

Memorandum

To: Sean Scanlon, Tweed Airport

Date: February 10, 2021

From: Nick Campbell, FHI

Subject: **Tweed Airport Master Plan Update
Community Advisory Committee Meeting #3
Summary of 1/5/2021 Meeting**

The third Community Advisory Committee (CAC) meeting for the Tweed New Haven Airport (HVN) Airport Master Plan Update (AMPU) was conducted from 7:00 pm to 8:30 pm on January 5, 2021. The meeting was held virtually due to COVID-19. The CAC meeting was attended by three CAC committee members along with several members of the project team and Tweed Airport staff.

Sean Scanlon, Executive Director of Tweed New Haven Airport introduced the purpose of the meeting to update the CAC on the status of the AMPU process. Mr. Scanlon introduced Jeremy Nielson, HVN Airport Manager, and Felipe Suriel, HVN Deputy Airport Manager, who both gave brief comments on AMPU progress so far.

Jeff Wood and Laura Canham of McFarland Johnson (MJ) conducted a presentation, which was followed by questions and discussion with CAC members. The presentation is attached below. The presentation consisted of an overview of the Facility Requirements chapter, the Alternatives chapter, and the next steps in the process. The presentation began with a summary of the facility requirements and explicit purpose of the AMPU. Mr. Wood stated that this project seeks to provide an adequate runway length to business and leisure destinations in the southeast, but that the length of the runway needs to strike a balance between the operational reliability of the airport and its safety, community, and environmental concerns. The runway alternatives include a 6,635-foot-long runway plus Engineered Materials Arresting System (EMAS) that meets both runway end declared distances of at least 6,000 feet. Mr. Wood highlighted that the various expansions and enhancements to the airport could be done in stages so that the plan is flexible and evolving and would likely include federal and private funding to advance some of the proposed developments. Creating a flexible expansion plan for the airport allows HVN to implement future technologies as they become available, enabling the service of a wider customer base.

Runway expansion is the primary alternative under consideration, and whether the expansion includes an Engineered Material Arresting System (EMAS). In addition to the runway, Mr. Wood presented proposals for an expanded taxiway system at the airport to meet Federal Aviation Administration (FAA) design and geometry standards.

Ms. Canham (MJ) then followed with a presentation of the terminal alternatives under consideration. Three terminal alternatives were presented to the members of the CAC, each with pros and cons. Ms. Canham highlighted that vehicle access concerns, terminal size, and incompatible land uses surrounding the terminal area were the primary drivers of analysis for the terminal alternatives, as the project team is seeking to improve overall access to, and functionality of, the airport. General Aviation (GA) alternatives were then presented.

After these alternatives were presented, Mr. Wood and Ms. Canham opened the floor to questions and comments related to the presentation. The following is a summary of the questions by the CAC and key discussion points.

- A member of the CAC inquired about the runway length at Westchester in comparison to what was proposed. Mr. Wood stated the recommended runway length at HVN would be 100 feet longer.
- A question was raised about the timeline for FAA AMPU approval, which was estimated for June 2021. A discussion started around whether or not the GA hangar location on the east side was chosen based on the East Haven versus New Haven taxes. The project team stated that the east side GA would stay as-is. GA alternatives just reviewed the potential expansion options to confirm HVN could meet facility requirements demand. The final GA development would be demand based.
- A member asked about the timeline of the overall expansion process if everything is approved, to which Mr. Wood gave an estimate of 3-5 years depending on permitting, construction, and environmental work.
- A question came up about what the difficulty is of getting airlines to come to HVN. Mr. Wood and Jeremy Nielson responded that the runway length and terminal size are key issues. The runway length is linked to reliability, which is a factor.
- Two CAC members asked if the parallel taxiways could be built separately from the runway expansion, and Ms. Canham and Mr. Wood both confirmed that they could be done in stages, independent of each other.
- A member followed up and inquired if the FAA would approve the runway extension without the taxiways. The project team stated that they could, but that the individual projects will be re-evaluated as projects are funded.
- Another CAC member asked if the GA development would mean changes to Robinson Aviation's leasehold. It was clarified that the AMPU will show general areas that would be available for GA development. These proposed developments might be privately funded and not be HVN's responsibility. The alternative layouts were a representation of what could occur to confirm that enough space is available to meet the forecast facility requirements.
- A member noted that clarifying the role of the airport maintaining GA hangars, as that would be the responsibility of the hangar owners.
- The question was asked who would be responsible for installing access to the new terminal. Mr. Wood stipulated that the connection to the public road and on-airport property access would most likely be the airport's responsibility and that the cost would be borne by the airport. Road improvements off airport property would be up to the City/Town.
- A member asked about the trip distance one could expect from HVN, Mr. Wood answered that a trip length of approximately 1,000 nautical miles was the design goal for the airport.
- A member asked what would be constructed first, and the project team responded that it would depend on funding and phasing, but potentially various elements could be constructed concurrently, especially the runway and terminal. There would likely need to be other sources of funding for the terminal. Safety and operational improvements receive a higher priority for funding.

Following the alternatives discussion, Mr. Wood laid out the next steps of the AMPU process, which involves the following steps:

- Selection of the preferred alternative by the end of the month
- Development of a draft Airport Layout Plan for FAA approval
- The National Environmental Policy Act (NEPA) environmental review process
- Final design, permitting, and implementation

Attendees:

- Sean Scanlon, HVN
- Jeremy Nielson, HVN/Avports
- Felipe Suriel, HVN/Avports
- Susan Godshall, New Haven Resident
- Scott Luzzi, Yale University
- Kevin Rocco, New Haven Resident
- Jeff Wood, MJ
- Laura Canham, MJ
- Steve Bourque, MJ
- Nick Campbell, Fitzgerald & Halliday, Inc.
- Laurel Stegina, Fitzgerald & Halliday, Inc.



