



# Chatham Municipal Airport

## Final Environmental Assessment

July 2021  
AIP No. 3-25-0015-026-2020



This Environmental Assessment becomes a Federal document when evaluate, signed and dated by the responsible FAA official.

Responsible FAA Official: \_\_\_\_\_ Date: \_\_\_\_\_

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## 1.0 Introduction

### 1.1 Airport Overview

The Chatham Municipal Airport (the Airport) located in the Town of Chatham, Barnstable County, MA, is a public use, general aviation airport servicing the communities of Cape Cod, MA. The Airport is located at 240 George Ryder Road and consists of approximately 100 acres.

The Airport is 63.7 feet above Mean Sea Level (MSL). The Airport Reference Point (ARP) is located at latitude N041°41'17.8957, and longitude W069°59'22.7484. The Airport is owned and maintained by the Town of Chatham and is subject to the charters and zoning laws of the Town. The Airport's infrastructure includes the following:

- A paved, 3,001' x 100' runway (Runway 06-24)
- A full-length parallel taxiway (Taxiway 'A') serving Runway 06-24 – Taxiway 'A' is 25' wide, and approximately 2,932' feet long
- A stub taxiway (Taxiway 'B') connecting the Main Apron with Taxiway 'A' and Runway 06-24 between midfield and the Runway 06 end – Taxiway 'B' is 35' wide and approximately 150' long
- A stub taxiway (Taxiway 'C') connecting Taxiway 'A' with Runway 06-24 midway between midfield and the Runway 24 end – Taxiway 'C' is approximately 35' wide and approximately 80' long
- Taxiway D is a paved taxiway located south of Taxiway 'C' and is approximately 25' wide and 275' long
- A paved taxiway (Taxiway 'E') running parallel to Taxiway 'A' approximately 25' wide and 1,040' long serving the hangar complex and Main Apron
- One paved Main Apron and one terminal apron capable of accommodating 42 aircraft
- An administration building
- Hangars serving general aviation aircraft
- A snow removal equipment storage building
- A 10,000- gallon above-ground 100-LL storage tank and fuel truck with capacity of 3,000 gallons

### 2.0 Proposed Action

The Proposed Action consists of three projects identified in the 2021 Airport Master Plan. These projects include: 1) Acquisition of Avigation Easements over 21 parcels, 2) Removal of Vegetative Obstructions and man-made obstructions (telephone poles in the Town Right-of-Way) on and on-off airport property, and 3) development of hangars. Each action is further described in Sections 2.1-2.3 below.

In addition, the 2021 Airport Master Plan identified other projects for development through the 20-year planning period as demand materializes. These projects are not analyzed in this document because they are actions that are not anticipated to be undertaken or constructed in the near future and are listed as categorically excluded actions (CatEx) in accordance with FAA Order 1050.1F. These projects include:

- Administration Building and Parking Lot Construction on previously developed land: CatEX 1050.1F, 5-6.4(h)
- Jet- A Fuel Facility: CatEx 1050.1F, 5-6.4(u)

## 2.1 Acquisition of Avigation Easements

Acquisition of Avigation Easements: This project seeks to secure avigation easements necessary to protect and enhance aircraft and public safety and to obtain eligibility for future vegetation clearing efforts. An analysis of obstruction data indicates that in addition to airport property and Town right-of-way, eight (8) properties in the Runway 06 approach surface and 13 properties in the Runway 24 approach surface contain individual trees (see Table 1) penetrating the Airport's approach surfaces as defined in Engineering Brief No. 99, Changes to Tables 3-2 and 3-4 of Advisory Circular 150/5300-13A, *Airport Design*<sup>1</sup>.

It should be noted that the Town of Chatham has adopted an *Airport Approach Protection* Bylaw<sup>2</sup> that regulates and restricts the height of structures and objects of natural growth in the vicinity of the Chatham Airport. If vegetation obstruction removal had occurred in accordance with the *Airport Approach Protection* Bylaw, then the number of required easements would be reduced from eight to six on the Runway 06 end, and from 13 to five on the Runway 24 end (which remains an option for the Town). Through this project, the Airport will address the following:

- Secure documents, permissions, and rights necessary to obtain eligibility for future vegetation clearing efforts and address a known safety issue at the airport by preventing future development of obstructions that are deemed incompatible with the airport.
- Comply with *Airport Approach Protection* Bylaw by promoting the health, safety, and general welfare of the public by preventing the creation, establishment, and maintenance of airport hazards, thereby protecting the lives and property of users of the Chatham Airport and of the occupants of land in its vicinity and preventing destruction or impairment of the airport and the public investment therein.
- Maintain compliance with FAA Grant Assurances, specifically #19 *Operation and Maintenance* and #20 *Hazard Removal and Mitigation*<sup>3</sup>.
- Enable FAA Flight Procedures to develop a GPS approach as the Airport's non-directional beacon (NDB) is expected to be phased out of the National Airspace System by 2030.
- Reduce the noise footprint over the community with an enhanced GPS approach procedure as some aircraft will not need to follow a circling approach to land, thus flying over fewer homes than they do today.

The 21 off-airport parcels and Airport property have been identified as being sparsely to moderately forested with isolated areas of vegetative obstructions affecting the approach surfaces. A description of each parcel along with its vegetative characteristics is provided in Table 1.

---

<sup>1</sup> [https://www.faa.gov/airports/engineering/engineering\\_briefs/media/EB-99A-Changes-to-Airport-Design-Tables-3-2-and-3-4.pdf](https://www.faa.gov/airports/engineering/engineering_briefs/media/EB-99A-Changes-to-Airport-Design-Tables-3-2-and-3-4.pdf)

<sup>2</sup> <https://www.ecode360.com/10425989>

<sup>3</sup> [https://www.faa.gov/airports/aip/grant\\_assurances/media/airport-sponsor-assurances-aip-2020.pdf](https://www.faa.gov/airports/aip/grant_assurances/media/airport-sponsor-assurances-aip-2020.pdf)

Table 1

Engineering Brief #99 Table 3-2 Runway Type 4					
Runway 06 End Parcels		Parcel Description	Vegetation Characteristics	Size of Parcel	Approximate Area Containing Vegetation
Parcel 8E-51-26	52 George Ryder Road	Single Family residential	Deciduous Upland Forest	0.44 acres	20,261 square feet
Parcel 8E-52-27A	1674 Main Street	Commercial	Deciduous Upland Forest	3.35 acres	21,010 square feet
Parcel 8E-53-27	1652 Main Street	Small Retail	Deciduous Upland Forest	2.86 acres	55,756 square feet
Parcel 8E-37-15	1716 Main Street	Multi-Use Commercial	Developed Land	1.85 acres	Isolated trees
Parcel 8E-39-16	1698 Main Street	Service Station	Developed Land	0.80 acres	Isolated trees
Parcel 8E-41-15C	47 George Ryder Road	Multi-Use Commercial	Developed Land	0.35 acres	Isolated trees
Parcel 8E-40-15B	39 George Ryder Road	General Office Building	Developed Land	0.23 acres	Isolated trees
Parcel 8E-44A-20	51 George Ryder Road	Single Family residential	Deciduous Upland Forest	0.67 acres	2,856 square feet
Parcel 62-9F-0-2		Airport property	Deciduous Upland Forest, Pitch Pine, Mixed Pine and Oak, Scrub Shrub Upland, Vernal Pool		84,735 square feet
Runway 24 End Parcels		Parcel Description	Vegetation Characteristics	Size of Parcel	Approximate Area Containing Vegetation
Parcel 10G-18-K1	438 George Ryder Road	Residential	Deciduous Upland Forest	4.48 acres	101,605 square feet
Parcel 10G-9-G3	81 Agnes Lane	Residential	Mixed Pine and Oak	0.37 acres	Isolated trees
Parcel 10G-8-G4	75 Agnes Lane	Residential	Mixed Pine and Oak	0.43 acres	Isolated trees
Parcel 10G-7-G5	63 Agnes Lane	Residential	Mixed Pine and Oak	0.39 acres	Isolated trees
Parcel 10G-3-G22	76 Agnes Lane	Residential	Mixed Pine and Oak	0.29 acres	Isolated trees
Parcel 10G-5-G17	58 Agnes	Residential	Mixed Pine and Oak	0.28 acres	Isolated trees
Parcel 11G-45A-G15	26 Agnes	Residential	Mixed Pine and Oak	0.29 acres	Isolated trees
Parcel 11G-47-G14	395 Old Queen Ann	Residential	Mixed Pine and Oak	0.29 acres	Isolated trees
Parcel 11G-48-G18	403 Old Queen Ann	Vacant Residential	Mixed Pine and Oak	0.32 acres	Isolated trees
Parcel 10G-12-K1A	George Ryder Road	Cranberry Bog	Cranberry Bog	0.53 acres	Isolated trees
Parcel 10G-6-G6	57 Agnes	Residential	Mixed Pine and Oak	0.41 acres	Isolated trees
Parcel 10G-11-G1	455 Old Queen	Residential	Mixed Pine and Oak	0.81 acres	Isolated trees
Parcel 10G-10-G2	87 Agnes	Residential	Mixed Pine and Oak	0.45 acres	Isolated trees
Parcel 9F-0-2		Airport property	Deciduous Upland Forest, Pitch Pine, Mixed Pine and Oak, Scrub Shrub Upland		50424 square feet

## 2.2 Removal of Vegetative Obstructions

Removal of Vegetative Obstructions: This project removes isolated vegetation in accordance with the Massachusetts Wetland Protection Act 310 CMR 10.53(n)<sup>4</sup> from 21 off-airport parcels, Town right-of-way, and Airport property from the Airport's airspace and protected surfaces. The 21 off-airport parcels in the Project Area are located at the Runway 06 end and Runway 24 end; and include Airport property (see Figure 1). Estimates of the area containing vegetative obstructions to be removed from each parcel is based on an obstruction analysis conducted as part of the 2019 Airport Master Plan project and subsequently confirmed as part of this project. Aerial mapping and the obstruction analysis show that a majority of the parcels contain isolated vegetative obstructions only, meaning select trees are proposed to be eliminated and parcels will not be clear-cut. Based on the density of vegetation on each parcel, an estimate of the area (in acres based on the canopy of trees) requiring tree clearing was calculated. Selective tree clearing is estimated to occur within an area approximately 4.2 acres in size off-airport property in the Runway 06 end, and within an area approximately 3.4 acres in size off-airport property in the Runway 24 end. Selective tree clearing on-Airport property will occur within an area approximately 5.8 acres in size within the approach and transitional surfaces. A breakdown of the estimated area requiring obstruction removal is identified in Table 1.

## 2.3 Development of Hangars

Construction of T-Hangar Buildings: This project includes the construction of two (2) T-hangar buildings (approximately 22 units) with vehicle parking to the north of the existing H-3 T-hangar row, including access taxilanes, and a small vehicle parking area adjacent to the SRE building (see Figure 2).

## 3.0 Purpose and Need

The purpose of the Proposed Action is to comply with FAA airport safety design standards and to provide for the aeronautical needs of the Airport and Airport users by 1) removing trees and other objects that obstruct the Airport's protected surfaces as defined in FAA Engineering Brief No. 99, Changes to Tables 3-2 and 3-4 of Advisory Circular 150/5300-13A; and 2) constructing T-hangars (approximately 22 units) and associated infrastructure needed to access the hangars in an effort to meet hangar demands at the Airport.

## 4.0 Project Alternatives

### 4.1 Acquisition of Avigation Easements and Vegetative Obstruction Removal

#### 4.1.1 Alternative 1- No Action Alternative

##### Assumptions

- The Airport does not secure documents, permissions, and/or rights necessary to obtain eligibility for future vegetation clearing efforts
- The Airport does not conduct tree clearing activities within the Airport's protected surfaces

##### Airport Impacts

- The Airport and Town fail to comply with FAA design and safety standards

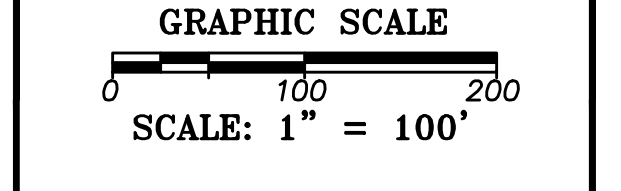
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<sup>4</sup> <https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations#current-regulations>

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PROJECT: ENVIRONMENTAL ASSESSMENT AND VEGETATION MANAGEMENT PLAN AIP NO. 3-25-0015-26-2020  
 OWNER: CHATHAM MUNICIPAL AIRPORT TOWN OF CHATHAM, MASSACHUSETTS

