based on the distance between an aircraft's cockpit to main gear, as well as the width of the main gear. There are six ADG groups and seven TDG groups.

Figure A-2: Taxiway Design Groups



Note: Values in the graph are rounded to the nearest foot. One foot = 0.305 meters.
Source: FAA AC 150/5300-13B, Change 1, March 31, 2022.

[1] Movement Area: Areas used for air carrier operations and regulated under Title 14 CFR Part 139. Includes runways, taxiways, and the other areas of the airport used for taxiing, takeoff, and landing of aircraft.

Table A-3 and **Table A-4** depict FAA taxiway standards.

Table A-3: Taxiway Standards – Airplane Design Group

Design Standard	ADG I	ADG II	ADG III	ADG IV	ADG V	ADG VI
Taxiway Safety Area (ft)	49	79	118	171	214	262
Taxiway Object Free Area (ft)	89	124	171	243	285	335
Runway/Taxiway Separation (ft)	150–400*	240–400*	300-400*	400	400-500*	500

Source: FAA AC 150/5300-13B, Change 1, March 31, 2022.
** Runway/taxiway separations vary based on approach visibility minimums and/or airport elevation.*

Table A-4: Taxiway Standards – Taxiway Design Group

Design Standard	TDG 1A/1B	TDG 2A/2B	TDG 3	TDG 4	TDG 5	TDG 6
Taxiway Width (ft)	25	35	50	50	75	75
Taxiway Shoulder Width (ft)	10	15	20	20	30	30

Source: FAA AC 150/5300-13B, Change 1, March 31, 2022.

A.4. Glossary of Terminology

100LL Specialized fuel used to power piston engine aircraft

AAC Aircraft Approach Category

A grouping of aircraft based on landing speed (see **Table A-2**).

AAGR Average Annual Growth Rate

AC Advisory Circular

An AC is an FAA publication that provides guidance for compliance with any rules within Title 14 of the CFR, *Aeronautics and Space*, including, airworthiness regulations, pilot certification, operations standards, and training standards.

ACN Aircraft Classification Number

The ACN is a number that expresses the relative effect of an aircraft at a given configuration on a pavement structure for a specified standard subgrade strength.

ACRP Airport Cooperative Research Program

ACRP is an applied research program authorized by Congress, sponsored by the FAA, and managed by the Transportation Research Board (TRB). This industry-driven program develops practical solutions to near-term challenges facing airports.

ACS American Community Survey

ADG Airplane Design Group

A classification of aircraft based on wingspan and tail height. When the aircraft wingspan and tail height fall into different groups, the higher group is used (see **Table A-2**).

ADIP Airport Data and Information Portal

ADO Airports District Office

The FAA ADO for GFL is the New York ADO.

ADPM Average Day of the Peak Month

ADS-B Automatic Dependent Surveillance-Broadcast

ADS-B is part of the FAA's Next Generation Air Transportation System (NextGen) designed to enhance the situational awareness of pilots and aircraft controllers.

ADG Airplane Design Group

A grouping of aircraft based on wingspan and tail height (see **Table A-2**).

AFFF Aqueous Film-Forming Foam

AGL Above Ground Level

AIM Aeronautical Information Manual

AIP Airport Improvement Program

The AIP provides grants for the planning and development of public-use airports that are part of the NPIAS.

Air Quality

Under Section 176(c) of the Clean Air Act (CAA) Amendments of 1977, the FAA is responsible for ensuring that federal airport actions conform to the State Implementation Plan (SIP), which protects against regional air pollution impacts. The criteria and procedures for implementing this conformity are detailed in Title 40 CFR Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans. Many federal actions on an airport are considered to be general conformity actions. Presently, the general conformity rules only apply in areas that have been determined by the EPA to be in nonattainment or maintenance for the CAA's National Ambient Air Quality Standards (NAAQS) of the six priority pollutants (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead). Under NEPA, the FAA may be required to prepare detailed air quality analyses for proposed projects whose air quality emissions have the potential to cause violations of the NAAQS for the six criteria pollutants.

ALP Airport Layout Plan

A set of drawings of current and future airport facilities that provides a graphic representation of the existing and long-term development plans for the airport.

