



MASTER PLAN UPDATE

Tweed-New Haven Airport Authority



Public Meeting Jan. 7, 2021



McFarland Johnson

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

Providing Feedback

- Raise Your Hand to Speak
 - Moderator Will Take Regular Breaks During the Presentation to Unmute and Call On Participants to Speak
- Offer a Comment/Question in the Chat Sidebar
 - Moderator Will Take Regular Breaks During the Presentation to Rephrase Comment / Question and Ask the Presenter to Respond

Request control



Turn on participant list



MASTER PLAN UPDATE

Tweed-New Haven Airport Authority

Locations of these controls may be different depending on the device and screen you are using



Request control



Leave



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d-New Haven Airport Authority



Participants

Invite someone or dial a number

Currently in this meeting (23)

Mute all

- Marcy Miller
- Adam Tecza
- Anthony Zemba
- BT Bonnie Torres
- Carla Tillery
- Chris Henry
- Dan Hageman
- Eric Smith
- FG Francisco Gomes
- Hannah Brockhaus
- JB Joaquin Brito, Jr

Participant avatars and names in the meeting bar:

- Melissa Pineda
- Michaela Phonkhomphon
- Leslie Black
- Michael Morehouse

Request control



Leave



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Request control



Turn on Chat Pane



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Request control



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Type your question/comment here

That's a really great comment!

Submit here



Maura Fitzpatrick

Francisco Gomes

Ryan Walsh

Melissa Pineda

Stephanie Brooks

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Raise Your Hand

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Request control



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Leave

Participants

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Currently in this meeting (2)

Marcy Miller
Organizer

SD Stephanie Dyer-Carroll



Maura Fitzpatrick



Francisco Gomes



Ryan Walsh



Melissa Pineda



Stephanie Brooks

Search



Introductions

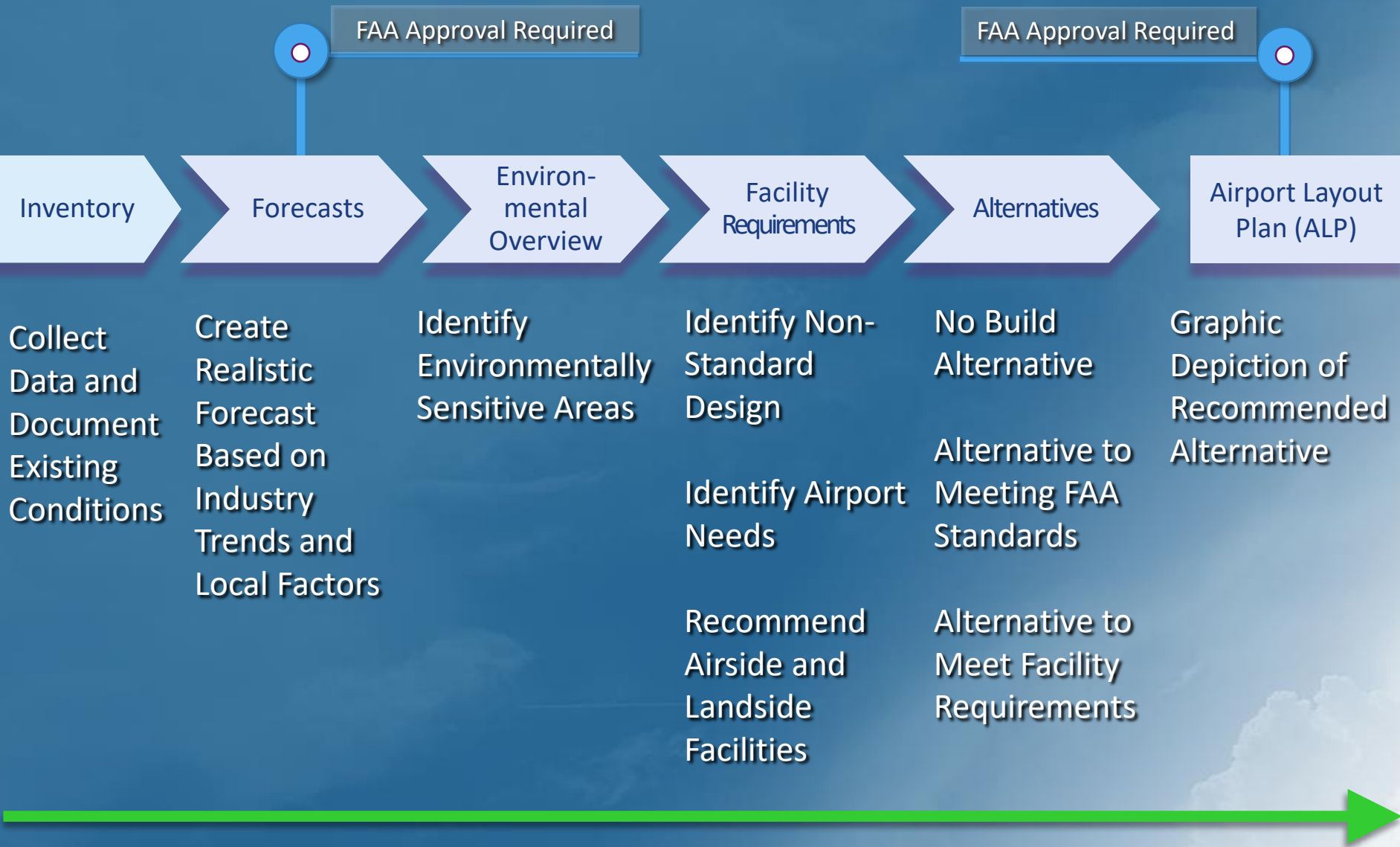
- Sean Scanlon, Executive Director
- Jeremy Nielson, Airport Manager
- Consulting Team:
 - McFarland Johnson
 - Fitzgerald Halliday, Inc.
 - ASM Americas
 - Harris Miller Miller & Hanson, Inc.
 - Woolpert
- Attendees