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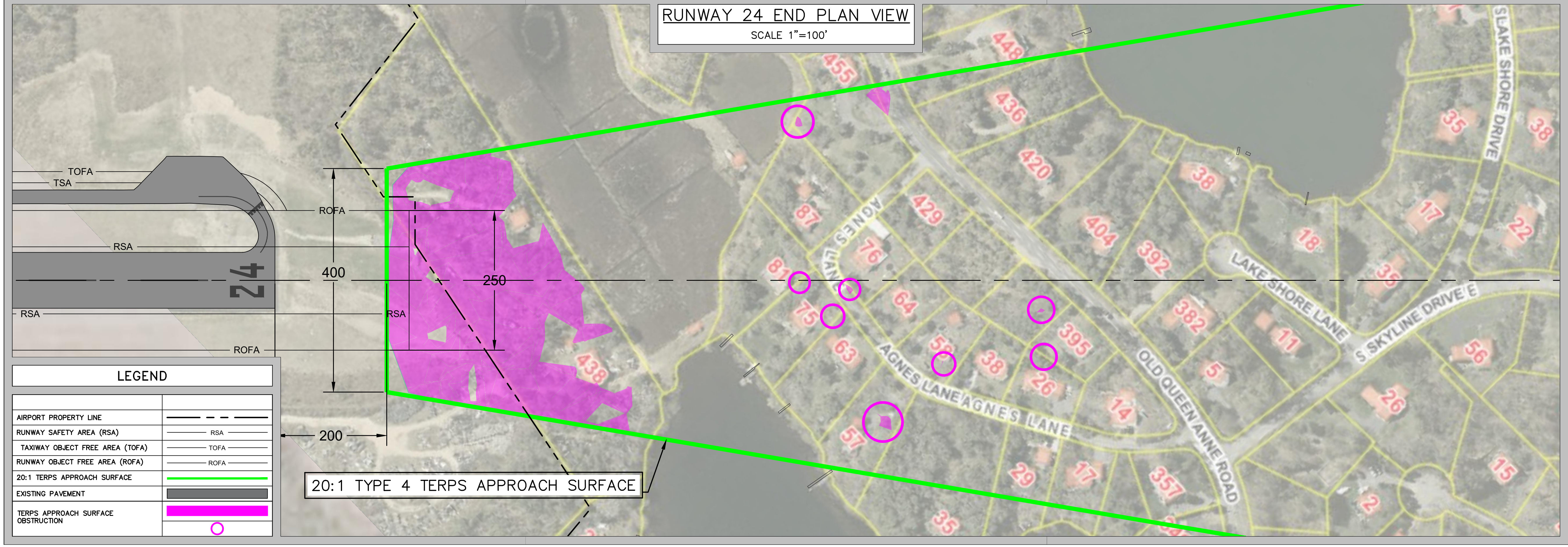
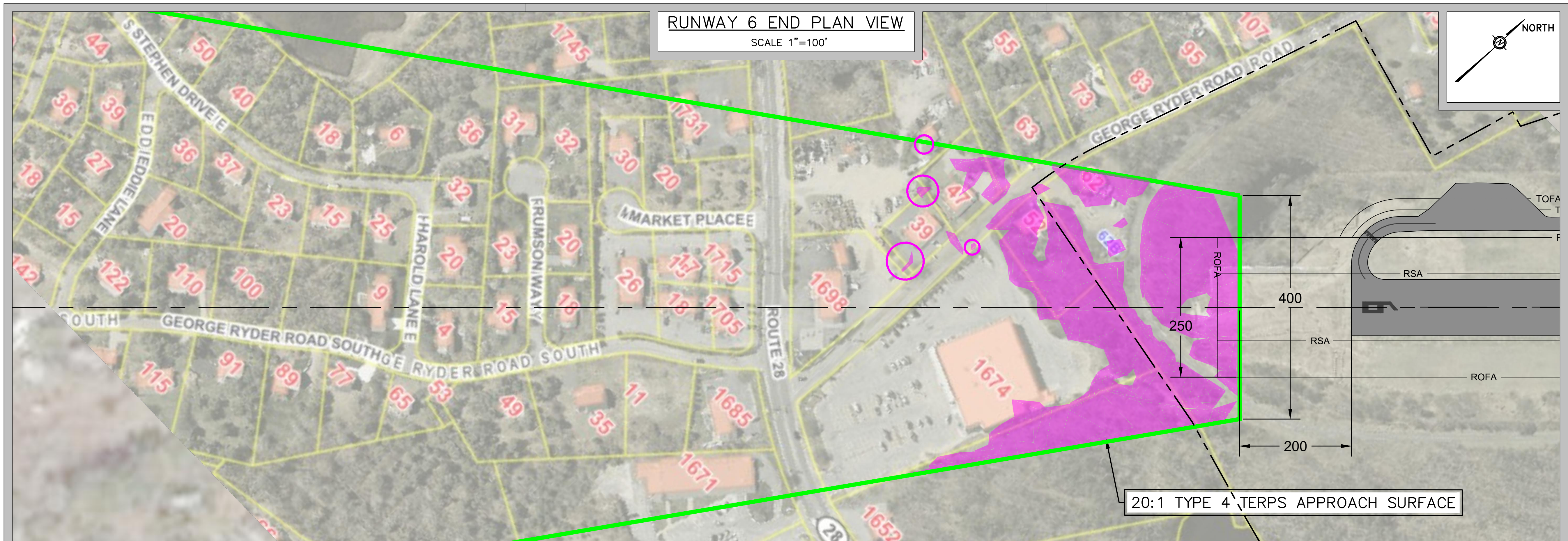


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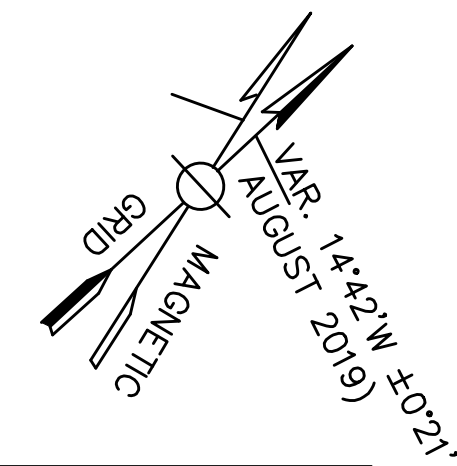
RUNWAY 06-24 OBSTRUCTION PLAN

DRAWING NO.

FIG. 1

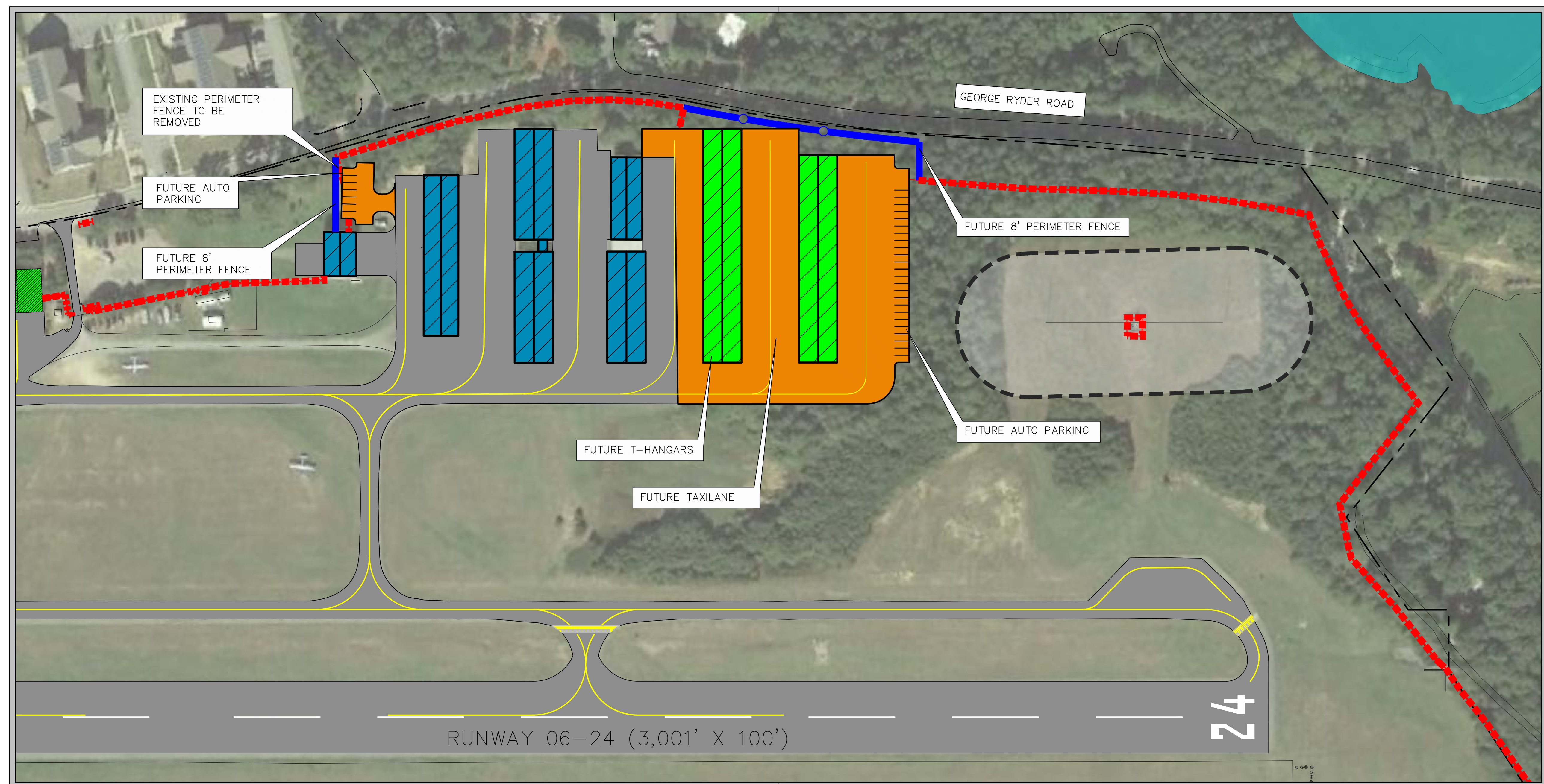


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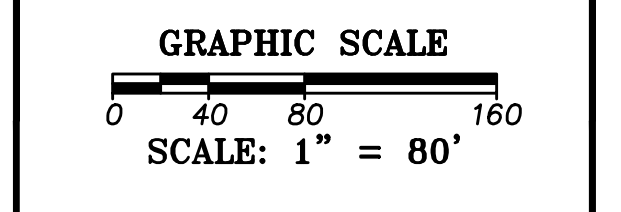


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 ENVIRONMENTAL ASSESSMENT AND VEGETATION MANAGEMENT PLAN  
 AIP NO. 3-25-0015-26-2020

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 CHATHAM MUNICIPAL AIRPORT  
 TOWN OF CHATHAM, MASSACHUSETTS

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PROJECT NO.		777095	
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DRAWN BY		DCQ	
CHECKED BY		MPC	
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SHEET TITLE

PROPOSED HANGAR LOCATION

DRAWING NO.

**FIG.2**

**HANGAR – ALTERNATIVE**  
 SCALE: 1" = 80'

LEGEND		
ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE	---	---
BUILDINGS/HANGARS	[Blue Hatched Box]	[Green Hatched Box]
PAVEMENT	[Grey Box]	[Orange Box]
8' CHAINLINK FENCE	[Red Dashed Line]	[Blue Dashed Line]

- NOTES:**
- 1) THE NDB SHALL BE DECOMMISSIONED FOR ALTERNATIVE 2

3/29/2021 2:20:10 PM U:\777095 COX EA and WMP\CADD\777095-COX-FIG 2.dwg (APL)

- The Airport and Town violate their federal obligations (specifically Grant Assurance #19 *Operation and Maintenance* and #20 *Hazard Removal and Mitigation*) and jeopardize the Airport's eligibility to receive future federal funding assistance
- Vegetative obstructions continue to negatively affect the Airport's protected surfaces, resulting in a continuing threat to the safety of airport users and neighboring properties
- The Runway 06-24 thresholds may require displacement, shortening the landing length available for airport uses
- Shorter landing distances may discourage the use of the Airport by many aircraft types currently operating at COX, which will have a negative effect of the Airport's ability to serve its users, thereby reducing revenue and the Airport's role in the National Plan of Integrated Airport Systems<sup>5</sup>
- Airport continues to be dependent on its non-direction beacon (NDB) as its sole navigational aid
- The FAA's 2018 *Navigation Programs Strategy* calls for NDBs to be gradually phased out of the National Airspace System, and by 2030 all NDB approaches are expected to be removed from the NAS
- In June 2020, MassDOT/AD ceased to provide funding assistance for the maintenance of the NDB

#### Environmental Impacts

- Since no obstruction removal is conducted, there are no environmental impacts resulting from implementation of this alternative

#### Summary of Alternative 1

- Trees continue obstruct the Airport's protected surfaces
- Fails to address a known safety condition and violates federal obligations
- This alternative does not meet the stated purpose and need
- Displaced threshold of approximately 390 feet on Runway 06 due to a 19.5-foot controlling penetration located approximately 507 feet off the runway end. This scenario reduces the available landing distance to approximately 2,611 feet on the Runway 06 end
- Displaced threshold of approximately 286 feet on Runway 24 due to a 14.3-foot controlling penetration located approximately 332 feet off the runway end. This scenario reduces the available landing distance to approximately 2,715 feet on the Runway 24 end
- This alternative does not comply with the requirements of FAA Engineering Brief No. 99

#### **4.1.2 Alternative 2- Displace the existing threshold, or light penetrating obstructions, and seek to acquire Avigation Easements for obstruction lighting (see Figure 3)**

#### Assumptions

- The Runway 06-24 thresholds are displaced
- The Airport secures documents, permission, and/or rights necessary to light obstructions
- Obstruction lights are installed in accordance with FAA requirements

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<sup>5</sup> [https://www.faa.gov/airports/planning\\_capacity/npias/](https://www.faa.gov/airports/planning_capacity/npias/)



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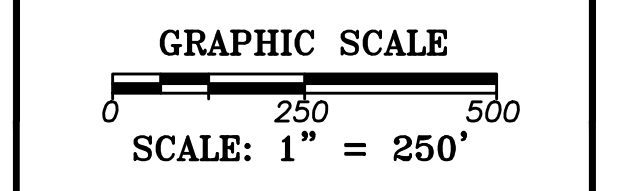
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DRAWN BY		RSM	
CHECKED BY		MPC	
DATE		MARCH, 2021	