ALS Approach Lighting System

Approach lighting systems are designed to facilitate the pilot's transition from instrument flying to visual identification of the landing runway. Depending on the system installed, the ALS generally consists of sequenced flashing lights, approach lights, and crossbar lights.

AMPU Airport Master Plan Update

AOA Air Operations Area

The AOA is not an FAA-defined term, but rather is a term specified in the airport security program that includes portions of the airport designed and used for landing, taking off, or surface maneuvering of aircraft. In this sense, the AOA encompasses both movement and non-movement areas.

AOPA Aircraft Owners and Pilots Association

APRC Approach Reference Code

ARFF Aircraft Rescue and Fire Fighting

According to 14 CFR Paragraph 139.315, Aircraft Rescue and Firefighting: Index Determination, the Index of an airport is determined by a combination of the length of air carrier aircraft and average daily departures of air carrier operations (generally five or more average daily departures of air carrier aircraft in a single Index group).

ARTCC Air Route Traffic Control Centers

ARTCCs help to control aircraft operating under IFR rules within controlled airspace and while en route. The ARTCCs designate specific routes/altitudes for aircraft to maintain separation along federal airways.

ASOS Automated Surface Observing System

An ASOS collects weather data on a continual basis, 24 hours a day.

ASV Annual Service Volume

The ASV is a reasonable estimate of the annual capacity, or the maximum annual level of aircraft operations that can be accommodated, at an airfield. It should be noted that airports could, and often do, exceed their stated ASV. However, delays begin to increase rapidly once the ASV is exceeded.

The VFR and IFR hourly capacities are the maximum number of aircraft operations that can take place on the runway system in one hour under VFR or IFR conditions, respectively. When hourly demand approaches or exceeds the hourly capacity, delays may force traffic into the succeeding hours or cause aircraft to divert to other airports.

AWOS/ASOS Automated Weather Observing System/Automated Surface Observing System

An AWOS/ASOS is a 24-hour real-time weather data collection and display system that transmits computer-generated voice reports about conditions at the location of the installation. The reports can also be accessed by telephone. A basic AWOS system measures cloud cover and ceiling, visibility, wind speed and direction, temperature, dew point, precipitation accumulation, icing (freezing rain), sea level pressure for altimeter setting, and detects lightning.

Based Aircraft

Defined by the FAA as being based at a particular airport and is operational and airworthy.

Biotic Resources

Biotic resources refer to the various types of flora (plants) and fauna (fish, birds, reptiles, amphibians, mammals, etc.), including state and federally-listed threatened and endangered species, in a particular area. It also encompasses the habitats supporting the various flora and fauna, including rivers, lakes, wetlands, forests, and other ecological communities. Airport projects can affect these ecological communities and thereby affect vegetation and wildlife populations.

BRL Building Restriction Line

A line identifying where buildings can and cannot be built on an airport.

CAGR Compound Annual Growth Rate

CDC Centers for Disease Control and Prevention

CFR Code of Federal Regulations

CFR is the codification of the general and permanent rules and regulations published in the Federal Register by the executive departments and agencies of the federal government of the United States.

CIP Capital Improvement Program

CWA Clean Water Act

Declared Distances

ASDA Accelerate-Stop Distance Available

The runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft that must abort its takeoff. A stopway is an area beyond the takeoff runway able to support the airplane during an aborted takeoff, without causing structural damage to the airplane.

LDA Landing Distance Available

The runway length that is declared available and suitable for satisfying aircraft landing distance requirements.

TODA Takeoff Distance Available

This distance comprises the TORA plus the length of any remaining runway or clearway beyond the far end of the TORA.

TORA Takeoff Run Available

The runway length that is declared available and suitable for satisfying takeoff run requirements. The TORA is measured from the start of takeoff to a point 200 feet from the beginning of the departure Runway Protection Zone.

DME Distance Measuring Equipment

DOD Department of Defense

EO Executive Order

EPA Environmental Protection Agency

ESA Endangered Species Act

FAA Federal Aviation Administration

FAR Federal Aviation Regulations

The FAR falls under CFR Title 14: *Aeronautics and Space*.

