2. Inventory

The development of a Master Plan update for Delaware Coastal Airport (GED or Airport) requires the collection and evaluation of baseline information relating to the Airport's property, role, facilities, services, tenants, access, and utilities. This information is vital in determining any expansion necessitated by the existing or anticipated future aeronautical demand. The information presented herein will be referenced in subsequent sections of the Master Plan when developing aviation activity forecasts, exploring demand/capacity relationships, and analyzing future facility requirements. The information covered in this chapter was obtained through a variety of sources including site visits, interviews with Airport staff, tenants, and users, and a detailed examination of Airport records, prior planning initiatives, and public documents. The inventory information presented in this chapter is organized as follows:

- Airport Location, Climate, and Geophysical Conditions
- Airside Facilities
- Landside Facilities
- Support Facilities and Services
- Airspace Structure and Approach Procedures
- Property, Land Use, and Zoning

2.1. AIRPORT LOCATION, CLIMATE, AND GEOPHYSICAL CONDITIONS

2.1.1. Airport Location

GED is centrally located in Sussex County in the State of Delaware (DE) on the Delmarva (Delaware-Maryland-Virginia) Peninsula, adjacent to the Town of Georgetown, DE to the east. The Airport covers approximately 744 acres, and due to its central location in southern DE, the coastal cities of Rehoboth Beach, Bethany Beach, and Lewes are not far. These locations are within a 20-mile radius of the Airport. Nearby major cities include Wilmington, DE (85 miles north), Baltimore, Maryland (MD) (80 miles northwest), and Washington, District of Columbia (DC) (90 miles west).

GED lies within the Salisbury, MD-DE Metropolitan Statistical Area (MSA), which includes the counties of Somerset, Wicomico, and Worcester, MD, and Sussex in DE. The MSA represents the Atlantic coastal areas of the Delmarva Peninsula and includes the cities of Rehoboth Beach, DE, and Ocean City, MD; two cities with high amounts of tourism in the summer months.

Figure 2-1 identifies GED in its regional location while **Figure 2-2** depicts a closer view of the Airport, its linkages to the local roadway transportation network, and neighboring developments.

Airport Service Area – Facility Comparison

The service area of a general aviation (GA) airport is often influenced by several factors, including the number and type of airports in the region, the facilities and services at the airport, the aeronautical demands from the regional community, and aircraft owners and pilots in the vicinity. The service area represents the realistic distance an airport user could be expected to travel in

Figure 2-1: GED Location Map

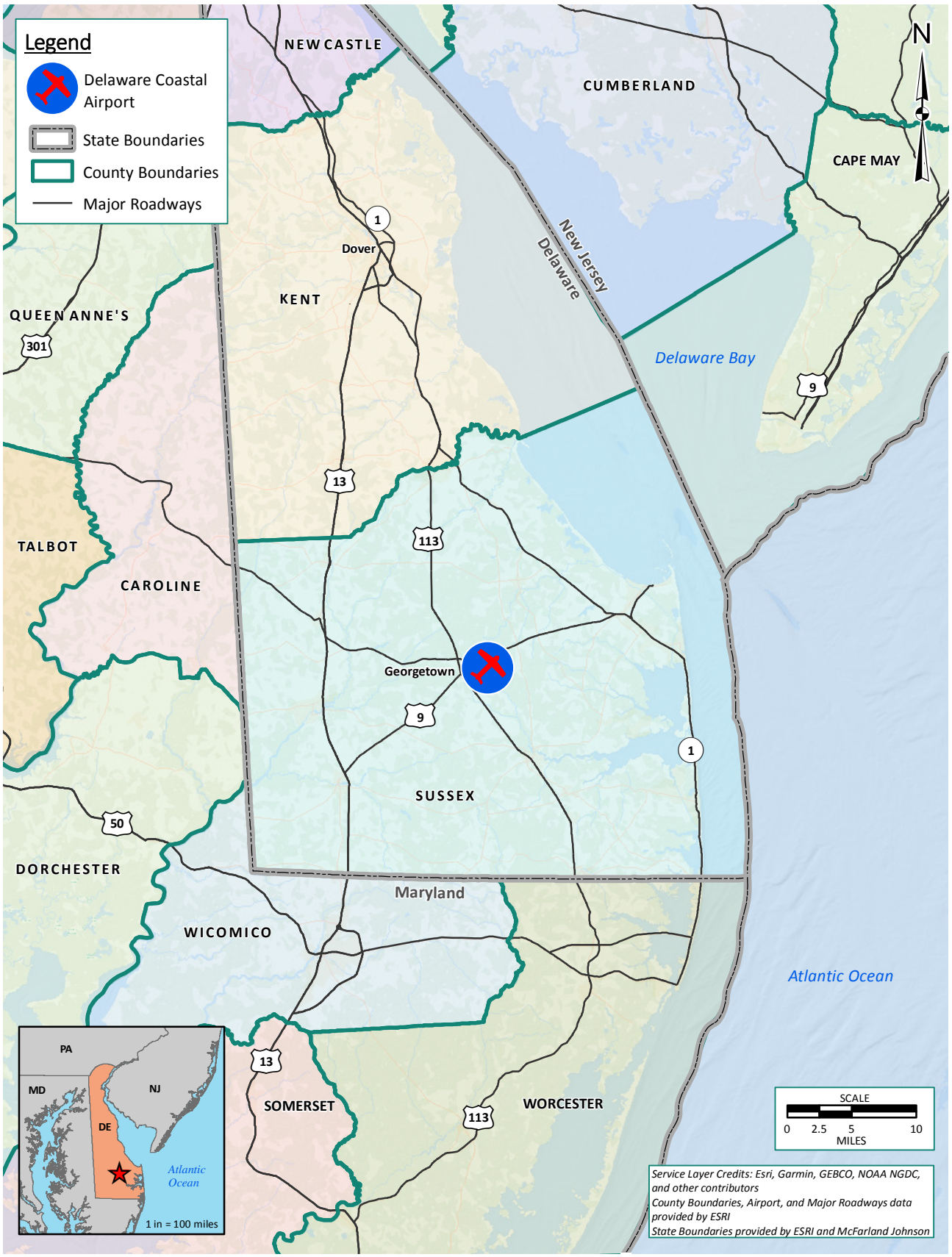

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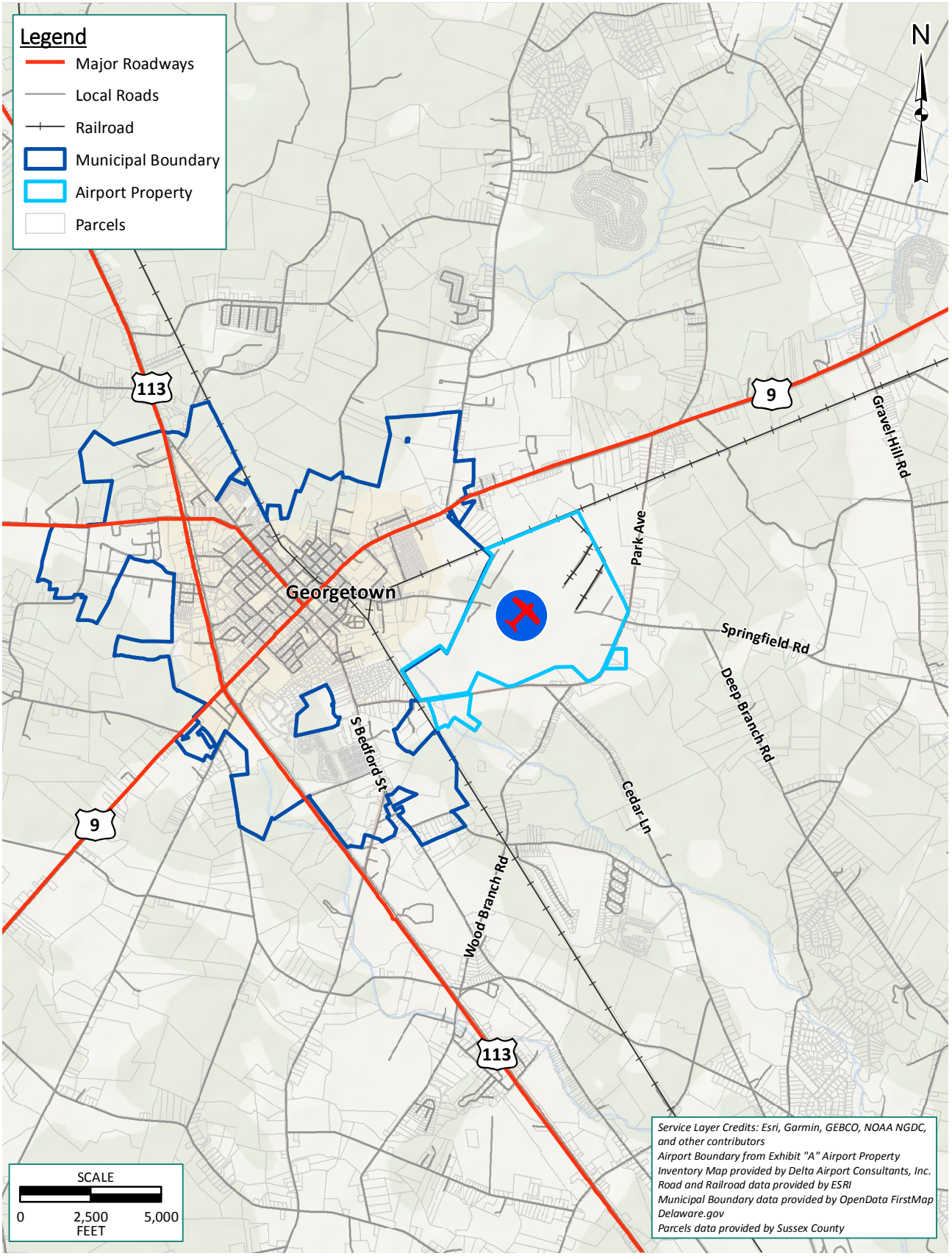
Figure 2-2: GED Vicinity Map



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order to access and utilize airport facilities. The State of Delaware is the only US state that does not offer commercial air service at any airport as of April 2020. However, new commercial air service by Frontier Airlines is anticipated to commence at Wilmington/New Castle Airport (ILG) later in 2020. The nearest airport to GED with commercial air service is Salisbury-Ocean City Wicomico Regional Airport (SBY), approximately 25 miles from GED. Up to six (6) daily departures are provided at SBY by American Airlines.

There are only four airports in Delaware that are listed in the 2019-2023 National Plan of Integrated Airport Systems (NPIAS), two of which are categorized as GA, including GED, and the other two being classified as Reliever. This is most likely due to the geographic proximity of Delaware to other major US cities, coupled with its low population and the historic inability of airlines to operate successfully at ILG.

Georgetown is home to the Delaware Court of Chancery, a court of equity that specializes in corporate law, where thousands of large corporations have had cases heard since 1792. Many of the country's largest corporations and more than 50 percent of all publicly traded companies in the US choose to incorporate in Delaware for the convenience of the nationally recognized courts. Since many corporations frequent Georgetown, GED receives regular corporate jet and helicopter traffic.

Table 2-1 reviews airports that are near GED and located on the Delmarva Peninsula, and includes their runway lengths, number of based aircraft, and proximity to GED in nautical miles. Nearby airports are included in the service area because airports with similar runway lengths and classifications may be used as a substitute for GED. Airport users may need to divert to nearby airports or choose to land at a different airport for several reasons. GA airports on the Delmarva Peninsula have a cause-and-effect relationship with each other in terms of based aircraft and annual operations. It should be noted that although Cape May County Airport is within close proximity to GED, it is located across Delaware Bay in New Jersey, and ferry travel is required to reach the airport.

The airport service area identified for GED encompasses areas within a 30-minute and 60-minute drive of the Airport. Figure 2-3 depicts the service area of GED and shows the distance airport users may need to travel to access the Airport.

2.1.2. Socioeconomic Data

To gain an understanding of how the airport can achieve its role in the National Airspace System (NAS), a breakdown of the economic and demographic environment of the Airport's local community can help determine the long-term needs of the people and businesses the Airport will be servicing. Socioeconomic data can assist in the preparation of econometric demand models for aviation demand forecasts. For a broad view of the socioeconomic information in the surrounding area of the Airport, data was broken down by the Town of Georgetown, Delaware (DE), the County of Sussex, DE, and the Salisbury, MD-DE MSA. Multiple public information sources were used, including the US Census Bureau, the Bureau of Labor Statistics, Data USA, and ProximityOne.

In all, the socioeconomic data of southern Delaware shows that the area is seeing an emergence of economic activity in the form of population, employee, income, and property value growth.