MASTER PLAN UPDATE

Tweed-New Haven Airport Authority



**Advisory Committee
Meetings** Jan. 5, 2021



Logistics

- Meeting Recording
- Please Mute Your Microphone
- Sign-In Sheet - Please Send a Chat with:
 - Name
 - Affiliation
 - Email Address
- Questions Will be Addressed at the End
 - Send a Chat any Time During the Presentation
 - Open Mic Q&A at the Conclusion

Introductions

- Sean Scanlon, Executive Director
- Jeremy Nielson, Airport Manager
- Attendees

Agenda

- Introductions
- Facility Requirements Summary
- Alternatives
- Next Steps
- Conclusion/Questions



Facility Requirements

Inventory

Forecasts

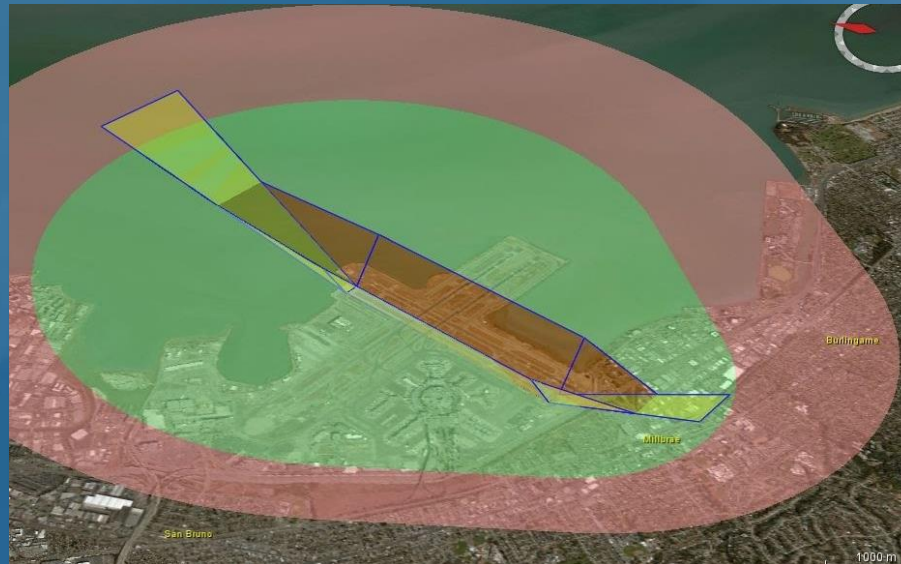
Environmental
Overview

Facility
Requirements

Alternatives

Airport Layout
Plan (ALP)

- Goal: Identify Needs for Alternatives
 - Compare Existing Conditions To:
 - FAA Safety Standards
 - FAA Design and Geometry Standards
 - Code of Federal Regulations Airspace Surfaces
 - Forecasts



Runway Length

- **Goal:** Provide Adequate Runway Length to Leisure Destinations in the Southeast
- Runway Length Needs to Balance Operational Reliability, Safety, Community, and Environmental
- Reliability is Critical for Sub-Daily Operators – the Longer a Runway, the More Reliable Service Can Be
- **Unconstrained Recommendation:** 7,600' – this is NOT Feasible
- **Constrained Recommendation:** 6,635'

Find Balance between Airport Limitations and Operational Reliability

Comparative Routes

Airport	Destinations	Runway Length	Aircraft Type
Westchester	Fort Myers, FL (958 nm)	6,549 feet	A320
Ogdensburg	Orlando-Sanford, FL (993 nm)	6,400 feet	A319, A320
Trenton-Mercer	Miami, FL (911 nm)	6,006 feet	A319, A320
Chicago Midway	Fort Lauderdale, FL (1,015 nm)	6,522 feet	B737



Recommended Runway Length Balance

- Constrained Recommendation of 6,635 Feet Balances the Following:



Safety



Community



Environmental



Fiscal



Regulatory



Operational

Airside Facility Requirements Summary

Item/Facility	Demand
Runway Length	6,635'
Runway Safety Area	Review Fence and Road in Runway 20 RSA Address RSA Transverse Grading
Runway Object Free Area	Review Fence, Road, and NAVAIDs in Runway 20 ROFA
Runway Protection Zone	Control of All RPZs Through Ownership or Avigation Easements
Runway Lighting	Update to Cable in Conduit Remove Runway 14-32 Lights
Runway Visual Aids	Upgrade to MALSR Runway 2 Install REIL on Runway 20
Instrument Approaches	Lower Runway 2 Minimums, if Possible Provide Vertical Guidance to Runway 20, if Possible
Taxiways	Full Parallel Taxiway to Runway 2-20 that Meets FAA Design Standards Address Taxilane/Taxiway Object Free Areas Address Airfield Geometry Concerns and Meet FAA Standards

Airfield Geometry Standards

- High Energy Intersection
- Direct Access
- Taxiway Intersecting Runway at Other Than a Right Angle
- Unexpected Hold Lines