FEMA Federal Emergency Management Agency

FIRM Flood Insurance Rate Map

FBO Fixed Base Operator

An FBO is an organization that provides aviation services, with permission from the airport, such as fueling, hangars, tie-downs, aircraft rental, aircraft maintenance, flight instruction, and other aeronautical services. In the case of GFL, Rich Air is the FBO.

Floodplains

Floodplains are land areas associated with bodies of water (lakes, rivers, and wetlands) that are likely to become inundated during a flooding event. The area or magnitude of a flood will vary according to the magnitude of the storm event, as determined by the storm interval occurrences. For example, a five-year storm has a magnitude that can be expected once every five years. Typically, FEMA utilizes a 100-year storm interval for flood preparation. Flooding related to a 100-year storm statistically has a one percent chance of occurring during any given year. The 100-year period has been selected as having special significance for floodplain management because it is the maximum level of flooding that can reasonably be expected and planned for during a project's expected life span.

EO 11988, *Floodplain Management*, directs all federal agencies to avoid the direct and indirect support of floodplain development wherever there is a practicable alternative.

FPPA Farmland Protection Policy Act

FT Feet

FY Fiscal Year

GA General Aviation

All flights conducted by non-commercial aircraft are not scheduled, except for military operations.

GHG Greenhouse Gas

GPS Global Positioning System

Groundwater

The EPA Sole Source Aquifer (SSA) program was established under the Safe Drinking Water Act (SDWA). According to the EPA, an SSA is defined as one that supplies at least 50 percent of the drinking water for its service area, and wherein there are no reasonably available alternative drinking water sources should the aquifer become contaminated. The SSA program allows for EPA review of federally funded projects that have the potential to affect designated SSAs and their source areas. According to the EPA, Airport property is not located over an SSA and therefore potential projects are not subject to EPA Section 1424(e) of the SDWA.

Historic Resources

According to 36 CFR Part 800, historic property is "any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the NHRP." NHPA Section 106 requires that federal agencies, such as the FAA, consider the effects of their actions on historic properties via consultation with SHPO.

HIRL High Intensity Runway Edge Lights

HITL High Intensity Taxiway Edge Lights

HITL is not an FAA-defined term but often refers to the taxiway variant of high-intensity airfield lighting. HITLs are differentiated from HIRLs by the color of their lens. Taxiway edge lights have solid blue lenses, or in the case when lights are not utilized, taxiways are sometimes marked with blue rod-shaped reflectors. Taxiway centerline lights are green in color.

HWCM Hazardous Waste/Contaminated Material

ICAO International Civil Aviation Organization

IFR Instrument Flight Rules

IFR conditions occur when the reported cloud ceiling is at least 500 feet but less than 1,000 feet AGL and/or visibility is at least one statute mile but less than three statute miles.

ILS Instrument Landing System

IMC Instrument Meteorological Conditions (see also IFR)

IPaC Information for Planning and Consultation

ISA International Standard Atmosphere

The standard atmospheric conditions by which to compare the actual atmospheric conditions at a certain time and location. ISA is based on a standard temperature (59° F, 15° C), pressure (29.92 in. Hg), and density at mean sea level (MSL).

Jet-A Specialized fuel used to power turbine engine aircraft

LNAV Lateral navigation

Flight guidance system that utilizes GPS to help pilots navigate horizontally.

LOC Localizer

A localizer provides horizontal guidance to aircraft executing a precision instrument approach, or a localizer-only approach.

LPV Localizer Performance with Vertical Guidance

An LPV approach allows pilots to fly precision approaches in adverse weather conditions, without an ILS.

LSA Light Sport Aircraft

MALSF Medium Intensity Approach Lighting System with Sequenced Flashing Lights

A MALSF is a 1,400-foot medium-intensity ALS with light stations positioned every 200 feet (61 m). This system includes three sequenced flashers adjacent to the outermost three light stations.

MALSR Medium Intensity Approach Lighting System with Runway Alignment Indicator

A MALSR is a 2,400-foot medium-intensity ALS with light stations positioned every 200 feet (61 m). This system includes sequenced flashing Runway Alignment Indicator Lights (RAILs).