Figure 2-3: Airport Service Area Map

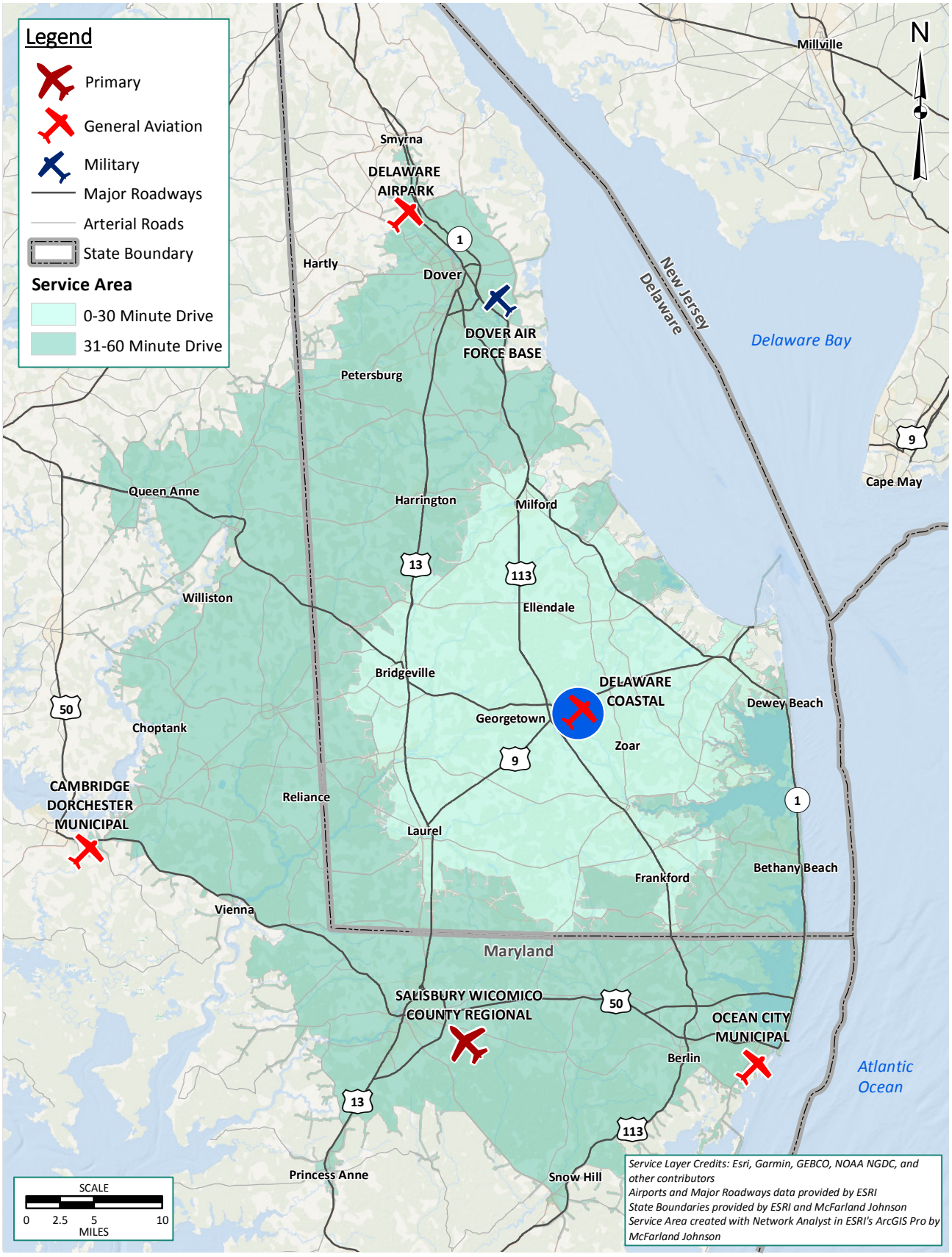

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Table 2-1: Delaware Coastal Airport and Surrounding Public Use Airports

Airport	Runways (Surface Type)	Based Aircraft	Associated City	Distance from GED
Laurel Airport (N06)	RWY 15-33: 3,175'x270' (Turf)	14	Laurel, DE	14 NM
Salisbury-Ocean City Wicomico Regional Airport (KSBY)	RWY 14-32: 6,400'x100' (Asphalt/Concrete) RWY 5-23: 5,000'x100' (Asphalt)	127	Salisbury, MD	22 NM
Ocean City Municipal Airport (KOXB)	RWY 14-32: 4,074'x75' (Asphalt) RWY 2-20: 3,204'x75' (Asphalt)	51	Ocean City, MD	25 NM
Dover Air Force Base (KDOV)	RWY 14-32: 12,903'x150' (Asphalt) RWY 1-19: 9,602'x150' (Concrete)	N/A	Dover, DE	27 NM
Cape May County Airport (KWWD)	RWY 1-19: 5,252'x150' (Asphalt) RWY 10-28: 4,998'x150' (Asphalt)	35	Wildwood, NJ	29 NM

Note: NM = Nautical Miles.

Source: FAA Form 5010, Airport Master Record, 2020.

Georgetown, DE

The town of Georgetown, Delaware is home to approximately 7,500 people and covers a total area of approximately 5.14 square miles. According to the US Census Bureau population estimate, the town has increased in population by around 15.7 percent since the 2010 Census and has been steadily increasing year by year. Employment has also been steadily increasing in Georgetown with 2,850 people being employed in the town. The median household income is $47,376.

Sussex County, DE

The US Census Bureau estimates the July 2018 population of Sussex County, DE to be approximately 230,000 people. All data sources suggest the County has been increasing in population steadily by approximately two (2) percent each year since 2010. The Bureau of Labor Statistics Mid-Atlantic Information Office reported that Sussex County had around a three (3) percent increase in employment from December 2017 to December 2018. The BLS report stated that there were approximately 79,900 people employed within the County in December 2018, with an average weekly wage of $833 (25 percent below the national average). From 2013-2017, the per capita income for the County was $31,874 (in 2017 dollars), and the median household income was $57,901. According to the Bureau of Labor Statistics, the unemployment rate in Sussex County held an average of 3.6 percent in the year 2019.

Salisbury, MD-DE MSA

The Salisbury, Maryland-Delaware MSA has a population of approximately 406,000 people, with all data sources showing a steady increase in the last decade. The number of people employed in the MSA totals 183,000, consistent with steady growth and up two (2) percent from the previous year. The median household income in the MSA is marginally higher than that of Sussex County at $59,273, with eight (8) percent growth from the previous year. According to the Bureau of Labor Statistics, the unemployment rate in the MSA held an average of 4.5 percent in the year 2019, indicating a 5.3 percent drop in unemployment since 2010.

2.1.3. Meteorological Conditions and Climate

The Sussex County area experiences all four seasons with warm summers and snowy winters. According to the National Oceanic and Atmospheric Administration (NOAA) Climate Normals data at Delaware Coastal Airport from 1981 to 2010, the warmest month is July with an average maximum temperature of 86.3°F and the coldest month is January with an average minimum temperature of 26.6°F. The average annual temperature for the area is 56.1°F. May has the highest amount of precipitation at 4.61 inches, while the annual monthly average is 3.65 inches. Sussex County also receives an average of 12.57 inches of snow annually, with February being the snowiest month with an average of 6.3 inches of snowfall.

A review of the Delaware Flood Planning tool reveals that while most of the Airport property including the entire airfield is in a low-risk flood area. A small section of the adjacent business park is within the Federal Emergency Management Agency (FEMA) 100-year floodplain. This section surrounds the first half of Sussex Ave and stretches from Broadcreek Ave to Park Ave and includes the open spaces and parking areas at Eastern Shore Poultry Company and the Delaware State Fire Marshal office.

The climatic conditions commonly experienced at an airport can play a large role in the layout and usage of its facilities. Weather patterns characterized by periods of low visibility and cloud ceilings often reduce the capacity of an airfield, and wind direction and velocity are the primary determinants of runway usage.

Ceiling and Visibility

FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*, identifies three categories of ceiling and visibility minimums. These categories include Visual Flight Rules (VFR), Instrument Flight Rules (IFR), and Poor Visibility Conditions (PVC). Utilizing data obtained through the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) database and from GED's on-site Automatic Surface Observing System (ASOS), an analysis was conducted to explore ceiling, visibility, and wind conditions at the Airport. According to a detailed review of the information obtained, the following can be reasonably expected at GED:

- VFR conditions - Ceiling is equal to or greater than 1,000 feet above ground level (AGL) and when visibility is equal to or greater than three (3) statute miles. This condition exists approximately 87 percent of the time at GED.
- IFR conditions - Ceiling is less than 1,000 feet AGL and/or when visibility is less than three (3) statute miles, but when the ceiling is greater than 200 feet AGL and visibility is greater than 0.5 statute miles. This condition exists approximately 11.7 percent of the time at GED.
- PVC conditions - Ceiling is less than 200 feet and/or visibility is less than 0.5 statute miles. This condition exists approximately 1.3 percent of the time at GED.

Wind Coverage

The orientation of runways for takeoff and landing operations is primarily a function of wind velocity and direction taken together with the ability of aircraft to operate under adverse conditions. Generally, the primary runway at an airport is oriented as closely as practical in the

direction of the prevailing winds. The most desirable runway configuration will provide the largest wind coverage for a given maximum crosswind component. The crosswind component is the vector of wind velocity and direction, which acts at a right angle to the runway. Further, runway wind coverage is the percentage of time in which operations can safely occur because of acceptable crosswind components. The FAA has set the criterion for desirable wind coverage for a runway system at 95 percent based on different allowable crosswind components based on the runway design code (RDC) for each runway.

Presently, Runway 4-22 and Runway 10-28 are classified as RDC B-II and RDC A-I (Small), respectively. Wind coverage is analyzed based on the maximum crosswind component of the critical aircraft for a specific runway under all weather conditions. Runway wind coverage at an airport refers to the percentage of time that crosswinds are within an acceptable velocity. FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*, identifies the minimum wind coverage permitted on a runway, considering all observations, to be 95 percent for the critical aircraft. Based on FAA guidance, wind coverage for an airport should be calculated using a 13-knot crosswind component for the RDC B-II runway and a 10.5-knot crosswind component for the RDC A-I (Small) runway. Utilizing the 10-year weather history obtained for the Airport, wind coverages based on crosswind speed and weather conditions are depicted in **Table 2-2**, **Table 2-3**, and **Table 2-4** for Runway 4-22, Runway 10-28, and the combined airfield configuration, respectively. Using the FAA's wind rose generator, wind roses were developed for the all-weather, VFR, and IFR weather conditions depicted in **Figure 2-4**, **Figure 2-5**, and **Figure 2-6**, respectively.

Based on the analysis of winds and wind coverage at GED, Runway 4-22 is identified as the primary runway, and Runway 10-28 is identified as an Airport Improvement Program (AIP)-eligible crosswind runway providing additional wind coverage, beyond that available with Runway 4-22 alone, for the smallest category of aircraft operating at the Airport.

Table 2-2: Wind Data for Runway 4-22

Condition	Wind Coverage by Crosswind Speed			
	10.5kts	13kts	16kts	20kts
All-Weather	93.16%	96.20%	98.86%	99.71%
Instrument Flight Rules (IFR)	92.54%	95.90%	98.47%	99.54%
Visual Flight Rules (VFR)	93.26%	96.25%	98.92%	99.73%

Source: FAA Airport GIS – Wind Rose, September 2019; McFarland Johnson, 2019.

Table 2-3: Wind Data for Runway 10-28

Condition	Wind Coverage by Crosswind Speed			
	10.5kts	13kts	16kts	20kts
All-Weather	89.97%	94.34%	98.02%	99.41%
Instrument Flight Rules (IFR)	87.57%	92.55%	96.93%	98.98%
Visual Flight Rules (VFR)	90.34%	94.62%	98.19%	99.47%

Source: FAA Airport GIS – Wind Rose, September 2019; McFarland Johnson, 2019.

Table 2-4: Combined Wind Data for Runway 4-22 and Runway 10-28

Condition	Wind Coverage by Crosswind Speed			
	10.5kts	13kts	16kts	20kts
All-Weather	97.95%	99.30%	99.78%	99.95%
Instrument Flight Rules (IFR)	97.45%	98.95%	99.59%	99.9%
Visual Flight Rules (VFR)	98.03%	99.36%	99.8%	99.96%

Source: FAA Airport GIS – Wind Rose, September 2019; McFarland Johnson, 2019.

2.1.4. Magnetic Declination

Magnetic declination, sometimes called magnetic variation, is the angle between magnetic north and true north. This angle varies relative to one's position on the earth's surface and over time. Current magnetic declination information was derived from NOAA's National Centers for Environmental Information (NCEI) database in August 2019. Being that airport runway numbers are designated based on their magnetic bearing to the nearest unit of ten, this information will be used in subsequent chapters to validate the accuracy of the current runway designations at GED or determine which runway designations are most appropriate at the airfield.

The NCEI database can calculate declination based on three different models, the US standard World Magnetic Model (WMM), the International Association of Geomagnetism and Aeronomy's (IAGA) International Geomagnetic Reference Field (IGRF), and the Enhanced Magnetic Model (EMM) research model. The WMM was used to calculate the magnetic declination at GED.

Using the airport reference point coordinates, the WMM2015V2 model calculated the magnetic declination of GED to be 11.63° west ± 0.35° changing by 0.03° east per year.

2.2. AIRSIDE FACILITIES

Airside facilities at the Airport consist of airfield pavement and equipment in place to support the movement of aircraft such as taxiing, takeoff, and landing. The airside facilities discussed in this section include the following:

- Aircraft Movement Areas
- Airfield Lighting
- Pavement Markings
- Takeoff and Landing Aids
- Airfield Signage

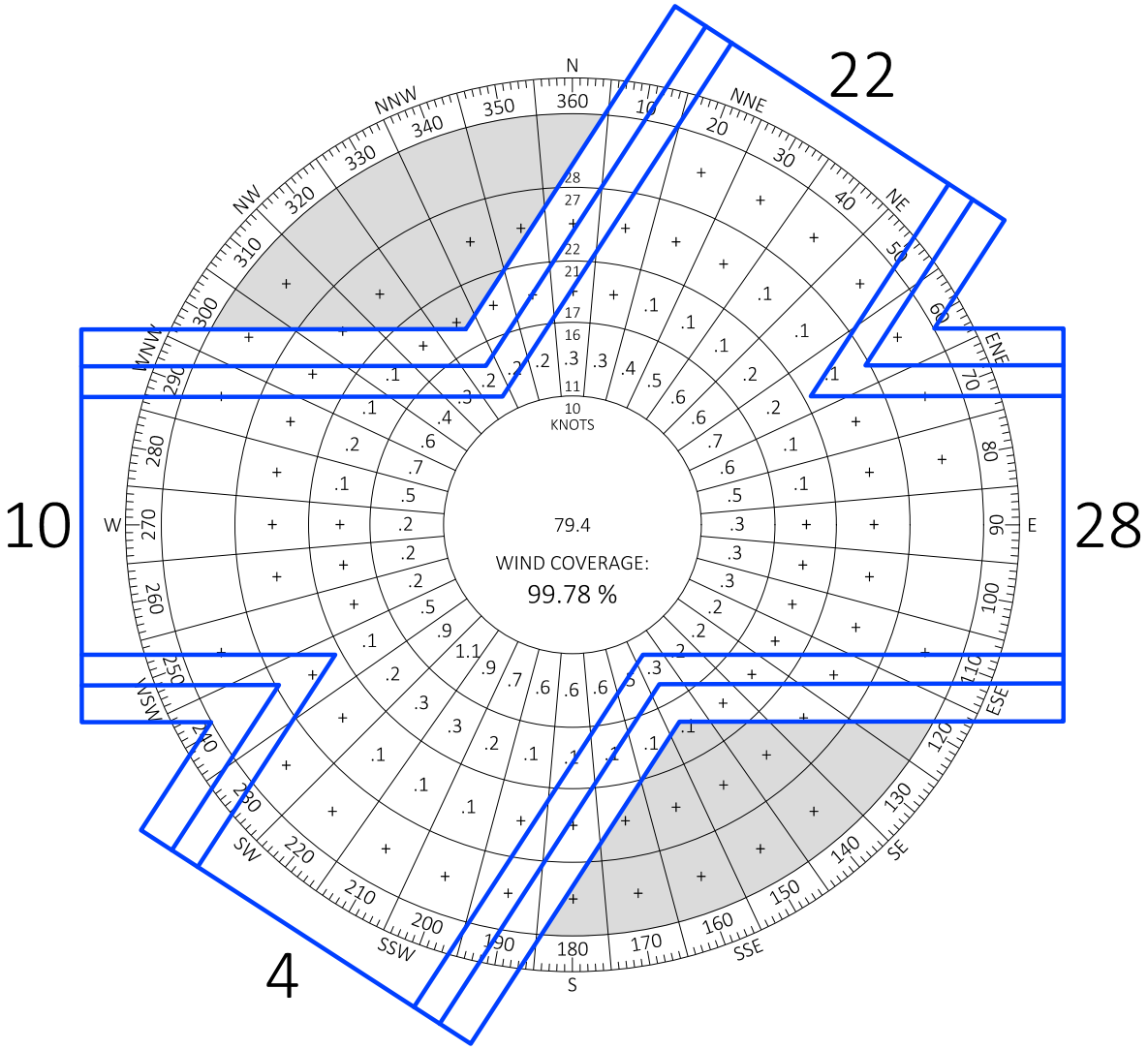
Figure 2-7 provides an overview of all airside facilities discussed in this section.