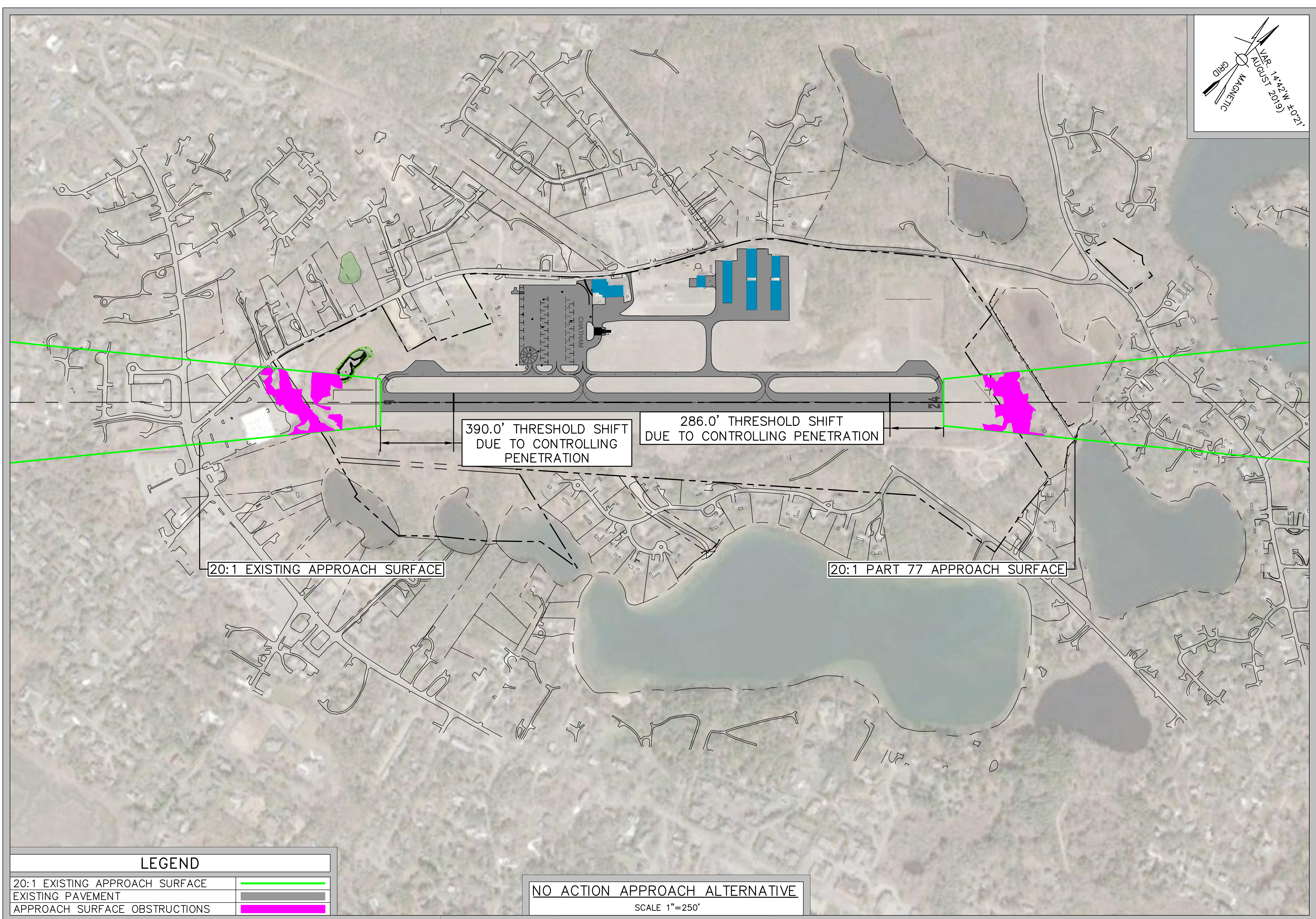
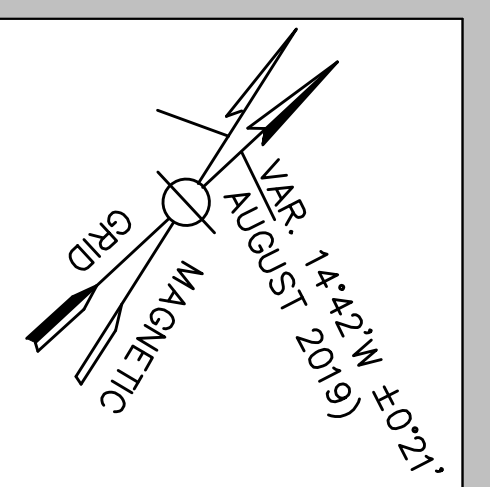


SHEET TITLE

ALTERNATIVE 2  
 DISPLACE EXISTING THRESHOLD

DRAWING NO.

FIG. 3



LEGEND	
20:1 EXISTING APPROACH SURFACE	
EXISTING PAVEMENT	
APPROACH SURFACE OBSTRUCTIONS	

NO ACTION APPROACH ALTERNATIVE  
 SCALE 1"=250'

3/29/2021 9:44:10 AM U:\777095 COX EA and WMP\CADD\777095-COX-FIG 3.dwg (APL)

### Airport Impacts

- Reduction in takeoff length and landing length available to pilots which further shortens a 3,001' runway
- Potential diminishment of the viability of the Airport's role in the National Plan of Integrated Airport Systems
- Lighting trees in a forested area would prove to be cumbersome and costly due to the number of trees, and lack of proper infrastructure to support lighting efforts
- The Airport would need to continuously monitor the vegetation and adjust the lighting as vegetation grows, which is impractical
- As trees grow and obstruct the approach surfaces the Airport may be forced to further displace their thresholds
- Airport continues to be dependent on its non-direction beacon (NDB) as its sole navigational aid
- The FAA's 2018 *Navigation Programs Strategy* calls for NDBs to be gradually phased out of the National Airspace System, and by 2030 all NDB approaches are expected to be removed from the NAS
- In June 2020, MassDOT/AD ceased to provide funding assistance for the maintenance of the NDB

### Environmental Impacts

- There are no environmental impacts associated with the acquisition of avigation easements
- Permanent and temporary impacts associated with the construction and/or placement of lighting infrastructure
- Significant visual impacts to neighboring residential and commercial properties

### Summary of Alternative 2

- Lighting trees is an impractical endeavor given the forest-like conditions surrounding the Airport
- Visual impacts from lighting trees would pose as a nuisance to neighboring residential and commercial properties
- This option only provides a temporary solution to a long-term problem
- Lighting trees may not be an effective method supported by the FAA Flight Procedures Office
- This alternative does not meet the stated need and purpose
- This alternative does not comply with the requirements of FAA Engineering Brief No. 99

**4.1.3 Alternative 3- Remove trees from the Airport's protected surfaces, on and off-Airport property where property rights exist, and seek to acquire approximately 4 Avigation Easements for future obstruction removal where penetrations have been identified in the approach surface according to Runway Type 2 of FAA Engineering Brief No. 99<sup>6</sup> (see Figure 4)**

### Assumptions

- The Airport seeks avigation easements over 4 parcels in the Runway 06-24 ends containing trees that obstruct the Airport's protected surfaces

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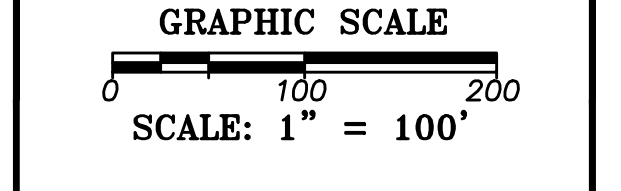
<sup>6</sup> Engineering Brief No. 99, Changes to Tables 3-2 and 3-4 of Advisory Circular 150/5300-13A, *Airport Design*

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 AIP NO. 3-25-0015-26-2020

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 TOWN OF CHATHAM, MASSACHUSETTS

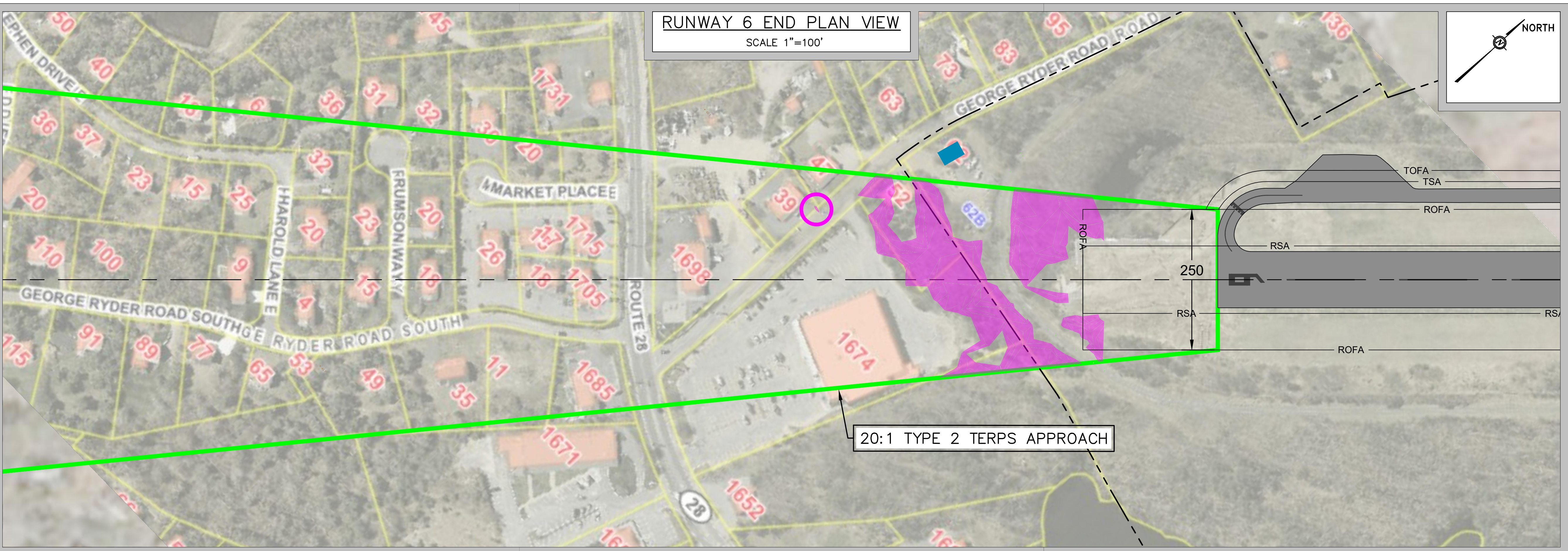
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CHECKED BY	MPC		
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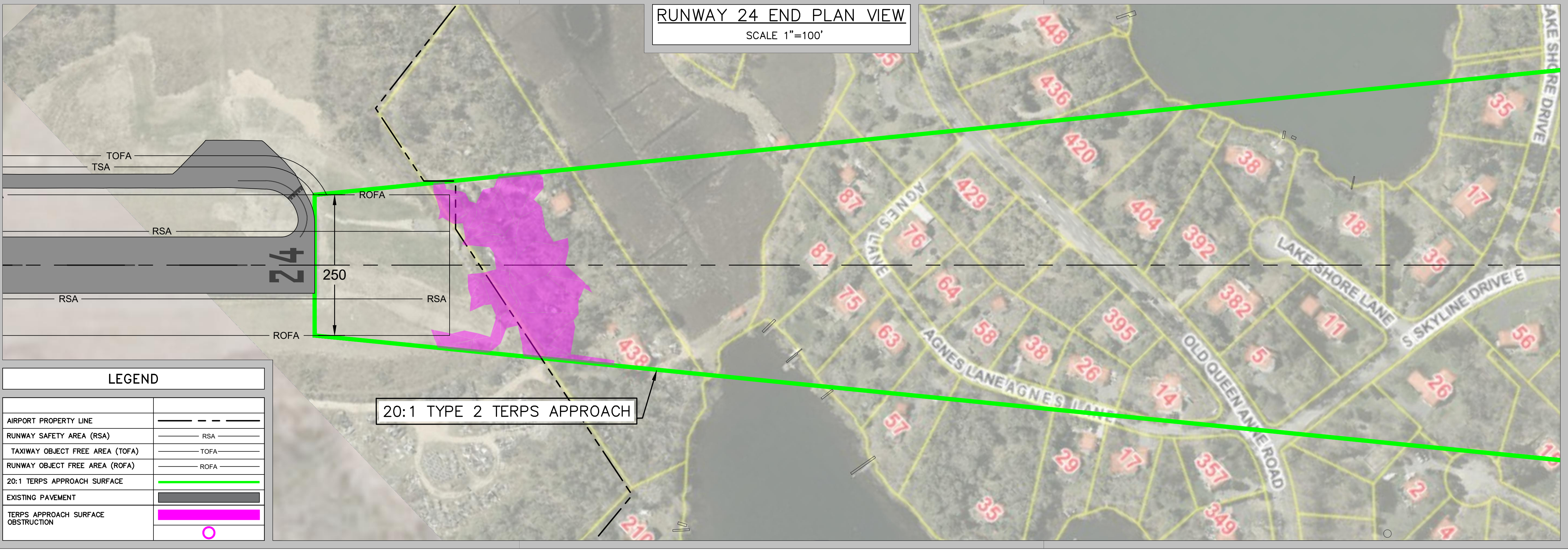
SHEET TITLE  
 ALTERNATIVE 3  
 TREE REMOVAL  
 FROM RUNWAY  
 6-24 TYPE 2

DRAWING NO.  
**FIG. 4**

**RUNWAY 6 END PLAN VIEW**  
 SCALE 1"=100'



**RUNWAY 24 END PLAN VIEW**  
 SCALE 1"=100'



**LEGEND**

AIRPORT PROPERTY LINE	---
RUNWAY SAFETY AREA (RSA)	— RSA —
TAXIWAY OBJECT FREE AREA (TOFA)	— TOFA —
RUNWAY OBJECT FREE AREA (ROFA)	— ROFA —
20:1 TERPS APPROACH SURFACE	—
EXISTING PAVEMENT	█
TERPS APPROACH SURFACE OBSTRUCTION	○