Agenda

- Introductions
- Master Plan Process
- Schedule
- Key Issues and Goals
- COVID-19 Update
- Forecasts/Design Aircraft
- Facility Requirements
- Alternatives
- Next Steps
- Conclusion/Questions

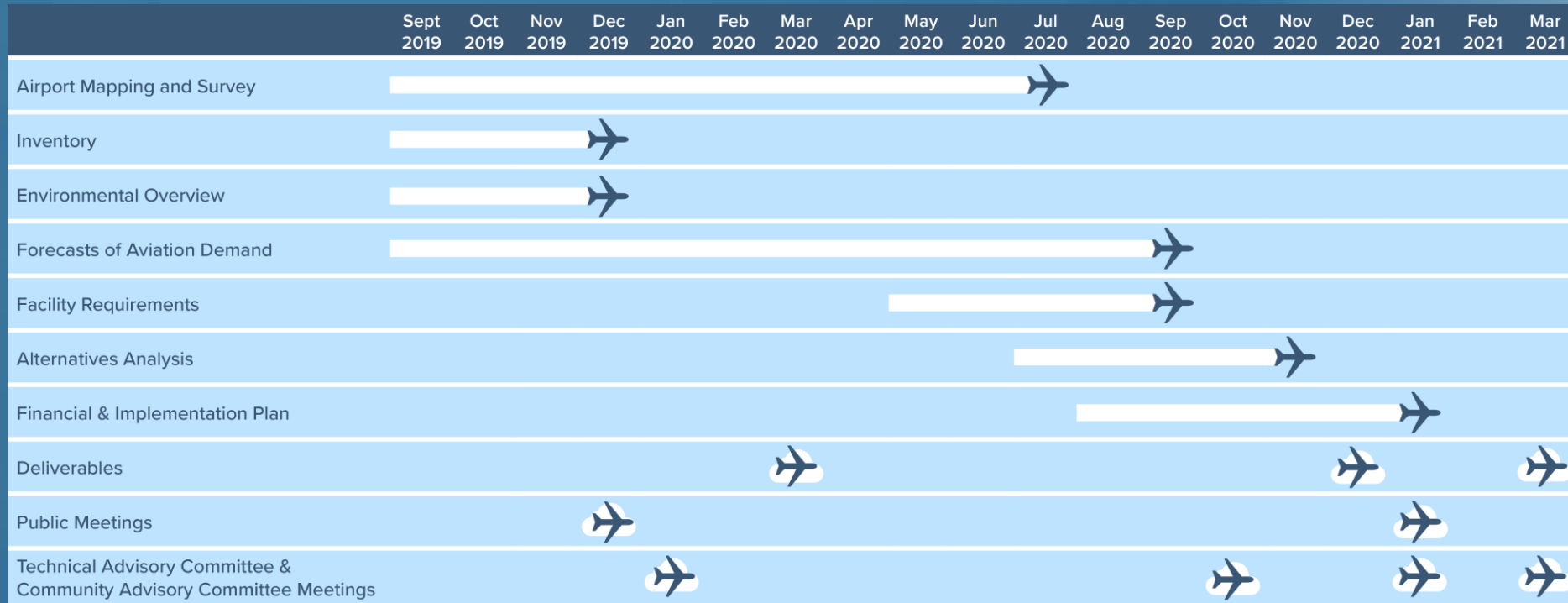


Master Plan Process



Public Outreach

Schedule

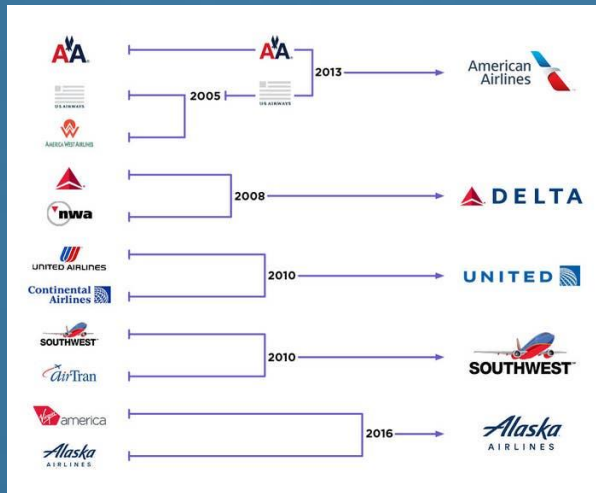


Key Issues and Goals



- (1) Identify Runway 2-20 ultimate length
- (2) Determine terminal area improvements to meet demand
- (3) Future of Runway 14-32
- Identify opportunities for economic sustainability
- Determine phasing and implementation plan for recommended improvements
- Engage the public throughout the process
- Maintain planning flexibility for future aviation industry changes

National Aviation Impacts From COVID



- Nationwide 63% Drop in Demand for December
- Sustained Lack of Demand Resulting in Unprecedented Times for Airlines
- ~1,000 Aircraft Prematurely Retired
- Additional Consolidation or Bankruptcies Possible
- Airline Crew Layoffs and Furloughs
- Federal Aviation Administration Anticipates 4- to 5-Year Recovery

COVID Changes at HVN

- Public Outreach – Online versus in Person
- HVN Terminal Changes
 - Floor Placards
 - Hand Sanitizing Stations
 - Digital Signage for Public Announcements
 - Received ACI Airport Health Accreditation Certification
- Fleet Changes due to Premature Retirement and Network Changes
- Network and Regional Airline Model
 - Weakened Appetite for New Opportunities
 - Increased Appeal of Smaller Airports like HVN
- Overall General Aviation Impact
- Long-Term Impact on Demand for Flight Training

Forecasts

Inventory

Forecasts

Environmental
Overview

Facility
Requirements

Alternatives

Airport Layout
Plan (ALP)

- Goal: Devise a Realistic Forecast
 - General Aviation (GA)
 - Service Area
 - Trends
 - Historic and Forecast Operations
 - Historic and Forecast Based Aircraft
 - Commercial Aviation
 - Catchment Area
 - Trends
 - Historic and Forecast Enplanements
 - Historic and Forecast Operations
 - Existing and Future Design Aircraft