Passenger Terminal Requirements

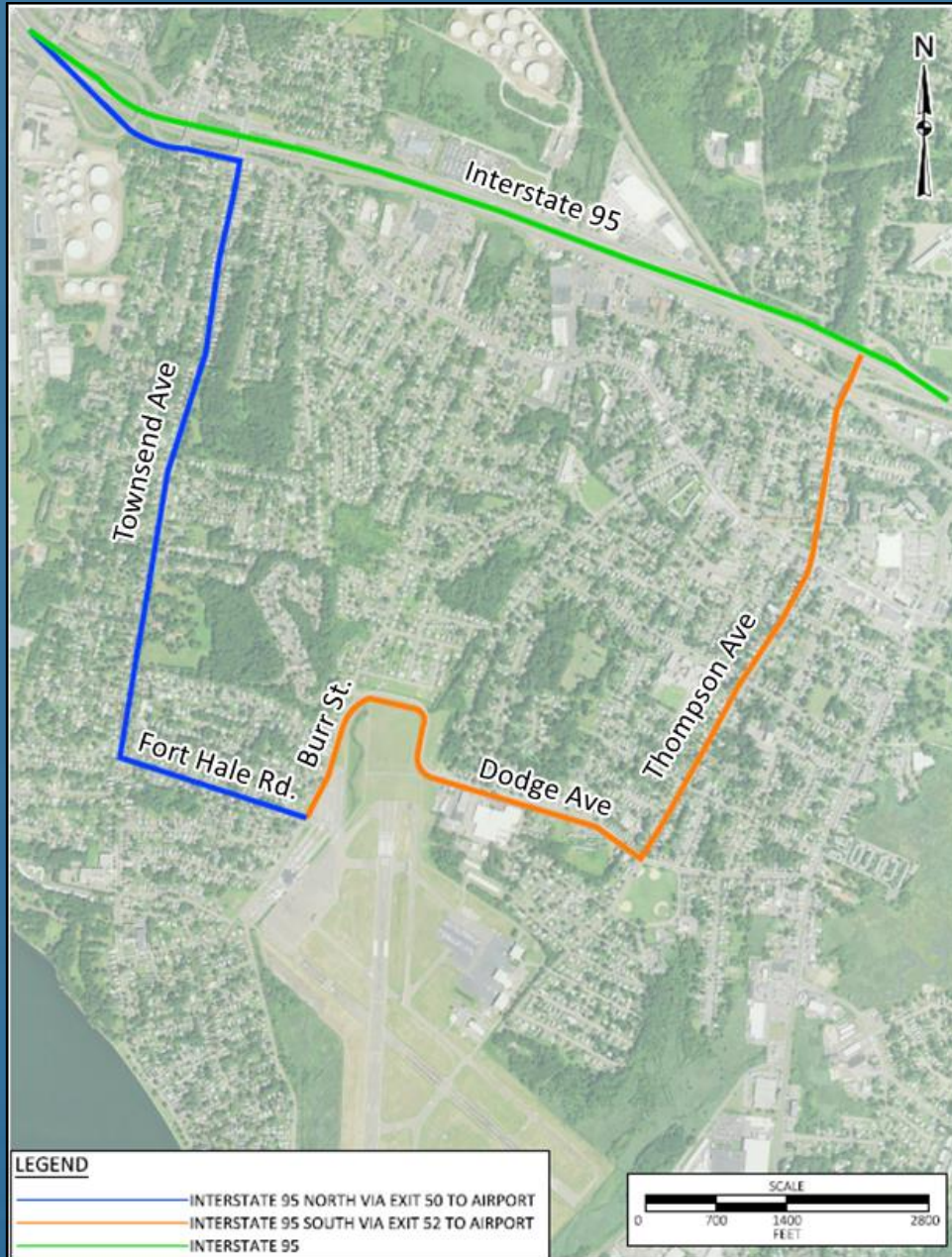
Terminal Functional Area	Existing Provision	100 Peak-Hour Passengers	150 Peak-Hour Passengers	200 Peak-Hour Passengers	250 Peak-Hour Passengers
Check-In /Ticketing	1,648	949	1,446	1,897	2,394
Baggage Screening & Makeup	751	3,115	3,240	3,240	3,240
Security Screening Checkpoint	1,356	4,883	4,981	6,366	8,854
Secure Holdrooms	1,865/1,511	5,780	6,878	9,072	12,364
Baggage Claim and Inbound Baggage	769	5,566	4,292	8,820	12,265
Concessions	1,090	2,078	3,117	4,156	5,194
Other Functions/Tenants	5,810	12,286	15,644	17,871	23,689
Total	14,800	34,657	39,598	51,422	68,000
Passenger Terminal Requirement Range		30,000-35,000	35,000-40,000	50,000-55,000	65,000-70,000

Recommendation Priorities:

- 1) Expand Baggage Claim Area
- 2) Expand Secure Holdroom
- 3) Expand Security Checkpoint
- 4) Expand Circulation and Support Facilities
- 5) Expand Outbound Baggage Screening Area (In-line System)

Total Additional Space - 20,000-55,000 SF

Airport Access



Access Route	I-95 N via Exit 50	I-95 S Via Exit 52
Stops	5	6
Speed Limit	25-30 mph	25-30 mph
Driving Through	Residential	Residential

- Ideal Airport Access:**
- Through Commercial/Industrial (Avoid Residential Areas)
 - Few Stops
 - Expedient – High Speed Limits

GA and Landside Facility Summary

Item/Facility	Demand
Hangars	2 Additional Individual Hangars 44,200 SF Additional Conventional Hangar Business Hangar(s) Private Investment
General Aviation and Admin Parking	Deficiencies: Existing: 99, Future: 121
General Aviation Fueling	Plan for Electric Aircraft Parking and Charging Additional Fuel Tanks as Needed
Utilities	Improve Terminal Power Load
Airport Traffic Control Tower	Upgrade and/or Replace Building and Technology Provide a Full Power Generator
Aircraft Rescue and Fire Fighting	Increase ARFF from 4,500 SF to 6,500 SF
Maintenance/ Snow Removal Equipment	Increase Maintenance/SRE from 9,500 SF to at least 22,000 SF Replace Vehicles Per Eligibility
Other	Electric Automobile Charging Stations Drainage Study Resiliency Planning

Alternatives

Inventory

Forecasts

Environmental
Overview

Facility
Requirements

Alternatives

Airport Layout
Plan (ALP)

- Airfield Alternatives
- Terminal Alternatives
- General Aviation Alternatives

Runway Alternatives Process



Identify Critical Runway Length
Need

Accelerate Stop Distance Available
Landing Distance Available



Review the Constraints: Generally, Remain Within the Existing Safety
Areas Due to Environmental Constraints and Community Feedback



Alternatives:
(1) No EMAS, (2) With EMAS

Weighing Pros and Cons



Preferred Alternative and Potential Changes Will Be Determined
Based on Feedback



Next Step: FAA Will Evaluate the Documentation

Engineered Materials Arresting System

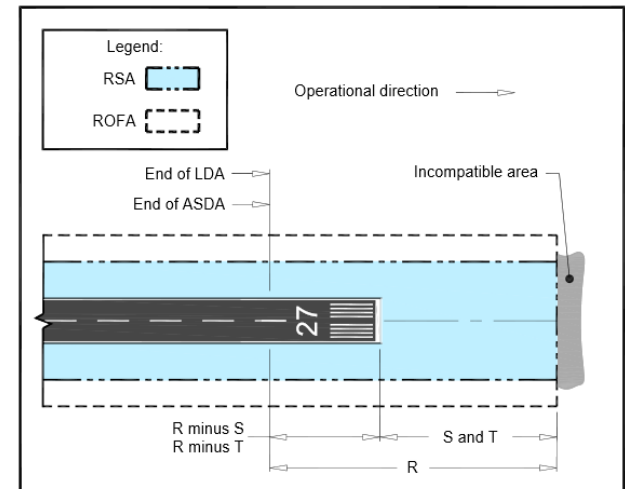
- EMAS: Crushable Material Placed at the End of a Runway to Stop an Aircraft That Overruns a Runway
- Aircraft Tires Sink Into Lightweight Material, Decelerating the Aircraft
- EMAS Improves Safety When 1,000 feet of Overrun is Not Available



Declared Distances

- Represent the Maximum Distances Available for Meeting Takeoff (TORA/TODA), Rejected Takeoff (ASDA), and Landing Distance (LDA) Performance Requirements
- Used for a Variety of Purposes
 - Obtain Additional RSA/ROFA
 - Mitigate Unacceptable Incompatible Land Uses in RPZ
 - Meet Runway Approach and/or Departure Surface Clearance Requirements
 - Mitigate Environmental Impacts
- Only Acceptable When It Is Impractical to Meet Design Requirements

Figure H-9. Adjusted ASDA and LDA Stop End for the RSA



- Note 1: When a stopway exists, see [Figure H-11](#) for the stop end of the ASDA.
- Note 2: S denotes the existing or proposed length of the RSA beyond the runway end.
- Note 3: T denotes the existing or proposed length of the ROFA beyond the runway end.
- Note 4: When declared distances are used as an incremental improvement and R is not obtainable beyond the LDA, this dimension equals the length of RSA obtainable beyond the ASDA.
- Note 5: When declared distances are used as an incremental improvement and R is not obtainable beyond the LDA/ASDA, this dimension may equal the length of RSA obtainable beyond the LDA/ASDA minus S.

