Feasibility Study for the Diversion of Airport Operations

at East Hampton Airport

HMMH Report 312040.001

September 6, 2021

Prepared for:

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1 Background and Purpose of Study

Public use airports receiving Federal funding for the purpose of airport development and improvement are obligated to comply with Federal grant assurances and other laws for several years after receiving these funds. The East Hampton Airport's (HTO) obligations to comply with these grant assurances and other such laws expire in September 2021. With the expiration of these grant assurances, the Town of East Hampton is considering closing or otherwise modifying airport use by certain categories and classes of aircraft. Closure or other modifications of the availability of the airport would foreseeably result in redistribution of some fraction of aircraft operations that would have otherwise occurred at East Hampton to other airports and landing areas in the region.

This study identifies the number and types of aircraft that could be expected to divert to one of four airfields in proximity to East Hampton so that the Town of East Hampton can understand the potential impact on aircraft operations at these diversion airfields, and to provide information for why these aircraft may choose to divert to these airfields. This assessment is based on the characteristics and capabilities of existing and historical air traffic at East Hampton Airport, the characteristics and capabilities of the potential diversion airfields, and general assessments of operator and/or user decision-making. These airfields—Francis S. Gabreski Airport (FOK), Montauk Airport (MTP), Mattituck Airport (21N), and Southampton Heliport (87N) – were selected because they are the four closest airports to East Hampton and presumably the most likely airports to be used if East Hampton were not an option.

The analysis for this study primarily focused on whether each flight operation could feasibly operate at any of the four diversion airfields. This feasibility assessment included a review of airport restrictions, facilities, and characteristics, aircraft performance characteristics, and weather data. The result of that assessment provided a total number of East Hampton operations that could operate at each airfield. Following that, we estimated the number of additional operations on a monthly, daily, and hourly basis that would be needed to support this number of operations, then discussed specific factors that could motivate passenger or pilot choice for choosing or not choosing to utilize that airfield.

In the remainder of this document, Section 2 identifies the data sources and the purpose for which they are used. Section 3 describes the analytical process used for this analysis, including the methods used to identify operations and categorize and filter the data. Section 4 provides a summary of the historical operations at East Hampton Airport and the results of the feasibility of diverting operations for each of the airfields. Lastly, Section 5 summarizes the overall effort.

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2 Data Collection and Processing

To fully determine which aircraft operations could reasonably move to one or more of the proposed diversion airfields, HMMH has obtained several types of data. These data include East Hampton's flight operations data, Federal Aviation Administration (FAA) aeronautical data for diversion airfield characteristics and facilities, National Oceanic and Atmospheric Association (NOAA) meteorological data, and other supplemental data, including aerial imagery and airport information.

2.1 Aircraft Operations Data

HMMH used airport operations data from the Vector Noise and Operations Management System (VNOMS) to identify the types and number of operations at East Hampton Airport. Data were obtained for the full calendar years of 2015, 2017, and 2019, as well as for January through June of 2021, totaling 98,373 aircraft operations at HTO. Table 1 summarizes the number of operations during the specified periods.

Table 1: Aircraft Operations at HTO (2015, 2017, 2019, Jan-June 2021)

Year	Operations Count
2015	26,010
2017	28,310
2019	31,464
2021 (Partial)	12,589
Total	***98,373***

Source: VNOMS,[1] HTO

These years were selected to compare current operations to historical operations. In 2015, East Hampton implemented several restrictions and curfews that limited operations at the airport. These restrictions were subsequently removed in November 2016. Thus, calendar year 2015 represents operations under such restrictions. Calendar year 2017 and 2019 represent historical operations prior to the COVID-19 pandemic; 2019 in particular was selected to avoid the presumed anomalous traffic levels of 2020. Lastly, the first half of 2021 is included to capture air traffic operations in the latter stages of the pandemic as air traffic presumably returns to more expected levels.

These aircraft operations data are classified by aircraft category, class, and engine type, with the subcategories for each shown in Table 2. Classifying the aircraft operations by these categories provides a general proxy for the number of operations that could be diverted to one of the diversion airfields, as this grouping generally corresponds to airfield requirements such runway length, airport services (e.g., instrument approaches, fuel services, etc.), and other relevant airport characteristics.

[1] https://airport.vector-us.com/Reports/AngularReports/index.aspx#!/activityReport. Accessed July 2021.

Table 2: Aircraft Operations Categorizations

Aircraft Categorization	Subcategories
Aircraft Category	Fixed wing
	Rotorcraft
Aircraft Class	Single-engine land
	Multi-engine land
	Single-engine sea
Engine Type	Jet
	Turbine propeller
	Piston

Source: *Code of Federal Regulations, Title 14, Part 61*

For this analysis, in addition to the aircraft category, class, and engine type, we also used operation date and time, aircraft model type, and landing and takeoff weights. These data are obtained from VNOMS and are listed, along with their uses, in Table 3.

Table 3: Inventory of Airport Operations Data Sources

Data Source	Data Type	Used For
VNOMS	Aircraft operation date and time	Weather estimation at potential diversion airfields Identification of day/night operations
	Aircraft model type	Determination of aircraft types that are allowed to and can safely operate at an airport
	Aircraft landing and takeoff weights	Determination of aircraft types that can safely land and take off at an airport
	Aircraft engine type	Determination of aircraft types that are allowed to and can safely operate at an airport
NOAA	Historical sunrise and sunset times	Determination of day or night operations

Each operation was classified as a daytime or nighttime operation based on historical sunrise and sunset data obtained from NOAA. According to the FAA, nighttime is defined as the time between the end of evening civil twilight and the beginning of morning civil twilight.[2] Morning civil twilight begins when the geometric center of the sun is six degrees below the horizon and ends at sunrise. Evening civil twilight begins at sunset and ends when the geometric center of the sun reaches six degrees below the horizon.[3] The time between sunrise and morning civil twilight or sunset and evening civil twilight varies depending on the time of year and airfield latitude, but generally ranges between 15 and 60 minutes before sunrise or after sunset.[4] As historical civil twilight times are not as readily available as sunrise and sunset times, we approximated morning civil twilight as 30 minutes prior to sunrise and 30 minutes after sunset.

[2] FAA Airplane Flying Handbook, Chapter 10. FAA-H-8083-3B. https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/airplane_handbook/media/12_afh_ch10.pdf. Accessed August 18, 2021.

[3] 14 CFR Part 1.1, Definitions

[4] The Air Almanac, U.S. Naval Observatory. 2020. https://apps.dtic.mil/sti/pdfs/AD1090313.pdf. Accessed August 28, 2021.

2.2 Aircraft Data

Several types of aircraft-specific data were obtained and used in this analysis. These data include the maximum takeoff weight (MTOW), wingspan, tail height, and stall speed. We used all these characteristics to determine whether an aircraft could feasibly operate using an airport's runways. We also used stall speed to estimate an aircraft's approach speed and crosswind limitations. These data are detailed in Table 4.

Table 4: Inventory of Aircraft-Specific Data Sources

Data Source	Data Type	Used For
FAA Airport Characteristics Database[5] FAA Advisory Circular (AC) 150/5300-13A, Airport Design, Appendix 1[6]	Aircraft maximum takeoff weight	Determination of aircraft types that can safely land and take off at an airport
	Aircraft wingspan	
	Aircraft height	
	Aircraft stall speed	Estimation of approach speed and crosswind component to determine if aircraft can safely land and take off at an airport given certain weather conditions
	Aircraft approach speed and category	Determination of aircraft types that can safely land and take off at an airport Estimation of runway length requirements

2.3 Airfield-Specific Data

HMMH obtained several types of data to assist in determining the types and level of traffic that each of the diversion airfields could support. These data types and their uses are summarized in Table 5.

Table 5: Inventory of Airfield Data Sources

Data	Source	Data Type	Used For
FAA Form 5010 Airport Master Records (FOK, HTO, MTP, 87N, 21N)	FAA Office of Airport Safety and Standards	Runway length and width	Determination of aircraft types that can safely land and take off at an airport
		Runway weight bearing capacity	Determination of aircraft types that can safely land and take off at an airport
		Airport restrictions and limitations	Determination of aircraft types that are allowed to operate at an airport
		Airport ownership (public vs. private)	Determination of aircraft types that are allowed to operate at an airport

[5] FAA Airport Characteristics Database, October 2018. https://www.faa.gov/airports/engineering/aircraft_char_database/media/FAA-Aircraft-Char-Database-v2-201810.xlsx. Accessed July 23, 2021.

[6] FAA Advisory Circular AC 150/5300-13A, February 26, 2014. https://www.faa.gov/documentLibrary/media/Advisory_Circular/150-5300-13A-chg1-interactive-201907.pdf. Accessed July 23, 2021.

Data	Source	Data Type	Used For
		Runway heading	Crosswind component estimation
Coded Instrument Flight Procedures (FOK, HTO, MTP, 87N, 21N)	FAA Aeronautical Information Systems, June 17 – July 15, 2021 (published on a 28-day cycle)	Decision height and visibility requirements by aircraft approach speed	Determination of whether an operation could safely land at an airport under given and/or estimated weather conditions
		Limitations and availability of approach procedure	Determination of whether an operation could safely land at an airport under given operational conditions (e.g., approach speed, time of operation)

Runway length, width, and weight constraints were obtained from the FAA's Form 5010 Airport Master Records and determine if an operation could safely land and/or depart from the diversion airfields. Form 5010 also provides ownership information and remarks for each airport, including curfews, restrictions on aircraft categories or classes, and other information that could contribute to a determination of whether an operation could use a diversion airfield.

Table 6: Airfield-Specific Data for East Hampton Airport and the Diversion Airfields

Facility	Ownership	Elevation (ft MSL)	Acreage	Driving Distance from HTO (miles)	Runways	Runway Length/Width (ft)
East Hampton (HTO)	Public: Town of East Hampton	55	570	N/A	10/28	4,255 x 100
					16/34	2,060 x 75
Montauk (MTP)*	Private: Montauk Airport Inc.	7	40	23	6/24	3,246 x 75
Francis S. Gabreski (FOK)	Public: County of Suffolk	66	1,451	26	1/19	5,100 x 150
					6/24	9,002 x 150
					15/33	5,002 x 150
Mattituck (21N)	Private: Mattituck Airport SD, LLC	30	18	35	1/19	2,200 x 60
Southampton Heliport (87N)	Public: Village of Southampton	5	0	17	H1	44 x 44

* Montauk requires prior permission for helicopter and jet traffic.