2.2.1. Aircraft Movement Areas

Runway System

GED has two bi-directional and intersecting runways. Runway 4-22 is the primary runway and Runway 10-28 is the crosswind runway. The Airport had previously included two other runways, Runway 13-31, and Runway 16-34. Runway 13-31 has been closed since 2008 and is now being

Figure 2-4: GED All-Weather Wind Rose



ALL-WEATHER			
KNOTS	RUNWAY 4-22	RUNWAY 10-28	COMBINED
10.5	93.16%	89.97%	97.95%
13.0	96.20%	94.34%	99.30%
16.0	98.86%	98.02%	99.78%

SOURCE: 724093 SUSSEX COUNTY AIRPORT ANNUAL PERIOD RECORD (2011 - 2020)

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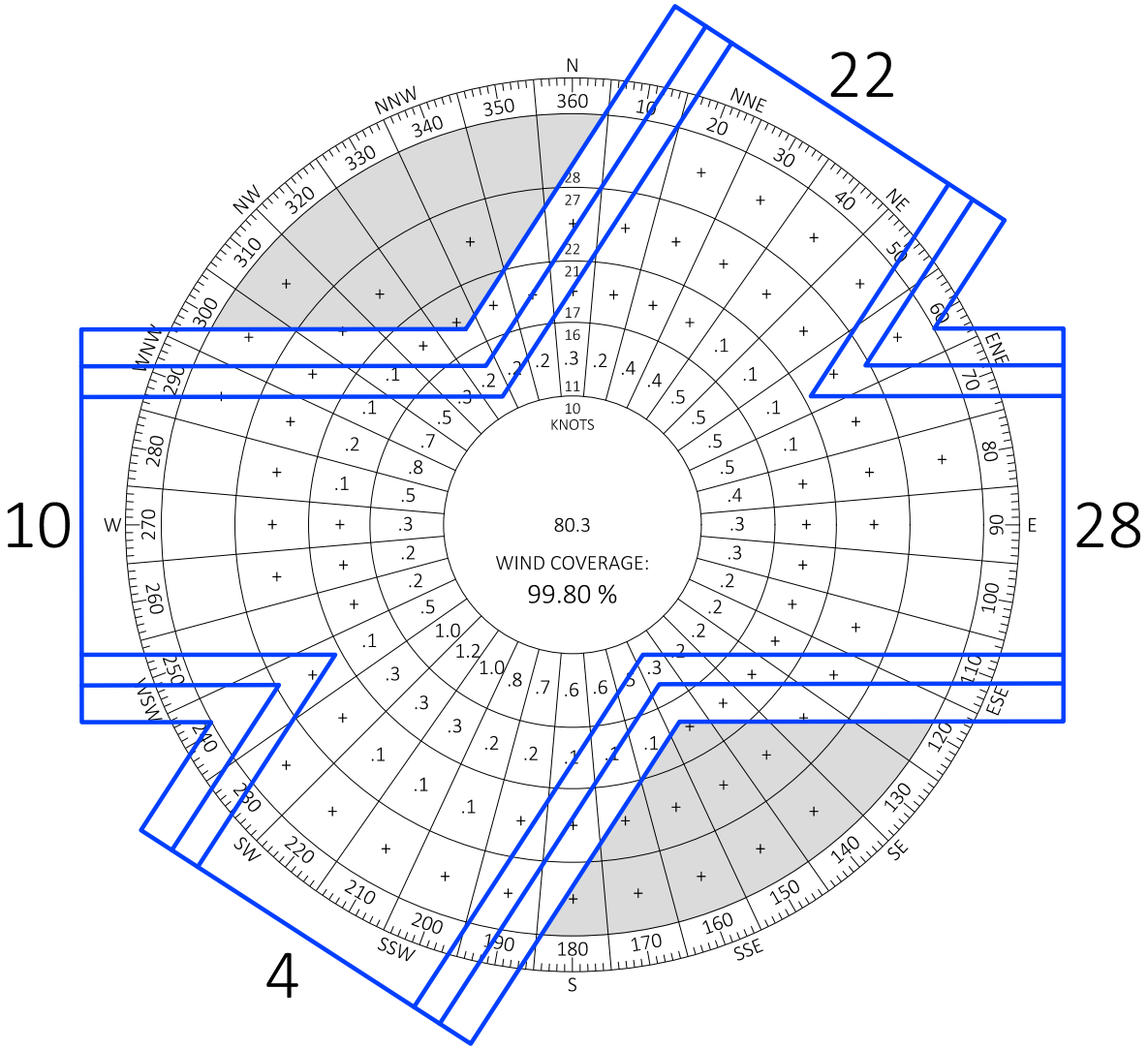
Figure 2-5: GED VFR Weather Wind Rose



VFR			
KNOTS	RUNWAY 4-22	RUNWAY 10-28	COMBINED
10.5	93.26%	90.34%	98.03%
13.0	96.25%	94.62%	99.36%
16.0	98.92%	98.19%	99.80%

SOURCE: 724093 SUSSEX COUNTY AIRPORT ANNUAL PERIOD RECORD (2011 - 2020)

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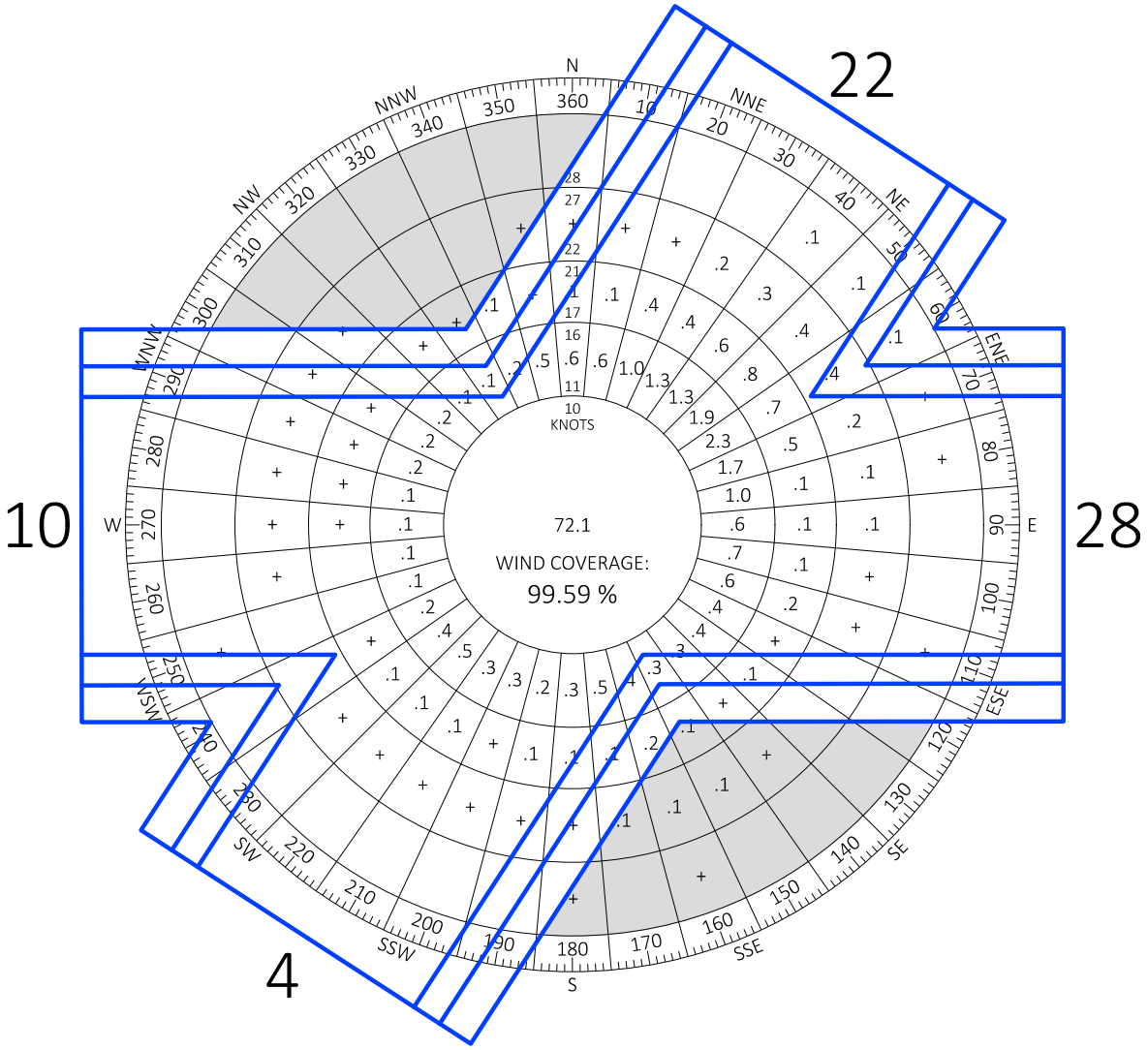
Figure 2-6: GED IFR Weather Wind Rose



IFR			
KNOTS	RUNWAY 4-22	RUNWAY 10-28	COMBINED
10.5	92.54%	87.57%	97.45%
13.0	95.90%	92.55%	98.95%
16.0	98.47%	96.93%	99.59%

SOURCE: 724093 SUSSEX COUNTY AIRPORT ANNUAL PERIOD RECORD (2011 - 2020)

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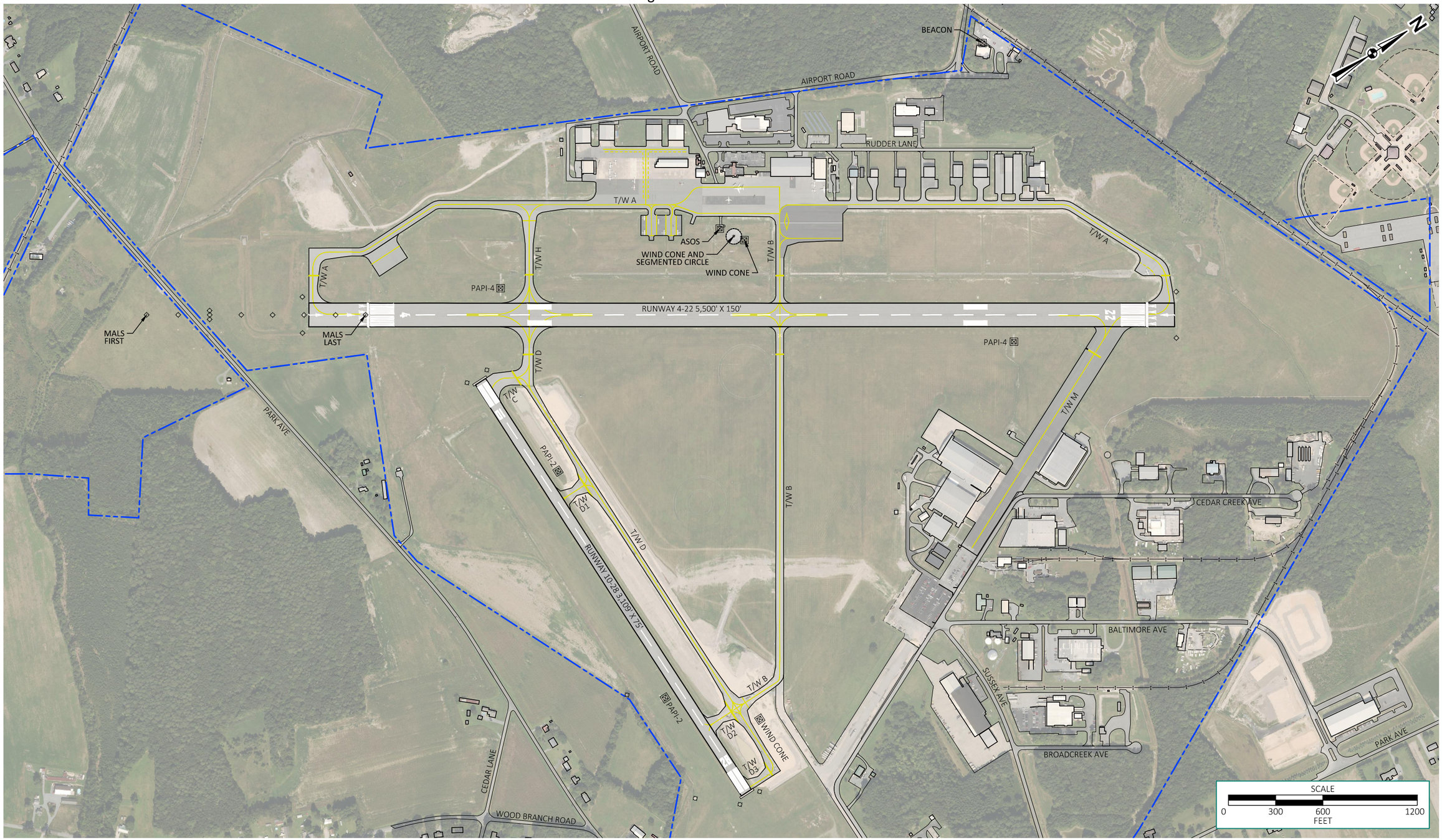
Figure 2-7: Airside Facilities



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utilized as a crossfield taxiway. Runway 16-34, situated on the east side of the Airport, has had pavement removed and is now used as an apron and taxiway for aviation maintenance services as well as an access road within the adjacent Business Park.