Summary of FAA Approved Forecasts

Enplanements			
Year	Constrained Low (Selected MP)	Covid-19 Impact	Revised Master Plan Forecast
2020	65,659	-80%	13,132
2021	74,377	-50%	37,188
2022	76,379	-25%	57,269
2023	78,436	-10%	70,592
2024	80,776	-5%	76,737

	Baseline	Forecasts			CAGR
	2019	2025	2030	2040	
FAA TAF (2019)					
Enplanements	46,953	49,836	52,380	57,861	1.05%
Total Operations	26,255	26,162	26,394	26,895	0.12%
Based Aircraft	59	65	70	80	1.53%
Master Plan Forecast					
Enplanements	50,355	82,723	94,531	123,999	3.40%
Total Operations	25,219	25,923	26,476	27,631	0.46%
Based Aircraft	50	51	53	56	0.57%
Percent Difference From TAF					
Enplanements	7.2%	66.0%	80.5%	114.3%	
Total Operations	-3.95%	-0.91%	0.31%	2.74%	
Based Aircraft	-15.25%	-21.54%	-24.29%	-30.00%	

Existing/Future Design Aircraft

Existing

Commercial –
Embraer 175



General Aviation –
Gulfstream V/550



Future

Commercial –
Airbus 319/320
Boeing 737



General Aviation –
Gulfstream 650



- No Change in Design Criteria (C/D-III)
- Newer Aircraft
 - Quieter
 - More Fuel Efficient
 - More Comfortable
 - Have Higher Performance (Less Runway Length)
- Longer Distances Not Bigger Planes

Discussion Break

Facility Requirements

Inventory

Forecasts

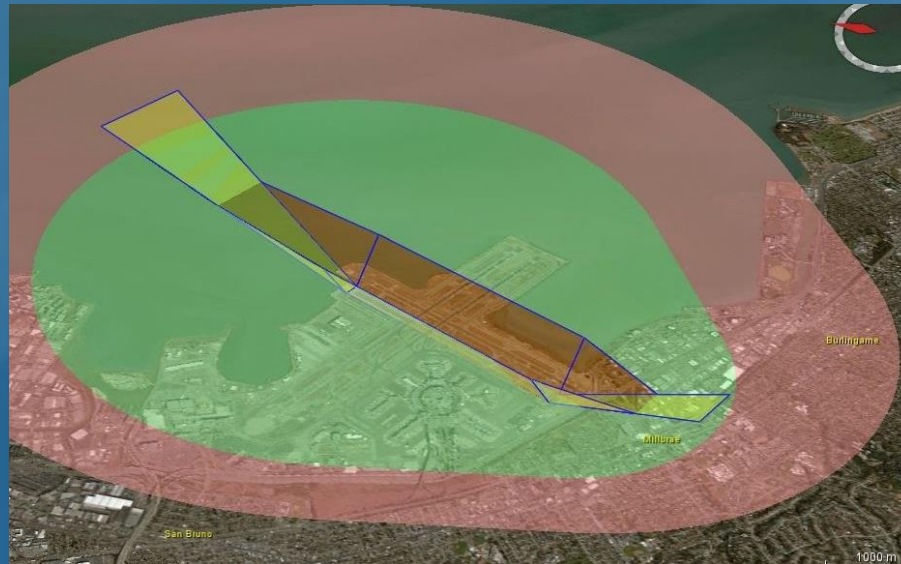
Environmental
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Facility
Requirements

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



Airside Facility Requirements

- Determines What, if any, Additional Facilities Will be Required
- Based on Most Demanding Aircraft Characteristics (Multiple Aircraft)
- Is Based on Existing and Forecast Activity
- Considers Peak Hour and Annual Demand
- Reviews the Following:
 - Runway Length
 - Runway Widths
 - Runway Strengths
 - Runway Orientation
 - Runway Design Surfaces (RSA, ROFA, OFZ, RPZ, etc.)
 - Markings, Lighting, and Signage
 - Taxiways
 - Apron/Ramp Areas (GA and Terminal)
 - Runway Geometry Standards
 - Visual Approach Aids

Runway Length

- HVN to Charlotte on ERJ-175 at maximum payload: 5,400 to 7,200 feet take-off length
- During strong crosswinds, runway contamination, and other factors, passenger/baggage/cargo load may be limited

Aircraft	Takeoff Length (MTOW)	Landing Length (MLW and Wet)
Existing		
E175 STD	6,061' – 7,261'	4,945' – 5,405'
E175 LR (American Airlines)	7,361' – 7,861'	4,945' – 5,405'
E175 AR	8,061' – 9,061'	4,945' – 5,405'
CRJ7	5,861'	5,865'
GLF5	5,971'	3,186'
Future		
A319	7,561'	5,175' – 5,290'
A320	7,661'	5,520' – 5,750'
GLF6	6,360'	4,034'