MCL Maximum Contaminant Levels

MOA Military Operations Area

MIRL Medium Intensity Runway Edge Lights

MITL Medium Intensity Taxiway Edge Lights

MLW Maximum Landing Weight

MSL Mean Sea Level

MTOW Maximum Takeoff Weight

NAAQS National Ambient Air Quality Standards

NAVAID Navigational Aids

NAVAIDS are all equipment, lights, signs, and charts associated with the navigation of an aircraft, both in the air and on the ground. NAVAIDs are depicted on various aeronautical charts. VFR Sectional Charts are referenced by pilots of slow to medium speed aircraft for cross-country navigation under VMC. NAVAIDs also include land-based navigational aids like the NDB, VOR, Satellite-based systems, and landing guidance systems.

NCDC National Climatic Data Center

NDB Non-Directional Beacon

A non-directional beacon is a radio beacon that aids the pilot of an aircraft equipped with direction-finding equipment. Non-directional refers to the type of radio signal transmitted. The signal sent out from an NDB is omnidirectional and can be received by an aircraft instrument detection finder. An NDB located along a final approach to an airport is also commonly referred to as a compass locator. NDBs are being rapidly replaced by GPS systems that offer more accuracy but are still in wide use in areas of hazardous terrain, such as Alaska, and in mountainous geographies.

NEPA National Environmental Policy Act

NHPA National Historic Preservation Act

NLEB Northern Long-eared Bat

NOAA National Oceanic and Atmospheric Administration

NPDES National Pollutant Discharge Elimination System

NRCS U.S. Natural Resource Conservation Service

NPIAS National Plan of Integrated Airport Systems

NPI Non-Precision Instrument

NRHP National Register of Historic Places

NRI Nationwide Rivers Inventory

NRPA Natural Resources Protection Act

NWI National Wetlands Inventory

OFA Object Free Area

An area centered on a runway, taxiway, or taxilane centerline to increase the safety of aircraft operations. This area is to remain clear of all non-air navigation and non-ground maneuvering related objects.

PAPI Precision Approach Path Indicator

A PAPI is a set of equally spaced lights positioned beside the runway. These color-coded lights can be in sets of two or four and provide visual information about an aircraft's position relative to a runway.

PCI Pavement Condition Index

The PCI is a rating of the pavement condition based on the distresses observed on the pavement surface by type and severity. The PCI values range from 0 (worst) to 100 (best).

PCN Pavement Classification Number

The PCN is a numerical value that expresses the load-carrying capacity of a pavement for unrestricted operations.

PCR Pavement Classification Rating

The strength of a pavement is reported in terms of the load rating of the aircraft that the pavement can accept on an unrestricted basis.

PFAS Per- and Polyfluoroalkyl Substances

PFOA Perfluorooctanoic Acid

PFOS Perfluorooctane Sulfonate

PMP Pavement Management Plan

PVC Poor Visibility and Ceiling

PVC conditions exist when the cloud ceiling is less than 500 feet and/or the visibility is less than one statute mile.

RCRA Resource Conservation and Recovery Act

RDC Runway Design Code

The RDC dictates the standards to which a runway must be designed and built. It is made up of the AAC, the ADG, and visibility (see **Table A-2**).

REILs Runway End Identifier Lights

A REIL system allows pilots to quickly and certainly identify the end of the runway. Specifications for REIL systems vary but are typically a set of sequence flashers that exist at the end of the runway to help pilots identify the runway beginning or landing threshold.

RHA Rivers and Harbors Appropriation Act

RNAV Area Navigation Approach

An RNAV approach is an instrument approach procedure that relies on the aircraft's area navigation equipment for navigational purposes. This approach allows an aircraft to choose any course within a network of navigation beacons.

ROFA Runway Object Free Area

An area centered on a runway centerline to increase the safety of aircraft operations. This area is to remain clear of all non-air navigation and non-ground maneuvering related objects.

RPZ Runway Protection Zone

The RPZ is the area located beyond or prior to the runway threshold, at ground level, to increase the safety of people and property around the airport.

RVR Runway Visual Range

RVR measures the atmospheric transmissivity along runways and translates this visibility value to the air traffic user.

RVZ Runway Visibility Zone

The RVZ is the area of visibility that connects two runway lines of sight by imaginary lines.