Constraints

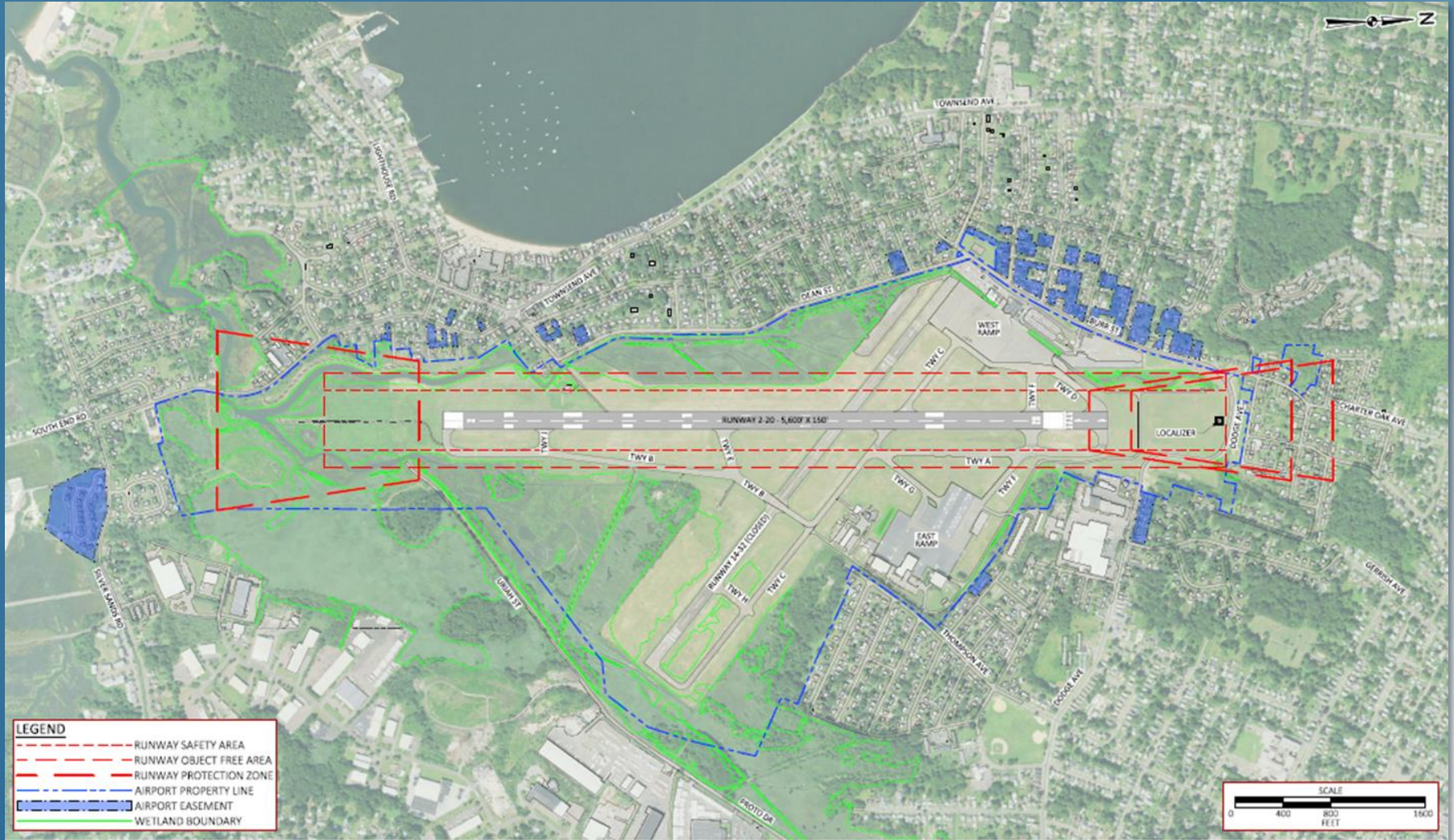


LEGEND	
	RUNWAY SAFETY AREA
	RUNWAY OBJECT FREE AREA
	RUNWAY PROTECTION ZONE
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY
	RESIDENTIAL AREA
	ROADS

Constraints Include:

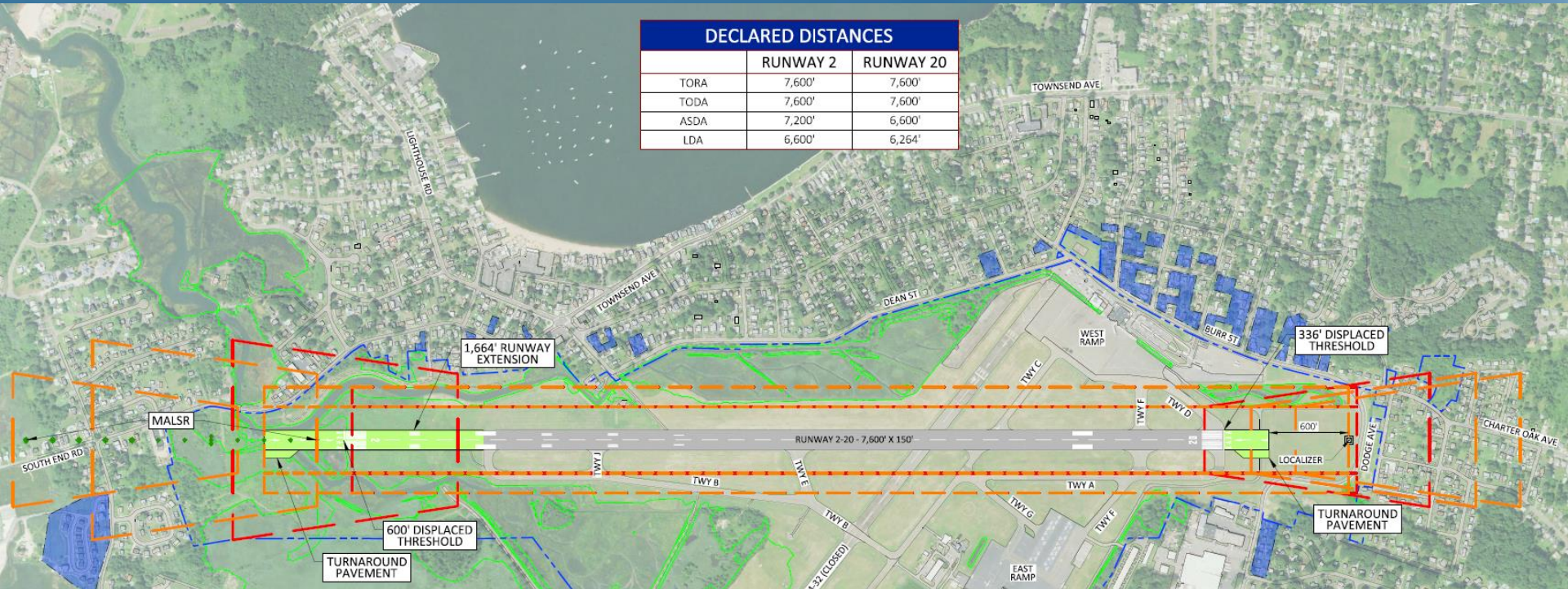
- Residential
- Roads/Streets
- Navigational Aids
- Wetlands/Creeks/Streams