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

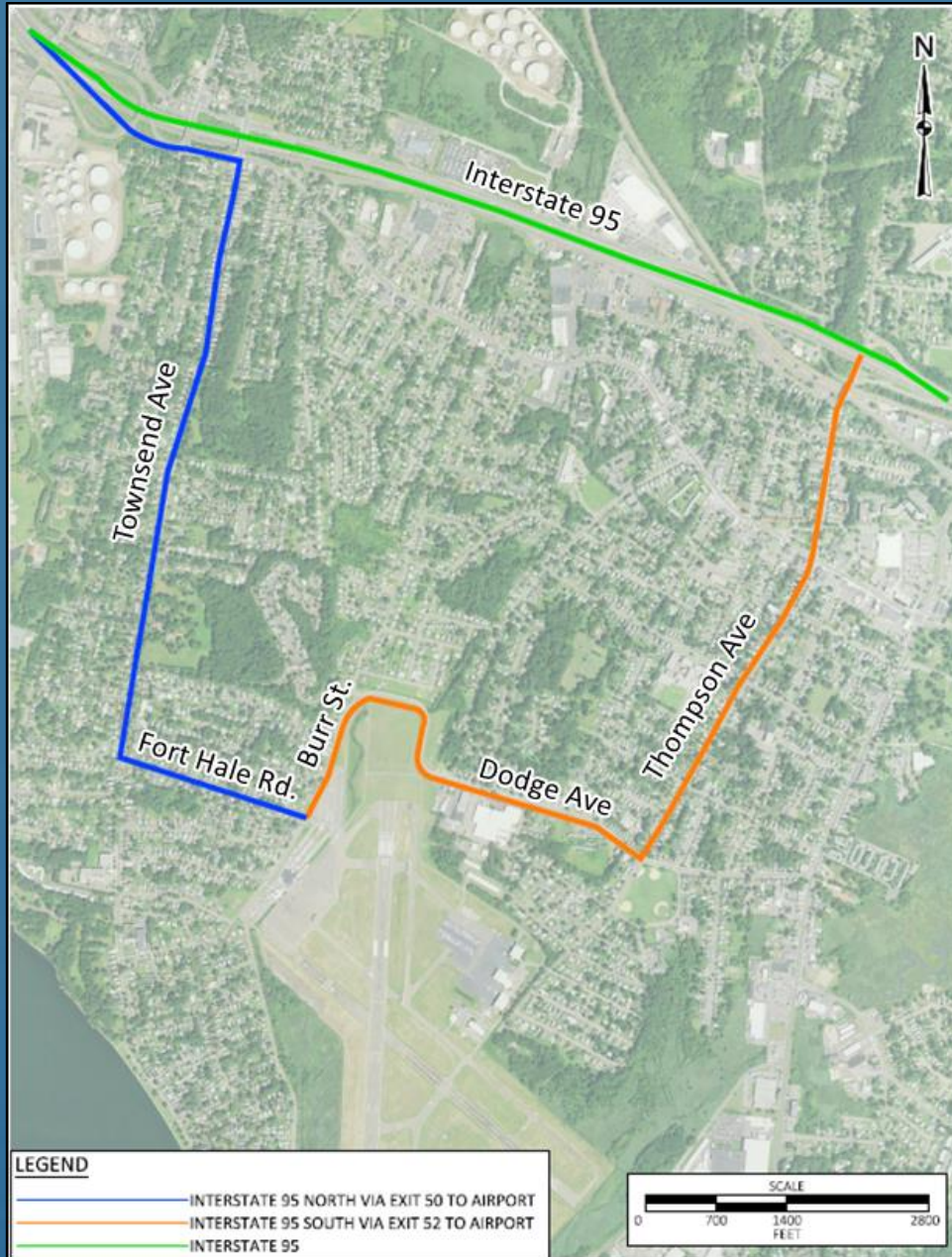
Terminal Functional Area	Existing Provision	100 Peak-Hour Passengers	150 Peak-Hour Passengers	200 Peak-Hour Passengers	250 Peak-Hour Passengers
Check-In /Ticketing	1,648	949	1,446	1,897	2,394
Baggage Screening & Makeup	751	3,115	3,240	3,240	3,240
Security Screening Checkpoint	1,356	4,883	4,981	6,366	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 from This Meeting



Next Step: FAA Will Evaluate the Documentation

Engineered Materials Arresting System

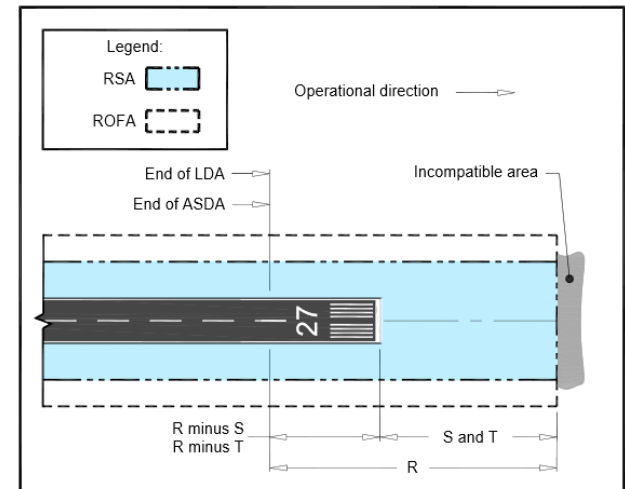
- EMAS: Crushable Material Placed at the End of a Runway to Stop an Aircraft That Overruns a Runway
- Aircraft Tires Sink Into Lightweight Material, Decelerating the Aircraft
- EMAS Improves Safety When 1,000 feet of Overrun is Not Available