3/29/2021 9:36:10 AM U:\777095 COX EA and WMP\CADD\777095-COX-FIG 4.dwg (APL)

- The Airport secures documents, permissions, and/or rights necessary to obtain eligibility for future obstruction clearing efforts to maintain its existing approach surfaces in accordance with FAA Engineering Brief No. 99
- Obstruction removal occurs on-Airport property, Town right-of-way, and on parcels where the Airport currently possesses easements

#### Airport Impacts

- The Airport eliminates trees that have a negative and unsafe effect on the Airport's existing visual approach surfaces
- Enhances safety for pilots, passengers, neighboring properties, and aircraft due to the removal of trees
- Airport maintains compliance with FAA Grant Assurances
- Airport continues to be dependent on its non-direction beacon (NDB) as its sole navigational aid
- The FAA's 2018 *Navigation Programs Strategy* calls for NDBs to be gradually phased out of the National Airspace System, and by 2030 all NDB approaches are expected to be removed from the NAS
- In June 2020, MassDOT/AD ceased to provide funding assistance for the maintenance of the NDB

#### Environmental Impacts

- There are no environmental impacts associated with the acquisition of aviation easements
- Temporary wetland impacts as a result of selective tree removal
- Selective tree removal is proposed to occur within wetland resource areas and their buffers as noted below:
  - Runway 06
    - Wetland: 1,996 square feet
    - Vernal Pool: 218 square feet
    - 350' Vernal Pool buffer (per Cape Cod Commission): 35,015 square feet

#### Summary of Alternative 3

- Vegetative obstructions are removed, eliminating the negative and unsafe effect they present to the Airport's approach surfaces
- Enhanced safety of pilots, passengers, and neighboring residential and commercial properties
- While maintaining the Airport's existing approach surface complies with FAA requirements, it fails to address the aeronautical needs of the Airport and users
- Does not address the decommissioning of the Airport's non-directional beacon
- This alternative does not comply with the requirements of FAA Engineering Brief No. 99

#### **4.1.4 Alternative 4- Remove trees from the Airport's protected surfaces, on and off-Airport property where property rights exist, and seek to acquire approximately 21 Aviation Easements for future obstruction removal where penetrations have been identified in the approach surfaces according to Runway Type 4 of FAA Engineering Brief No. 99 (Figure 5)**

#### Assumptions

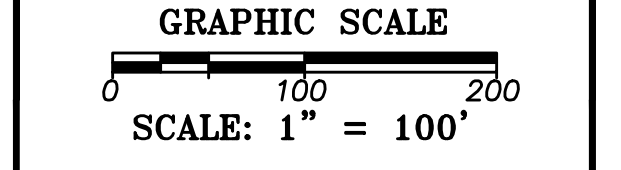
- The Airport seeks aviation easements over 21 parcels in the Runway 06-24 ends containing trees that obstruct the Airport's protected surfaces

PREPARED FOR:

PROJECT: ENVIRONMENTAL ASSESSMENT AND VEGETATION MANAGEMENT PLAN AIP NO. 3-25-0015-26-2020

OWNER: CHATHAM MUNICIPAL AIRPORT TOWN OF CHATHAM, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
PROJECT NO.	777095		
DESIGNED BY	ID		
DRAWN BY	ID		
CHECKED BY	MPC		
DATE	MARCH, 2021		

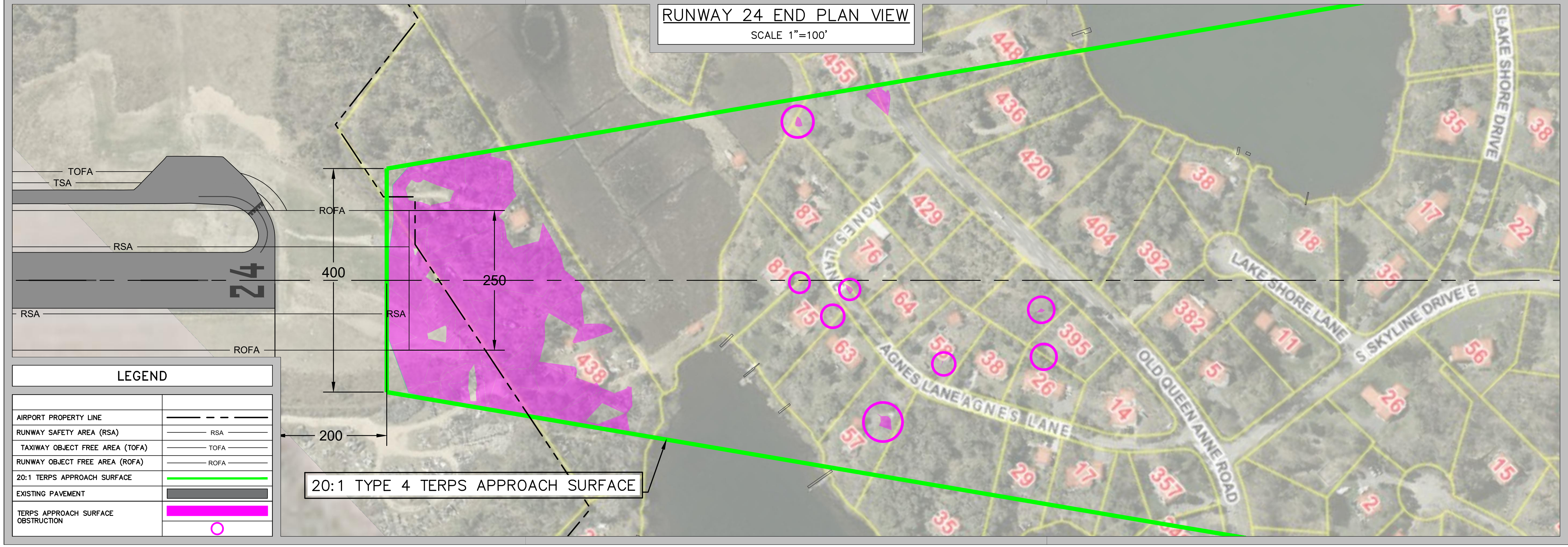
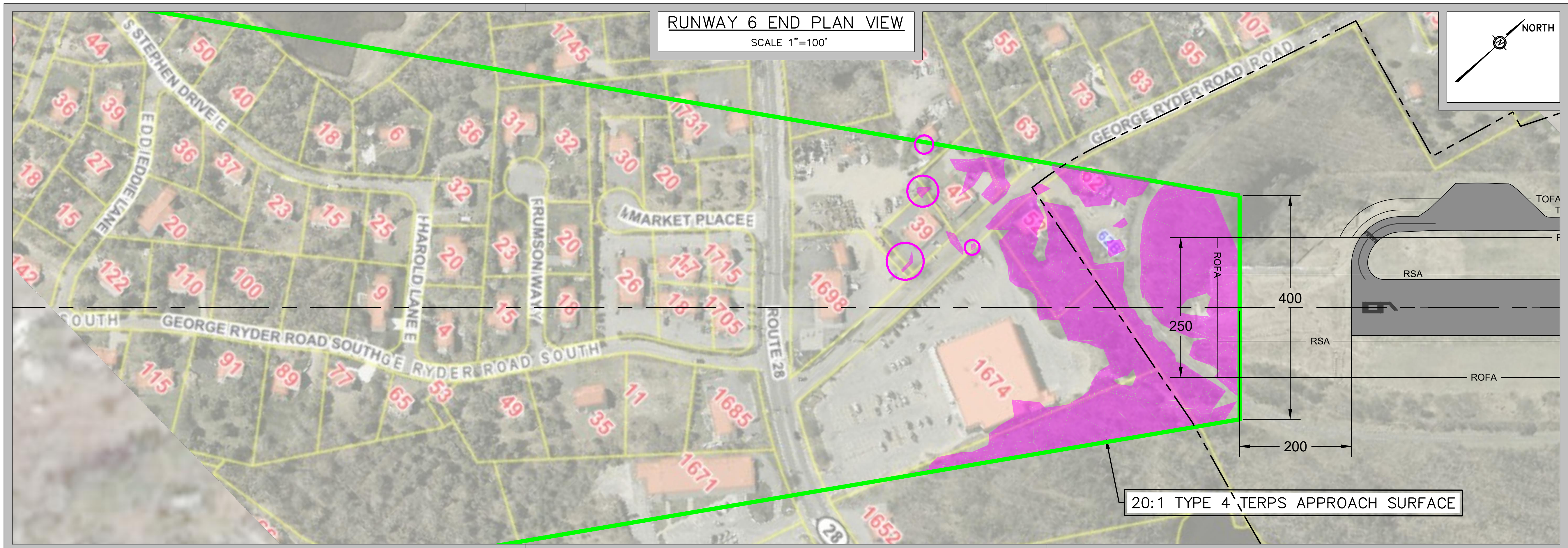


SHEET TITLE

ALTERNATIVE 4  
 TREE REMOVAL  
 FROM RUNWAY  
 6-24 TYPE 4

DRAWING NO.

FIG. 5



3/29/2021 10:37:54 AM U:\777095\_C0X\_EA\_and\_VMP\CADD\777095-C0X-FIG 5.dwg (APL)

- The Airport secures documents, permissions, and/or rights necessary to obtain eligibility for future obstruction clearing efforts
- Obstruction removal occurs on-Airport property, Town right-of-way, and on parcels where the Airport currently possesses easements

#### Airport Impacts

- The Airport eliminates trees that have a negative and unsafe effect on the Airport's protected surfaces
- Enhanced safety for pilots, passengers, neighboring properties, and aircraft due to the removal of trees
- Airport maintains compliance with FAA Grant Assurances
- FAA Flight Procedures can design a non-precision approach with vertical guidance (GPS approach) under this alternative which addresses the future decommissioning of the NDB
- Enhances airspace safety by providing a more accurate, direct, and unobstructed approach to Runway 06-24
- Improves safety at the Airport due to a stabilized approach<sup>7</sup> (i.e., the pilot establishes and maintains a constant angle glidepath towards a predetermined point on the landing runway)
- Reduces missed approaches and diversions when weather conditions result in low ceilings

#### Environmental Impacts

- There are no environmental impacts associated with the acquisition of aviation easements
- Temporary wetland impacts as a result of selective tree removal
- Selective tree removal is proposed to occur within wetland resource areas and their buffers as noted below:
  - Runway 06
    - Wetland: 4,650 square feet
    - Vernal Pool: 8,272 square feet
    - 350' Vernal Pool buffer (per Cape Cod Commission): 95,432 square feet

#### Summary of Alternative 4

- Vegetative obstructions are removed, eliminating the negative and unsafe effect they present to the Airport's approach surfaces
- Enhanced safety of pilots, passengers, and neighboring residential and commercial properties
- The Airport avoids the need to displace its threshold and therefore, positions the Airport to retain its existing client base, thereby preserving community revenue generated from landside sources (e.g., fuel, rental cars, hangars, etc.) and tourism (e.g., restaurants, hotels, property rentals, etc.)
- This alternative meets the stated need and purpose

---

<sup>7</sup>[https://www.faa.gov/about/office\\_org/headquarters\\_offices/ato/service\\_units/techops/navservices/gnss/waas/benefits/](https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gnss/waas/benefits/)

## 4.2 Development of Hangars

### 4.2.1 Alternative 1- No Action

#### Assumptions

- Additional hangars are not constructed at the Airport

#### Airport Impacts

- The Airport continues to lack the adequate infrastructure to meet existing demand for hangar units
- The Airport misses out on the opportunity for additional sources of revenue and the ability to contribute to becoming self-sufficient

#### Environmental Impacts

- No construction is proposed as part of Alternative 1, and therefore, no environmental resources will be impacted by this alternative

#### Summary of Alternative 1

- The Airport continues to lack the infrastructure necessary to meet hangar demand and misses out on the opportunity for additional revenue and ability to meet the aeronautical needs of the Airport
- This alternative does not meet the stated purpose and need

### 4.2.2 Alternative 2- Development of Hangars (see Figure 6)

#### Assumptions

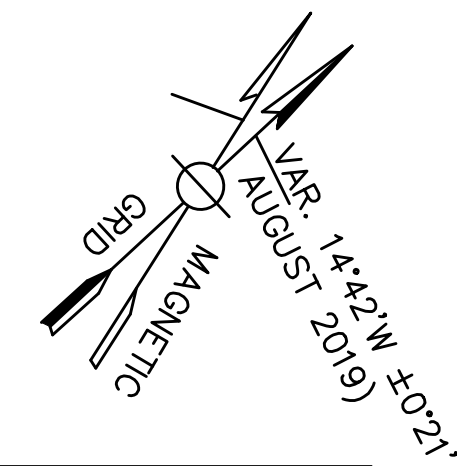
- The Airport constructs hangars as demand is realized. It is proposed that two (2) T-hangar buildings (approximately 22 units) with vehicular parking to the north of the existing H-3 T-hangar row, including access taxilanes, and a small vehicle parking area adjacent to the SRE building are constructed
- It is anticipated that the new T-hangars will be funded by private developers and that the Airport will incur no costs associated with their construction

#### Airport Impacts

- The project area for this proposed alternative is currently vacant and will allow the Airport to address hangar capacity in the short-term and/or as demand warrants
- Enhances safety at the Airport by providing delineated parking spaces inside the fence to differentiate between automobile parking areas and aircraft movement areas
- Provides the Airport with additional sources of revenue