Source: FAA Form 5010, Google Maps

Prior to the advent of the air traffic control system, aircraft operators separated themselves from other aircraft and obstacles by visually identifying such impediments and altering course to avoid them. This method is known as "see-and-avoid" and forms the basis of Visual Flight Rules (VFR) separation. However, operations in clouds or during periods of limited visibility require Instrument Flight Rules (IFR) separation, which uses different separation techniques, relying on air traffic control personnel, detailed procedures, and supplemental equipment to ensure safe separation between aircraft and from terrain. Such procedures include Coded Instrument Flight Procedures (CIFPs), which are charted and/or textual descriptions of a course or route to be flown, minimum and/or maximum altitudes to be observed, and similar procedural information that, when followed by pilots, facilitates separation of aircraft from other aircraft and from terrain while operating with limited visibility and or in clouds.

These procedures use satellite and ground-based navigational aids to provide lateral and sometimes vertical guidance to a runway in the absence of adequate visibility for pilots to visually navigate to a runway. Depending on the type of navigational aid used, IFPs have different usability limitations associated with the cloud altitude (known as the ceiling), forward visibility, and aircraft speed.

We obtained the CIFPs for the diversion airfields and reviewed them to determine the feasibility of landing at each airfield in weather conditions with limited visibility on a day-by-day basis.

Lastly, we estimated an approximate driving distance between East Hampton Airport and the diversion airports using Google Maps.

2.4 Meteorological Data

HMMH obtained hourly meteorological data for East Hampton Airport, Gabreski Airport, Montauk Airport, Groton Airport (GON), and Block Island Airport (BID) to characterize weather conditions at the diversion airports. These datasets allowed us to estimate weather conditions for a specific operation if it were to be diverted to one of these diversion airports on the same date and time as it originally occurred at East Hampton. These estimations of weather conditions allowed us to determine if the operation would have been able to occur at the diversion airport, given each airport's capabilities and facilities. Table 7 summarizes these weather data types and their uses.

Table 7: Inventory of Weather Data Sources

Data	Source	Data Type	Used For
Integrated Surface Data (FOK, HTO, MTP, BID, GON; 2015, 2017, 2019, 2021)	NOAA National Centers for Environmental Information	Hourly wind direction and speed	Active runway determination, crosswind component estimation
		Hourly ceiling and cloud cover status	Determination of instrument approach procedure selection
		Hourly visibility range	Determination of instrument approach procedure selection

Southampton Heliport and Mattituck Airport do not have their own weather observation stations; instead, pilots operating at these fields rely on weather data from Gabreski Airport and East Hampton Airport to inform their decision-making. In accordance with this, we used the same data to estimate weather conditions at Southampton and Mattituck. We compared wind speed and direction, ceiling, and visibility data for Gabreski and East Hampton, selecting the more liberal value (e.g., lower wind speed, smaller crosswind, and higher ceilings and visibilities) for the weather conditions at Southampton and Mattituck. The more liberal weather conditions were chosen to provide a more conservative (e.g., higher) estimate of operations that could potentially occur at these airfields if East Hampton were to restrict some or all its operations.

The historical weather data from Montauk only included wind speed and direction and did not include ceiling or visibility data. To determine approximations for ceiling and visibility at Montauk, we used historical data from Groton Airport, in CT, and Block Island Airport, in RI. As in the process for Southampton and Mattituck, we used the more liberal value between the two airports.

2.5 Other Data

In addition to a data-based assessment of the capability of operations to occur at the diversion airfields, we also wanted to assess the likelihood that pilots and/or passengers would choose to potentially operate out of one or more of the diversion airfields if East Hampton Airport was not available. Some of the considerations included the location of the airfield, its services and facilities, and the purpose and/or final destination of the trip. For the purpose of this study, services and facilities generally refers to passenger pick-up/drop-off areas, passenger waiting areas, and transportation services, including rental car facilities.

We obtained satellite photographical data from Google Maps, using them to estimate the area available for potential aircraft parking, as well as drop-off/pick-up areas for passengers. These estimates allowed us to assess the reasonableness of overnight and transient parking at each airfield. Additionally, we were able to estimate the accessibility of each airfield based on its geographical location and distance to city centers and to East Hampton Airport.

In May 2021, HR&A Advisors presented an economic impact analysis of the East Hampton Airport to the Town of East Hampton. In this report, they stated that in 2019, the terminal destination of approximately 60 percent of passengers arriving at the airport was the Town of East Hampton, while the remaining 40 percent departed the area for Southampton and points farther west.[7] We used this information to provide a general assessment of how each diversion airfield would affect the passengers remaining in East Hampton compared to those traveling farther west. This presentation did not specifically address passengers departing the East Hampton area for more easterly locations.

[7] *East Hampton Airport Preliminary Economic Impact Analysis*, HR&A Advisors, Inc. May 11, 2021.

3 Analysis

The purpose of this analysis is to estimate the number and types of aircraft operations that could feasibly be diverted to Montauk Airport, Gabreski Airport, Southampton Heliport, and Mattituck Airport if East Hampton Airport were to close or otherwise modify its aircraft operations, and to also identify the reduction or change in operations that could occur if East Hampton Airport were to restrict certain types of operations. This analysis provides a conservative (e.g., worst case) estimate of the number of operations that might occur at each diversion airfield.

Figure 1 shows the approximate locations of East Hampton Airport in blue and the diversion airfields in orange.

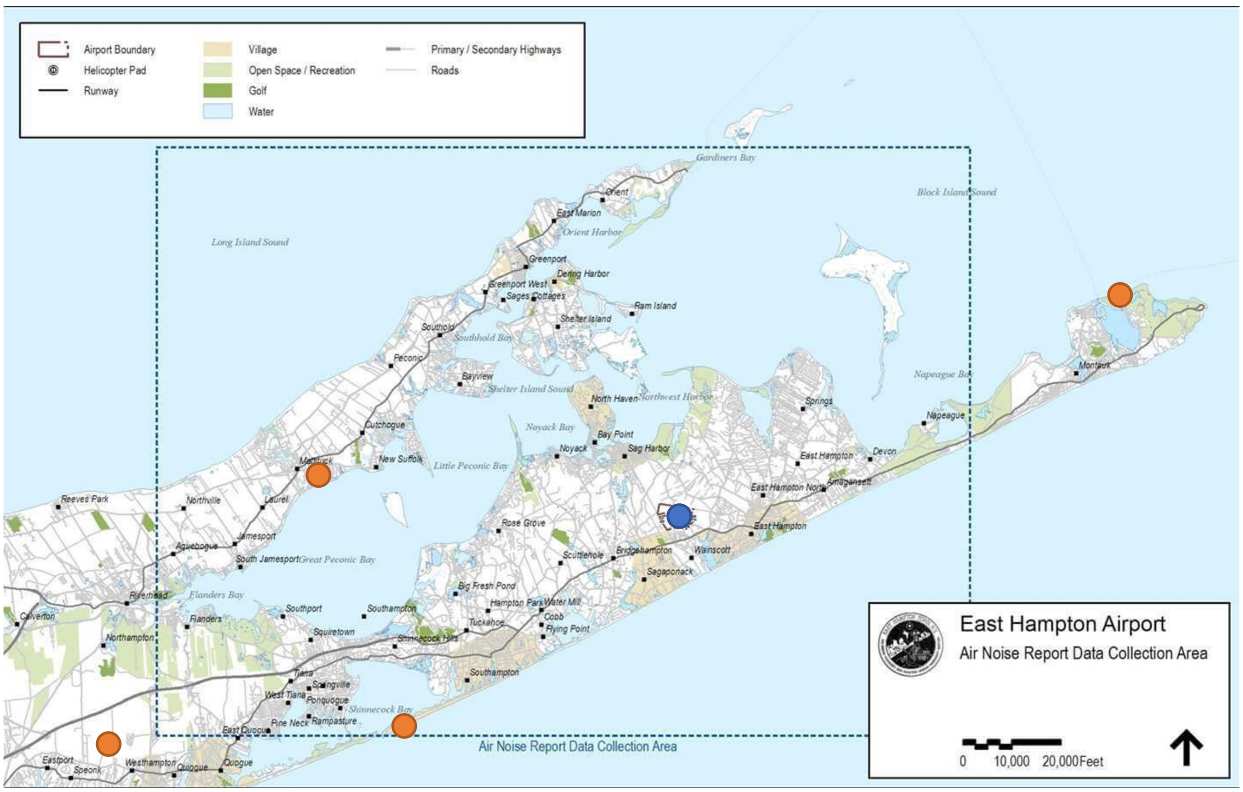

Figure 1: East Hampton Airport and the Diversion Airfields

To accomplish this, we first reviewed East Hampton's aircraft operations to define past and current operational usage and demand at the airport. We then assessed the ability of the selected diversion airfields to support these operations by reviewing and categorizing the airfields' facilities and characteristics against the flight operations categories. We then cross-referenced the operations against the airfield capabilities to determine the number and type of operations originally occurring at East Hampton that might feasibly operate at each airfield. Generally, this review defined the number and types of operations that, as standalone operations, could reasonably be expected to occur at each airfield based on the airfields' limitations, restrictions, and characteristics.

Lastly, we considered the possible increase in operations and operation rate at each airfield that would be required to support the total number of feasible operations and reviewed the possible effects that the airfields' locations and other factors might have on the likelihood that an operation would opt to use that particular airfield in lieu of East Hampton.

The following sections discuss the data processing and analysis used to accomplish these objectives.

3.1 Airport and Airfield Restrictions

We first identified flight operations that would be able and/or allowed to operate at each diversion airfield. Runway length, surface, and weight limits restrict the operations that could be diverted to each airfield. Additionally, Montauk and Mattituck are privately owned, which allows them to place restrictions on flight operations that occur. Table 8 summarizes these restrictions, and Sections 3.1.1 and 3.1.2 describe how we processed the data to identify the operations affected by these restrictions.

Table 8: Airport and Airfield Restrictions for the Diversion Airfields

Airport	Ownership	Restrictions
Montauk (MTP)	Private	No touch and go operations No night operations Closed to helicopters between sunrise and sunset Closed to jets and helicopters except by prior permission Runway length (3,246 ft) limits aircraft to MTOW < 12,500 lbs.
Gabreski (FOK)	Public	None
Southampton Heliport (87N)	Public	Helicopter operations only Closed at night
Mattituck (21N)	Private	No night operations No touch and go operations No training operations Runway length (2,200 ft) limits aircraft to MTOW < 12,500 lbs.