RSA Runway Safety Area

A defined surface surrounding the runway that is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway.

SF Square Feet

SHPO State Historic Preservation Office

SPCC Spill Prevention, Control, and Countermeasure

SRE Snow Removal Equipment

SSURGO Service Soil Survey Geographic Database

Surface Waters

The USACE regulates surface waters under Section 10 of the Rivers and Harbors Appropriation Act (RHA) that are considered to be a TNW as defined in the Act. The USACE also regulates surface water bodies through Section 404 of the CWA that have a significant nexus to a TNW as defined in either Section 10 of the RHA or Section 404 of the CWA. A significant nexus is generally defined as having more than an insubstantial or speculative effect on the chemical, physical, or biological integrity of a downstream TNW. Surficial open waterbodies, including streams, ponds, and lakes, are delineated by their Ordinary High Water Mark as defined in Title 33, Code of Federal Regulations, Part 328 (33 CFR Part 328).

The USACE also regulates wetlands and waterbodies within the state under chapter 310 of the NRPA. Coastal wetlands and great ponds are included as wetlands of special significance.

SWPPP Storm Water Pollution Prevention Plan

SY Square yards

TAF FAA's Terminal Area Forecast

The official FAA forecast of aviation activity for U.S. airports.

TDG Taxiway Design Group

A classification of airplanes based on outer-to-outer Main Gear Width (MGW) and Cockpit to Main Gear distance (CMG) (see **Table A-4**).

TFMSC Traffic Flow Management System Counts

TNW Traditional Navigable Waters of the United States

TOFA/TLOFA Taxiway Object Free Area/Taxilane Object Free Area

An area centered on a taxiway centerline to increase the safety of aircraft operations. This area is to remain clear of all non-air navigation and non-ground maneuvering related objects.

TSA Taxiway Safety Area

The TSA is a defined surface centered on the taxiway centerline and prepared or suitable for reducing the risk of damage to an aircraft deviating from the taxiway.

TWY Taxiway

USACE United States Army Corps of Engineers

USFWS United States Fish and Wildlife Service

USDOT United States Department of Transportation

VASI Visual Approach Slope Indicator

VFR Visual Flight Rules

VFR conditions generally occur whenever the cloud ceiling is at least 1,000 feet above ground level (AGL) and the visibility is at least three statute miles.

VMC Visual Meteorological Conditions (see also VFR)

VOR Very-High Frequency Omnidirectional Range

Wetlands

The USACE regulates activities in wetlands that have a significant nexus to TNWs under Section 404 of the CWA. The USACE requires that an area have predominantly hydrophytic vegetation, hydric soils, and wetland hydrology present in order to be considered a wetland. In addition, EO 11990 - *Protection of Wetlands* states that federal agencies shall provide leadership and shall act to "minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance natural and beneficial values of wetlands" in carrying out the agency's responsibilities. Under EO 11990, wetlands are defined as those areas that are inundated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or

aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Wild and Scenic Rivers

The Wild and Scenic Rivers Act (Public Law 90-542) describes river areas eligible to be included in a system afforded protection under the Act as free-flowing and possessing "…outstanding remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or similar values."

FLOYD BENNETT MEMORIAL AIRPORT

Airport Master Plan Update

Appendix B: Environmental Inventory

McFARLAND JOHNSON

Appendix B.1 – NYSDEC ERM

Environmental Resource Mapper

Visible Layers [Legend]

Map Layers

- Unique Geological Features
- Waterbody Classifications for Rivers/Streams
- Waterbody Classifications for Lakes

Waterbody Inventory/Priority Waterbodies List

- Lakes and Reservoirs
- Estuaries
- Rivers and Streams
- Shorelines

Imperiled Mussels

- Mussel Screening Ponded Waters
- Mussel Screening Streams
- Significant Natural Communities
- Natural Communities Near This Location
- Rare Plants or Animals
- Ten Year Travel Time
- Special Groundwater Protection Areas
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Base Flood Elevation Plus 72/75 Inches Sea-level Rise
- Limit to Moderate Wave Action