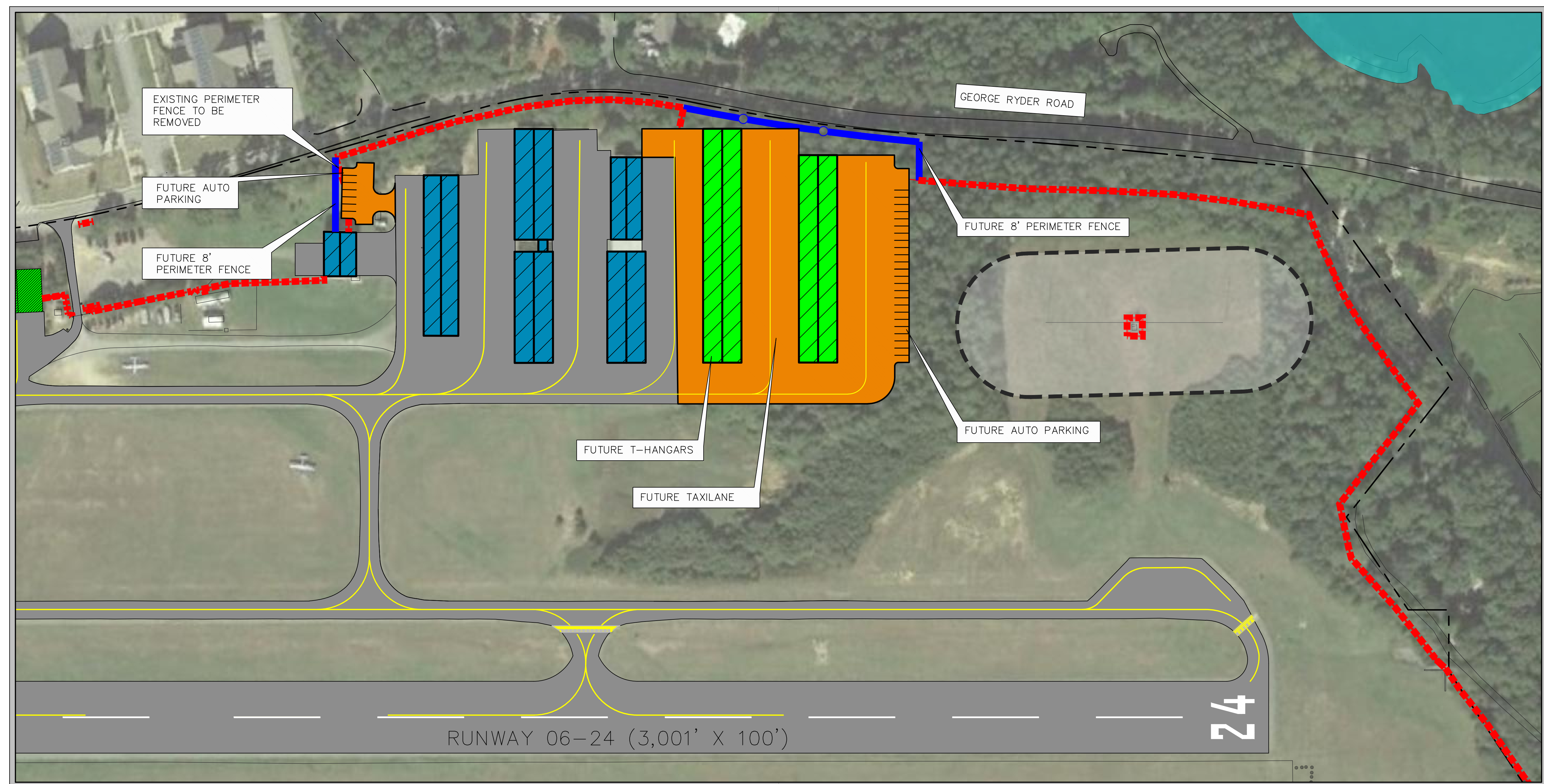
#### Environmental Impacts

- No anticipated wetland impacts
- Approximately 118,500 square feet of additional impervious surface
- Requires geotechnical investigation of project area to confirm suitable soils as there is a significant elevation change in a portion of this area



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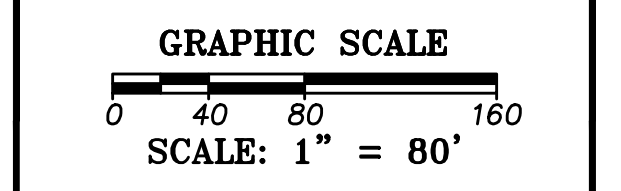


**PREPARED FOR:**

**PROJECT**  
 ENVIRONMENTAL ASSESSMENT AND VEGETATION MANAGEMENT PLAN  
 AIP NO. 3-25-0015-26-2020

**OWNER**  
 CHATHAM MUNICIPAL AIRPORT  
 TOWN OF CHATHAM, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
PROJECT NO.		777095	
DESIGNED BY		DCQ	
DRAWN BY		DCQ	
CHECKED BY		MPC	
DATE		MARCH, 2021	



SHEET TITLE

ALTERNATIVE 2  
 DEVELOPMENT OF  
 HANGARS

DRAWING NO.  
**FIG.6**

**HANGAR – ALTERNATIVE**  
 SCALE: 1" = 80'

LEGEND		
ITEM	(E) EXISTING	(F) FUTURE
AIRPORT PROPERTY LINE	---	---
BUILDINGS/HANGARS	[Blue hatched box]	[Green hatched box]
PAVEMENT	[Grey box]	[Orange box]
8' CHAINLINK FENCE	[Red dashed line]	[Blue dashed line]

**NOTES:**

- 1) THE NDB SHALL BE DECOMMISSIONED FOR ALTERNATIVE 2

3/29/2021 11:12:19 AM U:\777095 COX EA and IMP\CADD\777095-COX-FIG 6.dwg (APL)

### Summary of Alternative 2

- The Airport constructs 22 additional hangar units, meeting demand and increasing opportunities for revenue generation
- This alternative meets the stated purpose and need

## 5.0 Selection of Preferred Alternatives

The alternatives analysis presented in Section 4 of this document resulted in the selection of the following:

### 5.1 Acquisition of Avigation Easements and Vegetative Obstruction Removal

The preferred avigation easement acquisition and vegetative obstruction removal alternative (Alternative 4) includes removing trees from the Airport's protected surfaces, on and off Airport property where property rights exist, and seeking to acquire approximately 21 avigation easements for future obstruction removal where obstructions have been identified in the approach surfaces.

### 5.2 Development of Hangars

The preferred hangar development alternative (Alternative 2) includes the construction of two (2) T-hangar buildings (approximately 22 units) with vehicular parking to the north of the existing H-3 T-hangar row, including access taxilanes, and a small vehicle parking area adjacent to the SRE building.

## 6.0 Affected Environment/Environmental Consequences

*FAA Order 1050.1F, Environmental Impacts: Policies and Procedures*, effective July 16, 2015, provides requirements for compliance with the National Environmental Policy Act (NEPA). Order 1050.1F requires that Airport sponsors evaluate all proposed actions against the following Impact Categories:

- Air Quality
- Biological resources (including fish, wildlife, and plants)
- Climate
- Coastal resources
- Department of Transportation Act, Section 4(f)
- Farmlands
- Hazardous materials, solid waste, and pollution prevention
- Historical, architectural, archaeological, and cultural resources
- Land use
- Natural resources and energy supply
- Noise and compatible land use
- Socioeconomics, environmental justice and children's environmental health and safety risks
- Visual effects (including light emissions)
- Water resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

An assessment was performed for each potential environmental impact category identified per Order 1050.1F *Environmental Impacts: Policies and Procedures*, July 16, 2015. Of the 14 FAA categories, 7 are not discussed in this EA because they are either not present in the Area of the Proposed Action(s), or if present would not be affected by the activities associated with the alternatives evaluated. Table 2 lists the categories excluded in the discussion with this EA and the rationale for exclusion.

Table 2: *Environmental Impact Categories Excluded from the EA*

Impact Category	Rationale for exclusion
Wild and Scenic Rivers	Under the Wild and Scenic Rivers Act, “certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” <sup>8</sup> There are no wild and scenic rivers within the project area.
Coastal Resources	The Proposed Actions will not impact a coastal barrier resource system, pose an impact to coral reef ecosystems, or cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated.
Farmlands	Pockets of “farmland of unique importance and statewide importance” are present in the vicinity of the Airport, however, they are populated with residential housing and the Proposed Action(s) do not have the potential to convert important farmlands to non-agricultural uses.
Hazardous Materials, Solid Waste, and Pollution Prevention	The Proposed Action is not anticipated to generate, disturb, transport, or treat, store or dispose of, hazardous material, pollution, or solid waste.
Land Use	The Airport is located within the Town of Chatham’s Municipal Zone, while Airport property is surrounded primarily by Residential land areas with a few parcels categorized as General Business. In 1997, the Town of Chatham adopted the Airport Approach Protection Bylaw for the purposes of promoting safety and welfare of the public by restricting the height of structures and other objects in the vicinity of the Airport’s approach zones.
Natural Resources and Energy Supply	The Proposed Actions will not result in major changes to stationary facilities, or movement of aircraft and/or ground vehicles that would have a measurable effect on local supplies of energy or natural resources.
Noise and Noise-Compatible Land Uses	The Chatham Municipal Airport is classified as a B-I (small airplane) Airport, according to its most recent Master Plan Update. FAA Order 1050.1F, Appendix B states that, “No noise analysis is needed for projects involving Design Group I and II airplanes (wingspan less than 79 feet) in Approach Categories A through D (landing speed less than 166 knots) operating at airports whose forecast operations in the period covered by the NEPA document do not exceed 90,000 annual propeller operations (247 average daily operations) or 700 annual jet operations (2 average daily operations).” Further, equipment associated with the Proposed Action will temporarily include construction vehicles, concrete mixer, and semi-contractor trailers, which are expected to produce noise levels typical of a construction site. Construction equipment will be used during daylight hours.

<sup>8</sup> Wild & Scenic Rivers Act, October 2, 1968

## 6.1 Air Quality

Barnstable County meets the national primary or secondary ambient air quality standards for National Ambient Air Quality Standards. The Proposed Actions (Easement Acquisitions and Vegetation Obstruction Removal) meet the Federal Presumed To Confirm Actions Under General Conformity<sup>9</sup>, and they are not anticipated to change the operational environment of the airport in such a way as to increase air emissions above *de minimis* thresholds. The development of hangars (approximately 22 units) is intended to meet the demand of based aircraft owners, including those that have expressed concerns over the high salty air conditions damaging aircraft stored outdoors. Temporary, minor construction activity is required for the development of hangars and the site work associated with parking and building site preparation. The combined level of construction activity for these project components is anticipated to be on a smaller scale than other construction activities identified in the Federal Presumed To Confirm Actions Under General Conformity, and therefore project construction emissions are anticipated to fall well below the *de minimis* threshold and presumed to conform.

## 6.2 Biological Resources (including fish, wildlife, and plants)

Activities involving or affecting terrestrial and aquatic plant and animal species, game and non-game species, special status species (state or federally listed threatened or endangered), species of concern, or environmentally sensitive or critical habitat need to be reviewed for impacts. The proposed action may include a limited amount of vegetation management in designated National Heritage Endangered Species Program (NHESP) Priority Habitat (see Figure 7). The work within these areas is expected to be limited to selective tree clearing while maintaining the understory within Priority Habitat buffers and protecting water quality to the greatest extent practicable. This activity is not anticipated to have a significant impact to plant or animal species, nor result in a “take” of habitat as defined by NHESP. The proposed action does not include work within rivers or lakes, and as such, direct or indirect impacts to aquatic species is not anticipated.

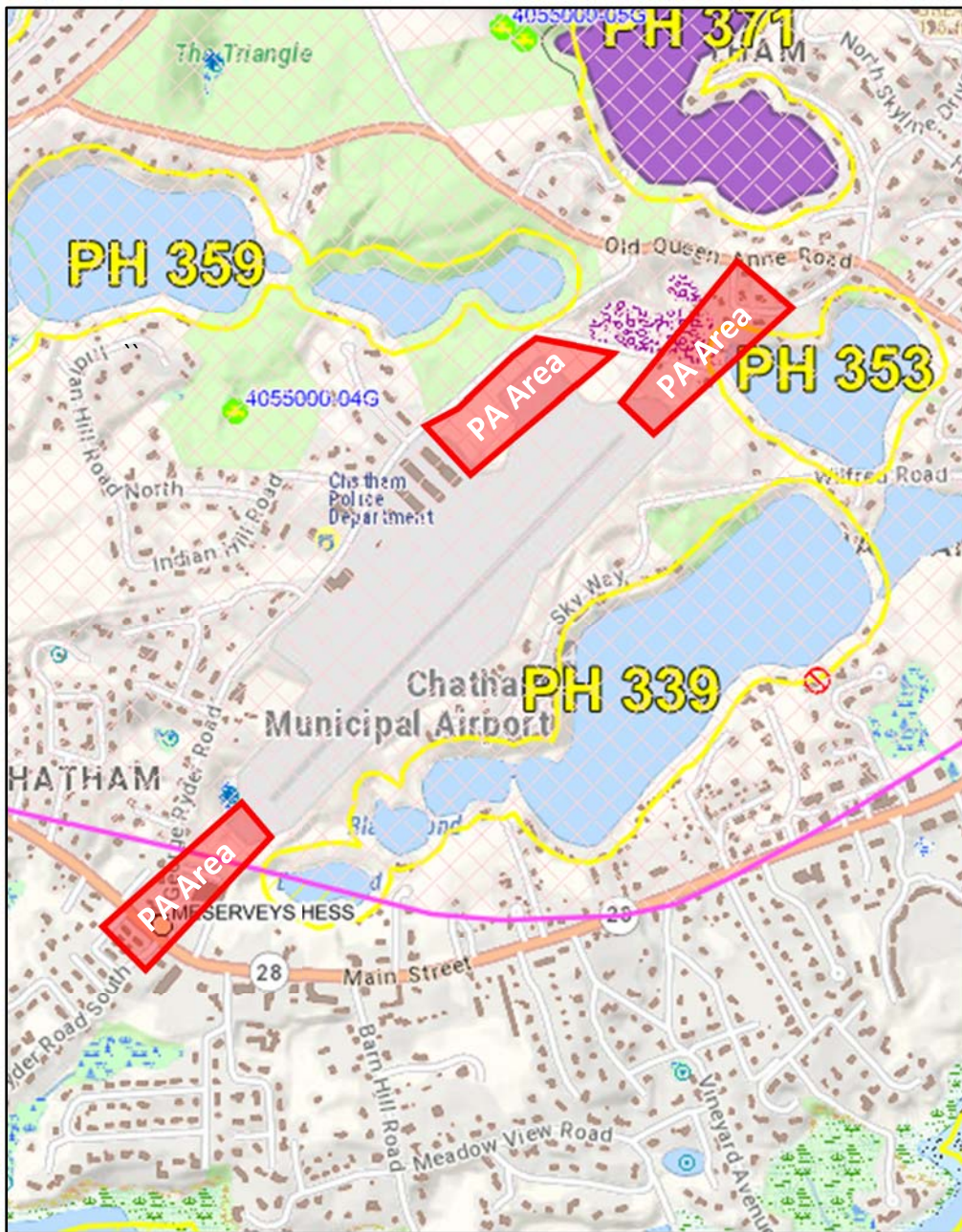
In 1992, MassDOT Aeronautics began a long-term vegetation management program to assist public-use airports in the Commonwealth in their efforts to enhance public safety and to comply fully with Federal and State laws, rules, regulations, advisories, and orders with regard to maintaining Protection Zones (PZs) free from obstructions. The initial action in MassDOT Aeronautics vegetation management program was to work with the MA Department of Environmental Protection (MA DEP) and Massachusetts Port Authority (MassPort) to streamline the permit process for vegetation management in wetland resource areas. A Generic Environmental Impact Report (GEIR) for Vegetation Removal in Wetlands at Public Use Airports (EOEA #8979) was completed in 1993. The GEIR evaluated the probable environmental impacts of vegetation clearing projects in wetland resources for the purpose of maintaining PZ free from vegetation obstructions at public-use airports throughout the Commonwealth.