Source: FAA Form 5010, AC 150/5325-4B

3.1.1 Runway length

Runway length requirements depend on the specific aircraft type, which are found in aircraft operating handbooks, and whether the flight and pilot are operating as a general aviation, noncommercial flight, a charter flight, or an air carrier flight. A detailed analysis of these requirements is beyond the scope of this analysis. Instead, we used airport design standards to provide a generic estimation of aircraft that could operate at each airfield. Runway length requirements were determined using the FAA Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Airport Design*. This AC provides guidelines for the determination of recommended runway lengths based on airfield elevation, temperature, and expected fleet mix.

According to this document, small aircraft[8] with approach speeds of under 30 knots (kts) have a recommended runway length of 300 feet (ft) for airports located at sea level and small aircraft with approach speeds greater than or equal to 30 kts and less than 50 kts have a recommended runway length of 800 ft at sea level. The four diversion airports are all located at approximately sea level, as

[8] As defined in AC 150/5325-4B, *Runway Length Requirements for Airport Design*, and elsewhere by the FAA, a small aircraft is one whose maximum certificated takeoff weight (MTOW) is less than or equal to 12,500 pounds (lbs.).

noted in Table 6, so for small aircraft with these approach speeds, we used these runway length estimates.

For small aircraft with approach speeds of 50 kts or more, AC 150/5325-4B provides guidelines on how to approximate runway length based on aircraft seating capacity and the mean daily maximum temperature during the hottest month of the year at an airport. For an airfield with an average temperature of 75 degrees Fahrenheit and an elevation of approximately sea level, small aircraft with fewer than ten passenger seats[9] require a runway approximately 2,900 ft long. Small aircraft with ten or more passenger seats require approximately 3,900 ft of runway. In addition to having elevations of approximately sea level, all four airfields considered in this study have mean daily maximum temperatures for the hottest month of approximately 75 degrees Fahrenheit.

For aircraft with a MTOW of more than 12,500 lbs. and less than 60,000 lbs., runway requirements are between 4,550 ft and 4,950 ft for a sea-level airfield with a mean temperature of 75 degrees Fahrenheit.

Table 9 summarizes the aircraft by size and/or weight that, according to AC 150/5325-4B, could be expected to operate at each of the potential diversion airports and at East Hampton Airport. Southampton Heliport is not included since it only serves helicopter traffic and does not have or need a runway per se, simply requiring a designated landing area or pad.

Table 9: Runway Operation Eligibility Matrix for the Diversion Airfields

Airport	Runway	Runway Length (ft)	MTOW ≤ 12,500 lb				12,500 < MTOW ≤ 60,000 lb
			Approach spd < 30 kt	30 ≤ Approach spd < 50	< 10 passengers	≥ 10 passengers	
East Hampton (HTO)	10/28	4,255	X	X	X	X	X
	16/34	2,060	X	X			
Montauk (MTP)	6/24	3,246	X	X	X		
Gabreski (FOK)	6/24	9,002	X	X	X	X	X
	1/19	5,100	X	X	X	X	X
	15/33	5,002	X	X	X	X	X
Mattituck (21N)	1/19	2,200	X	X			

Source: FAA AC 150 5325-4B, FAA Form 5010

3.1.2 Operational restrictions

As privately-owned airports available for public use, Montauk Airport and Mattituck Airport can restrict the type of aircraft and type of operations. Montauk does not allow night operations or touch and go operations.[10] Additionally, jet and helicopter operations are allowed by prior permission only. Mattituck

[9] Passenger seats do not include pilot and co-pilot seats.

[10] A touch-and-go operation is when a pilot performs a landing at an airfield, then, without coming to a full stop, takes off again. Touch and go operations are often conducted as part of flight training and proficiency flights.

does allow helicopter operations but not night or touch and go operations. As a heliport, Southampton Heliport only allows helicopter operations. These restrictions are specified in Table 8.

Aircraft category (fixed-wing, rotary wing) and engine types (jet, turboprop, piston) were provided in the flight operations data, and daytime/nighttime operations were identified using the process described in Section 2.1.

We identified touch and go operations by calculating the time difference between operations for each unique aircraft identifier (tail number or call sign). An operation pair where the first operation was an arrival and the second a departure and where the time difference was three minutes or less was considered a touch and go operation. Using these criteria, 6,180 operations in the entire data sample were identified as possible touch and go operations.

3.1.3 Aircraft parking and services

The availability of aircraft ramp areas, used for parking and movement not associated with runway operations, and other aircraft services could affect the operations that would occur at each of the diversion airfields. The absence of adequate parking necessarily excludes some operations that would require overnight or transient parking. Similarly, the lack of fuel, maintenance, and other services at all airfields except for Gabreski Airport could disincentivize certain types of operations at those airfields.

As noted by the acreage provided in Table 6, Montauk and Mattituck Airports have limited space available for aircraft parking, and Southampton Heliport has no space for parking. A review of satellite imagery confirmed these assessments. From this review, we estimate that Montauk Airport could have space for potentially up to 20 aircraft, though this number may be less depending on aircraft size and airport policies and restrictions. Similarly, eight hangars are visible at Mattituck, though hangars are usually reserved for aircraft based at an airport and are unavailable for transient aircraft. The area around the hangars away from the runway could provide unpaved space for aircraft parking, though the visual inspection could not confirm the extent to which this area is used for this purpose. Lastly, the visual examination indicates that no parking spaces available at Southampton; its paved area consists solely of the helipad.

Based on these reviews, we determined that any aircraft operations that require overnight or short-term transient parking would not be feasible at Southampton or Mattituck. However, overnight and transient parking at Montauk would be feasible but only for a small fraction of potential diversion operations.

To identify operations that would require parking, we calculated the time difference between operations for each unique aircraft identifier. Operation pairs where the first operation was an arrival and the second a departure were evaluated for overnight parking, short-term parking, or long-term but not overnight parking. Additionally, since Southampton Heliport cannot support more than one helicopter at a time and any helicopter parking there would prevent other operations from occurring, it received its own parking category. Table 10 describes the criteria for each parking classification.

Table 10: Parking Analysis Criteria for the Diversion Airfields

Parking Classification	Time Difference for Arrival/Departure Operations Pair
Touch and go	< 3 minutes
Southampton parking	> 20 minutes
Short-term parking	between 1 and 3 hours
Long-term but not overnight parking	≥ 3 hours but not overnight
Overnight parking	Date difference > 1 and time difference > 0

3.1.4 Airfield usage

Aside from this section, Sections 3.1 and 3.2 discuss factors that determine whether a flight operation could, as a standalone operation, reasonably physically occur at a diversion airfield. These factors simply assess if the operation meets criteria at each airfield and allows us to quantify the total number of operations that *could* occur at an airfield. They do not address the feasibility of operations in aggregate. In this section, we describe the method used in this analysis to provide a general estimate of the possible impact on an airfield resulting from the operations that could feasibly be shifted to another airfield from East Hampton Airport.

While we obtained detailed operational data for East Hampton Airport for 2015, 2017, 2019, and half of 2021, similar data were not obtained for the other airfields, and a capacity analysis for the diversion airfields is beyond the scope of this effort. However, we did want to provide an assessment of the effects of the possible additional operations on each airfield. To accomplish this, we first identified the number of operations that could potentially occur at each airfield based on quantifiable airport, airfield, and weather conditions as described in the rest of Section 3. We then identified the month(s) with the greatest number of operations and calculated the number of daily and hourly operations that would be required to support these additional operations.

Additionally, we used estimates of annual operations provided in the airports' Form 5010s. We first estimated the percent of operations that occurred during the peak month of operation in each year and obtained an average of the operational percentage for that month. We then estimated the number of operations for that peak month based on the Form 5010 data and used this estimate as a basis for assessing the operational increase associated with the relocated East Hampton operations.

3.2 Weather Limitations

We calculated estimates of daily weather conditions at each airfield based on the data described in Section 2.3. These data consisted of hourly records of temperature, pressure, wind direction and speed, visibility, and ceiling measurements. For each day, we calculated the average daily value for each available metric at East Hampton Airport, Gabreski Airport, Block Island Airport, and Groton Airport. As noted in Section 2.3, weather conditions for Southampton Heliport and Mattituck Airport were estimated from conditions at East Hampton and Gabreski Airports, and ceiling and visibility metrics for Montauk Airport were estimated from the same metrics at Block Island and Groton Airports.

3.2.1 Weather conditions

To provide a high-level metric to identify daily weather conditions at each diversion field, we classified each day according to the categorical outlook definitions provided in the FAA's Aeronautical Information

Manual[11] using the daily averages and estimates of ceiling and visibility at each airfield. These classifications and their definitions are provided in Table 11.

Table 11: Ceiling and Visibility Limitations for VFR and IFR Conditions[12]

Categorical Outlook	Ceiling (ft AGL)	Logic	Visibility (statute miles)
Low Instrument Flight Rules (LIFR)	< 500	OR	< 1
Instrument Flight Rules (IFR)	≥ 500 and < 1,000	OR	≥ 1 and < 3
Marginal Visual Flight Rules (MVFR)	≥ 1,000 and ≤ 3,000	OR	≥ 3 and ≤ 5
Visual Flight Rules (VFR)	> 3,000	AND	> 5

Source: FAA FAR/AIM Section 7-1-7

These classifications were used to identify operations that could be restricted at the diversion airfields due to weather. Each day was identified as having Low IFR (LIFR), IFR, Marginal VFR (MVFR), or VFR weather; the ceiling and visibility criteria listed in Table 11 were cross-referenced against the ceiling and visibility minima for each airfield's CIFPs. East Hampton, Gabreski, Montauk, and Southampton have CIFPs that allow aircraft to land in reduced visibility and thus would be able to accommodate operations in conditions of limited visibility; however, Mattituck has no such procedures. Though a limited number of operations could occur at Mattituck under IFR conditions, for this analysis we assumed this airport would only support operations under VFR weather conditions.

3.2.2 Wind limitations

We also approximated the minimum crosswind component at the diversion airports for each day. For each runway, we subtracted the wind direction from the runway heading provided in Section 2.3 to determine the crosswind angle, then selected the minimum angle from the absolute values of the crosswind angles. We then calculated the crosswind speed using the formula

$v_{xw} = v_w \sin(\theta_{xw})$. Table 12 provides an example of this calculation.