Runway 4-22 – 5,500' x 150'

Displaced Threshold RW 4 – 370'
Displaced Threshold RW 22 – 169'

Runway 4-22 is the primary runway at GED measuring 5,500 feet long by 150 feet wide with 15-foot-wide stabilized turf shoulders across most of its length. Constructed of grooved asphalt over a concrete base, Runway 4-22 is categorized as with an RDC of B-II and in overall good condition. The pavement is designed to hold a 50,000-pound single-wheel, 175,000-pound dual-wheel load. The 2020 Pavement Management Plan (PMP), provided in Appendix B, identified a Pavement Condition Index (PCI) of 80 for the runway, indicative of satisfactory condition. A 370-foot displaced threshold to Runway 4 and a 169-foot displaced threshold to Runway 22 threshold impacts the landing length available for aircraft approaching either end of Runway 4-22. Both ends of Runway 4-22 are currently supported by Global Positioning System (GPS) and Very-High Frequency (VHF) Omnidirectional Radio Range (VOR) based non-precision instrument approaches.

Runway 10-28

Runway 10-28 – 3,109' x 75'

Runway 10-28 is the crosswind runway at GED intended to satisfy airfield crosswind coverage for the small aircraft operating at the Airport. Runway 10-28 measures 3,109 feet long by 75 feet wide with 15-foot-wide turf shoulders across most of its length. Constructed of asphalt, Runway 10-28 is categorized as an RDC A-I (Small) and is in overall good condition. The pavement is designed to hold a 50,000-pound single-wheel load or a 91,000-pound dual-wheel load. The 2020 PMP identified a PCI of 86 for the runway, indicative of good condition.

Runway End and Threshold Coordinates

The existing geographic location and elevation of runway ends, and thresholds are maintained as part of the FAA's Airport Master Record (Form 5010) for all federally obligated airports. Existing latitude, longitude, and mean sea level (MSL) elevations for all four runway ends and runway thresholds at GED are detailed in Table 2-5.

Operational Limitations – Declared Distances

When a portion of the physical runway length at an airfield is not declared as useable for a specific type of operation (takeoff or landing) in a specific direction, declared distances are used to express to pilots the useable runway lengths and ensure airfield and airspace safety requirements are met. Declared distances, therefore, represent the maximum distances available and suitable for meeting takeoff, rejected takeoff, and landing distance performance requirements. Most often, declared distances are implemented at an airfield to meet Runway Safety Area (RSA) and/or Runway Object Free Area (ROFA) requirements, or to meet runway approach and/or departure surface clearance requirements.

Table 2-5: Existing Runway End and Threshold Coordinates and Elevations

	Runway 4 End	Runway 22 End	Runway 10 End	Runway 28 End
Latitude	38°40.974325' N	38°41.734883' N	38°41.087030' N	38°41.086925' N
Longitude	75°21.948960' W	75°21.320803' W	75°21.749400' W	75°21.096002' W
Elevation	48.9' AMSL	48.5' AMSL	49.0' AMSL	53.3' AMSL
	Runway 4 Landing Threshold	Runway 22 Landing Threshold	Runway 10 Landing Threshold	Runway 28 Landing Threshold
Latitude	38°41.02550' N	38°41.71148' N	Same	Same
Longitude	75°21.90671' W	75°21.34014' W	Same	Same
Elevation	48.7' AMSL	49.1' AMSL	Same	Same

Note: AMSL – Above Mean Sea Level

Source: FAA Form 5010,2019; Airport Survey, 2019.

The following definitions are necessary to fully understand the terminology and implications of declared distances.

- **Take-off Runway Available (TORA)** is defined as the distance to accelerate from brake release to lift off, plus safety factors. This distance defines the length of runway declared available and suitable to satisfy take-off run minimums.
- **Take-off Distance Available (TODA)** is the distance to accelerate from brake release past lift-off to start the take-off climb, plus safety factors. This distance consists of the TORA plus any remaining runway or clearway beyond the far end of the TORA available to satisfy take-off distance requirements.
- **Accelerate Stop Distance Available (ASDA)** is the distance to accelerate from brake release to aircraft take-off decision speed (V1) and then decelerate to a stop, plus safety factors. This distance defines the runway plus stopway declared available and suitable for satisfying ASDA requirements.
- **Landing Distance Available (LDA)** is the distance from the threshold required to complete the approach, touchdown, and deceleration to a stop, plus safety factors.

Although declared distances are not currently published, operational limitations for aircraft are presently in place. Threshold displacements on both the Runway 4 and Runway 22 end limits the landing lengths available when approaching those runway ends. Additionally, non-standard conditions present in the RSA/ROFA areas of the runway system have the potential to reduce both takeoff and landing distances available. **Table 2-6** tabulates the individual declared distances for each runway end.

Table 2-6: Existing Declared Distances

	TORA	TODA	ASDA	LDA
Runway 4	5,500'	5,500'	5,500'	5,130'
Runway 22	5,500'	5,500'	5,500'	5,331'

Source: Airport Mapping, 2019; McFarland Johnson, 2019.

Taxiway System

The Airport has one full-length parallel taxiway for Runway 4-22 on its west side which provides

access to the GA aprons, and a full-length parallel taxiway for Runway 10-28. Four taxiway entrances provide access to Runway 4-22 from the full-length parallel, two of which extend through Runway 4-22 to provide access to Runway 10-28 as well. The airport achieves crossfield access through the pavement of the previous Runway 13-31, which is now closed and used as a taxiway. The decommissioned runway to the east acts as an apron and taxiway for large aircraft using the maintenance, repair, and overhaul (MRO) organization based on the field and provides access to Runway 22. The taxiway system includes standard yellow pavement marking and medium-intensity taxiway edge lights (MITL).

Taxiway A

Taxiway A supports operations on Runway 4-22 and provides access to the GED's primary apron and location of FBO services. Taxiway A is a full-length taxiway connecting each end of Runway 4-22 and is parallel with the runway across much of its length. The majority of Taxiway A has a centerline to centerline offset of 700 feet from Runway 4-22. This shrinks to 645 feet on the terminal apron when the taxiway centerline splits to provide a more useful traffic flow on the terminal apron. The final 300 feet of Taxiway A at the Runway 4 end is offset from the Runway centerline by 400 feet. Runup pads are located at each end of the taxiway adjacent to the runway ends. Taxiway A is equipped with a MITL system. Taxiway A is 50 feet wide across its entire length and is in good condition. The 2020 PMP identified a PCI of 80 for Taxiway A, indicative of satisfactory condition.

Taxiway B

Taxiway B provides crossfield access from the FBO ramp area to Taxiway D located near the Runway 28 end after crossing the middle-third of Runway 4-22. Taxiway B is located approximately 2,620 feet from the Runway 4 threshold and 2,330 from the Runway 22 threshold. Prior to its closing in 2008, the taxiway pavement was utilized as crosswind Runway 13-31. Taxiway B is 50 feet wide across its entire length and is in good condition. The 2020 PMP identified a PCI of 82 for Taxiway B, indicative of satisfactory condition.

Taxiway C

Taxiway C connects the end of Taxiway D perpendicularly to the Runway 10 end. Taxiway C is 50 feet wide across its entire length and is in good condition. The 2020 PMP identified a PCI of 84 for Taxiway C, indicative of satisfactory condition.

Taxiway D

Taxiway D connects perpendicularly to Runway 4-22 and continues into a full-length parallel taxiway for Runway 10-28. At its origin from Runway 4-22, Taxiway D is located approximately 1,000 feet from the Runway 4 threshold and is perpendicular to Runway 4-22. Taxiway D is 50 feet wide across its entire length and is in good condition. The Taxiway D extension, completed in early 2020, also includes two additional entrance/exit taxiways to Runway 10-28 and improved stormwater drainage along the taxiway's length. The 2020 PMP identified a PCI of 81 for the previously constructed segment of Taxiway D, indicative of satisfactory condition. The new segment of Taxiway D was identified with a PCI of 100, indicative of good condition.

Taxiway H

Taxiway H connects Taxiway A to Runway 4-22 perpendicularly at a point approximately 1,000 feet from the Runway 4 threshold. Taxiway H is 50 feet wide across its entire length and is in good condition. The 2020 PMP identified a PCI of 100 for Taxiway H, indicative of good condition.

Taxiway M

Taxiway M is the remains of what was Runway 16-34 of the distinctive Army Air Corps triangle runway system design and highlights some of GED's history. Today, Taxiway M serves as an access route from Runway 4-22 to ALOFT AeroArchitects, a major tenant and employer at the Airport. Taxiway M provides runway access to Runway 4-22 approximately 375 feet from the Runway 22 end. Aircraft accessing the runway in this location would either need to execute a mid-field departure on Runway 22, back-taxi and turn around to execute a full-length departure on Runway 22, or back-taxiway on Runway 22 to access Taxiway A and thereby access the Runway 4 end to allow for a full-length departure on that runway. Taxiway M is 150 feet wide across its entire length and is in good condition. The 2020 PMP identified a PCI of 99 for Taxiway M, indicative of good condition.

Taxilane System

Taxilanes are different from taxiways in that they provide access to hangar facilities and not runways. Additionally, the design and safety criteria for taxilanes are slightly less restrictive than those for taxiways as aircraft operating in these areas are expected to do so at a low rate of speed. Presently several hangar-access and apron-access taxilanes exist along Taxiway A.

2.2.2. Instrument Approaches

During times of inclement weather and/or low visibility, instrument approaches enable pilots to land safely. Several different types of instrument approaches can be established, each with specific limitations. As weather conditions such as cloud ceiling and visibility deteriorate, the necessity for instrument approaches increases. When the cloud ceiling is greater than 1,000 feet AGL and the visibility is greater than three statute miles, the conditions are considered visual, and pilots can operate under VFR. In VFR conditions, no published approaches are required for an aircraft to safely land at an airport. However, once the cloud ceiling is less than 1,000 feet AGL and/or the visibility is less than three statute miles, pilots must operate under instrument flight rules (IFR). Additional air traffic control services are provided to pilots during IFR conditions and published approach charts detail the steps to land safely on the airfield without using visual references.

There are two basic categories of instrument approaches: precision and non-precision. Both approach types provide horizontal course guidance to the runway centerline they serve. The degree of horizontal guidance increases with the sophistication of the instrument approach aid, which is reflected through the minimum operating parameters for each approach. The difference between a precision and a non-precision approach is that a precision approach offers vertical guidance in addition to horizontal guidance to a runway, allowing pilots to descend safely on a fixed glideslope even when the runway is not in sight. Non-precision approaches use conventional NAVAIDs such as VOR, non-directional beacon (NDB), and distance measuring equipment (DME) to assist the pilot in locating the runway for a visual approach, but do not provide vertical guidance.

Presently, GED has non-precision instrument approaches available for both Runway 4 and Runway 22. Instrument approaches to both ends of Runway 4-22 include Area Navigation (RNAV)-GPS and VOR. Non-precision instrument approaches have been requested for Runway 10 and Runway 28 but have not yet been approved.

Multiple types of RNAV (GPS) approaches are available to pilots, including localizer performance with vertical guidance (LPV), lateral navigation/vertical navigation (LNAV/VNAV), lateral navigation (LNAV), and circling. Both LPV and LNAV/VNAV approaches take advantage of the refined accuracy of GPS information provided by a Wide Area Augmentation System (WAAS) - a system of ground-based receivers across the United States which provide regular correction to GPS signals for WAAS-enabled GPS equipment to utilize for improved accuracy. LNAV and Circling procedures were developed as GPS approaches prior to the initiation of WAAS in 2003. These approaches can be flown by aircraft with or without WAAS-enabled GPS equipment. As a result of the potential loss of accuracy, however, these types of approaches typically have higher approach minima. Approach minima consist of either a decision altitude (DA) or a minimum descent altitude (MDA) and a visibility condition. The DA and MDA essentially provide a pilot with a floor in the airspace they must remain above until making visual confirmation of the runway end. Figure 2-8 and Figure 2-9 present the RNAV (GPS) approach charts for Runway 4 and Runway 22, respectively.

The VOR approaches to Runway 4-22 each include straight-in procedures and circling procedures based on the Waterloo VOR/DME approximately 11 NM northeast of the Airport. DME is required on aircraft using the VOR Runway 4 approach.

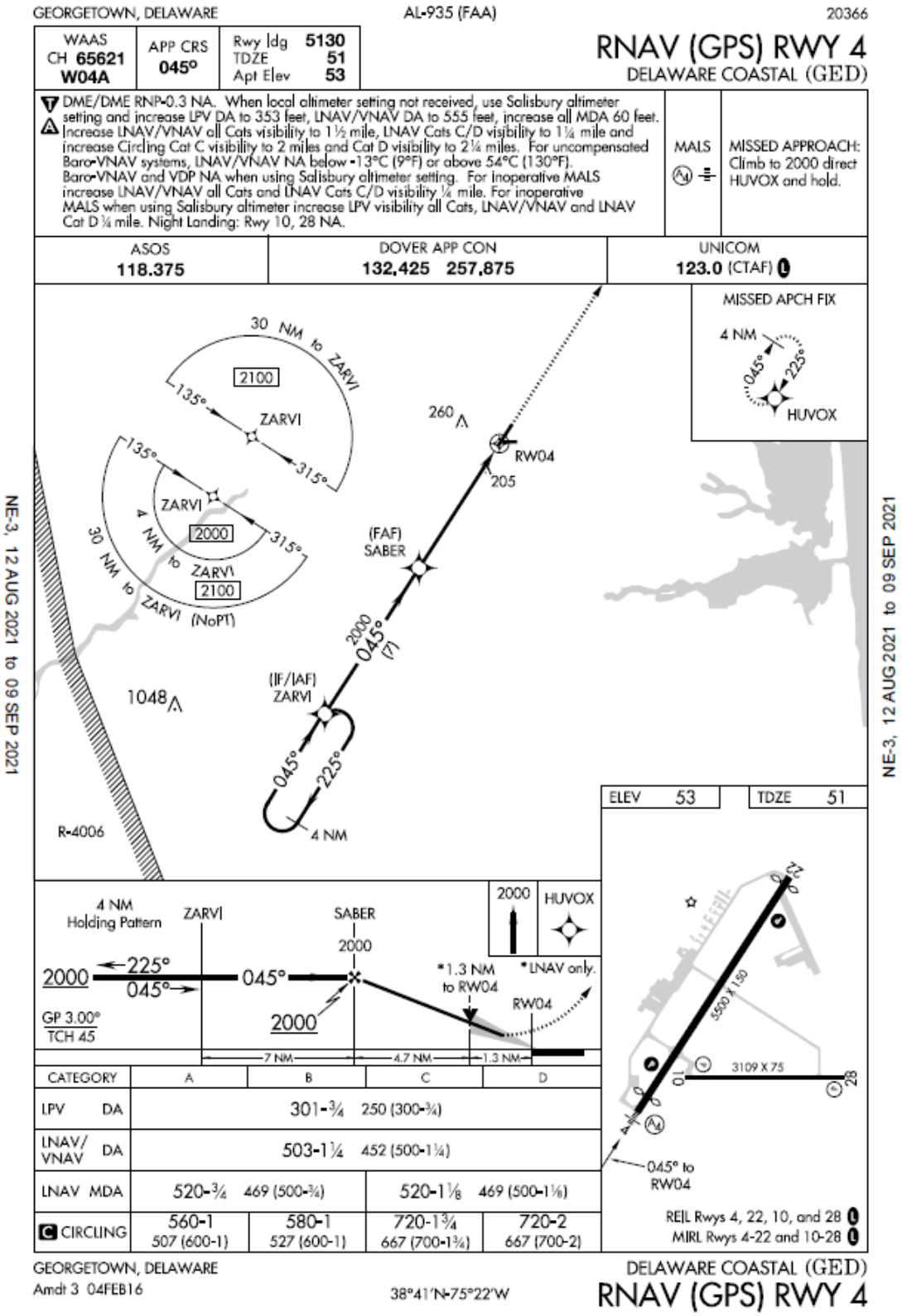
Table 2-7 details the approach minima for all types of RNAV and VOR approaches to Runway 4-22 at GED. The visibility condition expresses how poor the visibility can be before the approach is not available to any pilot and the airport is closed to all traffic.