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

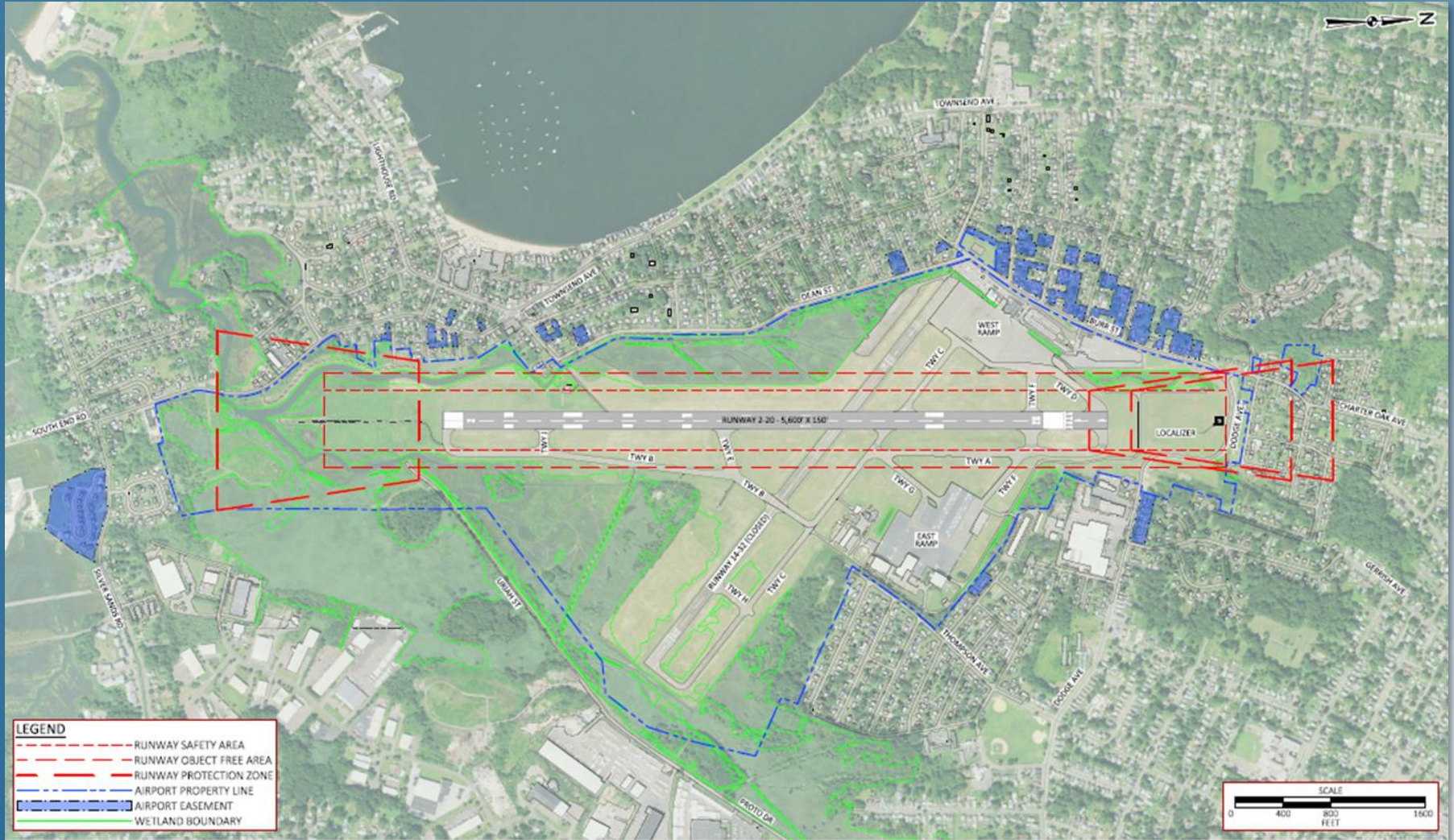


LEGEND	
	RUNWAY SAFETY AREA
	RUNWAY OBJECT FREE AREA
	RUNWAY PROTECTION ZONE
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY
	RESIDENTIAL AREA
	ROADS

Constraints Include:

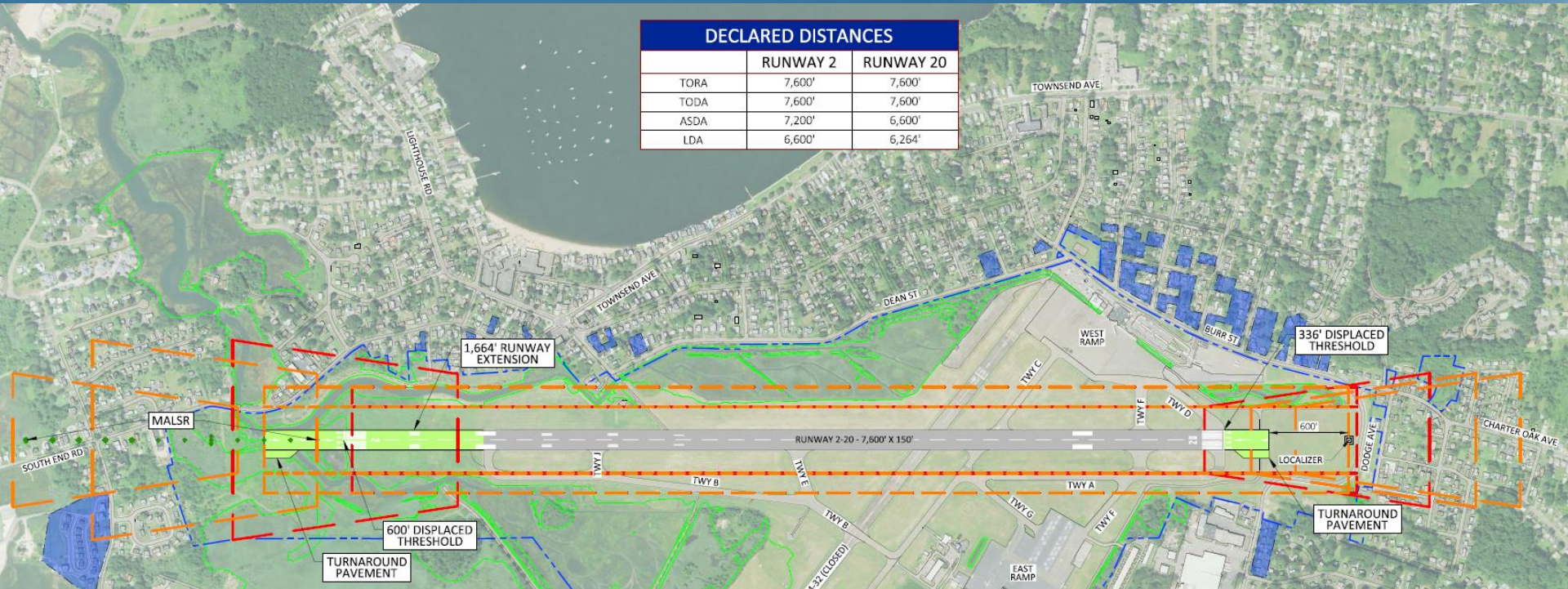
- Residential
- Roads/Streets
- Navigational Aids
- Wetlands/Creeks/Streams