Table 12: Example Crosswind Estimation, MTP

Date	Wind Direction	Wind Speed (v_w) (kts)	RW6	RW24	Crosswind Angle (Θ_{xw})	Crosswind Speed (v_{xw}) (kts)
1/13/2021	303.0	4.0	-241.0	-61.0	61.0	3.5
1/14/2021	247.3	1.7	-185.3	-5.3	5.3	0.2
1/15/2021	81.1	5.1	-19.1	160.9	19.1	1.7
1/16/2021	162.7	8.3	-100.7	79.3	79.3	8.2

[11] FAA FAR/AIM Section 7-1-7, *Categorical Outlooks*. https://www.faraim.org/faa/aim/473/aim-473.html. Accessed August 31, 2021.

[12] The definitions and operating rules for VFR and IFR operations are complex and depend on airspace classification and aircraft category. The information presented in this table assume Class D and E airspace.

The calculation $v_{xw(ac)} = 0.2v_{ref} = 0.2v_{stall}$[13] was used to estimate the maximum crosswind component for each fixed-wing aircraft. Although certain aircraft and/or operators may be able to accept higher crosswind limitations, this estimation was used to provide a general formula for crosswind limitations across all aircraft. In practice, several aerodynamic factors determine an aircraft's maximum demonstrated crosswind; however, this estimation provides an adequate proxy for this study.

We then compared the estimated daily crosswind at each airport against the estimated maximum crosswind for each flight that occurred on that day. If the estimated crosswind exceeded the aircraft's maximum crosswind, that flight was excluded from consideration for diversion to that airport.

Since, as noted in Section 2.3, Mattituck Airport does not report weather and instead references the weather stations at Gabreski, East Hampton, and Brookhaven, we calculated the crosswind component for Mattituck using the wind direction and speed from both Gabreski and East Hampton. We then selected the more liberal (e.g., weaker) crosswind estimate as the Mattituck crosswind estimate, again to err towards a worst-case scenario with respect to diversion traffic volumes.

Since helicopters are not subject to crosswind limitations like fixed-wing aircraft are, we only looked at the overall estimated wind speeds at each airfield to determine if any helicopter operations would be restricted due to wind. At East Hampton Airport, the maximum daily average windspeed was approximately 20 kts; values for this metric were similar at Gabreski (20.4 kts) and Montauk (18.8 kts). Generally, windspeeds at Gabreski and Montauk were within six knots of the windspeeds at East Hampton. Since all helicopter operations in this dataset occurred at East Hampton under these wind conditions, and since the wind speeds recorded at Gabreski and Montauk and estimated at Montauk and Southampton during the same period are similar to the windspeeds at East Hampton, we determined that the wind conditions at the proposed diversion airfields would not restrict any helicopter operations.

3.3 Operational Feasibility

The prior sections discussed the process used to determine if a specific operation could, as a standalone operation, physically occur at each diversion airfield. Those sections focused on quantifiable data. However, several non-quantifiable factors also could affect the likelihood that certain operations would occur at a diversion airfield. These factors can apply to the flight operator or to the passenger.

Airport fees may incentivize one airport or airfield over another. Most of these facilities, aside from Mattituck Airport, charge fees. East Hampton Airport charges landing fees based on MTOW; these fees range from $20 to $700.[14] Southampton also charges based on MTOW, with fees either $150 or $200.[15] Gabreski Airport's fees are based on weight, time of day, commercial/noncommercial, overnight, and other factors.

Passengers' destinations and the distance and time associated with reaching this destination may affect whether a flight operation would occur at a specific diversion airfield. Though specific information regarding passenger destinations and trip purposes were not available, HR&A's economic impact

[13] FAA AC 23-8C, *Flight Test Guide for Certification of Part 23 Airplanes*. https://www.faa.gov/documentlibrary/media/advisory_circular/ac_23-8c.pdf. Accessed August 28, 2021.

[14] http://ehamptonny.gov/DocumentCenter/View/1545/Landing-Fee-Schedule-PDF?bidId=

[15] FAA Form 5010, Southampton Heliport, FAA Site 16205.1*H. Accessed August 25, 2021.

analysis stated that in 2019, 60 percent of East Hampton Airport passengers traveled to the Town of East Hampton or otherwise remained near East Hampton, while the other 40 percent continued to Southampton and points west.

Availability of airport facilities and other services could outweigh proximity to the destination. Availability of rental car and other transportation services may also influence whether a trip would occur at a diversion airfield. As the Hamptons are a vacation and tourist destination, we would expect that passengers would require car rental facilities, access to public transportation (including rideshares), or ground vehicle parking. In the absence of these facilities, some subset of operations may not occur at a given location. Similarly, if adequate waiting areas, drop-off/pick-up locations, food and hygiene facilities, and other amenities are not available, some passengers may opt to forego their trip or utilize alternate means of transportation.

4 Results

This section first discusses the dataset with respect to operations at East Hampton Airport, defining the number, category, and engine types of the operations over the years, including identification of the top 20 aircraft types at East Hampton. We also discuss the historical monthly operational trends seen during these years.

After characterizing the operations in the context of East Hampton Airport, we then assess the full dataset to determine which of the East Hampton operations could feasibly be expected to operate at each of the diversion airports. For the quantitative analyses, we treat each operation as essentially a standalone operation, asking whether this particular operation, in the absence of any other operations, could occur at each diversion airport. This quantitative analysis does not look at all operations in aggregate, but instead provides a total count of all operations that, by themselves, could reasonably operate at an airport given all the constraints and restrictions associated with that airport.

Following the quantitative analysis, we then provide a general discussion of the increase in operations that would be required to support the number of operations identified from the quantitative analysis. Though this discussion does not specifically discuss capacity numbers, it provides a general idea of how much operations would increase at that airport if all feasible East Hampton operations were to be conducted at the diversion airport instead. A brief discussion of other factors, such as airport facilities and services and airfield location, is provided to further identify factors influencing a pilot's or passenger's choice to make or abandon a trip if it could not occur at East Hampton.

Finally, after identifying several restrictions and limitations at the diversion airfields, we identify some potential restrictions and limitations that might be feasible to implement at East Hampton. These limitations were chosen for several reasons, but a key reason for selecting these was that, as discussed in the sections for each diversion airfield, the operations that would be eliminated or reduced at East Hampton could reasonably be expected to be absorbed by the other airfields.

4.1 Historical Flight Operations at East Hampton Airport

This analysis used flight operations data from East Hampton Airport for calendar years 2015, 2017, and 2019, as well as the first half of calendar year 2021. This data sample contained 98,373 flight operations as indicated in Table 1, distributed among 351 distinct aircraft types. Fixed-wing piston aircraft represent the majority of operations in this sample, ranging between 35 and 44 percent of annual operations, followed by helicopters, which represent 24 to 30 percent of operations. Turboprop operations comprise 12 to 20 percent of operations and jets represent 14 to 20 percent. Table 13 provides the distribution of operations by engine type and year.

Table 13: Historical Operations at East Hampton Airport by Engine Type

Engine Type	2015		2017		2019		2021 (Partial)		*Total*	
Piston	10,217	39.3%	9,977	35.2%	11,228	35.7%	5,498	43.7%	***36,920***	***37.5%***
Turboprop	5,147	19.8%	5,227	18.5%	6,140	19.5%	1,606	12.8%	***18,120***	***18.4%***
Jet	3,832	14.7%	4,459	15.8%	4,505	14.3%	2,415	19.2%	***15,211***	***15.5%***
Helicopter	6,706	25.8%	8,539	30.2%	9,577	30.4%	3,060	24.3%	***27,882***	***28.3%***
Unknown	108	0.4%	108	0.4%	14	0.0%	10	0.1%	***240***	***0.2%***
Total	***26,010***	***100%***	***28,310***	***100%***	***31,464***	***100%***	***12,589***	***100%***	***98,373***	***100%***

Of the 351 aircraft types included in this data sample, 20 of them conducted nearly 70 percent of all operations, with the top ten covering approximately 50 percent of all operations. Table 14 shows these top 20 aircraft, their engine types, operational counts, and overall operational percentages for the data sample.

Table 14: Top Twenty Aircraft Operations at East Hampton Airport

Aircraft Type	Engine Type	2015	2017	2019	2021 (Partial)	Total	Total Percent
S76	Helicopter	2,632	3,521	3,889	1,443	**11,485**	*11.7%*
C208	Turboprop	2,728	2,856	3,455	643	**9,682**	*9.8%*
C172	Piston	1,219	1,438	2,612	1,563	**6,832**	*6.9%*
B407	Helicopter	974	1,319	2,255	783	**5,331**	*5.4%*
SR22	Piston	1,135	1,058	1,676	564	**4,433**	*4.5%*
PC12	Turboprop	906	1,031	1,295	519	**3,751**	*3.8%*
P28A	Piston	719	907	1,128	556	**3,310**	*3.4%*
C182	Piston	793	733	749	280	**2,555**	*2.6%*
C680	Jet	496	583	764	442	**2,285**	*2.3%*
PA34	Piston	481	640	664	205	**1,990**	*2.0%*
BE58	Piston	646	667	442	161	**1,916**	*1.9%*
BE36	Piston	635	750	343	145	**1,873**	*1.9%*
E55P	Jet	318	465	694	318	**1,795**	*1.8%*
AS55	Helicopter	511	468	564	214	**1,757**	*1.8%*
B430	Helicopter	778	482	390	4	**1,654**	*1.7%*
CL30	Jet	321	442	500	332	**1,595**	*1.6%*
C56X	Jet	472	472	432	153	**1,529**	*1.6%*
A139	Helicopter	205	445	536	313	**1,499**	*1.5%*
B350	Turboprop	469	441	462	122	**1,494**	*1.5%*
AS50	Helicopter	535	630	138	18	**1,321**	*1.3%*
Total		**16,973**	**19,348**	**22,988**	**8,778**	**68,087**	
Total Percent		*65.3%*	*68.3%*	*73.1%*	*69.7%*	*69.2%*	

Over the years, between 77 and 80 percent of East Hampton Airport's annual operations occurred during the May to September period, with operations per month peaking in July and August. As defined and discussed in other reports on East Hampton Airport, the summer season begins the weekend before July 4th and ends after Labor Day, while the shoulder season covers all of September and October. Figure 2 illustrates the cyclical nature of the operations over the study years.