Table 2-7: Instrument Approach Minima

	Runway 4		Runway 22	
	DA/MDA AGL	Visibility	DA/MDA AGL	Visibility
	RNAV(GPS)		RNAV(GPS)	
LPV (DA)	250’	¾ Mile	270’	7/8 Mile
LNAV/VNAV (DA)	452’	1 ¼ Mile	395’	1 ⅛ Mile
LNAV (MDA)	469’	¾ Mile C/D aircraft: 1 ⅛ Mile	449’	1 Mile C/D aircraft: 1 ⅜ Mile
CIRCLING	507’ C/D: 667’	1 Mile C aircraft: 1 ¾ Mile D aircraft: 2 Miles	507’ B: 527’ C/D: 667’	1 Mile C aircraft: 1 ¾ Mile D aircraft: 2 Miles
	VOR/DME		VOR/DME	
VOR/DME	489’	¾ Mile C/D aircraft: 1 Mile	629’	1 Mile C/D aircraft: 1 ¾ Mile
CIRCLING	507’ B/C: 527’ D: 567’	1 Mile C aircraft: 1 ½ Mile D aircraft: 2 Miles	630’ C/D: 670’	1 Mile C: aircraft: 1 ¾ Mile D aircraft: 2 Miles

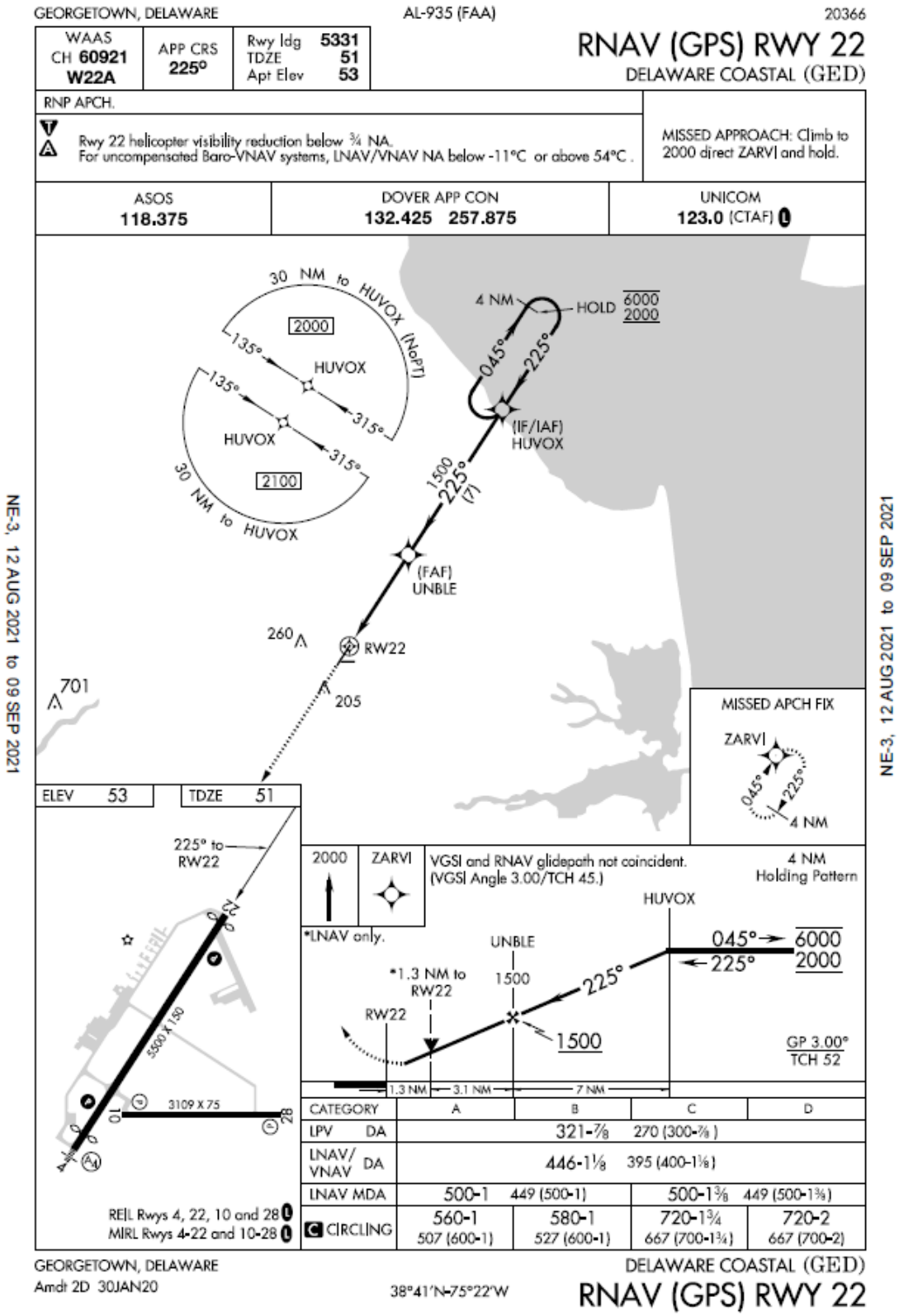
Note: C/D = Aircraft Approach Category (AAC)
Source: FAA published instrument approach charts, March 2020.

Figure 2-8: RNAV (GPS) Runway 4



Source: FAA published instrument approach charts, September 2021.

Figure 2-9: RNAV (GPS) Runway 22



Source: FAA published instrument approach charts, September 2021.

2.2.3. Airfield Lighting

Proper airfield lighting is required at all airports that are utilized for nighttime operations. The existing lighting systems at the Airport allow for aircraft operations at night and are supported by equipment in either of the four (4) airfield electrical vaults. Vault 1 is the original electrical lighting vault at the Airport and is located adjacent to the terminal building on its south side, near an airfield entrance/exit gate. Vault 2 and Vault 3 were added in 2018 to replace the aging Vault 1 and improve reliability. Vault 4 is dedicated to the instrument approach lighting system for Runway 4.

Identification Lighting

Rotating beacons universally indicate the location and presence of an airport at night or in adverse weather conditions. Currently, the rotating beacon at GED is located atop a telecommunications tower at the Sussex County Emergency Operations Center adjacent to Airport Road. The beacon equipment atop the tower consists of an optical rotating system that projects a green beam of light. The beacon, which is in good condition, is controlled by an optical sensor and operates continuously from sunset to sunrise and whenever the airfield is in low-light conditions.

Runway Lighting

Runway lights allow pilots to identify the edges of the runway and assist them in determining the length remaining during periods of darkness or otherwise restricted visibility. These lighting systems are classified according to their intensity or brightness. Presently, all runways are equipped with medium-intensity runway edge lights (MIRL). This system, as well as the taxiway lighting system and approach lighting system, can be activated by pilots through the common traffic advisory frequency (CTAF) at 123.0 MHz by keying their on-aircraft microphone in a specific sequence. The on-site FBO also can toggle the system on and off. The MIRL at GED consist of base-mounted light fixtures placed ten (10) feet from the runway edge. Cables run between the fixtures in buried conduit and this lighting system is overall considered to be in good condition. On Runway 4-22, the runway edge lights are white, except for the last 2,000 feet of each end where the edge lights are yellow and white. For landing aircraft, the last 2,000 feet of runway edge lights will appear yellow. On Runway 10-28, the runway edge lights are yellow and white, except for at the midpoint of the runway, where they are yellow.

As part of the runway lighting system, the identification of the runway end and thresholds are critical to a pilot during landing and takeoff. Therefore, runway ends, and thresholds are equipped with special lighting configurations to aid in their identification. The lights marking the ends of the runway emit red light toward the runway to indicate the end of the runway to a departing aircraft and emit green outward from the runway end to indicate the threshold to landing aircraft, unless the threshold is displaced (as is the case for Runways 4 and 22) in which case additional threshold lighting is installed adjacent to the threshold location. For runways with this condition, an approaching aircraft would see a bar of red lights indicating the runway edge of pavement and red edge lights until the green threshold bar indicates the start of the runway for landing operations.

Taxiway Lighting

All taxiways at GED, except for Taxiway M, are equipped with a MITL system. The MITL lights emit blue light, as per FAA standards.

Taxiway M is used solely for operations by aircraft needing to access ALOFT AeroArchitects and is not used by regular general aviation traffic.

2.2.4. Pavement Markings and Condition

FAA AC 150/5340-1M, *Standards for Airport Markings*, presents the guidelines for establishing airfield surface markings for runways, taxiways, and aprons. Adherence to the standards presented in the AC is mandatory for airport projects funded through federal grant assistance programs such as the AIP.

Runway Markings

Runway surface marking criteria are directly related to the approach category of each runway threshold, including the existence of blast pads, stopways, or displaced thresholds. The criteria for surface markings on runways per threshold approach category represents the minimum requirements, and additional marking schemes may be permitted if deemed necessary by the FAA. Threshold approach categories include precision, non-precision, and visual, and each has unique marking schemes. Runways with different approach categories at each end may show different marking schemes.

Precision

There are no runways at GED that are marked with precision runway markings. This reflects the fact that there are no precision instrument capable runways at the Airport.

Non-Precision

Runway 4-22 at GED is marked with non-precision runway markings consisting of runway designation numbers, centerline striping, threshold stripes, and aiming point markers. Displaced thresholds on each end of the Runway are marked with threshold bars to identify the beginning of useable pavement for landing operations.

Visual

Runway 10-28 at GED is marked with basic or visual runway markings consisting of runway designation numbers, threshold markings, and centerline striping.

Taxiway Markings

All the taxiways and hangar taxilanes have visible centerline stripes with holding position markings located before any runway intersection. Enhanced taxiway centerlines and hold position markings as defined by FAA Advisory Circular 150/5340-1M, *Standards for Airport Markings*, are currently in place at GED prior to all runway access locations. The enhanced markings are intended to provide supplemental visual cues to alert pilots of an upcoming runway holding position marking as a method to minimize the potential for runway incursions by reinforcing a pilot's situational awareness as he/she approaches a runway intersection.

Apron Markings

Both the based and transient aircraft aprons have markings for aircraft tie-down parking spots. The tie-down markings are yellow and t-shaped. The based aircraft apron also features taxilane markings to distinguish areas of movement from non-movement areas. The taxilane markings are yellow and consist of a solid centerline with dashed edge markings placed 17.5 feet from the centerline, indicating a 35-foot wide taxilane.

2.2.5. Takeoff and Landing Aids

Approach Lighting System

Approach lighting systems (ALS) provide the basic means to transition from instrument flight to visual flight for landing. Operational requirements dictate the sophistication and configuration of the ALS for a runway. Presently at GED, only Runway 4 is equipped with an ALS. Specifically, Runway 4 is supported by a 1,400-foot medium-intensity approach lighting system (MALS). The MALS includes a threshold light bar and seven (7) five-light bars located on the extended runway centerline. The first bar is located 200 feet from the landing threshold, and the remaining bars are located at 200-foot intervals out to 1,400 feet from the landing threshold. There are two additional five-light bars, one on each side of the centerline bar, 1,000 feet from the landing threshold. The lights, all white except for the threshold lights which have green filters, are aimed into the approach to the runway away from the runway threshold. The MALS can be activated through the CTAF at 123.0 MHz by keying their on-aircraft microphone in a specific sequence.

Runway End Identified Lights (REILs)

REILs provide rapid and positive identification of the approach end of a runway and give landing pilots a visual queue as to where the end of the runway is. These lights consist of a pair of synchronized flashing lights, one located on each side of the runway threshold facing the approach path. REILs may be either omnidirectional or unidirectional. Currently, at GED, both Runways 4-22 and 10-28 have unidirectional REILs in good condition.

Visual Glide Slope Indicators

There are several airfield systems installed at airports that provide an identification of the aircraft's relation to the most appropriate glideslope when approaching a runway. At GED, precision approach path indicators (PAPI) systems have been installed on the left side of all runway ends. Runways 4 and 22 are equipped with a 4-light PAPI system and Runways 10 and 28 are equipped with a 2-light PAPI. PAPIs provide the pilot with visual descent information during an approach to a runway. These lights are typically visible from five miles during the day and up to 20 miles at night. PAPIs use a light bar unit that is installed in a single row perpendicular to the runway edge. The lights project a beam of white light in the upper segment and red light in the lower segment. Depending on the aircraft's angle in relation to these lights, the pilot will receive a combination that indicates his position relative to the desired glideslope. At GED, Runway 4-22 and Runway 28 utilize a glideslope of 3.00°, with Runway 10 utilizing a glideslope of 3.50°.

Wind Indicators

Perhaps the most basic takeoff and landing aid is the wind indicator, which informs pilots as to wind direction and speed to indicate active landing direction. The Airport's principal wind indicator is a yellow wind tee within a 100-foot diameter segmented circle located just south of Taxiway B and east of the terminal apron. Segmented circles can include traffic pattern indicators that correspond with the Airport's runway configuration and traffic patterns, however, at GED, all runways utilize a standard left-hand traffic pattern. A supplemental windsock is located near the wind tee and segmented circle, and an additional windsock is located near Taxiway H for operations on Runway 10-28.