Since the completion of the GEIR, MassDOT Aeronautics and FAA have assisted in funding over 15 VMPs throughout the state at General Aviation (GA) airports, based on available funds and urgency of obstruction removal. Following the initiation of the VMPs at each of the airports, monitoring has been performed, typically focusing upon the vegetative regrowth, especially within wetlands, the evaluation of wildlife habitat, and overall health of the wetland. Additional observations have been made relative to overall site conditions including general conditions of erosion, stream scour, and sedimentation, especially in the immediate years following the initial site work, when the greatest vegetive change occurs. Some general conclusions are based on multiple years of wetland monitoring at each of the airports (37 aggregate years of monitoring for all airports):

<sup>9</sup> <https://www.govinfo.gov/content/pkg/FR-2007-07-30/pdf/07-3695.pdf>

# Figure 7- NHESP Priority Habitat

ENVIRONMENTAL ASSESSMENT  
 CHATHAM MUNICIPAL AIRPORT (CQX)  
 CHATHAM, MA





NHESP Data

-  NHESP Priority Habitat of Rare Species
-  NHESP Estimated Habitat of Rare Wildlife
-  Certified Vernal Pool
-  Potential Vernal Pool
-  Area of Critical Environmental Concern (ACEC)




Wetlands

-  Marsh/Bog
-  Wooded Marsh
-  Cranberry Bog
-  Salt Marsh
-  Open Water
-  Reservoir w/PWSID
-  Tidal Flats
-  Beach/Dune

Regulated Areas

-  Zone II Well Area
-  IWPA

Outstanding Resource Waters (ORW)

-  ORW for ACEC
-  PWS Contributor
-  ORW for PWS and Other

Reference: MassGIS OLIVER Data Viewer

- Wetland jurisdictional boundaries have not been observed to change as a consequence of the VMP activities.
- Incidental observation of water features at airports (e.g., streams or vernal pools) have not shown any noticeable change in local hydrology, such as diminished or increased flooding boundaries in pools or increased stream scour. While there is a theoretical increase in runoff potential following tree removal due to the loss of rainfall interception by the tree canopy, this appears to be offset by the dense regrowth of the shrub layer once light is able to reach the former forest floor.
- Increased stream scour and excessive erosion have not been noted following any of the VMP cutting at any of the airports.
- There have been no long-term impacts on erosion or sedimentation within wetlands due to the tree cutting activity. Short term erosion during initial cutting has been controlled and restored during operations.
- No diminishment of rare species or their habitat has been observed as part of the VMP activities and some improvements to rare species habitat have been noted.

### **6.3 Department of Transportation Act, Section 4(f)**

49 United States Code (USC), Subtitle I, Section 303 provides that the U.S. Secretary of Transportation shall not approve any program or projects requiring the use of publicly owned land or a public park, recreation area, or wildlife and waterfowl refuge of national, State or local significance, or land of a historic site of national, State, or local significance unless there is no prudent and feasible alternative to using that land, and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

In 1999, following a meeting with the Chatham Airport Commission, the Town of Chatham requested approval of the Airport Commission for the proposed bike trail across airport property to the south, following the perimeter fencing to Wilfred Road. As part of the request and approval, the Town of Chatham agreed to relocate the bike trail at any time in the future from any location which interferes with the provisions of the required safety zones at the Airport. As part of this Environmental Assessment, the Airport filed a Notice of Proposed Construction or Alteration (FAA Form 7460-1) through the FAA's Obstruction Evaluation/Airport Airspace Analysis (OE/AAA) to evaluate the existing location of the bike path in relationship to the proposed primary surface. The FAA issued an evaluation determination on March 5, 2021 with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground. The FAA does not object to the proposal (see Appendix A).

### **6.4 Historical, Architectural, Archaeological, and Cultural Resources**

Archaeological and Historical Services, Inc. conducted intensive (locational) subsurface survey testing between December 7, 2020 and December 23, 2020. The survey was conducted under Massachusetts Historical Commission (MHC) Permit No. 4051. The Tribal Historic Preservation Offices (THPOs) of the Wampanoag Tribe of Gay Head (Aquinnah), and the Mashpee Wampanoag Tribe were informed in advance of the archaeological survey. There were four areas where the locational survey was conducted. No significant finds are associated with three of the four areas, and no further testing is recommended by AHS. One of the areas is considered potentially archaeologically sensitive and a site examination survey is recommended for this site. However, the potentially sensitive area is not associated with the Proposed Action(s) associated with this Environmental Assessment.

In addition, the Massachusetts Historical Commission (MACRIS) database was reviewed to identify information on historic properties that may be affected by the proposed action(s). A review of the data base indicates that one property, the Emery Cranberry Bog located at the end of Runway 24 is listed on the MACRIS database. However, this parcel is not recommended for listing in the National Register of Historic Places according to the MACRIS database.

### **6.5 Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks**

The scope of the Proposed Action(s) is small, and except for isolated portions of selective vegetation management, the work will occur entirely on airport property. The nature of the Proposed Action(s) is not anticipated to result in: disproportionately high and adverse effects (human health, economic, or environmental) on minority or low-income populations; disproportionate health and safety risks to children; extensive relocation of residents or community businesses contributing to severe economic hardship for affected communities; or disruption of local traffic patterns thereby reducing levels of service of roads serving the community.

Vegetation management work will cause minor temporary construction-period impacts on private properties. However, this work will not disrupt or divide the physical arrangement of the established community. Most of the off-airport work will include selective, isolated tree removal procedures. The work will be highly localized and will occur over a short duration (1 – 3 days is typical for the average size private property). The work will not require any temporary or permanent relocation of people, businesses, or services.

Proposed Action(s) undertaken on airport property may cause minor temporary increases in traffic associated with construction vehicle trip generation and utility tie-in. These impacts will be minimal, and local traffic patterns will not be disrupted as a result of the project. The type of projects proposed under these actions will not appreciably induce substantial economic growth either directly or indirectly or change the community tax base.

### **6.6 Visual Effects (including light emissions)**

Visual effects include light emissions, visual resources, and visual character. Light emissions include light that emanates from a light source into the surrounding environment. Existing light emissions at the Airport come from the following sources: building area lights; apron area lighting; runway, taxiway edge lighting systems; Runway End Identifier Lights (REILS); airport rotating beacon, and off-Airport obstruction lights.

Visual character refers to the overall visual makeup of the existing environment. The visual character of the neighborhood surrounding the airport includes buildings of typical local architectural style interspersed among the rich coastal natural resources of the Cape.

The Proposed Action has the potential for both construction period and permanent visual effect impacts. All aspects of construction are expected to occur during daylight hours, so construction-period light emissions (including glare) are presumed to not be an issue. Temporary impacts to visual resources and visual character for activities during construction are unavoidable. Visual construction impacts can be mitigated for projects that occur on airport property by using appropriate site screening methods.

Vegetation management and tree clearing associated with this action will reduce tree cover on select properties in the vicinity of the airport. However, as identified in Table 1, tree removal off airport is expected to be minimal and is not anticipated to result in extensive removal of screening from existing light emissions on or off airport property. Obstruction removal from the Airport’s approach surface is a requirement per the FAA Grant Assurances for safe aircraft operation. Though these impacts are unavoidable, it is expected that any additional light emissions will be

minimal. Light emissions from new hangar development are expected to have a *de minimis* impact by employing proper lighting design and use of mitigation measures such as dark-sky compliant fixtures and proper light shielding in accordance with Cape Cod Commission requirements.

## **6.7 Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)**

### **6.7.1 Wetlands**

The preferred alternative for aviation easements/vegetation obstruction removal will require the removal of select vegetation from wetlands, a vernal pool located on-airport property and within the buffers to these resource areas. However, the proposed work is to remove select trees and not alter wetlands hydrology or soil elevations. Therefore, no wetland resources will be lost as part of this work and the only alteration will be the conversion to more of a sapling and shrub dominated wetlands. While a breakdown of the area requiring obstruction removal is provided below, it is important to note that the obstruction removal will be selective and include only those penetrations and near penetrations (typically within 10' of protected surfaces) and not result in widespread clear-cutting. Vegetation removal will be performed in a manner that minimizes impacts to resource areas.

- Runway 06
  - Wetland: 4,650 square feet
  - Vernal Pool: 8,272 square feet
  - 350' Vernal Pool buffer (per Cape Cod Commission): 95,432 square feet

Further, based upon the years of vegetation monitoring of VMPs at multiple Airports in Massachusetts, there has been no observation of changes in the local hydrology as might have been evidenced by increased stream scour, erosion, and sedimentation, or diminished or increased flood boundaries associated with streams or pools, including vernal pools.

### **6.7.2 Floodplains**

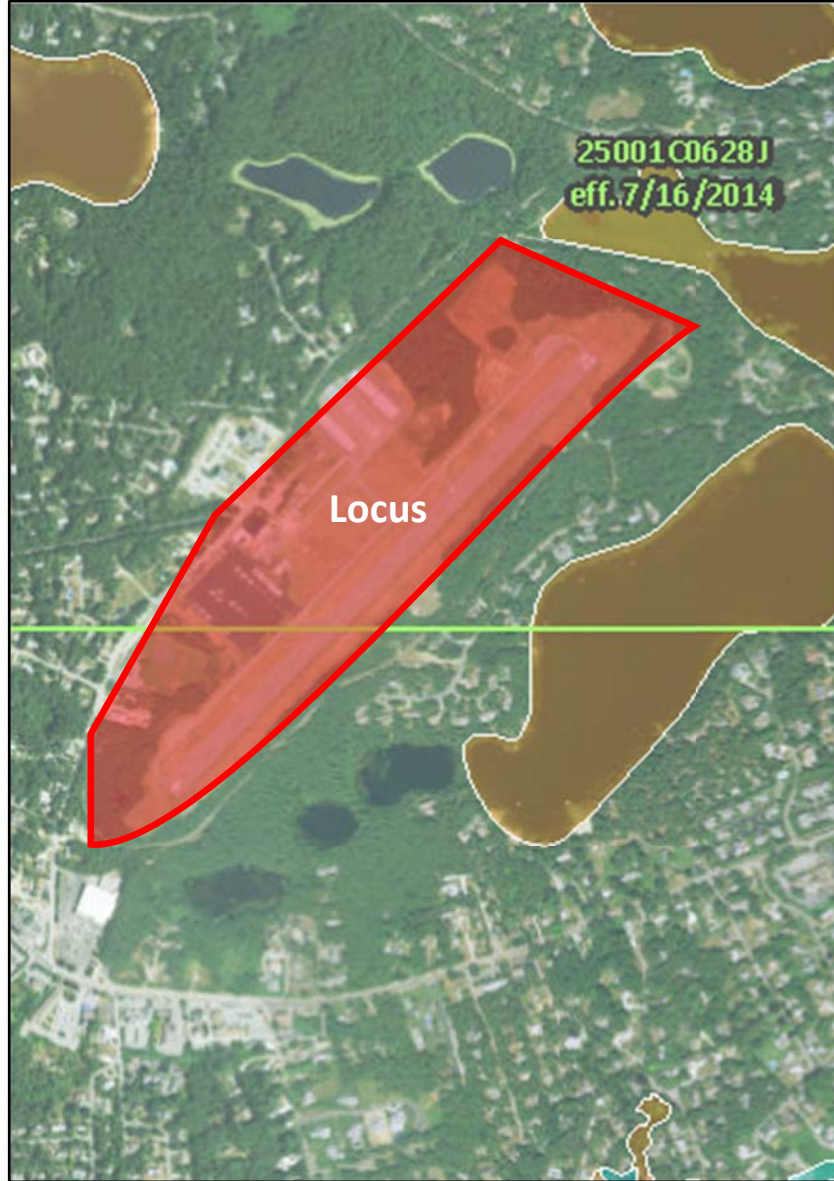
According to the Federal Emergency Management Agency (FEMA), two areas on or around Airport property are classified as Zone X, meaning that the areas have a 0.2 percent chance of annual flooding. These areas are associated with White Pond, to the east of Airport property, and Emery Pond, to the northeast of Airport property (See Figure 8).