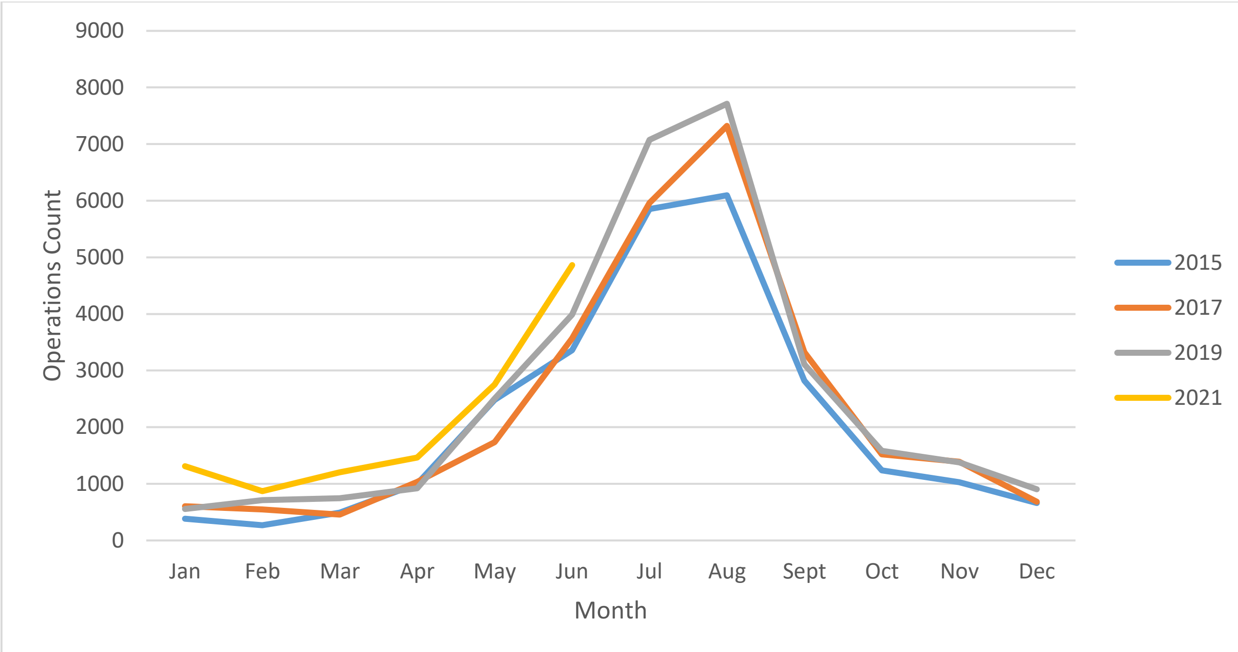

Figure 2: Historical Operational Peaks at East Hampton Airport

Source: VNOMS

The information presented in this section provides the basis for various assumptions and estimates that we make later in this report; for example, Figure 2 allows us to identify the historical peak traffic months and to estimate the percent of operations that occur during these months. These data also provide insight into the operational character of the airport, allowing us to predict what types of modifications are likely to be most impactful for East Hampton.

4.2 Montauk Airport (MTP)

Montauk Airport, privately owned by Montauk Airport Inc., is a public-use airport approximately three miles northeast of Montauk. It is located on 40 acres and has one runway that is 3,246 ft long and 75 ft wide. The owner requires that jet and helicopter operations obtain prior permission to operate at the airport. Satellite photos of the airport show limited aircraft parking; a visual inspection estimated that under 20 aircraft could potentially park on the available non-movement area. Additionally, the airport's Form 5010 states that only four aircraft are based at the field.

As a privately-owned airport, Montauk's owner chooses to prohibit touch and go and nighttime operations; neither type is allowed at the airport. Additionally, the available runway length limits the type of operations that can occur at the airport. As indicated in Table 8, per AC 150/5325-4B, Montauk's runway length generally allows for aircraft with MTOW less than 12,500 lbs. and fewer than 10 passengers. Since the limitations in AC 150/53525-4B focus on airport design and do not include a detailed discussion of aircraft operators and their runway requirements and limitations, we also reviewed aircraft with MTOW greater than or equal to 12,500 lbs. and 10 or more passengers to determine if any of them could potentially operate at Montauk. This review indicated that the King Air Model 100 and the Britten-Norman BN-2 Islander's takeoff distances would likely allow them to operate at the airport.

Montauk has two Instrument Approach Procedures (IAPs); the RNAV[16] GPS to Runway 6 requires a ceiling of 540 ft or higher, and the RNAV GPS to Runway 24 requires a ceiling of at least 520 ft. Both IAPs specify one mile visibility for aircraft with approach speeds of 120 kts or less and 1.5 miles visibility for aircraft with higher approach speeds. Given these requirements, IFR operations could occur at this airfield. However, as LIFR conditions involve ceilings of less than 500 ft and visibility of less than one mile, neither could be used in LIFR.

We also identified operations where estimated crosswinds exceeded estimated aircraft crosswind capabilities. We used the estimated daily crosswind calculations for Montauk for each day and compared them to the estimated maximum crosswind limits for the aircraft operating at the airport that day. If the Montauk crosswind estimate was greater than an aircraft's crosswind limitation, we assumed that such an operation could not occur at Montauk.

With all these restrictions in place, a total of 55,644 operations would be eligible to occur at Montauk, with an average annual operations count of 15,898. In 2015, 13,290 operations would have been able to operate at the airport; 17,027 operations could have occurred in 2017 and 18,429 in 2019. Through the end of June 2021, 6,898 East Hampton operations could have occurred at Montauk.

Table 15 summarizes the types and number of operations that meet the above criteria.

Table 15: Operational Counts for Feasible East Hampton Operations at Montauk Airport

Year	Piston and Turboprop	Jet operations	Helicopter	Total
2015	8,100	252	4,938	13,290
2017	9,114	356	7,557	17,027
2019	9,858	361	8,210	18,429
2021 (Partial)	4,185	127	2,586	6,898
Total	***31,257***	***1,096***	***23,291***	***55,644***
Average	***8,931***	***313***	***6,655***	***15,898***

The airport also limits jet and helicopter operations; it is closed to helicopter operations between sunset and sunrise and prior permission is required for jet and daytime helicopter operations. The sunrise/sunset restriction is accounted for under the daytime-only operations restriction already applied. However, as shown in Table 15, on average, 313 jet operations and 6,655 helicopter operations annually could potentially shift to Montauk and thus would require prior permission to do so.

For this part of the analysis, we reviewed the distribution of aircraft engine types at Montauk for the analysis years as provided by the FAA's Traffic Flow Management System Counts (TFMSC)[17] data for the years cited in this study. The TFMSC data include flights that file flight plans with the FAA and/or are tracked by radar.

According to the available data, during these years, jets represent less than 0.5% of existing operations at the airport. Similarly, helicopters represent approximately 4 percent of existing operations. Though

[16] Area navigation, or RNAV, procedures allow aircraft to operate on any flight path within a network of ground-based or space-based navigational aids, rather than navigating specifically between land-based navigational aids. RNAV not only allows for increased accuracy and precision in identifying aircraft position when compared to land-based navigational aids, but also allows the use of routes that use space-based navigation points in addition to land-based navigational aids, which provides greater flexibility and efficiency in flight routing.

[17] FAA Traffic Flow Management Counts for Airports. https://aspm.faa.gov/tfms/sys/Airport.asp. Accessed August 2021.

annual rates of helicopter operations may be greater than represented by this data, we were unable to identify and obtain this data.

We assumed that similar ratios would apply to the possible operations identified in this section, which would allow on average 47 jet operations and 374 helicopter operations to operate at Montauk each year. The number and engine types of these operations are provided in Table 16.

Table 16: Estimated Prior Permission Operational Counts at Montauk

Year	Piston and Turboprop	Jet operations	Helicopter	Total
2015	8,100	42	339	8,482
2017	9,114	48	382	9,543
2019	9,858	52	413	10,323
2021 (Partial)	4,185	22	175	4,382
Total	***31,257***	***164***	***1,309***	***32,730***
Average	***8,931***	***47***	***374***	***9,351***

Generally, of the East Hampton operations that could occur at Montauk, most (approximately 75 percent) occur between May and September, with 25 percent of all operations occurring usually in August. Using this 25 percent estimation, 2,334 operations would be expected to occur during the peak month, which would result in an additional 75 daily operations. According to the historical data, the highest monthly operations occurred in August 2017, with 4,107 operations, and includes all operations. If all these operations were to move to Montauk Airport, the airport would experience 132 additional operations per day. Assuming these operations occur during daytime hours, this would require an increase of nine operations per hour during these peak months. With the expected operational load specified in Table 16, peak month operations would be estimated at 2,338 additional operations, which would be approximately 75 operations per day or 5 operations per hour.

According to Montauk's Form 5010, the airport supported 30,361 operations between July 2018 and June 2019.[18] Using the assumption that 25 percent of these operations occurred during the peak month, the airport supported 245 operations per day, or 16 operations per hour, in the peak month. For Montauk to support the additional 2,500 peak month operations, 320 daily operations or 21.4 hourly operations would be needed on average, which would be 134 percent of the current operational level.

In considering whether to forego an operation due to constraints at East Hampton versus flying into Montauk, the location of Montauk compared to the passenger's destination would likely be a consideration. In HR&A's economic analysis of East Hampton Airport, they stated that 60 percent of passengers arriving at East Hampton Airport remained in the Town, while the other 40 percent departed for more westerly destinations. For passengers intending to remain in the East Hampton area or transfer to more eastern points, Montauk's location could provide some incentive. However, for the 40 percent of passengers heading to western destinations, Montauk would likely disincentivize some of these trips. Similarly, the lack of facilities, services, and parking would likely disincentivize passengers who intend to remain in the Town.

[18] FAA Form 5010, Montauk Airport, FAA Site 15707.*A. Accessed August 25, 2021.

4.3 Francis Gabreski Airport (FOK)

Gabreski Airport, owned by the County of Suffolk, is a public use airport approximately three miles north of Westhampton Beach. Its level of operations warrants Class D airspace[19] when its air traffic control tower is open, between 7 a.m. and 11 p.m. local time; the airspace is considered Class G otherwise.