Limit to Moderate Wave Action

Limit to Moderate Wave Action

Wetland Layers

Previously Mapped Freshwater Wetlands

Informational Freshwater Wetland Mapping

National Wetlands Inventory

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

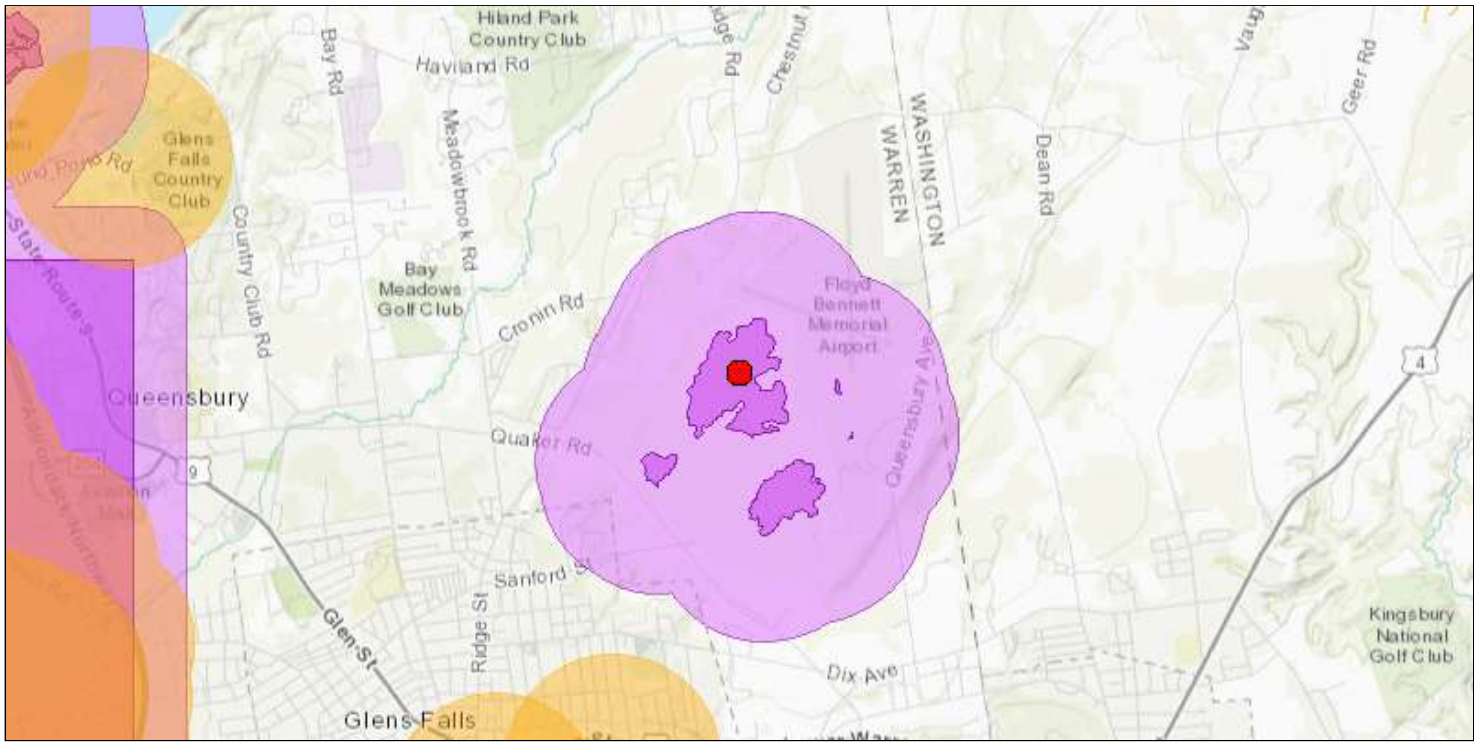
Freshwater Pond

Lake

Other

Riverine

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	611933.2795821914	**Northing:**	4799019.193504045
Longitude/Latitude	**Longitude:**	-73.61919499850254	**Latitude:**	43.33569676740587

The approximate address of the point you clicked on is:
12804, Queensbury, New York

County: Warren
Town: Queensbury
USGS Quad: HUDSON FALLS

Significant Natural Communities

Natural Community Name: Northern white cedar swamp
Location: undefined
Significance: High Quality Occurrence of Rare Community Type