No Build



Alternatives Considered and Dismissed

- 7,600-foot Long Runway

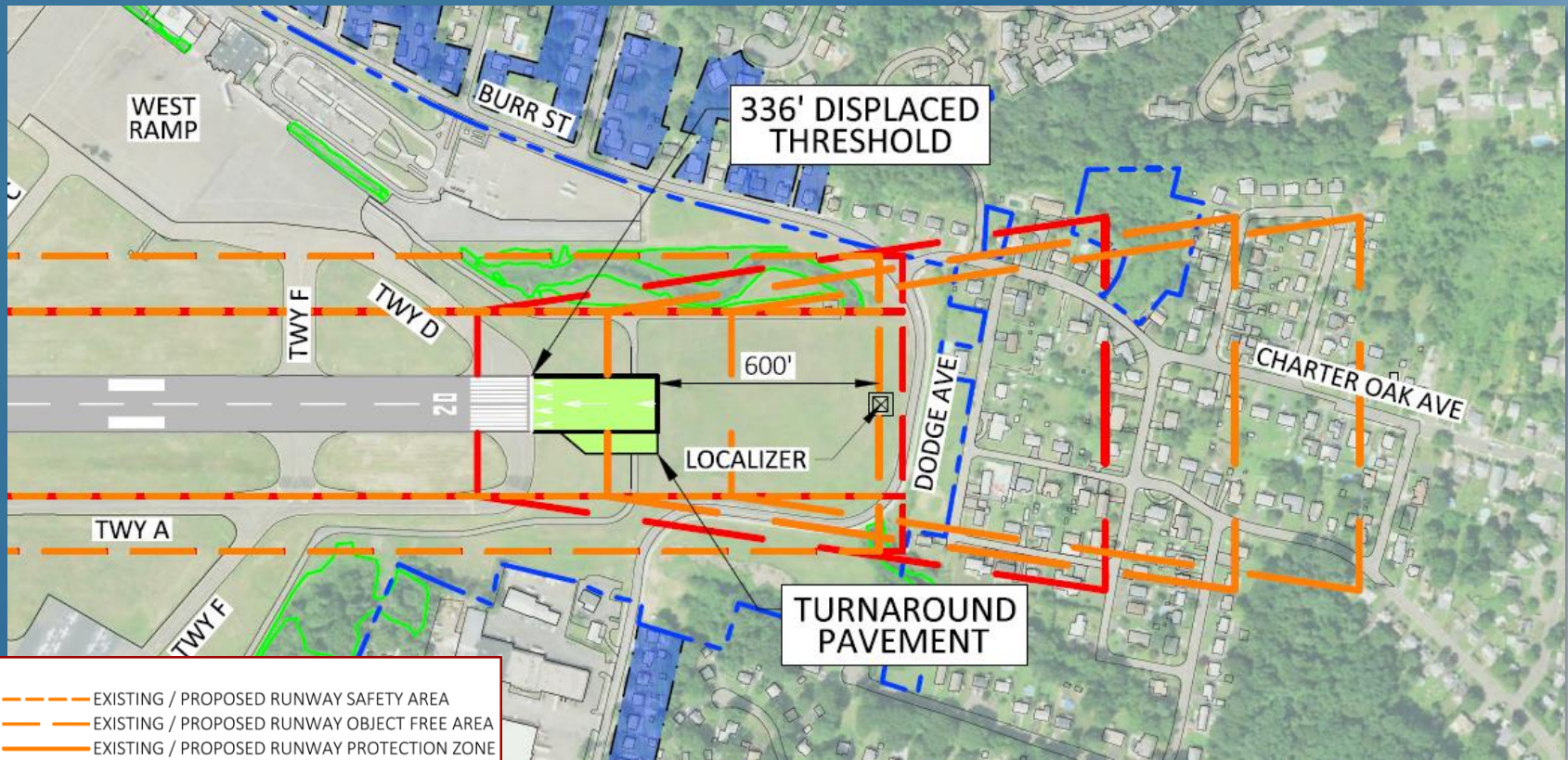


DECLARED DISTANCES		
	RUNWAY 2	RUNWAY 20
TORA	7,600'	7,500'
TODA	7,600'	7,500'
ASDA	7,200'	6,500'
LDA	6,600'	6,264'

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

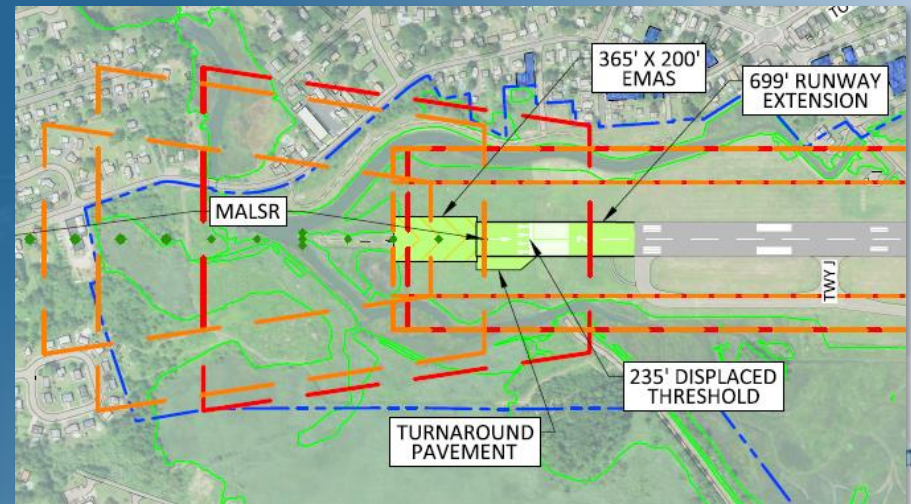
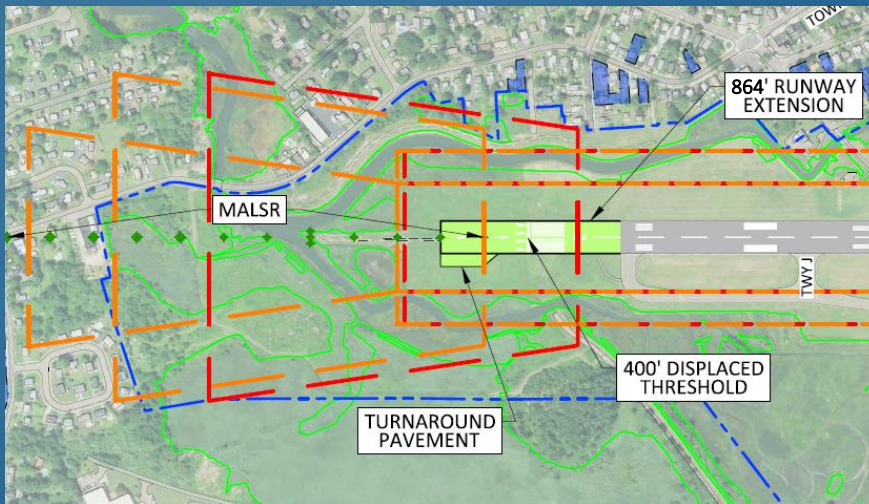