No Build



Alternatives Considered and Dismissed

- 7,600-foot Long Runway

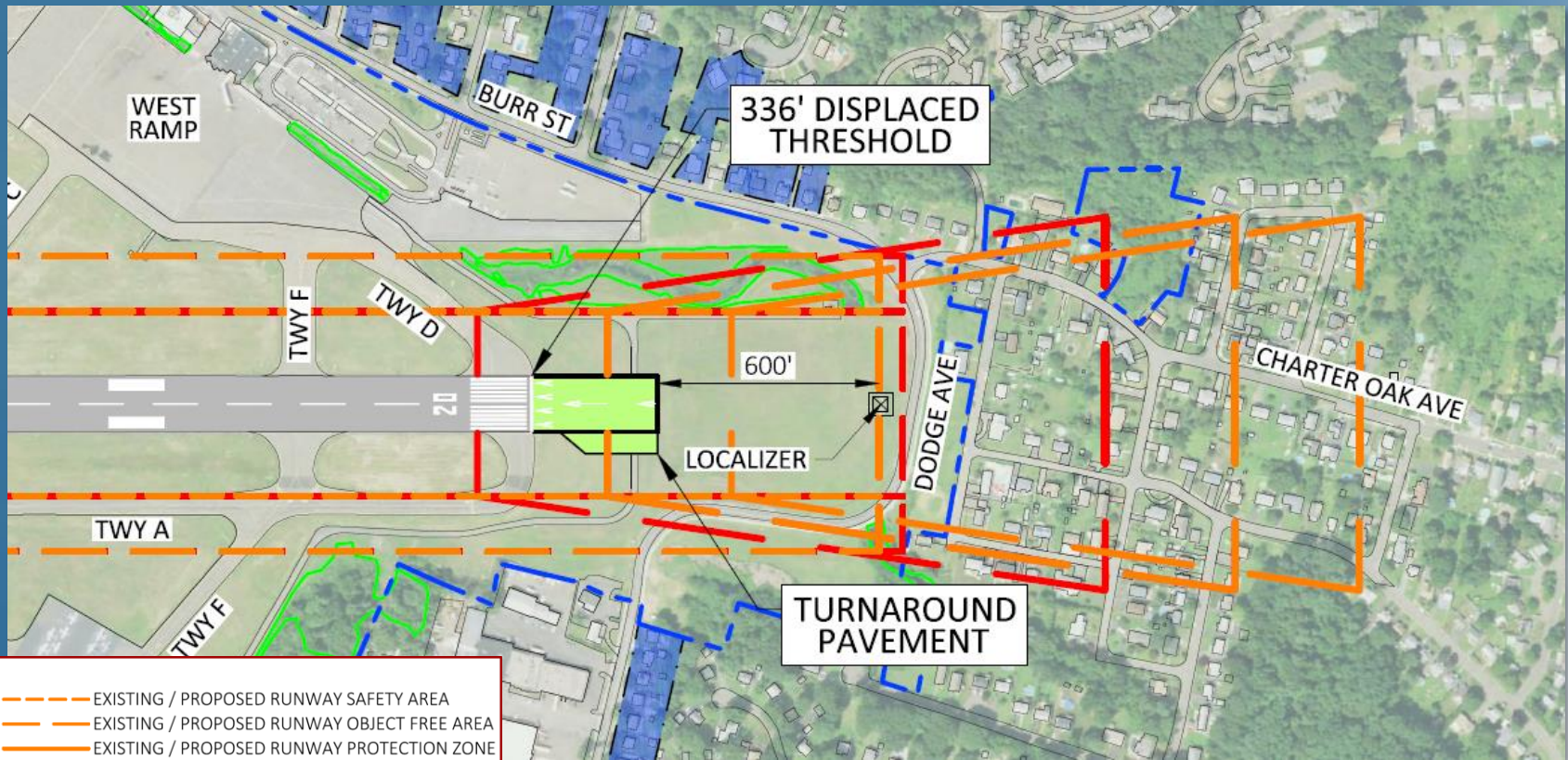


DECLARED DISTANCES		
	RUNWAY 2	RUNWAY 20
TORA	7,600'	7,500'
TODA	7,600'	7,500'
ASDA	7,200'	6,500'
LDA	6,600'	6,264'

LEGEND	
	EXISTING / PROPOSED RUNWAY SAFETY AREA
	EXISTING / PROPOSED RUNWAY OBJECT FREE AREA
	EXISTING / PROPOSED RUNWAY PROTECTION ZONE
	PROPOSED PAVEMENT
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY

Runway 20 Extension











- 336 Foot Runway Extension
- Additional Turnaround Pavement
- No Impacts to NAVAIDs