Natural Communities in the Vicinity

Natural Community Name: Marl fen
Location: Glens Falls Airport
Significance: Rare Community Type

State Regulated Freshwater Wetlands

ID: HF-3
Class: 1
Size (Acres): 782.7

Informational Freshwater Wetland Mapping

National Wetands Inventory

Attribute: undefined
Type: undefined
Acres: undefined

For more information about the National Wetands Inventory wetlands visit http://www.fws.gov/wetlands/

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

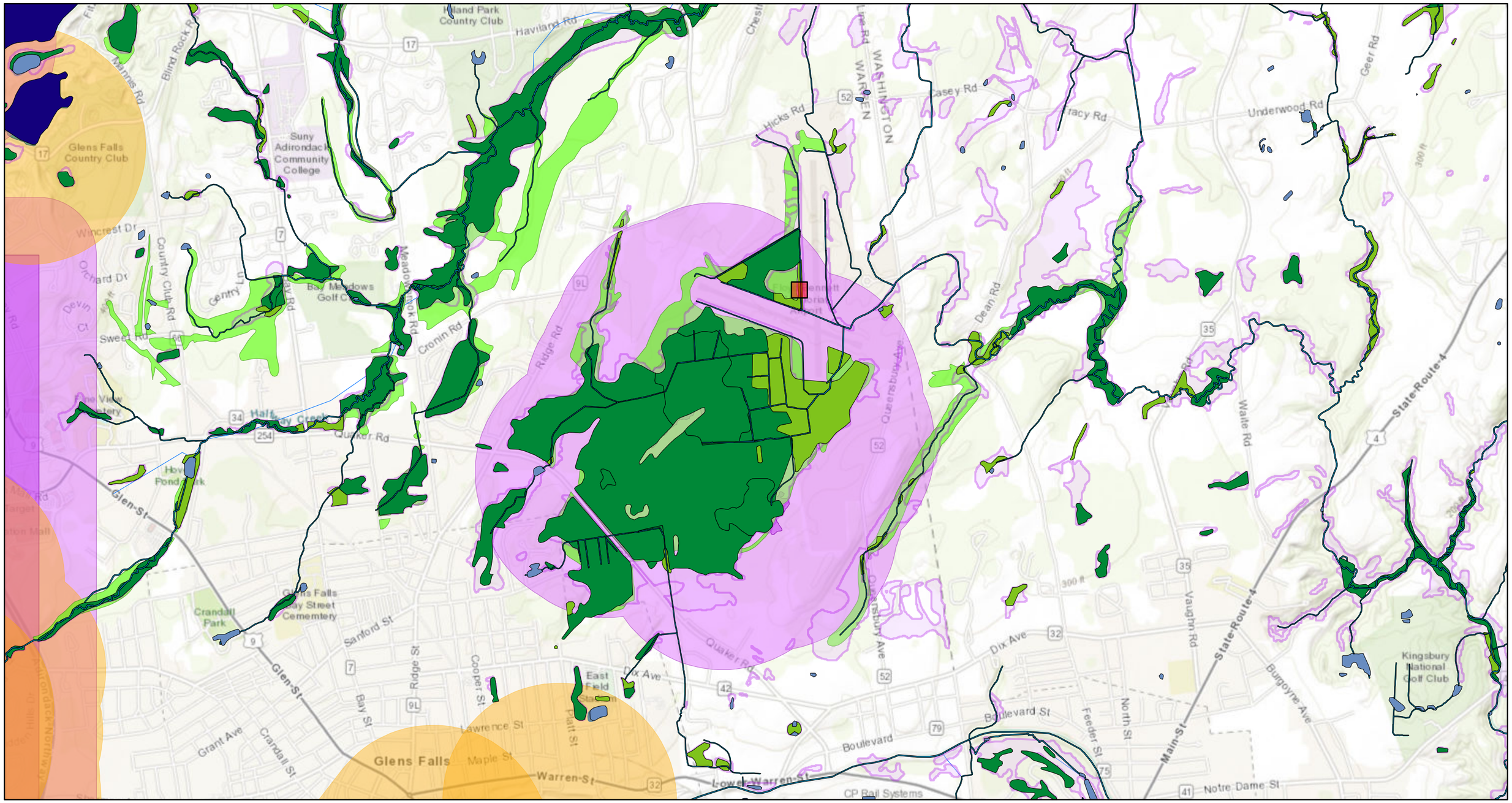
The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