Automated Surface Observing System

Automated surface observing system (ASOS) units are automated sensor suites that are designed to provide real-time weather data. ASOS serves as a primary climatological observing network in the United States and there are currently more than 900 ASOS sites in operation in the US. These systems generally report at hourly intervals, but also report special observations if weather conditions change rapidly and deteriorate to IFR or PVC conditions. GED's ASOS is located east of the terminal apron near the wind indicator.

2.2.6. Airfield Signage

Connected to the electrical conduit used for the airfield lighting system are several internally illuminated airfield signs. These include location, direction, designation, and mandatory instruction signs. The mandatory signs include holding position signs which identify to a pilot the limits of the runway environment. These signs are located on the left side of each taxiway adjacent to the runway holding position markers.

2.3. LANDSIDE FACILITIES

Landside facilities at the Airport consist of support buildings and structures typically accessible to the airfield. This section will describe the Airport's supporting facilities which aid in the utilization of the airside facilities identified previously in this document. The location and function of these facilities are discussed in the following order:

- General Aviation Terminal Building
- Aprons
- Hangar Facilities and Other Tenants
- Vehicle Parking
- Aviation Fuel Storage and Usage
- Airport Administration and Maintenance
- Airfield Security
- Non-Aviation Facilities

- Utilities

Figure 2-10 provides an overview of all landside facilities discussed in this section.

2.3.1. General Aviation Terminal Building

GED is home to a 6,150 square foot one-story GA terminal building, constructed in 2002, along Taxiway A near the intersection of Taxiway B. Table 2-8 below separates the GA terminal building into functional spaces in terms of area (square feet (SF)). The building's primary function is to serve as an access point for GA pilots and passengers between GA aircraft and ground transportation. The building is also utilized as FBO office space, with a pilot lounge, a conference room, and a restaurant.

2.3.2. Aprons

At GA airports, aprons are intended for use by aircraft for loading and unloading of passengers and cargo, fueling, maintenance, and short-term and long-term parking. GA apron layouts must accommodate aircraft parking positions, movement patterns, hangars, and support facilities, while minimizing potential incursions and maintaining efficient support services. Aprons should be designed for use by the critical aircraft using the facility, considering extra room for safe maneuvering, and allowing easy access using aircraft power. Depending on aircraft size, apron parking can be accomplished through tie-downs or wheel chocks. Wheel chocks are primarily used for larger and itinerant aircraft, while tie-downs can be suitable for smaller aircraft.

Table 2-8: Terminal Building Functional Areas

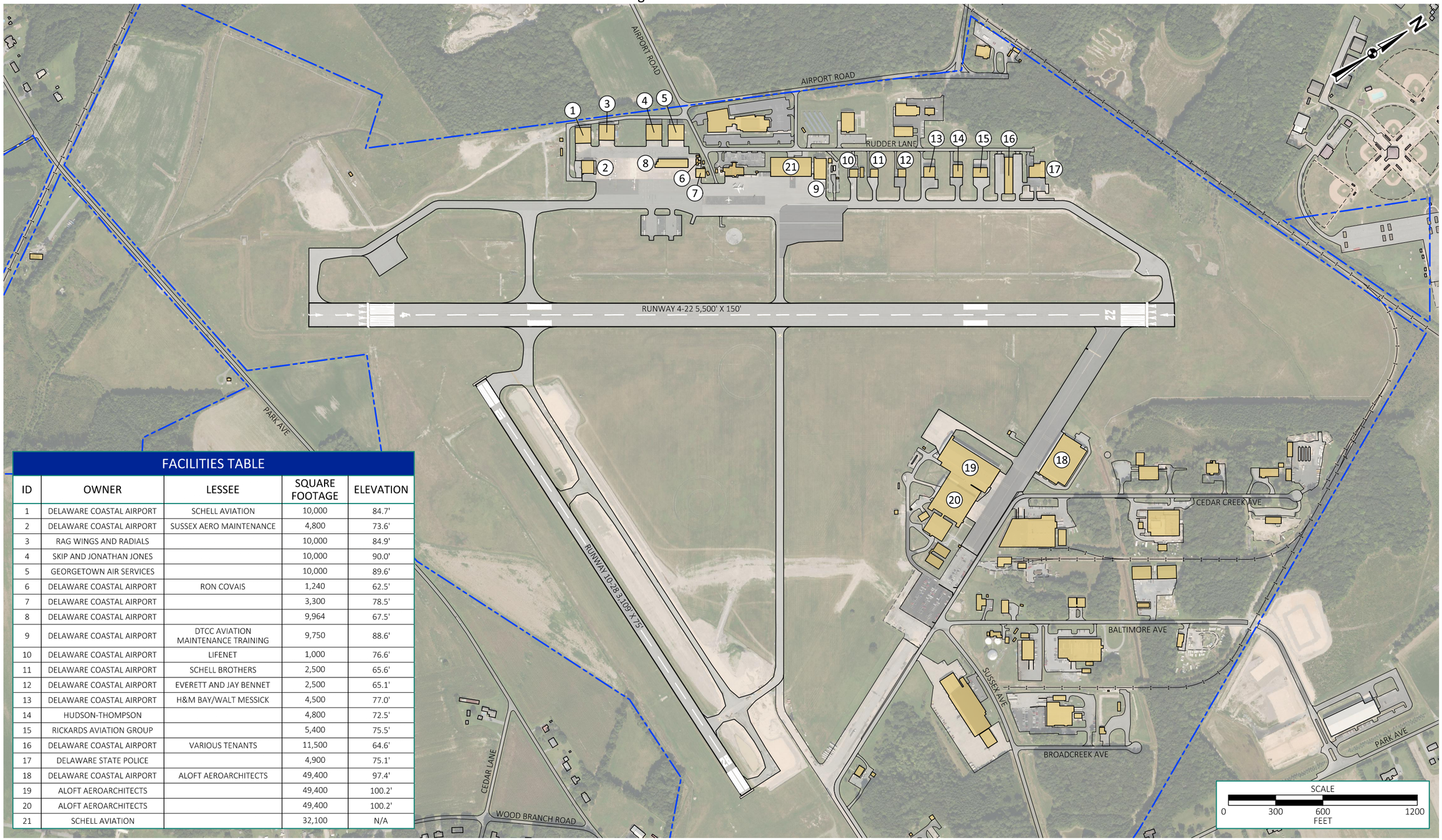
Use	Area (SF)
Office Space (3 Offices)	1,090
Restaurant	2,390
Conference Room	555
Lobby / Restroom / Vending	1,100
FBO Reception/Control Area	383
FBO Office	190
Flight Planning	129
Pilots' Lounge	143
Weather Briefing Room	36
Mechanical Room	134
Total:	6,150

Source: Sussex County Records, Airport Master Plan, 2007.

Terminal Apron

GED features a 186,362 SF paved parking apron directly in front of and adjacent to the GA terminal building along Taxiway A. It is meant to provide FBO services and access to the terminal building for mostly transient aircraft. The apron is paved with asphalt concrete and consists of 17 marked tie-down spaces and two (2) marked spaces for wheel chock parking by large aircraft. The 2020 PMP identified a PCI of 56-70 for the terminal apron, indicative of fair condition.

Figure 2-10: Landside Facilities



FACILITIES TABLE				
ID	OWNER	LESSEE	SQUARE FOOTAGE	ELEVATION
1	DELAWARE COASTAL AIRPORT	SCHELL AVIATION	10,000	84.7'
2	DELAWARE COASTAL AIRPORT	SUSSEX AERO MAINTENANCE	4,800	73.6'
3	RAG WINGS AND RADIALS		10,000	84.9'
4	SKIP AND JONATHAN JONES		10,000	90.0'
5	GEORGETOWN AIR SERVICES		10,000	89.6'
6	DELAWARE COASTAL AIRPORT	RON COVAIS	1,240	62.5'
7	DELAWARE COASTAL AIRPORT		3,300	78.5'
8	DELAWARE COASTAL AIRPORT		9,964	67.5'
9	DELAWARE COASTAL AIRPORT	DTCC AVIATION MAINTENANCE TRAINING	9,750	88.6'
10	DELAWARE COASTAL AIRPORT	LIFENET	1,000	76.6'
11	DELAWARE COASTAL AIRPORT	SCHELL BROTHERS	2,500	65.6'
12	DELAWARE COASTAL AIRPORT	EVERETT AND JAY BENNET	2,500	65.1'
13	DELAWARE COASTAL AIRPORT	H&M BAY/WALT MESSICK	4,500	77.0'
14	HUDSON-THOMPSON		4,800	72.5'
15	RICKARDS AVIATION GROUP		5,400	75.5'
16	DELAWARE COASTAL AIRPORT	VARIOUS TENANTS	11,500	64.6'
17	DELAWARE STATE POLICE		4,900	75.1'
18	DELAWARE COASTAL AIRPORT	ALOFT AEROARCHITECTS	49,400	97.4'
19	ALOFT AEROARCHITECTS		49,400	100.2'
20	ALOFT AEROARCHITECTS		49,400	100.2'
21	SCHELL AVIATION		32,100	N/A

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Based Aircraft Apron

The Airport also includes a 213,371 SF paved parking apron for use by mostly based aircraft. The apron is adjacent to and southwest of the terminal apron. 69,882 SF of the apron is paved with Portland cement concrete, and the remaining pavement is asphalt concrete. There are 19 marked tie-down positions for parking small aircraft. The 2020 PMP identified a PCI of 38-42 for the portion of the apron that is paved with Portland cement concrete, indicative of very poor condition. The remainder of the apron has a PCI of 90-95, indicative of good condition.

Overnight Ramp

There is additional apron space for GA aircraft at the Airport dedicated to overnight parking. Directly south of the based aircraft apron is the 39,209 SF overnight apron area, which stems off Taxiway A to the south. There are 13 marked tie-down positions for overnight parking of small aircraft. The 2020 PMP identified a PCI of 82 for the overnight ramp, indicative of satisfactory condition.

A second overnight apron area is currently under construction and is expected to be completed before October 2022. Located adjacent to the northeast corners of Taxiway A and Taxiway B, the second overnight apron will include marked tie-down positions for overnight parking for as many as three mid-size jets and/or 13 small aircraft.

Private Apron

ALOFT AeroArchitects uses their apron in support of their MRO operations for Boeing Business Jet aircraft. This apron is located adjacent to Taxiway M and the ALOFT AeroArchitects hangars. Taxiway M is also used as an apron by ALOFT AeroArchitects. The total apron space, including Taxiway M, is approximately 234,150 SF. Since the Boeing 737 is the primary aircraft of focus for ALOFT AeroArchitects, the apron can accommodate such large aircraft. The 2020 PMP identified a PCI of 99 for Taxiway M, indicative of good condition.

2.3.3. Hangar Facilities and Other Tenants

Aircraft that are based at the Airport or that intend on parking long-term can be accommodated with additional protection and security by storing the aircraft in a hangar. Hangars protect from adverse weather conditions and deter potential security threats through individual enclosed parking spaces. Hangars can range in size, shape, function, and material, depending on their intended use, and may be required to adhere to local permitting codes. Many hangars include fire alarm and sprinkler systems, floor drains, offices, and multiple aircraft parking locations.

The most common types of hangars found at airports like GED are t-hangars and conventional hangars. T-hangars look to maximize the number of available parking positions on an apron area by arranging staggered and opposite-facing parking positions. T-hangars do not have standards for arrangement but must adhere to separation standards detailed in FAA AC 150/5300-13A, *Airport Design*. Most t-hangars can accommodate aircraft with a wingspan of 55 feet or less. For larger aircraft, corporate or conventional hangars are typically designed as separate buildings for individual aircraft but may vary in size and capability. Aircraft needing a conventional hangar are

typically too large to fit in a t-hangar configuration with other aircraft. Conventional hangars usually have a large aircraft door on one side, so they are normally on the perimeter of the apron. A complete inventory of Airport hangars, their dimensions, and conditions, can be found in Appendix A. There is also a table of Airport hangars and relevant information in Table 2-9 below.

GED is home to 21 hangars of many different types, sizes, and functions, ranging from 40 ft x 31 ft (1,240 SF) to 260 ft x 190 ft (49,400 SF). There are 16 public conventional hangars at the Airport with a total area of approximately 111,000 SF, which are located almost entirely along Taxiway A and the surrounding public apron space. There is one set of t-hangars that are located on the public apron adjacent to the GA terminal building with nine individual units and a total area of approximately 10,000 SF. Finally, there is another t-hangar farther north among Taxiway A with 10 individual units and approximately 13,000 SF.

There are also three conventional hangars dedicated to the Boeing Business Jet MRO at ALOFT AeroArchitects, with a total area of approximately 115,000 SF. It is significant to note that the ALOFT AeroArchitects hangars are primarily used for MRO operations and therefore not available for typical aircraft storage.

2.3.4. Vehicle Parking

An automobile parking lot for public and employee terminal and airfield access is located off Rudder Lane directly adjacent to the general aviation terminal building and has 45 paved parking spaces, including four (4) handicap spaces.

Additionally, there is a free public parking lot located across Rudder Lane, suitable for automobile parking for general aviation users. Individual hangar units also provide pavement space suitable for automobile parking, and some hangars include pavement space with designated parking spots. An analysis of special requirements for automobile parking concludes that there are approximately 100 additional parking spaces available for users of airfield hangars.

ALOFT AeroArchitects operates a parking lot with 275 paved spaces for their employees. The Delaware Coastal Business Park tenants provide their own parking based on their individual needs and are not included as part of the Airport inventory.

2.3.5. Aviation Fuel Storage and Usage

GED has a total of eight above-ground storage tanks (AST) for fuel – Jet-A, 100LL AvGas, auto, and diesel. Fuel is dispensed via trucks owned by the County, Georgetown Air Services, ALOFT AeroArchitects, and the Delaware State Police. Table 2-10 lists all fuel tanks and trucks located on the airfield.

Georgetown Air Services owns and operates four of the tanks and four of the fueling trucks. The fuel farm is located northeast of the FBO terminal building. ALOFT owns and operates one AST, which holds Jet-A fuel for use in their customer's aircraft. ALOFT also owns one fueling truck.