It is located on 1,451 acres and has three runways: Runway 06/24 (9,002 ft long and 150 ft wide), Runway 01/19 (5,100 ft x 150 ft), and Runway 15/33 (5,002 ft x 150 ft), all of which are long enough to support all flight operations included in this analysis as discussed in Sections 2.3 and 3.1. Additionally, the airport provides parking, maintenance, fuel, and other services. As these services are on par with or exceed those available at East Hampton Airport, no East Hampton flights would likely opt to forego operation due to the availability of services.

Gabreski Airport has five IAPs: an ILS/LOC to Runway 24, two RNAV GPS approaches (Runway 6 and Runway 24), and two TACAN20 approaches (Runway 6 and Runway 24). Table 17 lists the procedures and their operational minima for the most precise approach requirements. As noted in Table 11, LIFR weather conditions exist when the ceiling is below 500 ft Above Ground Level (AGL) or visibility is less than one statute mile. Three of the IAPs at Gabreski can be used in such conditions, so no restrictions were applied based on this general weather classification (LIFR, IFR, MVFR, VFR).

Table 17: Instrument Approach Procedure Ceiling and Visibility Minima at Gabreski Airport

IAP	Ceiling Minimum (ft AGL)	Visibility Minimum (statute miles)
ILS/LOC 24	266	0.5
RNAV GPS 6	307	0.75
RNAV GPS 24	266	0.5
TACAN 6	420	1
TACAN 24	660	0.5

Source: FAA US Terminal Procedures Publication, Northeast Vol 2, August 12, 2021 – October 7, 2021

However, although Gabreski's IAPs can be used in LIFR conditions and, depending on the operator, aircraft can descend below the ceiling minimum, for this study we assumed that if ceiling and visibility were less than the prescribed minima, operations during that period did not occur. Because of this, we reviewed weather conditions at Gabreski on an hourly basis in addition to the daily aggregate values to determine if any operations in LIFR conditions would not have been able to occur. For this review, we

[19] Controlled airspace refers to the different classifications of airspace (Classes A, B, C, D, and E) included as part of the National Airspace System (NAS). Each airspace class has specific requirements that operators must meet to use that airspace; similarly, air traffic controllers provide defined services to flights operating in each class under instrument and visual meteorological conditions. In some cases, multiple airspace classes may overlap; when this occurs, the regulations associated with the most restrictive, currently active airspace class apply.

Class D airspace covers the airspace from the surface to 2,500 ft MSL at airports with a control tower that are not otherwise covered by Class B or C airspace. Class D airports with instrument approach procedures (IAPs) may include extensions to the main airspace to provide separation and protection for these operations. Operations within this airspace are authorized with active radio communication with the tower or by prior authorization or arrangement.

Class G is uncontrolled airspace and air traffic control services are not necessarily provided within it.

[20] A TACAN, or tactical air navigation system, is a ground-based navigational aid that provides distance and bearing to a ground station. It is primarily used by military aircraft, although the distance information can be used by civilian aircraft.

identified hourly weather reports where the visibility was less than 0.5 statute miles and the ceiling less than 300 ft AGL, then identified any operations that occurred during these hours. This method identified 873 operations that likely would have not occurred at Gabreski.

We also identified operations where estimated crosswinds exceeded estimated aircraft crosswind capabilities. We used the estimated daily crosswind calculations for Gabreski for each day and compared them to the estimated maximum crosswind components supported by the aircraft operating at the airport that day. If the Gabreski crosswind estimate was greater than an aircraft's crosswind component, we assumed that such an operation could not occur at Gabreski.

Table 18 summarizes the operations that would be feasible at Gabreski if they were to be diverted from East Hampton Airport. If East Hampton Airport were to close or to limit its operations, 97,495 of all operations, or 99 percent, that would be diverted from East Hampton could potentially be conducted at Gabreski.

Table 18: Operational Counts for Feasible East Hampton Operations at Gabreski Airport

Restrictions	2015	2017	2019	2021 (Partial)	Average
Feasible diversion operations to FOK	25,670	28,127	31,268	12,430	27,856

While this analysis found that nearly all the traffic currently operating at East Hampton could theoretically operate at Gabreski, airport capacity may not accommodate this increase. Generally, 80 percent of annual operations at East Hampton occur during the May to September period, peaking in July and August. In 2019, approximately 7,000 of the years' possible diversion operations occurred during each of these months. If all operations from East Hampton were to shift to Gabreski, nearly 250 additional daily operations would have to occur to support these additional 7,000 operations. Using the assumption that these operations would occur between 7 a.m. and 10 p.m., Gabreski's operations would have to increase by 17 operations per hour.

Gabreski's Form 5010 states that it supported 63,602 operations in 2018. With the peak month traffic assumed to be 25 percent, the airport would have supported 513 operations daily, or 34.2 hourly operations on average. The additional 7,000 peak month operations would result in 739 daily operations or 49 hourly operations on average, which would be a 44 percent increase.

Both East Hampton and Gabreski charge landing fees, though the fee structures are different. East Hampton charges landing fees based on weight only, while Gabreski charges landing fees based on time of day, commercial or non-commercial flights, and weight and/or number of engines.[21] Certain operations at Gabreski may also pay fees associated with overnight stays. Though an assessment of the costs associated with landing and overnight fees is not included in this analysis, it is possible that the different fee structure could disincentivize some of the trips that might shift to Gabreski.

Another consideration when diverting aircraft operations to Gabreski would be the availability of ramp space for aircraft parking. While the operations diverted due to aircraft parking limitations might be accommodated in terms of airport throughput, the more pertinent limiting factor may be the physical parking space and duration at each airport. In terms of acreage, according to a visual estimation based on satellite photos, East Hampton appears to have about 8.25 acres of paved parking area, while Gabreski has approximately 15.5 acres available for civilian parking. For actual parking needs, about 40

[21] https://www.suffolkcountyny.gov/Departments/Economic-Development-and-Planning/Francis-S-Gabreski-Airport/Airport-Information/Fee-Schedule. Accessed August 27, 2021.

percent of East Hampton traffic required parking for an hour or more, and around 25 percent, or 3,125, of those operations occurred during the peak month. An analysis of parking duration was not conducted as part of this study, but the number of additional operations requiring parking would likely have a significant impact on parking availability at Gabreski.

Lastly, as noted in HR&A's economic analysis of East Hampton Airport, 60 percent of passengers arriving at East Hampton remain in the East Hampton area, while the other 40 percent travel to the west. An evaluation of passenger destinations and their effects on trip occurrence is also beyond the scope of this analysis, but it is reasonable to assume that the additional travel distance and time would disincentivize some of the trips for passengers bound for East Hampton or points farther east.

4.4 Mattituck Airport (21N)

Mattituck Airport (21N) is owned by Mattituck Airport SD, LLC, and covers 18 acres of land approximately one mile southeast of Mattituck. It is a public use airport but restricts training operations, including touch and go operations, and night operations as noted in Table 8. Additionally, its runway, Runway 01/19, is 2,200 ft long and 60 ft wide, which limits the types of aircraft that can safely operate at the airport. As noted in Table 9, AC 150/5325-4B indicates that operations by jets or by aircraft with a MTOW of 12,500 lbs. or more likely could not be conducted at Mattituck. Similarly, aircraft with ten or more passengers would likely not operate at the airport. For completeness and to provide a conservative estimate of feasible operations at Mattituck, we reviewed fixed-wing model types with MTOW less than 12,500 lbs. and ten or more passengers to determine if any of these types could operate at Mattituck. We determined that, based on takeoff distance, the Cessna 208 could be supported at Mattituck. The Pilatus PC12 could possibly be supported, but as its stated runway requirement is within 100 ft of the runway length,[22] we elected to exclude it.

Satellite photos show very limited parking, especially for transient operations. A visual review of the photos shows eight hangars and two off-ramp parking spots. Additional unpaved parking areas could potentially be available but could not be confirmed by visual inspection. Therefore, we assumed that operations requiring overnight parking would not occur. Similarly, we assumed that operations requiring any transient parking, as described and identified in Section 3.1.3, would be limited.

Weather considerations would also restrict operations at Mattituck. As mentioned in Section 2.3, pilots operating at Mattituck can use weather information from Gabreski or East Hampton; for this analysis, we have selected the more liberal weather condition of the two to use to provide a worst-case estimate of which operations could occur at Mattituck for each day. This analysis uses wind speed and direction to calculate crosswind estimates, and ceiling and visibility estimates to provide an estimate of the daily weather conditions at the airport.

Mattituck has no IAP; although it is possible to fly into an airport without IAPs, several conditions must be met, and an assessment of these is beyond the scope of this analysis. As a result, we assumed that operations at this airport are limited to VFR operations only.

We also identified operations where estimated crosswinds exceeded estimated aircraft crosswind capabilities. We used the estimated daily crosswind calculations for Mattituck for each day and compared them to the estimated maximum crosswind components supported by the aircraft operating

[22] https://www.pilatus-aircraft.com/en/fly/pc-12. Accessed August 31, 2021.

at the airport that day. If the Mattituck crosswind estimate was greater than an aircraft's crosswind component, we assumed that such an operation could not occur at Mattituck.

With these restrictions assumed, a total of 52,628 operations could occur at Mattituck, with an average annual operations count of 15,037. In 2015, 14,526 operations would have been able to operate at the airport; 15,376 operations could have occurred in 2017 and 17,315 in 2019. Through the end of June 2021, 5,411 East Hampton operations could have occurred at Mattituck.

Table 19 summarizes the types and number of operations that meet the above criteria.

Table 19: Operational Counts for Feasible East Hampton Operations at Mattituck Airport

Engine Type	2015	2017	2019	2021 (Partial)	Average
Piston	6,110	5,280	5,682	2,254	5,522
Turboprop	2,753	2,927	3,572	684	2,839
Helicopter	5,650	7,169	8,061	2,473	6,672
Unknown	12	-	-	-	3
Total	***14,525***	***15,376***	***17,315***	***5,411***	***15,036***

As mentioned, parking at Mattituck is limited, though it is possible that some transient parking would be allowed. For this, we assumed that parking for up to three hours could be allowed. Of these operations, 5,787 would require short-term parking, as the interval between a takeoff and landing is longer than an hour but does not require overnight parking. Another 32,288 operations would not require parking as defined by the method described in Section 3.1.3. Table 20 provides counts of operations that could possibly be supported at Mattituck for the no-parking case and the short-term-only parking case, as well as the criteria described earlier in this section.