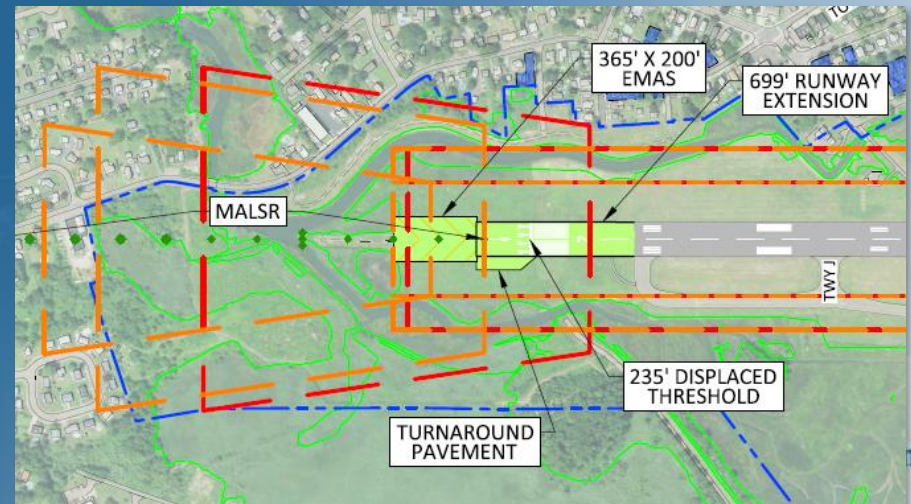
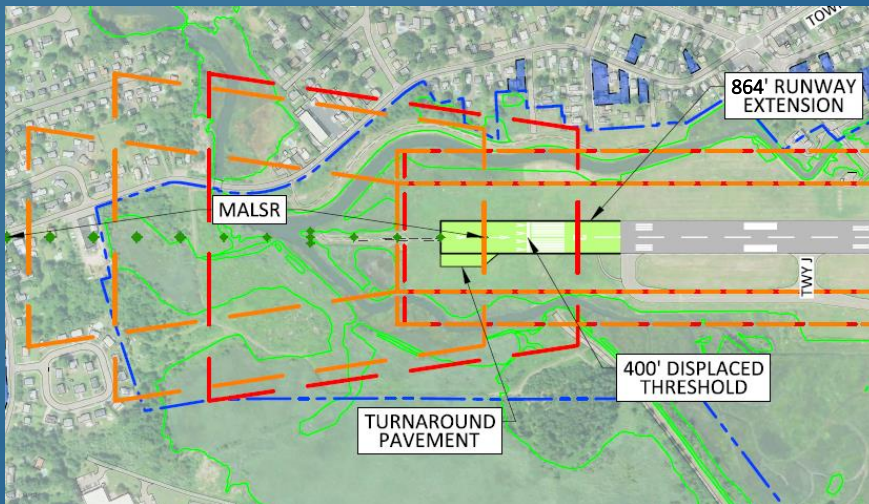


LEGEND	
	EXISTING / PROPOSED RUNWAY SAFETY AREA
	EXISTING / PROPOSED RUNWAY OBJECT FREE AREA
	EXISTING / PROPOSED RUNWAY PROTECTION ZONE
	PROPOSED PAVEMENT
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY

Runway 2 Extension

- 864-Foot Runway Extension
- 699-Foot Runway Extension
- Engineered Materials Arresting System (EMAS)

LEGEND	
 / 	EXISTING / PROPOSED RUNWAY SAFETY AREA
 / 	EXISTING / PROPOSED RUNWAY OBJECT FREE AREA
 / 	EXISTING / PROPOSED RUNWAY PROTECTION ZONE
	PROPOSED PAVEMENT
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY



Combined Runway Alternatives

DECLARED DISTANCES

	RUNWAY 2	RUNWAY 20
TORA	6,800'	6,800'
TODA	6,800'	6,800'
ASDA	6,400'	6,000'
LDA	6,000'	5,664'

Runway Alternative No EMAS



DECLARED DISTANCES

	RUNWAY 2	RUNWAY 20
TORA	6,635'	6,635'
TODA	6,635'	6,635'
ASDA	6,235'	6,635'
LDA	6,000'	6,299'

Runway Alternative With EMAS



LEGEND

- PROPOSED PAVEMENT
- TO BE REMOVED
- AIRPORT PROPERTY LINE
- AIRPORT EASEMENT
- WETLAND BOUNDARY

Airfield Alternative Overview

Item/Facility	No Build	Runway Alternative No EMAS	Runway Alternative with EMAS
Meets FAA Standards	No	Yes	Yes
Meets Facility Requirements	No	Improves Conditions – Does not meet 6,000 LDA/ASDA	Yes
Flexibility	None – is not flexible to the changing fleet	Improves Conditions	Yes
Environmental	None	Low Impacts No Direct Impact to Tuttle Creek	Low Impacts No Direct Impact to Tuttle Creek
Construction Costs (Comparative)	Low/None	Medium	High
Operational Costs	Low	Low	High

Runway Alternatives Summary

- Critical Runway Lengths are Accelerate Stop Distance Available (ASDA) and Landing Distance Available (LDA)
- Additional Runway Length Improves Operational Reliability Especially During Inclement Weather (e.g. Wet/Winter Conditions)
- Master Plan Focused on Developing Alternatives Within the Existing Runway Safety Area (RSA) Footprint
- 7,600-foot Runway Length Is NOT Feasible
- Both Feasible Alternatives Generally Fit Within Footprint
- Final Preferred Alternative May Be Adjusted Based on Feedback
- FAA Will Evaluate Documentation in Master Plan Prior To Approving the Airport Layout Plan (ALP)
- Projects Must be Shown on the ALP to Be Eligible For Funding
- FAA Will Re-Evaluate at Subsequent Funding and Approval Steps

Taxiway Alternative Overview

Item/Facility	No Build	Full-Length Parallel Taxiway
Meets FAA Standards	No	Yes
Meets Facility Requirements	No	Yes
Flexibility	None	Yes
Environmental	None	High
Costs (Comparative)	None	High