### **6.7.3 Surface Waters**

The Preferred Alternative(s) will not impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water.

# Figure 8- FEMA Floodplain Plan

## ENVIRONMENTAL ASSESSMENT CHATHAM MUNICIPAL AIRPORT (CQX) CHATHAM, MA



Reference: FEMA National Flood Hazard Layer (NFHL) Viewer

### Legend

- 1% Annual Chance Flood (100-year)
- 0.2% Annual Chance Flood (500-year)
- Regulatory Floodway

#### 6.7.4 Groundwater

As of August 2008, a total of 16 Sole Source Aquifers have been designated by EPA Region 1, New England Office, including the Cape Cod Sole Source Aquifer, which serves approximately 147,725 permanent residents and 424,445 peak seasonal residents.

As part of the Chatham Airport Groundwater Management Plan (GMP - Appendix B) dated November 1989; five monitoring wells were installed to characterize the site hydrogeology and groundwater quality conditions. In addition to the five monitoring wells, water levels were also measured at existing wells and ponds. The groundwater elevation measurements were used to develop a groundwater contour map (see figure in the GMP - Appendix B). The groundwater generally flows toward the airport from the east and west and then southwest towards the intersection of George Ryder Road and Main Street.

Proposed federal financially assisted projects which have the potential to contaminate designated aquifers are subject to EPA review. Examples of federally funded projects which have been reviewed by EPA in New England include:

- Highway improvements and new road construction
- Airport improvements
- Transportation stations and maintenance facilities
- New construction of rail lines
- Large wastewater treatment facilities
- Projects funded through Community Development Block Grants
- Large residential developments funded through the Rural Utilities Service
- Water system improvements

##### 6.7.4.1 Discharge History

The Commonwealth of Massachusetts Executive Office of Energy & Environmental Affairs (EEA) offers a searchable online data portal<sup>10</sup> identifying waste sites and reported releases of hazardous materials within the state. A total of 99 records exist for releases within the boundaries of the Town of Chatham. Of these 99 records, one record of a release (#4-0001147) occurred on April 15, 1992 on the Airport and it has a DEP/NFA (No Further Action) compliance status. This status means that response actions were taken at the time of the incident and MDEP feels that "no further action" was required for the site. A second release (#4-0013528), located near the south end of the Airport but off of Airport property, occurred on November 29, 1997 and it has an RAO compliance status. This status, short for "Response Action Outcome," means that the response actions carried out were sufficient to achieve a level of no significant risk, or at least ensure that all substantial hazards were eliminated.

Further investigation via the Massachusetts EEA Data Portal revealed additional information about the November 29, 1997, release (#4-0013528). According to the December 1998 Response Action Outcome (RAO) Statement prepared by the licensed site professional assigned to the incident, a small plane crashed on privately-owned property located at 1652 Main Street in Chatham, Massachusetts, which is located south of the Runway 06 end, off of Airport property. The crash occurred in the rear portion of the property next to

<sup>10</sup> <https://eeonline.eea.state.ma.us/Portal/#!/search/wastesite>

Bearses Pond. According to the RAO Statement, approximately 30 gallons of aviation gasoline leaked from the wing tanks, contaminating soil and groundwater below the plane. Additionally, a separate small area approximately 20 feet from the main body of the plane was also contaminated by lubricating oil where the engine landed.

Response actions were supervised by a licensed site professional (LSP) to remove oil-contaminated soil from the site of the aircraft engine and aviation gasoline contaminated soil from the plane area. Based on these remedial response actions, a permanent solution was achieved, and the site is classified as “closed”.

No other reportable releases have occurred on Airport property since 1997.

In 1999 Bennett & O’Reilly, Inc prepared an Underground Injection Control (UIC) Closure Assessment Report at the Airport in accordance with the provisions of the MassDEP “Closure Requirements for Shallow Injection Wells” Closure Guidance, 1995, consistency with the MA Contingency Plan (MCP), 310 CMR 40.000. The report included the following:

“On January 23, 1992, the Chatham Municipal Airport was determined by the MA Department of Environmental Protection to be a Location To Be Investigated (LBTI), as a possible disposal site within the provisions of the MGL Chapter 21E and the Massachusetts Contingency Plan, 310 CMR 40.00, as associated with the discovery of moderate levels of tetrachloroethylene (PCE) within the Chatham Indian Hill wellfield. An on-site visit was conducted on December 10, 1991, by the Department, upon which one floor drain, which discharged into a MDC trap and leaching basin, and three, subsurface, 55 gallon perforated barrels used as leaching pits were observed in the main building. Subsequent to this LTBI determination, and on-site visit, the MADEP Division of Water Supply issued a Notice of Noncompliance on March 2, 1992, to the Town of Chatham Municipal Airport.

A Phase I Limited Site Investigation was conducted in October 1992 by the firm of DeFeo, Wait & Pare, Inc. (DWP), per the Department’s request. The purpose of the Phase I investigation was to identify any release of oil and/or hazardous materials that may have occurred on or adjacent to the property, and/or to determine if there was a potential for such a release to occur under the jurisdiction of the MA Oil and Hazardous Material Release Prevention Act, Chapter 21E of the MA General Laws. This investigation included the research of environmental records and collection of soil and groundwater samples for laboratory analysis.

According to the Phase I Limited Site Investigation report issued by DWP, low level contamination was identified in two indoor leaching pits (UI-2 and UI-2) and the MCD trap. It was the recommendation of DWP that these drainage areas be sealed, in accordance with the UIC Closure Program (UIC) Regulations (310 CMR 72.00). **It was further determined that the source of PCE contamination within the Indian Hill wellfield was not related to activities within the Chatham Municipal Airport, as no significant concentrations of PCE were discovered, and the Chatham Airport is located hydrologically downgradient to the wellfield.** On February 1, 1994, the Department (Gregg Hunt) officially issued a determination that “no further action” was required at the site.

On February 4, 1999, Bennett & O’Reilly, Inc., was contacted by the Town of Chatham Water Quality Laboratory (Robert Duncanson) to provide environmental assessment and appropriate remedial response measures, if required, for the abandonment of the floor drain and three (3) leaching pits. Assessment

activities were conducted on April 7, 1999, by Bennett & O'Reilly, Incl, personnel (Craig Sasse), as assisted by Bob Duncanson of Chatham Water Quality Laboratory. Five hand borings were conducted within the floor drain areas. As representing leach pit sidewalls and bottom of hole areas, soil samples were collected, preserved and forwarded to Groundwater Analytical of Buzzards Bay, MA for Total Petroleum Hydrocarbon (TPH ASTM D3328-90), Volative Organic Compounds (EPA 8260B) and trace metal (ICP-AES and CVAA) analysis.

Laboratory analysis was received by Bennett & O'Reilly, Inc., on April 23, 1999. These results were compared to the Method 1- Risk Characterization standards for the strictest GW-1 and S-1/GW-1 categories and to the Reportable Concentration standards of the RCS-1 standards. Although low levels of PCE were reported within the HB-1:0-5' and HB-2:0-5 intervals and low levels of trace metals, primarily arsenic and chromium, were noted in each sampling location, all reported concentrations were well below the most stringent Method 1- Risk Characterization Standards and RCS-1 Standards. As such, soil conditions and the Chatham Municipal Airport represent a condition of "No Significant Risk", and no remedial repose actions were conducted as part of the of the UIC closure procedures."

A copy of the entire report is located in Appendix C .

## **6.7.4.2 Measures to Protect the Sole Source Aquifer**

### **6.7.4.2.1 Vegetation Management**

The Airport and vegetation management areas are located within the Cape Cod Sole Source Aquifer, as noted above, and within the MADEP Approved Zone II Wellhead Protection Area. The Zone II area includes three wells- Indian Hill (0.2 miles east), Well 8 (0.35 miles north), Training Field (0.4 miles north) see Figure 9. The wells and associated Zone II areas are located outside of vegetation maintenance areas. The proposed vegetation management is not anticipated to affect the groundwater within the work areas for many of the reasons noted in Section 6.2. In addition, as noted in the Airport's Draft Vegetation Management Plan (see Appendix D), select methods of vegetation removal, including the timing of removal and limited use of machinery, are designed to provide a high level of protection of the soils and a correspondingly low potential for sedimentation into wetland resources. The proposed mitigation of these potential erosion impacts shall include a combination of construction methodology, construction specifications, erosion control barriers, construction timing, monitoring, and some revegetation. The construction specifications, which will be included in the work contract, will direct the contractor to repair soils disturbed by machinery by restoring each area to grade, and then converting the area with seed and/or mulch. On slopes, an erosion control barrier will be included in the mitigation as directed by the on-site inspector. Other specifications will include staging areas, log removal methods, slash maintenance and a detail of areas to be avoided with machinery. There will be a general soil erosion specification authorizing the on-site inspector to direct the contractor to repair damaged areas on a case-by-case basis.

The placement of erosion control barriers will be determined by the on-site inspector on an as-needed-basis. A detail of the correct installation of haybale and silt fence barriers, as well as depicted locations of erosion and sedimentation controls along defined haul roads and staging areas, will be included in the contract plans and documents.

Construction timing is perhaps the most important tool in controlling the disturbance of soils during the implementation of the VMP. The removal vegetation when the soils relatively dry, or otherwise stable will significantly reduce the potential for widespread soil disturbance. The bid documents and/or the Order of Conditions will emphasize that suitable soil conditions are required for vegetation removal in wetland areas.

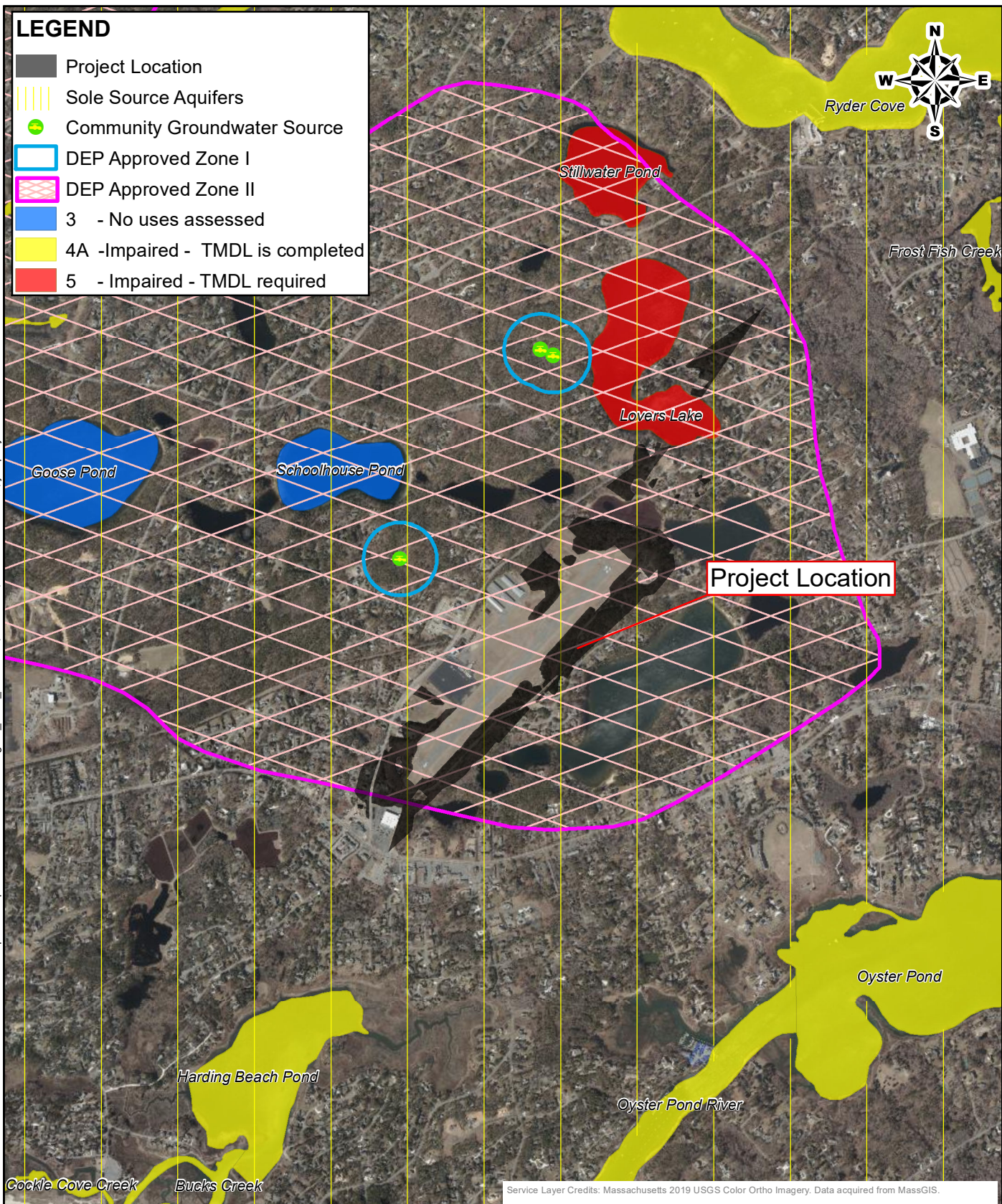
The monitoring of the project by an engineer/environmental scientist who is responsible for the correct implementation of the plan and the Order of Conditions is an important feature of the project. The individual (or team) will be authorized to request the contractor to repair soils, install erosion control measures, use specific access routes, avoid sensitive areas, and comply with the construction specifications and applicable permits.