Table 20: Operational Counts for Parking Restrictions for Feasible East Hampton Operations at Mattituck Airport

	Engine Type	2015	2017	2019	2021 (Partial)	Average
No Parking	Piston	4,848	3,761	4,085	1,588	4,081
	Turboprop	2,420	2,621	2,965	616	2,463
	Helicopter	3,542	4,181	5,366	2,264	4,387
	Unknown	12	-	-	-	3
	Total	***10,822***	***10,563***	***12,416***	***4,468***	***10,934***
Short Term Parking Only	Piston	5,530	4,601	4,994	1,949	4,878
	Turboprop	2,654	2,871	3,422	672	2,748
	Helicopter	4,139	4,872	5,967	2,393	4,963
	Unknown	12	-	-	-	3
	Total	***12,335***	***12,344***	***14,383***	***5,014***	***12,592***

As in the other analyses, of the East Hampton operations that could feasibly be conducted at Mattituck Airport, 81 percent occurred during the May to September period, with approximately 25 percent occurring during the busiest month, usually July or August. This 25 percent estimation would result in 3,148 additional peak month operations for the short-term parking limitation and 2,734 additional operations for the no parking case. During July and August 2019, approximately 4,300 operations occurred each month. If these operations were to shift to Mattituck, an additional 140 daily operations, or approximately 9.3 additional operations per hour, would have to occur at the airport.

Per its Form 5010, Mattituck supported 12,200 operations between July 2018 and June 2019. Using the estimation that 25 percent of these occurred during the peak month, the airport saw 98 daily operations, or 6.6 hourly operations on average. If the airport were to support all additional 4,300 operations during the peak month, Mattituck would experience 237 daily operations or 15.8 hourly operations on average, which would be 2.4 times the existing level.

However, given Mattituck's size, runway conditions, and available services and facilities, it is reasonable to assume that many operations that occurred at East Hampton would in fact not choose to operate at Mattituck. Additionally, Mattituck's location likely would be another reason to disincentivize operations. As noted in HR&A's economic study, 60 percent of East Hampton passengers remain in the vicinity of the Town of East Hampton. Mattituck is located approximately 30 miles' driving distance from East Hampton (including two ferries) so passengers whose destination is in that area would require around an hour or more of additional transit time. Furthermore, as Mattituck does not provide rental car services and appears to have limited drop-off and pick-up facilities, it may prove less attractive to tourists and vacationers.

4.5 Southampton Heliport (87N)

The Southampton Heliport, approximately five miles southeast of Southampton, is a public-use heliport owned by the Village of Southampton. Since this airfield is strictly a heliport, operations are necessarily limited to the 27,882 helicopter operations in the dataset, which represent 28.2 percent of all operations at East Hampton Airport.

According to the Southampton Village website, the heliport is only open during the daytime. The website specifies hours of operation,[23] which vary by season, but for simplicity and consistency we identified operations as day or night as defined in Section 2.1.

Additionally, since the heliport facilities are limited to the helipad only, we assumed that any operations requiring overnight parking as identified in Section 3.1.3 would not occur. Aside from not having space for overnight parking, Southampton also cannot support transient parking. To account for this, we estimated that a drop-off or pickup operation at Southampton would require no more than 20 minutes; any arrival/departure pair separated by more than 20 minutes was assumed to not occur at Southampton.

As Southampton has a helicopter IAP with a 560-ft ceiling and one mile visibility requirements, IFR operations could occur at this airfield. However, as LIFR conditions involve ceilings of less than 500 ft, the Southampton helicopter IAP could not be used in LIFR.

With all these restrictions in place, a total of 22,896 operations could occur at Southampton Heliport, with an average annual operations count of 6,546. In 2015, 5,750 operations would have been able to operate at the airfield; 6,489 operations could have occurred in 2017 and 8,541 in 2019. Through the end of June 2021, 2,116 East Hampton operations could have occurred at Southampton.

As Southampton has no facilities, limited acreage, and is between a county park and a residential area, it likely would not be able to support an average of an additional 6,546 annual operations. Approximately 85 percent of the helicopter operations that could occur at Southampton would occur between May and September, with the peak in July and August. In 2019, approximately 2,300 East Hampton helicopter

[23] https://www.southamptonvillage.org/245/Southampton-Village-Heliport. Accessed August 25, 2021.

operations occurred in both July and August. To support this level of operations, Southampton would see an average increase of 74 operations per day. Assuming all operations occur during daylight hours, roughly between 6 a.m. and 8 p.m. in the summer, Southampton would experience an average of an additional 5.3 operations per hour during the peak months.

Southampton Heliport's Form 5010 says that, for October 2015 through September 2016, 400 operations occurred at the heliport. With 25 percent of operations occurring during the peak month, the heliport would have received approximately 3 operations per day. As noted above, supporting all helicopter operations from East Hampton would require an additional 74 daily operations, which would be an increase of over 20 times the stated existing operational level.

The landing fee structures differ between Southampton and East Hampton. Southampton charges $150 for helicopters with less than 5,000 lbs. MTOW and $200 for helicopters 5,000 lbs. or more, while East Hampton charges $20 for aircraft less than 4,500 lbs., $100 for aircraft weighing 4,500 to 9,999 lbs., and $150 and upwards for heavier aircraft. Thus, landing fees are not likely to be a determining factor in whether an operation would be likely to shift to Southampton if it could not occur at East Hampton. However, East Hampton's publicly available rates date from 2016 and may have changed.

Southampton's location near the end of a peninsula by the Shinnecock Inlet would likely limit its desirability as an alternate airport for many helicopter operations that would otherwise operate at East Hampton. Its limited proximity to central business districts likely means that passengers would require rental car, parking, or taxi facilities, none of which are necessarily available at Southampton. Additionally, the location of Southampton Heliport and the travel time and distance to passengers' final destinations are likely to disincentivize the use of Southampton Heliport as an alternative to East Hampton Airport. Though it seems reasonably situated to serve both the 60 percent of East Hampton passengers staying in the Town of East Hampton and the 40 percent heading to Southampton and westward, the heliport is located approximately 17 miles from East Hampton and 18 miles from Westhampton, with a single ingress and egress road. Therefore, the lack of facilities and its location would likely deter many flights from using Southampton Heliport as an alternative to East Hampton.

4.6 East Hampton Diversion Options

This section discusses some potential modifications and their possible effects on East Hampton and the diversion airfields included in this study. The modifications included here were selected primarily because they are similar to existing restrictions and/or limitations at diversion airfields. We determined how many operations would be displaced from East Hampton and used the results described in the previous sections to estimate how the displaced operations could be distributed to the diversion airfields.

Table 21: Counts for Potential East Hampton Airport Operational Modifications

Restrictions		2015	2017	2019	2021 (Partial)	Annual Average	Average Operations to Relocate	Available Airfields
No restrictions (all operations)		26,010	28,310	31,464	12,589	28,107	0	N/A
Aircraft	No jet operations	22,178	23,851	26,958	10,174	23,760	4,347	FOK
	No helicopter operations	19,304	19,771	21,887	9,529	20,140	7,967	All

Restrictions		2015	2017	2019	2021 (Partial)	Annual Average	Average Operations to Relocate	Available Airfields
	No jet or helicopter operations	15,472	15,312	17,381	7,114	15,794	12,313	All
Aircraft size	Fixed-wing MTOW < 12,500 lbs.	21,604	23,299	26,492	10,065	23,274	4,833	FOK
	Fixed-wing MTOW < 12,500 lbs. and < 10 passengers	21,541	23,268	26,470	10,050	23,237	4,870	FOK
	All aircraft MTOW < 12,500 lbs. and < 10 passengers	18,465	19,036	21,739	8,213	19,272	8,835	All
Aircraft speed	Aircraft approach speeds ≤ 120 kts	18,447	18,545	20,968	9,002	19,132	8,975	FOK
Training	No touch and go operations	25,000	27,082	29,293	10,749	26,321	1,786	FOK
Parking	No overnight parking	20,628	22,622	25,598	9,985	22,524	5,583	FOK, MTP
	Short term parking only (< 3 hours)	18,045	18,977	21,991	9,448	19,560	8,547	FOK, MTP
	No parking	15,006	15,401	18,004	8,016	16,122	11,985	FOK, MTP
Shutdown (No operations)		0	0	0	0	0	28,017	All

Restricting both jet and helicopter operations would provide the greatest reduction in traffic at East Hampton, reducing the average annual operations count to 15,794 (56.2 percent of the 28,017 average annual operations). Annually, an average of 7,967 helicopter and 4,347 jet operations would need to be relocated to other airfields.

Based on the analyses discussed earlier, only Gabreski and Montauk can accept jet operations, and the latter only to a limited extent. Due to runway length, Montauk is only able to accept the smallest jets. Montauk historically does not have many jet operations so we would expect very few jets to choose Montauk over Gabreski. For Gabreski to absorb all displaced East Hampton jet operations, we estimate that 25 percent, or 1,087, of the jet operations would occur during a year's peak month, which would require an average of 35 additional operations daily or 2.3 additional operations hourly. For Gabreski to accept all jet traffic, it would need to support an hourly rate of 36.5 operations on average.

A review of historical jet traffic at East Hampton shows that a peak of 1,332 jet operations occurred in August 2019. For Gabreski to accommodate all these jet operations, it would experience an additional 43 daily operations or 2.9 additional hourly operations, which would result in an average of 37.1 hourly operations.

If Montauk were to accommodate additional 100 jets annually, again assuming that 25 percent would occur during the peak month, operations would increase by 0.8 operations per day on average, raising its average hourly operations rate to 16.8 during the peak month. This would correspondingly reduce

Gabreski's operations to an additional 32 daily or 2.1 hourly operations. As Montauk only accepts jet operations with prior permission, the number of jet operations that the airport would support would be subject to the owner's plan for the airport.

A more complex but similar estimation can be performed for helicopter operations. As with the other analyses, we assume that 25 percent, or 1,992, of the operations would occur during the peak month. All diversion airfields can theoretically accept helicopter operations, though the bulk would likely shift to Gabreski. Given Southampton's low daily operations rate, even during the peak month, it is unlikely that it would handle much of East Hampton's relocated helicopter traffic. For this assessment, we assume that its operational rate would at most triple, supporting up to 279 operations during the peak month; this accounts for any traffic growth between September 2016 when the stated operational rate was recorded and now. Mattituck does not support much helicopter traffic, so for this assessment, we assume that it could handle up to 1.5 helicopter operations daily, or 47 operations, during the peak month.