Terminal Alternative 1



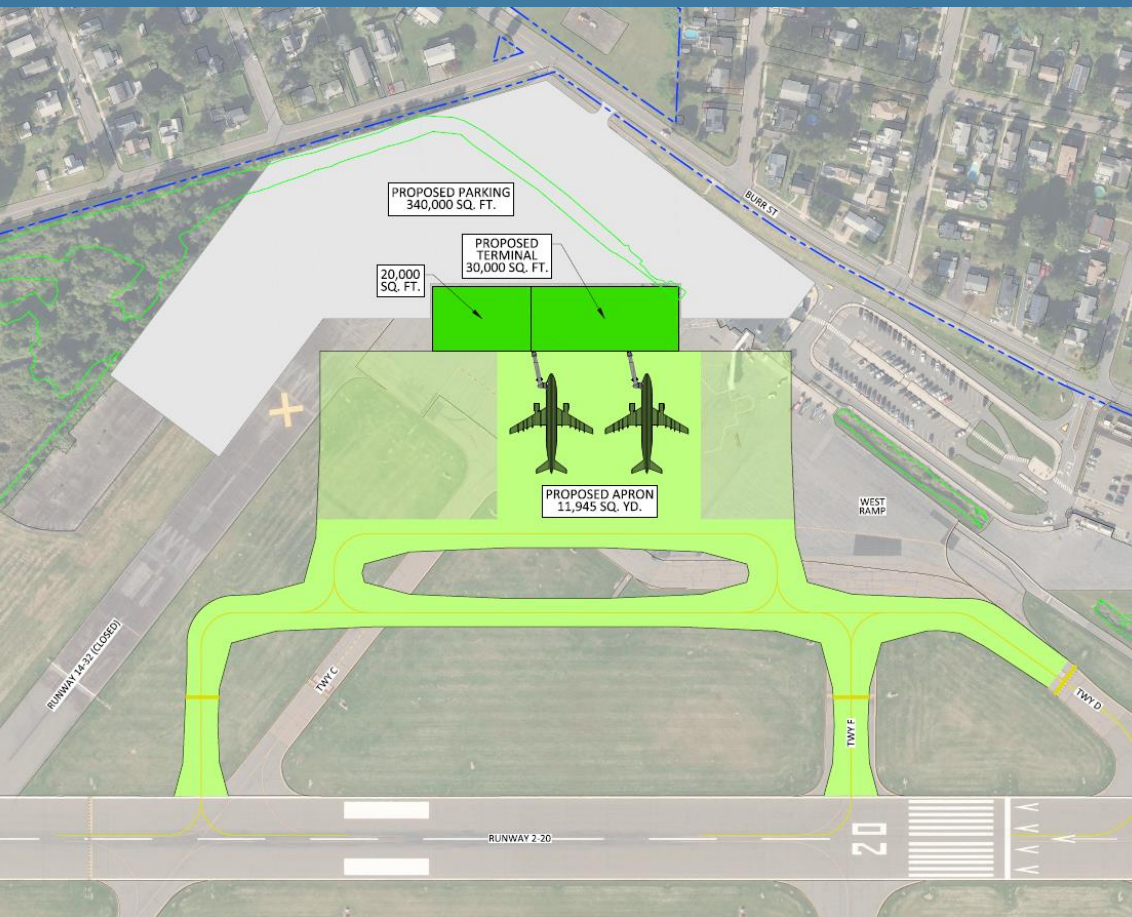
Pros:

- Uses Existing Parking Lots and Circulation Roads
- Has Low Environmental Impacts

Cons:

- Does Not Address Access Concerns
- Constructability
- Is Constrained Site – No Flexibility
- Is Not Compatible with Adjacent Land Use
- Requires Aircraft To Cross Active Runway for Runway 2 Departure/Runway 20 Landing
- Requires Fuel Trucks To Cross RSA

Terminal Alternative 2



Pros:

- Provides Infrastructure Flexibility
- Can Utilize Existing Parking Lots and Circulation Roads
- Has Low Environmental Impacts
- Improves Constructability

Cons:

- Does Not Address Access Concerns
- Is Not Compatible with Adjacent Land Use
- Requires Aircraft To Cross Active Runway for Runway 2 Departure/Runway 20 Landing
- Requires Fuel Trucks To Cross in RSA

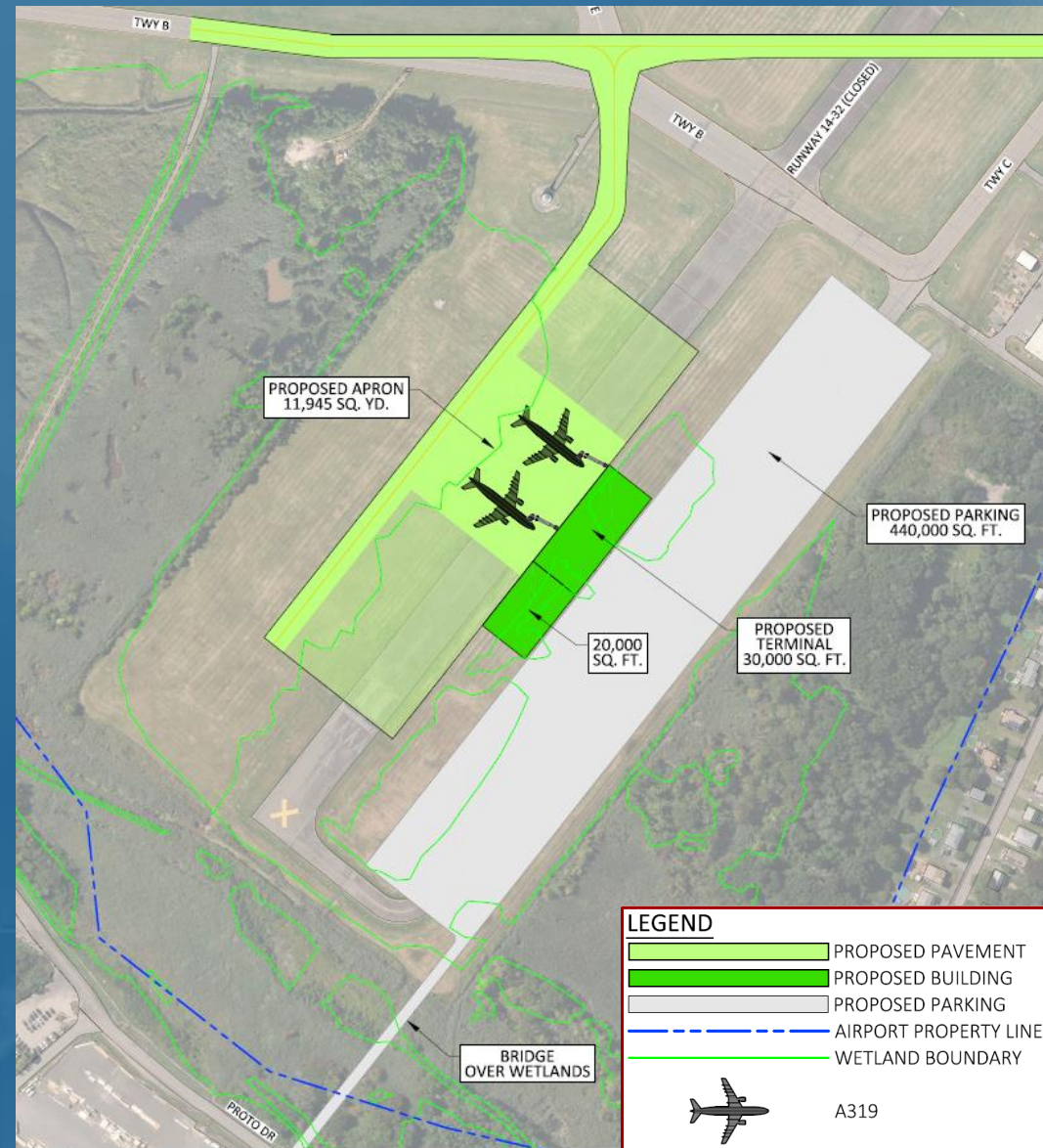
Terminal Alternative 3

Pros:

- Provides Infrastructure Flexibility
- Improves Roadway Access
- Best Constructability
- Is Compatible with Adjacent Land Uses
- Provides Shorter Taxi Route to Runway 2
- Has Close Proximity to Fuel Farm
- Improves Safety by Reducing Runway Crossings
- Terminal Is Closer to ARFF

Cons:

- Has Higher Cost
- Impacts Existing Disturbed Wetlands

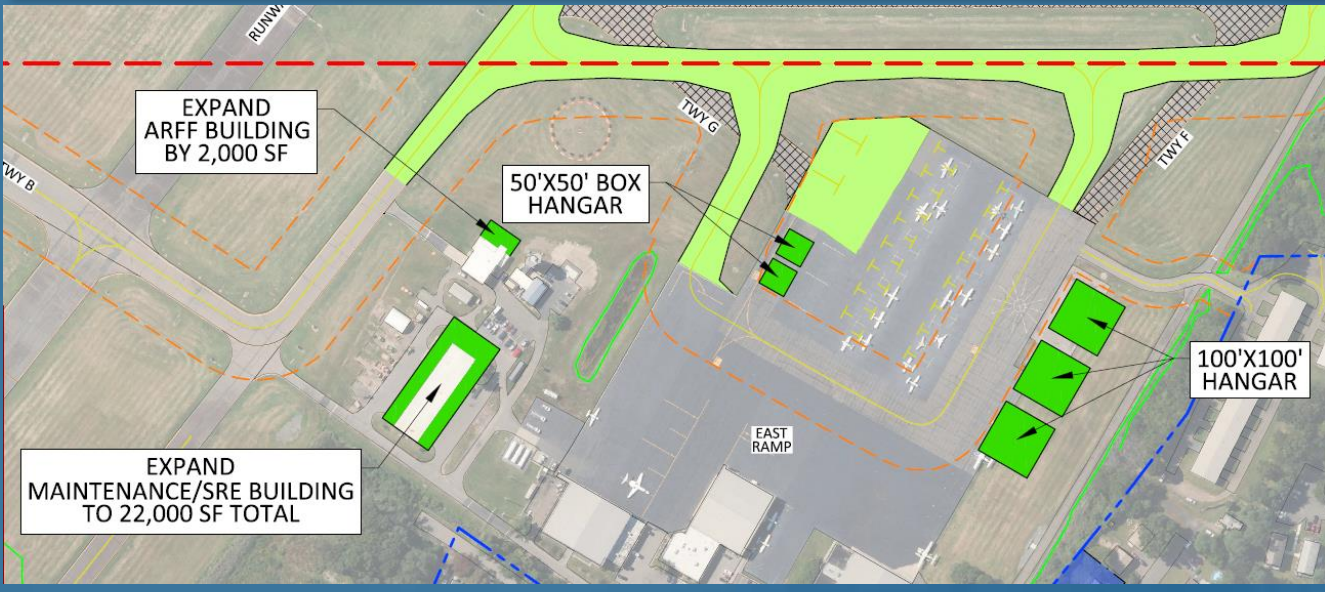


Terminal Alternative Overview

Item/Facility	No Build	Terminal Alt. 1 – Existing Location	Terminal Alt. 2 – West New Terminal	Terminal Alt. 3 – East Side Terminal
Meets FAA Standards	No	No - Runway Crossing; Fuel Truck Crosses RSA	No - Runway Crossing; Fuel Truck Crosses RSA	Yes
Meets Facility Requirements	No	No – Does not Address Access Concerns	No – Does not Address Access Concerns	Yes
Flexibility	None – Constrained	Low	Medium	High
Community Impacts	Medium – Existing Impacts Will Remain Incompatible Adjacent Land Use	High – Roadway Improvements Incompatible Adjacent Land Use	High – Roadway Improvements Incompatible Adjacent Land Use	Low – New Access
Environmental	None	Low	Low	High
Costs	None	Medium	Medium	Higher

General Aviation Alternatives - East

- Meet Facility Requirements
- GA/Tie-down Layout versus more Corporate Layout



LEGEND	
	RUNWAY OBJECT FREE AREA
	TAXIWAY OBJECT FREE AREA
	PROPOSED BUILDING
	PROPOSED PAVEMENT
	TO BE REMOVED
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY

General Aviation Alternatives - West



T-Hangars:

- Meets Facility Requirements
- Moves GA West, Allows for Separation of Corporate and GA
- Wetland Expansion: 7 acres



Corporate/Business Alternative:

- Meets Facility Requirements
- Wetland Expansion: 7 acres

General Aviation Alternative Overview

Item/Facility	No Build	East Ramp – GA	East Ramp – Corporate	West Ramp – GA	West Ramp - Corporate
Meets FAA Standards	No	Yes	Yes	Yes (including ARFF and SRE Expansion)	Yes (including ARFF and SRE Expansion)
Meets Facility Requirements	No	Yes	Yes – most current tie-downs in hangars	Yes – GA would move West, East Corporate	Yes
Flexibility	No	Yes	Yes	Improved	Yes
Environmental	Low	Low	Low	Provides Environmental Mitigation Opportunities	Provides Environmental Mitigation Opportunities
Costs	None	Medium	Medium	High	Low

Alternative Discussion



Next Steps

- Preferred Alternative
 - Final Determination Will be Shown on the Airport Layout Plan (ALP)
- Airport Layout Plan – FAA Approval
 - Projects Must Be Shown on the ALP to Be Eligible For Funding
 - Approval of the ALP Will Be Conditioned Upon Completion of the National Environmental Policy Act (NEPA)
 - Design and Construction is Subject to Funding Availability

After the Master Plan

- National Environmental Policy Act (NEPA) process
 - Project Purpose and Need is the Foundation of NEPA Documents
 - FAA Will Carefully Review the Purpose and Need
- Final Design and Permitting
- Begin Implementation

Conclusion / Questions