### **6.7.4.2.2 T-Hangar Construction**

The proposed T-hangar construction will include two (2) buildings to accommodate approximately 22 units for use by individual aircraft owners. Each hangar unit is anticipated to be approximately 7,400 square feet in size. The primary purpose of the T-hangars is for the protection of aircraft from weather and in particular, the high salt content in the air at Chatham Airport. In support of the hangars, development will include taxiways needed to provide access to the existing taxiway/taxilane system, and vehicle parking. The proposed area of disturbance, including construction staging is expected to occur within 2.6 acres of airport property. The

**LEGEND**

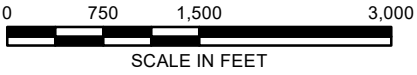
- Project Location
- Sole Source Aquifers
- Community Groundwater Source
- DEP Approved Zone I
- DEP Approved Zone II
- 3 - No uses assessed
- 4A -Impaired - TMDL is completed
- 5 - Impaired - TMDL required



© 2021 - GZA GeoEnvironmental, Inc. J:\0\_166600 - 0\_166699\15.0166692.03 Chatham Airport Comprehensive VMP\GIS\mxd\Fig5-6\_VMP\_PWS.mxd, March 03, 2021 - 4:43:55 PM, jacquelyn.claver

Service Layer Credits: Massachusetts 2019 USGS Color Ortho Imagery. Data acquired from MassGIS.

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**CHATHAM AIRPORT VMP  
CHATHAM, MA**

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PREPARED FOR:  
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**PUBLIC WATER SUPPLIES**

PROJ MGR: SDR	REVIEWED BY: GPD	CHECKED BY: SLL	<b>FIG 9</b>
DESIGNED BY: JRC	DRAWN BY: JRC	SCALE: 1 in = 1,500 ft	
DATE: 03/03/2021	PROJECT NO: 15.0166692.03	REVISION NO:	

construction of hangars and associated pavement would occur in phases as demand for hangars materializes, and a relatively small quantity of materials would be on site at any time. Potential construction impacts from the proposed hangar development would be reduced through the implementation of an erosion and sediment control plan, including stormwater runoff controls and Best Management Practices (BMPs).

It is important to note that the Airport maintains a current Stormwater Pollution Prevention Plan (SWPPP) in accordance with the United States Environmental Protection Agency. Structural controls and practices used to minimize the exposure of potential pollutant sources to rain, snow, snowmelt, and stormwater include the following:

- Shallow grassed swales- removes pollutants through sedimentation and gravity separation
- Deep sump catch basins- removes trash, debris, and coarse sediment from stormwater runoff and serves as temporary spill containment devices for floatable such as oils and greases
- Leaching catch basis- permit runoff to infiltrate into the ground
- Oil/water separators and secondary containment structure- separates and diverts oil and fuel from stormwater. The system has an oil stop valve, safety oil sump and a secondary underground storage tank. The oil stop valve's ballasted float remains open when submerged in water but closed and sealed when submerged in oil or fuel. When closed the pollutant is captured by the underground storage tank
- Infiltration basis with infiltration trench- impounds and stores runoff until it can exfiltrate through the basin floor, and sides/bottom of the stone infiltration trench. The trench provides the storage of runoff under ground level

In addition, the Airport maintains a current Spill Prevention, Control and Countermeasures Plan (SPCC) in accordance with EPA regulations to prevent, prepare for, and respond to oil spills. The Airport further maintains a policy that prohibits the storage of fuel or oil in hangars other than that contained in the aircraft tank itself, or the aircraft owner's vehicle fuel tank that is stored when the owner is away on a flight. Other BMPs are employed such as materials are to be stored in properly labeled containers with expiration dates, potential health hazard, suggestions for handling, and first aid instructions. Activities such as aircraft and equipment washing are restricted to a designated wash area at the Airport where waste is collected and discharged to the existing oil/water separator at the Airport. Aircraft fueling occurs in a similar designated area.

During construction of the hangars, contractor's operating construction vehicles and equipment on the Airport must be prepared to expeditiously contain and clean up spills resulting from fuel or hydraulic fluid leaks. This includes having properly trained personnel and the appropriate equipment on-site to perform such cleanup.

#### **6.7.5 Climate**

Although there are currently no Federal standards for aviation related Green House Gas (GHG) emission, it is well established that GHG emissions can affect climate. The proposed alternatives would contribute GHGs temporarily during construction.

According to the 2021 Airport Master Plan, the number of based aircraft is expected to increase from 40 to 47 over the twenty-year planning period. The construction to accommodate this anticipated gradual growth is expected to fall well below *de minimis* thresholds, as supported by larger scale construction projects in the Federal Presumed to Conform Actions Under General Conformity<sup>11</sup>. While the project would ultimately result in a slight increase in aircraft traffic and associated GHG emission, it is anticipated that this increase would have a negligible impact on climate.

## 7.0 Mitigation

The Proposed Action involves the construction of T-hangars as the future need may arise, and the removal of vegetative obstructions from 21 properties, Town right-of-way, and Airport property. Additionally, the Proposed Action seeks to acquire avigation easements over 21 properties for the purpose of future obstruction removal. Based on the analysis in this EA and extensive experience with similar projects at multiple airports, the environmental impacts resulting from these actions are not anticipated to be significant. The Airport proposes the following mitigation efforts with respect to vegetation obstruction removal:

- Cutting tree trunks and brush to ground level, without stump removal, minimizing ground impacts;
- Tree cutting and removal will be performed in a manner that causes the least amount of environmental disturbance. Considerations will be given to leave downed trees and branches on site, where practical, to minimize disturbance and create wildlife habitat;
- Using equipment that will perform adequately while minimizing soil disturbance and wetland disturbance. Mid-sized equipment such as tracked or four-wheel drive vehicles will be used to move trees to staging areas for processing into smaller material and loading to prevent ground disturbance;
- Within wetlands, the stumps of the trees will be left in place, no soil disturbance, grading or grubbing will take place, and no fill material or temporary mats (or similar measures) will be placed in wetlands;
- All ground disturbing activity will be halted immediately, and MHC would be notified should evidence of archaeological or historical resources be encountered during obstruction removal activities;
- Sediment and erosion control, dust prevention, and hazardous spill prevention and response plans (above and beyond the Airport's SPCCC) will be developed and implemented;
- On residential properties, stumps will be cut 6" below grade so that replanting ground cover necessary following tree removal can occur. This may include grasses and shrubs that will not intrude into the Airport's approach surfaces;
- Vegetation removal activities will be performed during frozen ground, or otherwise dry and stable conditions;
- Special care shall be taken that machinery is not being driven, and logs are not being stockpiled/stored within wetlands;
- Tree cutting near vernal pools shall be performed after amphibians migrate from the pool; and
- Tree removal within wetlands shall be done by mechanical means from the uplands or hand felling, and within the vernal pool removal shall be done with hand tools only.

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<sup>11</sup> <https://www.fws.gov/policy/library/2007/E7-14644.pdf>



## 8.0 List of Preparers

Federal Aviation Administration  
Mr. Richard Doucette  
1200 District Avenue  
Burlington, MA 01803

Gale Associates, Inc.  
Mr. Matthew Caron  
Six Bedford Farms Drive, Suite 101  
Bedford, NH 03110

GZA GeoEnvironmental  
Mr. Steve Riberdy  
1350 Main Street #1400  
Springfield, MA

## 9.0 List of Agencies Consulted

Massachusetts Department of Transportation  
Aeronautics Division  
Mr. Nathan Rawding  
1 Harborside Drive, Suite 205N  
Boston, MA 02128

Tribal Historic Preservation Officer  
Mashpee Wampanoag Tribe  
Mr. David Weeden  
438 Great Neck Road South  
Mashpee, MA 02649

Tribal Historic Preservation Officer  
Wampanoag Tribe of Gay Head (Aquinnah)  
Ms. Bettina Washington  
20 Black Brook Road  
Aquinnah, MA 02535

Commonwealth of Massachusetts  
Massachusetts Historical Commission  
220 Morrissey Boulevard  
Boston, MA 02125

United States Environmental Protection Agency  
5 Post Office Square  
Boston, MA 02109

## 10.0 Public Involvement

During the development of this Environmental Assessment, the Airport Commission held a public information meeting on February 10, 2021, outlining the Environmental Assessment process. At the completion of the draft Environmental Assessment, the draft EA was made available during a regularly scheduled Airport Commission meeting on April 14, 2021. Subsequently, the draft EA was posted to the Town's website on May 14, 2021. Circulation of the draft Environmental Assessment for public comment was advertised on May 27, 2021, and June 3, 2021, in the Cape Cod Chronicle advising readers where locate the document and where to send comments.

At the close of the public comment period, all comments were reviewed by the Airport Commission and the FAA. Input received, both written comments received during the public comment period as well as verbal comments provided in virtual public meetings and via phone calls, have been incorporated into the document when appropriate. Responses to the most frequent and/or substantive comments are provided below: For a full listing of public comments submitted, please see Appendix E.

Q: Who is responsible for overseeing the development of the Environmental Assessment and is it an impartial assessment?

A: All work on the Environmental Assessment has been completed under the supervision of the Federal Aviation Administration (as required by federal regulations) and the Chatham Airport Commission (as required by local and state law). Gale Associates is working under a contract with the Town of Chatham, funded by federal and state grants. The FAA and the Airport Commission are responsible for the information contained in the document.

Q: Why has the Jet-A fuel facility, which was proposed in the Airport Master Plan, been omitted from the Environmental Assessment?

A: The jet-A fuel tank is excluded from the assessment because it is not being proposed at this time. At some point in the future if/when it is proposed for construction, the regulations applicable at that time will determine what analysis is required. Currently, the FAA does NOT conduct Environmental Assessments for most fueling facilities. The FAA interprets fuel farms as being Categorically Excluded pursuant to section 5-6.4(u) of FAA Order 1050.1F, unless they have remote fueling capabilities. This is often the case at very large, commercial service airports. This is generally not the case at general aviation airports.

Q: Why is the Airport pushing to expand airport traffic, including larger, noisier commercial flights?

A: There are no proposed improvements in the Master Plan or the Environmental Assessment that calls for the expansion of airport traffic or larger/noisier aircraft. Aircraft are limited in large part by runway length requirements, and there is no proposal to lengthen the airport's existing runway. Chatham is a public-use airport and is open to all types of aircraft that can utilize the Airport given its limited runway length. The FAA and the Town of Chatham cannot prohibit pilots from utilizing the Airport.

Q: Can the Airport limit the size and number of planes that use the Airport? And can the Airport restrict the hours that planes can access the Airport?

A: The Airport Commission and the FAA cannot limit the size and number of planes that use the Airport. Aircraft are limited in large part to the length of runways. There are no plans in the Master Plan or the Environmental Assessment to increase the length of the runway. Regarding hours of operation, the Airport could adopt a voluntary

program restricting the hours of operations at the Airport, but all public use airports are open 24 hours/day, except in an emergency.

Q: Why does the Environmental Assessment claim that there are no environmental impacts associated with the acquisition of aviation easements?

A: There are no environmental impacts associated with the actual acquisition of aviation easements, as that is simply a negotiated real estate transaction between the landowner and the entity seeking an easement. There are however, potential environmental impacts associated with tree clearing which is discussed in the Environmental Assessment.

Q: Has either the FAA or Airport Commission directly contacted all private parties that are potentially targeted for aviation easements?

A: At this time, no property owners have been contacted regarding aviation easements. It is premature to notify property owners at this time as there has been no commitment from Town, State or FAA to fund an aviation easement acquisition project. Further, the Town still has other options available to them to remove vegetation without the need for aviation easements.

Q: What restoration efforts occur as part of tree clearing projects?

A: Restoration efforts following selective tree clearing are highly dependent on a number of factors, particularly where the tree is located. If trees are removed from "landscaped" areas on private property, typically the stump is ground in place and all debris removed. The property is loamed and seeded to match the adjacent landscaped area. If trees are removed from a wooded area, typically the stumps remain, and the large trunk and branches may remain or are chipped or removed. In some instances, where tree clearing may occur in wetlands and wetland buffers, permitting requirements dictate that some "slash" remain as habitat for wetland species. Permitting requirements for work in sensitive areas such as wetlands or rare species habitat will determine any specific mitigation in those instances.

Q: What safeguards does the Airport have in place regarding the existing fuel facility and the proposed jet-A fuel facility?

A: The Airport maintains a Stormwater Pollution Prevention Plan and Spill Control and Countermeasures Plan in accordance with EPA regulations. The existing fuel facility at the Airport is also equipped with EPA compliant containment and secondary containment systems which include oil/water separators.

Q: Does the Environmental Assessment propose to clear cut 10 acres of trees and destroy wetlands, including a vernal pool?

A: The Environmental Assessment does not propose to cut 10 acres of trees. There are select trees within 4.2 acres off-airport property in the Runway 06 end that need to be removed, and within 3.4 acres off-airport property in the Runway 24 end (see page 3 of the Environmental Assessment). The Airport Commission cannot legally "destroy" vernal pools or wetlands. Any proposed clearing within wetland resource areas must comply with local, state, and federal requirements, including local Conservation Commission and Cape Cod Commission requirements.



Q: What is the purpose of new hangars when the Master Plan calls for nominal growth within the forecast planning period.

A: The development of hangars is proposed to meet future demand as it materializes. Hangars are not expected to be constructed until the demand is realized. The purpose of including the hangars in the Environmental Assessment is so that the Airport is positioned to move forward with development in the future.

Q: Are straight-in approaches less safe than the current circling approaches?

A: Circling approaches inherently present more of a hazard than straight-in procedures. By aligning the procedures with the runway and providing glide path information, the procedure will become more precise and safer.