LEGEND	
	EXISTING / PROPOSED RUNWAY SAFETY AREA
	EXISTING / PROPOSED RUNWAY OBJECT FREE AREA
	EXISTING / PROPOSED RUNWAY PROTECTION ZONE
	PROPOSED PAVEMENT
	AIRPORT PROPERTY LINE
	AIRPORT EASEMENT
	WETLAND BOUNDARY

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 (Comparative)	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 - West



LEGEND	
	PROPOSED PAVEMENT
	PROPOSED BUILDING
	PROPOSED PARKING
	AIRPORT PROPERTY LINE
	WETLAND BOUNDARY
	A319

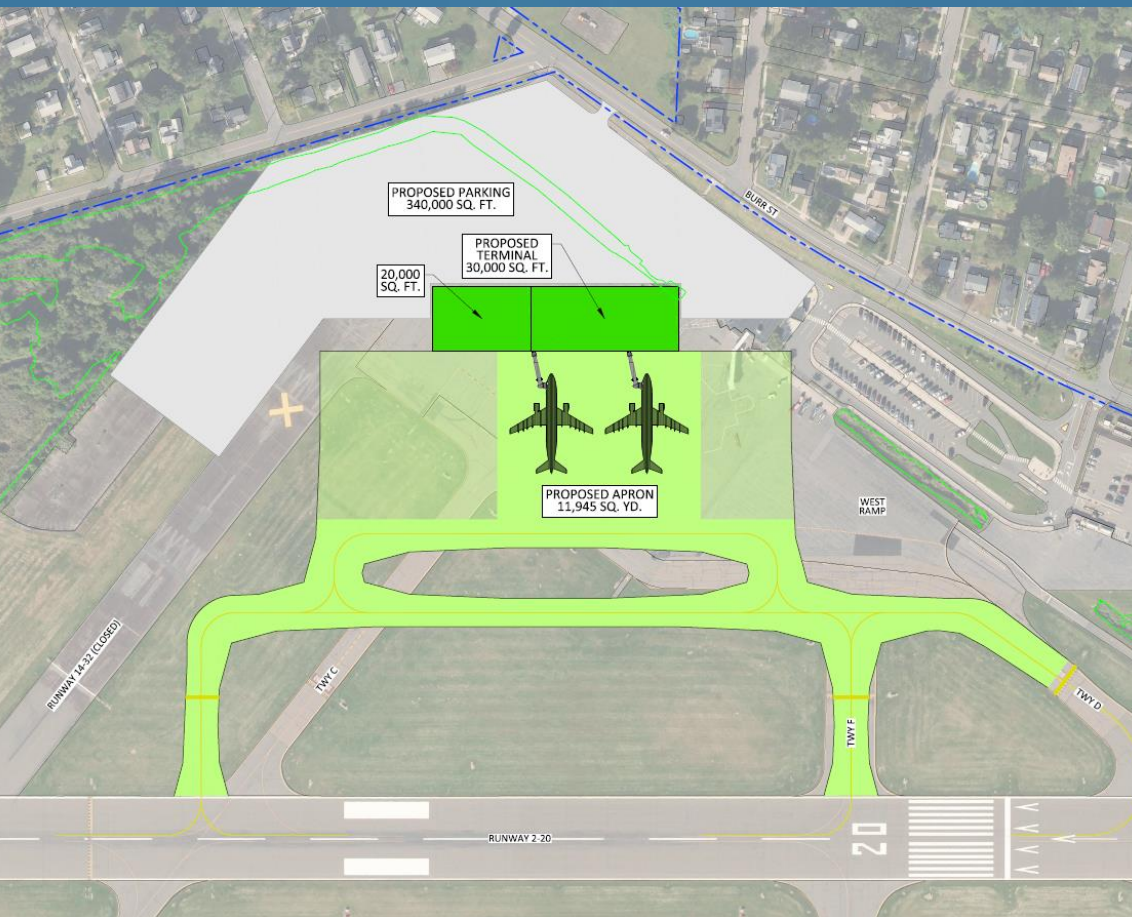
Pros:

- 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 - West



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

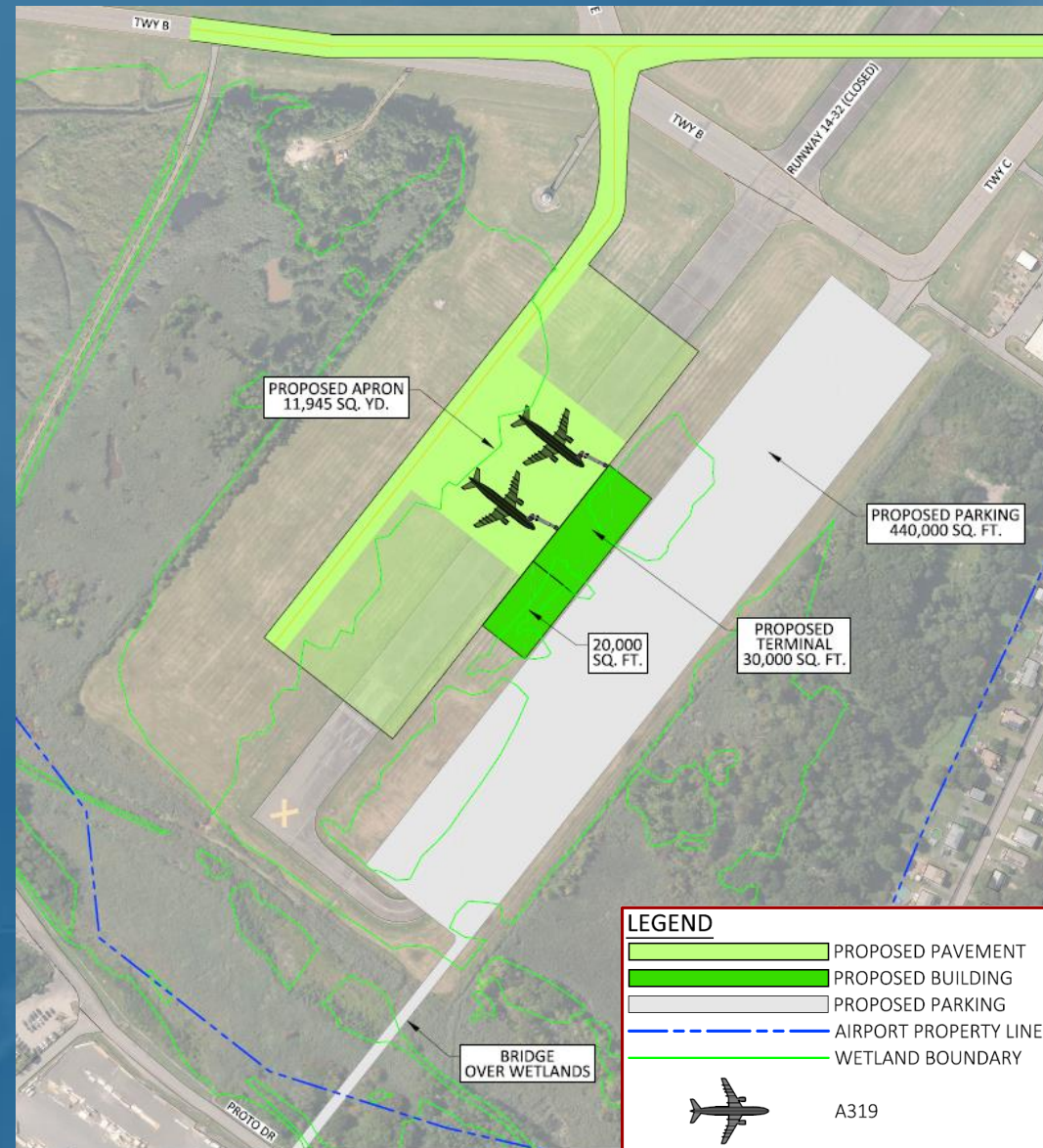
Terminal Alternative 3 - East

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



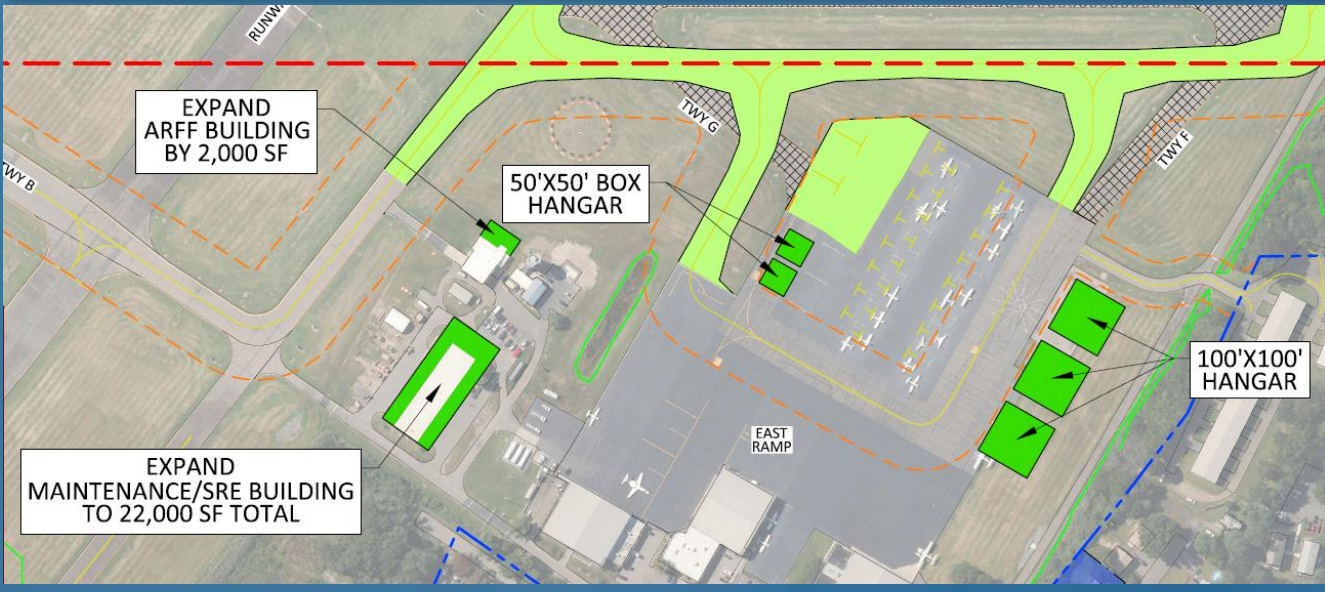
Terminal Alternative Overview

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

Discussion Break

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 Require- ments	No	Yes	Yes – most current tie- downs in hangars	Yes – GA would move West, East Corporate	Yes
Flexibility	No	Yes	Yes	Improved	Yes
Environ- mental	Low	Low	Low	Provides Environmental Mitigation Opportunities	Provides Environmental Mitigation Opportunities
Costs	None	Medium	Medium	High	Low

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 / Comments

- Master Plan Website:
TweedMasterPlan.com
- Email:
HVNMasterPlan@mjinc.com