Print Preview

Floyd Bennett Airport NYSDEC ERM



May 14, 2025

1:36,112

0 0.33 0.65 1.3 mi

0 0.5 1 2 km

Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, METI/ NASA, EPA, USDA

NYS Department of Environmental Conservation
Not a legal document

Appendix B.2 – USFWS IPaC

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Warren and Washington counties, New York

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699
fw5es_nyfo@fws.gov

3817 Luker Road
Cortland, NY 13045-9385

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

---

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Bald and Golden Eagle information is not available at this time

Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

Proper interpretation and use of your eagle report
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your “IPaC PROBABILITY OF PRESENCE SUMMARY” at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (FWS). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The FWS interprets the MBTA to prohibit incidental take.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

Migratory bird information is not available at this time

Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be

present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1Cd
- PEM1/5Ed
- PEM1/SS1Ed
- PEM1E

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1Ed

PSS1Ed
PFO1E

FRESHWATER POND
PUBHx

RIVERINE
R4SBCx
R3UBH
R4SBC
R3UBHx

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local

government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix B.3 – Noise

Noise Table: Title 14 CFR Part 150 – FAA Land Use Compatibility Guidelines as a Function of Yearly DNL

Land use	Yearly day-night average sound level (L_{dn}) in decibels					
	Below 65	65–70	70–75	75–80	80–85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings ...	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail—building materials, hardware and farm equipment.	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade—general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

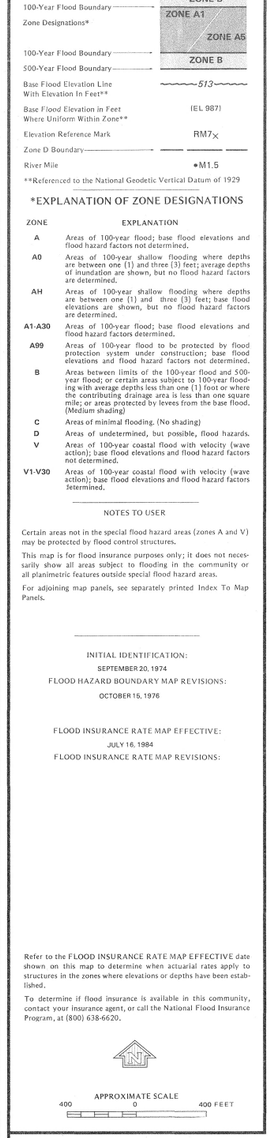
Numbers in parentheses refer to notes.

Appendix B.4 – Floodplain

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION IN FT. (NGVD)[1]	DESCRIPTION OF LOCATION
RM 14	338.772	Standard USC&GS disk stamped G 67 1955 set in top of northend of west headwall of 15-inch pipe culvert about 1 foot below level of road, located approximately 18 feet west of centerline of Queensbury Avenue, 1.65 miles north of intersection of State Route 32 and Queensbury Avenue and 0.4 mile south of entrance to Warren County Airport along Queensbury Avenue.
RM 15	310.318	Standard USC&GS disk stamped F 67 1955 set in top of north end of west concrete headwall of 50-inch pipe culvert about 3 feet below level of road, located approximately 24 feet west of centerline of Queensbury Avenue, 0.65 mile north of intersection of Dix Avenue and 1.25 miles south of entrance to Warren County Airport along Queensbury Avenue.

FLOOD INSURANCE RATE MAP INDEX



**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
SEPTEMBER 20, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS:
OCTOBER 15, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE:
JULY 16, 1984
FLOOD INSURANCE RATE MAP REVISIONS:

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

APPROXIMATE SCALE
400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
QUEENSBURY, NEW YORK
WARREN COUNTY

PANEL 27 OF 35
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360879 0027 B

EFFECTIVE DATE:
JULY 16, 1984