Table 2-9: GED Hangar Facilities

Type	Area (SF)	Owner	Occupant
Conventional	10,000	GED	Schell Aviation
Conventional	4,800	GED	Sussex Aero Maintenance
Conventional	10,000	Rag Wings and Radials	DE Aviation Museum/Rag Wings and Radials/Larry Kelley
Conventional	10,000	Skip and Jonathan Jones	
Conventional	10,000	Georgetown Air Services	
T-hangar	1,240	GED	Ron Covais
Conventional	3,300	GED	Jon Reichart
T-hangar	9,964	GED	Various Lessees
Conventional	9,750	DTTC	DTTC
Conventional	2,500	GED	Air Methods (LifeNet)
Conventional	2,500	GED	Schell Brothers
Conventional	2,500	GED	Everett and Jay Bennet
Conventional	4,550	GED	H&M Bay/Walt Messick
Conventional	4,800	Hudson-Thompson	
Conventional	5,400	Rickards Aviation Group	
T-hangar	11,500	GED	Various Tenants
Conventional	4,900	DE State Police	DE State Police
Conventional	37,000	GED	ALOFT AeroArchitects
Conventional	48,1000	GED	ALOFT
Conventional	29,900	GED	ALOFT
Conventional	31,200	Schell	Schell Aviation

Note: DTTC = Delaware Technical Community College
Source: GED Building Condition Assessment (Urban Engineers, Inc.)

Table 2-10: Fuel Storage and Delivery Equipment

Equipment	Owner	Capacity	Content/Use
AST	FBO-GAS	10,000	Jet-A
AST	FBO-GAS	10,000	100LL Avgas
AST	FBO-GAS	--	Sludge
AST	FBO-GAS	--	Sludge
AST	ALOFT	10,000	Jet-A
AST	Sussex County	1,000	Auto Gas
AST	Sussex County	550	Diesel Fuel
Truck	FBO-GAS	5,000	Jet-A
Truck	FBO-GAS	2,000	Jet-A
Truck	FBO-GAS	1,200	100LL Avgas
Truck	ALOFT	5,000	Jet-A
Truck	FBO-GAS	5,000	100LL Avgas

Source: GED Tenants, 2020.

2.3.6. Airport Administration and Maintenance

Ground Support Equipment (GSE) Storage/Snow Removal

GED owns or leases the equipment used to maintain the airfield. The equipment is stored in, and outside of, a maintenance equipment storage building. The County has two employees who always operate this equipment and maintain the airfield, and eight personnel for snow removal (rotation dependent on the amount of snowfall). If there is an abundance of snow, the County has contract services with A.P. Croll & Son and/or King Construction, both of Georgetown, DE. The equipment includes:

- 1991 International Dump Truck with 10‟ Snowplow
- 1974 Chevrolet Dump Truck with 10‟ Snowplow
- 1988 485-Case IH Tractor with 8‟ Snowplow
- 1997 5640-Ford New Holland Tractor with 8‟ Snowplow
- 1991 595-Case IH Tractor with 6‟ Front End Loader
- 1988 Case IH Tractor
- 1997 5640-Ford New Holland Tractor
- 1986 255-Case IH Tractor
- 1998 Woods 10-Foot Mower, Model 121
- 1995 Woods 10-Foot Mower, Model 121
- 1999 Woods 6-Foot Mower, Model L59
- 2002 Sweeper Truck
- 2002 Chevrolet C-3500 Dual Wheel (Dump Body) with Snowplow

Fire Protection

General aviation airports such as GED are not required to have specific on-airport rescue or firefighting staffing. GA airports typically receive these services from local community emergency agencies. Fire protection for the Airport is provided by the Georgetown Fire Company Station 77, which is located approximately two miles from the Airport.

2.3.7. Airfield Security

GED is a general aviation airport with flights typically operating under Federal Aviation Regulations (FAR) Part 91 and “For Hire” aircraft operated under FAR Part 135. The airport is not subject to the security requirements outlined in FAR Part 139 due to the absence of scheduled commercial air service with aircraft of more than nine (9) passenger seats. Although no specific mandate for security exists, many GA airports provide a basic level of fencing, gated access, and/or personnel to secure the airfield area.

GED’s primary security measure is the presence of a guard patrol, with a vehicle, on duty 24 hours a day, seven days a week. The guard is supported in an emergency by the Delaware State Police Helicopter unit that is based at GED. The Delaware State Police hangar is also staffed full-time.

The Airport is mostly surrounded by a perimeter fence with an access control system. Access authority for the gates is granted to County operations and maintenance personnel as well as key

airport tenants and users. The gates may be "siren activated" to allow approaching emergency vehicles expedited passage.

2.3.8. Utilities

Electrical power to the airport is provided by Delmarva Power. The airport previously installed an emergency generator near the electrical vault to provide backup power to the airfield lighting, as well as portions of the GA terminal building. Natural gas is supplied by Chesapeake Utilities Corporation. Communications service is provided by Comcast and Verizon. Water and sewage services are provided by the Town of Georgetown.

2.4. SUPPORT FACILITIES AND SERVICES

2.4.1. Fixed Based Operators (FBOs)

A full-service fixed base operator (FBO) is defined as a full-service commercial operator who engages in the primary activity of aircraft refueling and one or more of the following secondary activities: airframe and power plant maintenance, flight training, aircraft rental, air charter or taxi, avionics maintenance and sales, and aircraft storage. Delaware Coastal Airport is home to Georgetown Air Services, a full-service FBO on the field that offers services to the GA pilot including fueling and aircraft storage. Georgetown Air Services is located at GED in the general aviation terminal building.

2.4.2. Specialized Aviation Service Operators (SASO)

A Specialized Aviation Service Operator (SASO) is a commercial aeronautical business like an FBO that offers a single or limited commercial aeronautical service such as flight training, airframe and powerplant repair, maintenance, aircraft charter, air taxi or ambulance, aircraft sales, or other commercial flight support business. Unlike an FBO, a SASO does not require the sale of aircraft fuel and usually specializes in a certain aspect of the aviation business. The SASO is not limited to the servicing of aircraft coming to and from the Airport but can have a role in the Airport's daily operations and usage. GED is home to three individual SASOs including Sussex Aero Maintenance, Inc., LifeNet, and ALOFT AeroArchitects.

Sussex Aero Maintenance, Inc. is located at a hangar on the airfield and provides aircraft maintenance to Airport users at GED. The Sussex Aero Maintenance, Inc. maintenance hangar has a total area of 4,800 SF. There is also a 1,200 SF auxiliary building used primarily as additional office space. Sussex Aero Maintenance, Inc. is considered a SASO because it does not provide fuel sales to Airport users.

LifeNet is located in a hangar accessible via Rudder Lane. LifeNet is a part of the national Air Methods LifeNet Medical Transport System and is affiliated locally with ChristianaCare a medical system based in Wilmington with hospitals and outpatient medical facilities throughout Delaware, Northeastern Maryland, and Southeastern Pennsylvania. Through the presence of the helicopter at Delaware Coastal Airport, emergency medical transportation can be provided from the Georgetown area to trauma centers in Newark and Wilmington. LifeNet operates around the clock

and each flight has a pilot, flight nurse, and flight paramedic, all of whom are based at GED. In addition, LifeNet employs additional staff for aircraft maintenance and other administrative needs.

ALOFT AeroArchitects, formerly PATS Aircraft Systems, is a manufacturer of advanced aircraft systems and retrofitter for Boeing Business Jet and VIP aircraft. ALOFT facilities include three hangars adjacent to Taxiway M and they provide modification and luxury interior component installation services. ALOFT is the only provider of their proprietary PATS Auxiliary Fuel System kits.

2.5. AIRSPACE STRUCTURE AND APPROACH PROCEDURES

The airspace over the United States consists of multiple types and categories of three-dimensional imaginary surfaces designed to regulate air traffic throughout the NAS. The purpose of these airspaces is to maintain a safe and efficient flow of air traffic through the NAS and allow air traffic controllers (ATC) to separate duties based on location and frequency of operations.

Airspace can be broken up into two categories, either regulatory or nonregulatory, and four types including controlled, uncontrolled, special use, and other. The different categories and types depend on the frequency and density of aircraft operating in the airspace, the nature of the operations, the required level of safety, and public interest. A basic representation of airspaces over the United States is depicted in Figure 2-11.

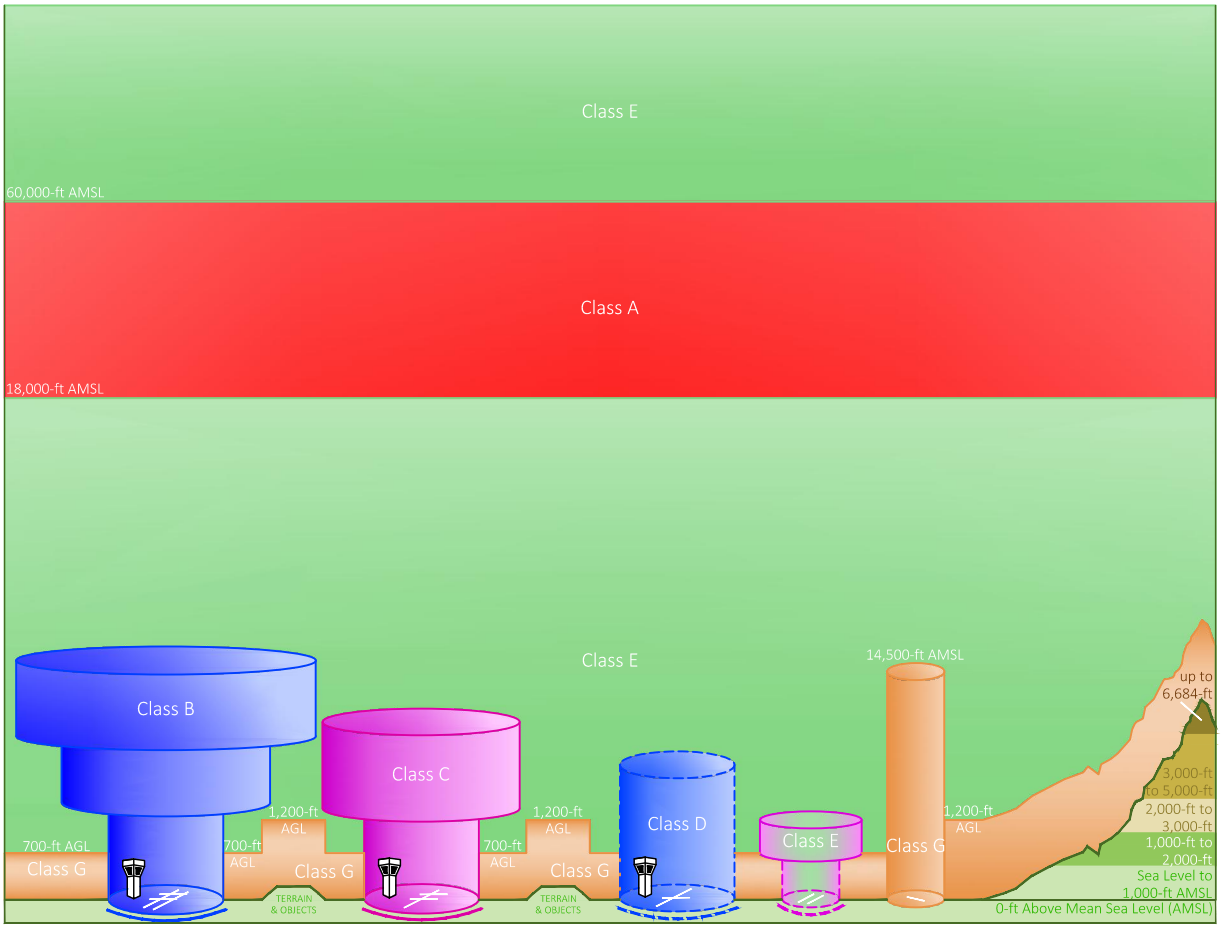
The most important type of airspace in the NAS is controlled airspace, where ATC service is provided, and consists of Class A, B, C, D, and E. Class A airspace is the airspace from 18,000 feet mean sea level (MSL) up to and including flight level (FL) 600 (~60,000 feet MSL) over the contiguous US and Alaska, and all operations within Class A must be conducted under instrument flight rules (IFR). Class B, C, and D airspaces surround commercial-service airports across the US to provide safety and efficiency to operations at the airport. Depending on the size and number of operations at the airport, it could have a Class B, C, or D airspace, which generally begins at the surface (airport elevation) and extend to 10,000 feet MSL, 4,000 feet MSL, or 2,500 feet MSL, respectively. Class B, C, and D airspace is tailored to each airport, and air traffic laws determine how aircraft can operate within or gain clearance to each of these airspaces. Class E is generally all the controlled airspace that does not fall within the other types, and usually begins at 14,500 feet MSL, extends to 18,000 feet MSL (lower limit of Class A), and consists of all the airspace above FL 600.

The only airspace that is classified as uncontrolled is Class G airspace, which is all the other airspace that is not Class A, B, C, D, or E. Class G extends from the surface to the Class E airspace above, and ATC has no responsibility for aircraft within this airspace. Special use airspace is designated based on certain operational activities in certain areas and includes prohibited areas, restricted areas, warning areas, military operation areas, alert areas, and controlled firing areas. Other airspace refers to any remaining classification such as temporary flight restrictions, national security areas, published VFR routes, Air Defense Identification Zones (ADIZ), and military training routes, among others.

2.5.1. Airspace and Air Traffic Control

The airspace immediately surrounding GED is Class E airspace, meaning that it begins at 700 feet AGL and extends to Class A up to 17,999 feet MSL. Outside of the immediate area around GED,

Figure 2-11: GED General Airspace Schematic



Communication Requirements and Weather Minimums

	Class A	Class B	Class C	Class D	Class E	Class G
Minimum Pilot Qualification	Instrument Rating	Student *	Student *	Student *	Student *	Student *
Entry Requirements	IFR: ATC Clearance VFR: Operations Prohibited	ATC Clearance	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: None	None
VFR Visibility Below 10,000 AMSL **	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	3 Statute Miles	Day: 1 Statute Mile Night: 3 Statute Miles
VFR Cloud Clearance Below 10,000 AMSL	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal ***
VFR Visibility 10,000 AMSL and Above **	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	5 Statute Miles	5 Statute Miles
VFR Cloud Clearance 10,000 AMSL and Above	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 1 Statute Mile Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal
Airport Application	N/A	• Radar • Instrument Approaches • Weather • Control Tower • High Density	• Radar • Instrument Approaches • Weather • Control Tower	• Instrument Approaches • Weather • Control Tower	• Instrument Approaches • Weather	
Special VFR Permitted?	No	Yes	Yes	Yes	Yes	N/A

* Prior to operating within Class B, C, or D airspace (or Class E airspace with an operating control tower), student, sport, and recreational pilots must meet the applicable FAR Part 61 training and endorsement requirements. Solo student, sport, and recreational pilot operations are prohibited at those airports listed in FAR Part 91, Appendix D, Section 4.
** Student pilot operations require at least 3 statute miles visibility during the day and 5 statute miles visibility at night.
*** Class G VFR cloud clearance at 1,200 AGL and below (day): clear of clouds.