As indicated by the FAA's TFMSC data and discussed in Section 4.2, helicopter traffic at Montauk appears to represent about four percent of its operations, so based on its operational rate as noted in Section 4.2, it could handle about one hourly helicopter operation during the peak month, or 484 operations. This leaves 1,182 helicopter operations at Gabreski, which would require an additional 38 daily or 2.5 hourly operations.

If all traffic were to be relocated to the other airfields (i.e., East Hampton Airport closes), 15,794 non-jet and non-helicopter operations would need to be supported annually by Mattituck, Montauk, and Gabreski. Using the 25 percent estimation, this requires support for 3,949 operations during the peak month. We also looked at historical peak month operations; in August 2019, 3,858 operations were supported at East Hampton.

According to current operations data, Mattituck and Montauk traffic appear to be mostly non-jet and non-helicopter traffic, so we assumed that 95 percent of the current operations would fall into this category. Using existing operational data, we assume that Mattituck currently supports 2,898 non-jet and non-helicopter operations during the peak month (94 daily and 6.2 hourly). Similarly, we assume that Montauk currently supports 7,211 peak month operations (233 daily and 15.5 hourly).

For this estimation of traffic allocation in the event of East Hampton's closure, we attempted to distribute these operations between the three airports in general accordance with their existing number of operations. We assumed that Montauk might be able to handle an additional 3.1 fixed-wing non-jet operations per hour (1,442 operations in the peak month), while Mattituck could support an additional 8.4 fixed-wing non-jet operations per day (261 operations in the peak month). This would address 1,703 peak month operations and would require that Gabreski support an additional 4.8 fixed-wing non-jet operations per hour.

Table 22 summarizes the effects of the helicopter, jet, and helicopter/jet modifications on the four diversion airfields, including the effects of entirely closing East Hampton Airport on the other airfields according to the notional distribution of operations discussed above. It provides estimates of the current operational hourly rate based on Form 5010 annual operations, estimates of the number of operations that would be required during the peak month to support East Hampton's operations diverted to that airfield, and estimates of the new operational hourly rate that would be needed to support those additional operations. The table also estimates the percent increase in operations represented by the new estimated hourly rate.

Table 22: Potential Estimated Impacts of Operational Restrictions at East Hampton

Scenario	Airfield	Estimated Current Operations Per Hour (Peak Month)	Estimated Additional Operations (Peak Month)	Estimated Hourly Rate to Support Additional Operations (Peak Month)	Estimated Hourly Rate Increase (Peak Month)
All HTO jet traffic relocated to FOK	Gabreski	34.2	1,087	36.5	107%
HTO jet traffic relocated to FOK, MTP	Montauk	16.0	100	16.8	105%
	Gabreski	34.2	987	36.3	106%
All HTO helicopter traffic relocated to FOK	Gabreski	34.2	1,992	38.5	113%
HTO helicopter traffic relocated to all four airfields	Southampton	0.2	279	0.6	300%
	Mattituck	6.6	47	6.7	102%
	Montauk	16	484	17	106%
	Gabreski	34.2	1,182	36.7	107%
HTO jet traffic relocated to FOK, MTP HTO helicopter traffic relocated to all four airfields	Southampton	0.2	279	0.6	300%
	Mattituck	6.6	47	6.6	102%
	Montauk	16	584	17.3	108%
	Gabreski	34.2	2,169	38.9	114%
All traffic relocated to all airfields	Southampton	0.2	279	0.6	300%
	Mattituck	6.6	308	7.2	110%
	Montauk	16	2,026	20.7	127%
	Gabreski	34.2	4,415	43.7	128%

For many of these restrictions described in Table 21, the most viable option for relocating flights would be Gabreski. For example, the operations that would be diverted by a fixed-wing MTOW limit of less than 12,500 lbs. could only shift to Gabreski, as would aircraft with approach speeds greater than 120 kts. Similarly, Mattituck and Montauk both prohibit touch and go operations so those flights would have to occur at Gabreski or not at all. For the restrictions where Gabreski is largely the only option, up to 9,000 additional operations would require accommodation. Using the same method discussed above, this results in 73 additional daily operations during the peak month, or 4.8 additional operations per hour (a 114 percent increase).

Regarding parking restrictions, removing all aircraft parking at East Hampton would result in the greatest reduction in traffic at East Hampton Airport, reducing the average annual operations by 42.6 percent. This number allows only operations by aircraft that complete an arrival and departure separated by less than an hour and would result in a focus on short-term transient traffic. This option also does not include exemptions for aircraft based at East Hampton. Such an option is likely not feasible for the airport since it would shift support towards operations that would not terminate at the airport, eliminating the economic benefits associated with aircraft operations.

As with the analysis for eliminating all aircraft parking availability, the analysis of the restrictions on overnight and longer-term parking do not distinguish between transient aircraft and aircraft based at East Hampton. According to the airport's Form 5010, 54 aircraft are based at East Hampton; however, their operations are included in those that would shift to another airport if these parking restrictions were enacted. Thus, the numbers of displaced aircraft provided for these cases are higher than what might be expected.

Lastly, as was discussed in Section 4.3, enacting parking restrictions at East Hampton may stress aircraft parking capacity at Gabreski. Other sections in Section 4 noted that parking availability is quite limited at the other diversion facilities, so if East Hampton were to restrict parking, most operations with a stopover of more than an hour would have to use Gabreski. Using the estimation that 25 percent of operations occur during the peak month, 1,396 operations requiring overnight parking and 2,137 operations requiring parking for more than an hour would be diverted from East Hampton. This corresponds with 45 additional daily operations for overnight parking or 69 additional daily operations that require any sort of parking. East Hampton operations require parking approximately 40 percent of the time; using the same rate for Gabreski, 6,360 existing Gabreski operations could be estimated to require any type of parking during the peak month, or 205 daily operations. The additional 69 operations represent a 34 percent increase in daily parking needs at Gabreski.

5 Summary and Conclusions

For the years 2015, 2017, 2019, and the first half of 2021, East Hampton Airport supported on average 28,107 operations annually. The bulk of these operations, generally around 75 percent of the year's operations, occur during the peak summer season. This analysis provided estimations of the number and types of East Hampton operations that each of the four diversion airfields could theoretically support if East Hampton were to close and all its operations still occurred but at different airfields. This analysis also mentioned several factors that could influence the passenger's and/or pilot's decision to go ahead with the operation at a different airport. This report does not include quantification of these factors but does mention them to illustrate that they would presumably reduce the number of operations that a diversion airfield would potentially experience.

This analysis shows that, while all the diversion airfields could support some level of East Hampton Airport's operations if the airport were to close or otherwise restrict or reduce operations, Gabreski Airport would likely receive the bulk of those operations simply because it provides facilities, services, and support at a similar level to East Hampton. For it to support all East Hampton's operations, Gabreski would experience a 44 percent increase in operations. Montauk could serve the needs of some flights currently operating at East Hampton, but they would likely be transient, smaller general aviation flights. If it were to serve all East Hampton operations that could operate at the airport, Montauk would see a 34 percent increase in operations. To lesser extents, Mattituck and Southampton Heliport could serve some operations too, but for a much smaller subset of East Hampton's operations.

We also presented several possible scenarios that East Hampton could use to modify operations. The greatest feasible modification would be to restrict all helicopter and jet operations; this would reduce operations at East Hampton by 43.6 percent. Based on the analysis for this scenario, the helicopter and jet operations would likely be able to be distributed among and served by the four diversion airfields, at least with respect to takeoffs and landings. Southampton Heliport would see a threefold increase in traffic, to nine operations during the peak month, while Gabreski would see a 14 percent increase and Montauk an eight percent increase in traffic. However, though these traffic levels could be acceptable at these airfields, parking needs may be the larger constraint, as a basic assessment of parking needs indicates that the additional East Hampton traffic could increase parking requirements by 34 percent at Gabreski.

This analysis shows that if East Hampton were to close or to modify operations, Gabreski would experience most of the effects since it is most equipped to support the number and types of operations that occur at East Hampton, assuming that all operations would relocate to the diversion airfields discussed here (versus opting to forego an operation due to convenience, usefulness, or other factors). If the airport were to close altogether, for the scenario proposed in Section 4.6, Gabreski Airport could potentially experience almost a 40 percent increase in operations for all aircraft types and would serve 12.3 more operations per day than their current rate. Similarly, for all other scenarios, Gabreski would experience anywhere from a six to 14 percent increase in operations. The other airports would also see increases—Montauk could experience a 27 percent increase if East Hampton were to close—but Gabreski would be the most affected. However, the numbers presented here represent a worst-case scenario. In this analysis, we used conditions that provided conservative operational counts. Additionally, as a result of being forced to operate at a different airfield, several flight activities may not occur, further reducing the number of operations that would be experienced by an airport.

In conclusion, based on the results of this study, closing East Hampton Airport may strain other airports in its vicinity, even though the numbers presented here represent a conservative condition. However, this study only provides a cursory look at non-aeronautical factors in the form of a general discussion of passenger destination. A more detailed study regarding passenger mode choice, operator economic drivers and business cases, and other influential factors would be necessary to fully investigate the impact of closing or otherwise modifying East Hampton traffic on nearby airports and airfields.

6 Acronyms

21N	Mattituck Airport
87N	Southampton Heliport
AC	Advisory Circular
AGL	Above Ground Level
BID	Block Island Airport
CFR	Code of Federal Regulations
CIFP	Coded Instrument Flight Procedure
FAA	Federal Aviation Administration
FOK	Francis S. Gabreski Airport
ft	feet
GON	Groton Airport
HTO	East Hampton Airport
IAP	Instrument Approach Procedure
IFR	Instrument Flight Rules
kts	knots
lbs.	pounds
LIFR	Marginal Instrument Flight Rules
MTOW	Maximum Takeoff Weight
MVFR	Marginal Visual Flight Rules
NOAA	National Oceanic and Atmospheric Association
RNAV	Area Navigation
TACAN	Tactical Air Navigation System
TFMSC	Traffic Flow Management System Counts
VFR	Visual Flight Rules
VNOMS	Vector Noise and Operations Management System