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the Class E airspace begins at 1,200 feet AGL. Below the Class E airspace from airport elevation up to 700 feet AGL is uncontrolled Class G airspace which is typical for airports with no control tower. Figure 2-12 depicts the surrounding airspace around GED, as shown in the 1:500,000 scale Washington VFR Sectional Aeronautical Chart.

Approximately 11 NM northeast of GED is the Waterloo VOR – Ultra-High Frequency (UHF) Distance Measuring Equipment (DME). This is a low altitude VOR/DME Navigational Aid (NAVAID) and is usable under 18,000 feet AGL within a 40 NM radius, making GED well within its operational boundaries. The Class E transition area surrounding GED continues northeast to provide controlled coverage to the Waterloo VOR/DME and small private airstrips in the area. The Class E airspace surrounding GED and the neighboring Class E airspace overlap to form one area that is made up of two airspace cylinders.

In the general vicinity of GED, the Delmarva Peninsula includes multiple other Class E airspaces for the various non-towered airports in the area and a few additional NAVAIDs. The nearest Class D airspaces surround the Salisbury-Ocean City Wicomico Regional Airport to the south, Easton-Newman Field Airport to the west, and Dover Air Force Base to the north.

Approximately 20 miles southwest of GED is the Patuxent River Complex, a grouping of restricted airspaces that make up flight test ranges for the Naval Air Systems Command and Naval Air Warfare Center Aircraft Division based at Naval Air Station Patuxent River in St. Mary's County, Maryland. The complex is primarily used for research, development, testing, and evaluation of Naval aircraft and can be available if traffic volumes permit. The Patuxent River Complex poses as an obstacle to normal traffic coming in and out of the busy northeastern US, however, the FAA has plans to address this issue in the future through renegotiated Letters of Procedure with the US Navy.

2.6. PROPERTY, LAND USE, AND ZONING

Compatible land use surrounding airports is an important issue when planning for airport growth and sustainability. The following sections will explore airport property ownership and controls as they relate to the Airport as an asset, both physically and operationally.

2.6.1. Existing Property Ownership and Interests

Delaware Coastal Airport has acquired a variety of adjacent properties in recent decades to facilitate airport development, runway protection zone (RPZ) control, and runway extensions. The Airport's Exhibit "A" Property Map identifies that the Airport currently encompasses approximately 744 acres of land with acquisitions starting in 1974 from the State of Delaware. Included within the Airport are approximately 169 acres of land that have been approved by the FAA for a release of aeronautical use. While this land remains part of the larger airport parcel, these lands are no longer required to be reserved for future aeronautical use and are currently utilized for industrial purposes.

The Airport has used several funding sources to acquire the parcels that comprise the Airport, including funds from the FAA's Airport Improvement Program. The Airport has also acquired multiple avigation easements to allow uninterrupted airport operations as well as sewer easements to enable the development of buildings and other aeronautical and non-aeronautical

Figure 2-12: GED Surrounding Airspace

facilities. These easements total approximately 98 acres

2.6.2. Existing Land Use

There are a variety of land uses surrounding the Airport property. An aerial map of land uses surrounding GED is shown in **Figure 2-13**. The Airport parcel has a land use designation of public services.

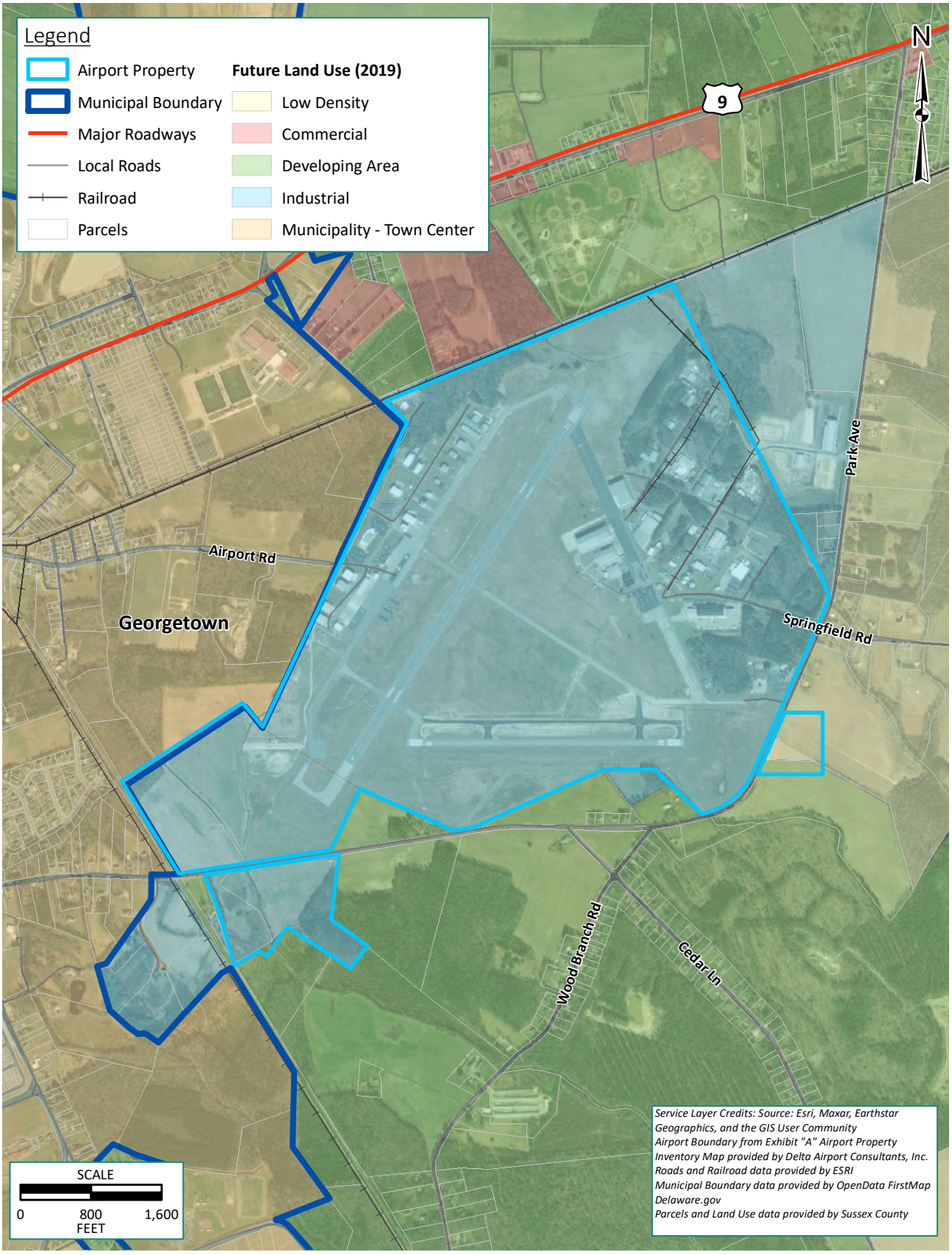
Other adjacent land uses are residential, agricultural, commercial, industrial, institutional, and municipal town centers. The mixed land use designations provide an assortment of neighbors for the Airport. Sussex County hosts businesses from many industries including government operations, financial services, poultry processing facilities, and health care facilities. Georgetown is home to facilities for Perdue Inc., a nationally recognized poultry processing corporation, and smaller operations such as Eastern Shore Poultry which is located on land that was released to Sussex County by the Airport in 1972 to develop an Industrial Park.

2.6.3. Existing Zoning

In the Town of Georgetown, there are a variety of zoning designations, as shown in **Figure 2-14**. The Airport itself is zoned as Light Industrial (LI-2) and is located about a mile from Georgetown's Municipal Town Center which is zoned as Vacation-Retirement-Residential-Park District (VRP). Surrounding properties are zoned as General Residential (GR), High-Density Residential (HR-1), General Commercial (GC-1), and Agricultural Residential District (AR-1). Details regarding each zoning classification are noted below.

- **Light Industrial District (LI-2):** The purpose of this district is to provide for a wide variety of light manufacturing, fabricating, processing, wholesale distributing, and warehousing uses appropriately located for access by major thoroughfares or railroads. Commercial uses and open storage of materials are permitted, but new residential development is excluded.
- **General Residential (GR):** The purpose of this district is to provide for medium-density residential use, including all manufactured homes. Manufactured homes shall include those which do not meet certain characteristics of manufactured homes permitted in AR Districts.
- **High-Density Residential (HR-1):** The purpose of these districts is to permit variety in housing types and provide for residential densities appropriate for areas that are or will be served by public sanitary sewer and water systems and which are well located with respect to major thoroughfares, shopping facilities, and centers of employment.
- **General Commercial (GC-1):** The purpose of this district is to provide retail shopping, personal services, and a wide variety of commercial and miscellaneous service activities generally serving a community-wide area. Such uses are generally located along major arterial roadways where a general mixture of commercial and service activity now exists. Such uses shall not be characterized by extensive warehousing, frequent heavy trucking activity, open storage of materials, or the nuisance factors of dust, odor and noise associated with manufacturing.
- **Agricultural Residential District (AR-1):** The purpose of these districts is to provide for a full range of agricultural activities and to protect agricultural lands, as one of the county's most valuable natural resources, from the depreciating effect of objectional, hazardous and

Figure 2-13: GED Land Use Map



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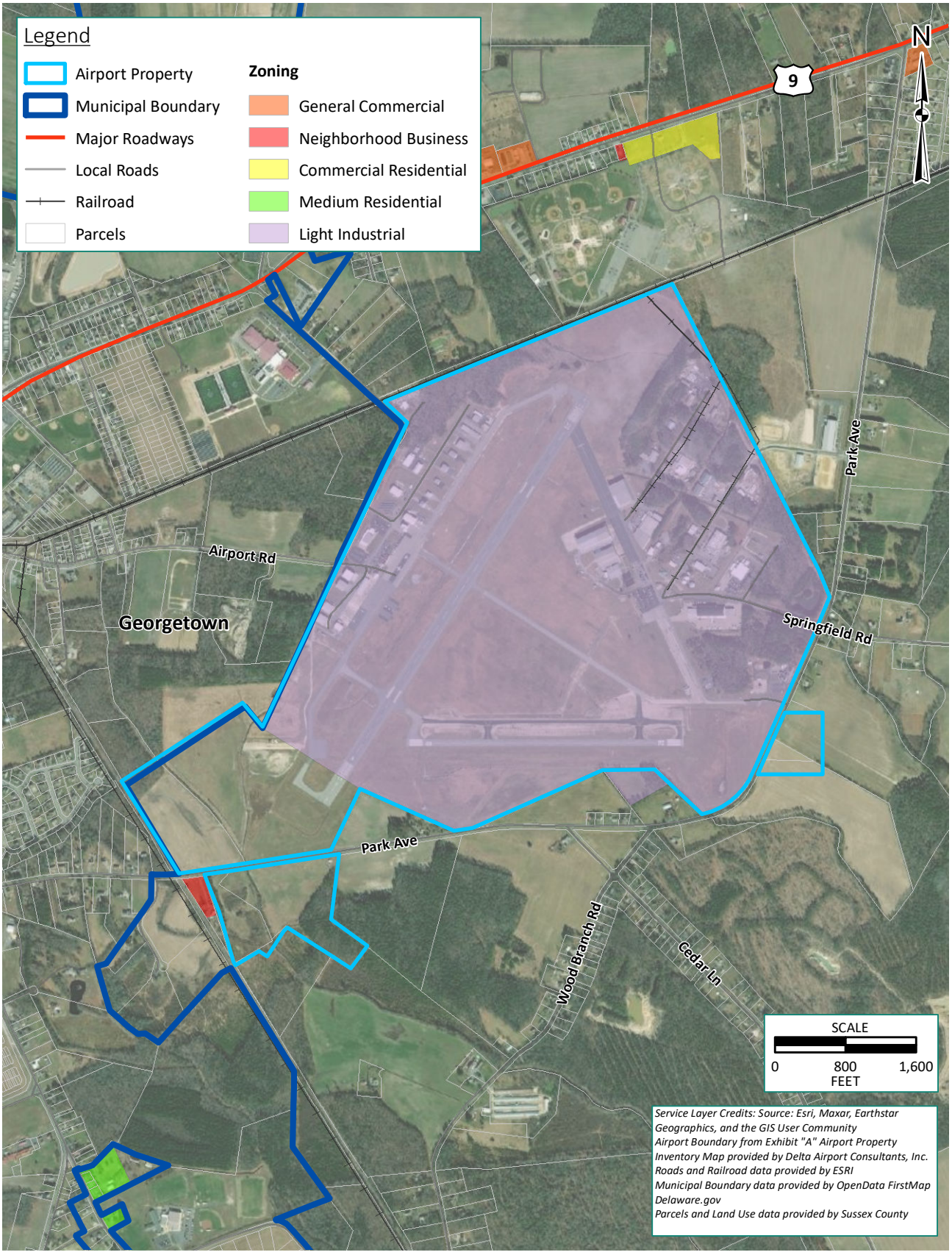
unsightly uses. They should also protect established agricultural operations and activities. These districts are also intended for the protection of watersheds, water resources, forest areas, and scenic values and, at the same time, to provide for low-density single-family residential development, together with such churches, recreational facilities and accessory uses as may be necessary or are normally compatible with residential surroundings. The AR regulations seek to prevent the untimely scattering of more-dense urban uses, which should be confined to areas planned for efficient extension of public services.

- Vacation-Retirement-Residential-Park District (VRP): In order to encourage planned vacation, retirement, and general residential park developments which are compatible with the surrounding area and are economically feasible, and to achieve the goals of the Comprehensive Plan, the Vacation-Retirement-Residential-Park District (VRP District) is hereby established. To enable the district to operate in harmony with the plan for land use and population density embodied in these regulations, the VRP District is created as a special district to be superimposed on other districts contained in these regulations and is to be so designated by a special symbol for its boundaries on the Zoning District Map.

2.7. CONCLUSION

The purpose of this inventory is to provide general facility data for subsequent analyses pertinent to this study effort. The following chapters of this report will seek to project future aeronautical demand which will then be compared to existing facility data to analyze future facility requirements and provide context for consideration of development alternatives.

Figure 2-14: GED Zoning Map



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