



Norfolk International Airport Master Plan Update

Planning Advisory Committee (PAC) Meeting
September 12, 2019



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design/construction solutions

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Agenda

- Status of the Master Plan Update
- Forecast and Facility Requirements Summary
 - Forecast Results (FAA Approved)
 - Airside Facility Requirements
 - Landside Facility Requirements
- Airport Development Concepts
 - Existing infrastructure improvements
 - Potential areas for future projects
- Overview of Final Steps
- Get Your Input and Ideas



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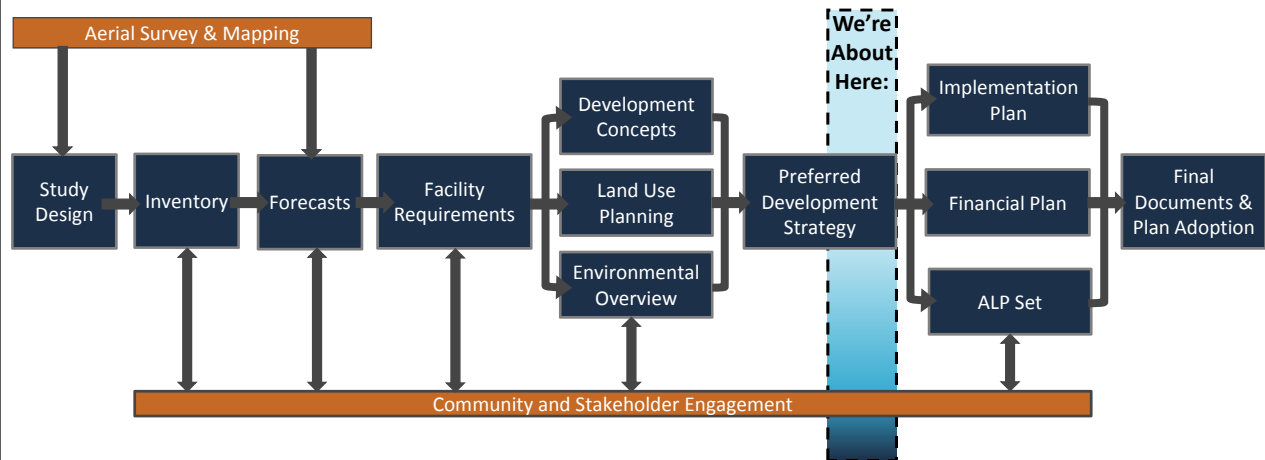
Master Plan Focus Areas

- Address Industry trends and regional changes since previous studies
- Specific focus areas:
 - Airfield Improvements
 - Airfield geometry & FAA Design Standards
 - Disposition of Runway 14-32
 - Potential parallel runway
 - Terminal Facility Improvements
 - Air Cargo & General Aviation Requirements
 - Access & Parking Improvements



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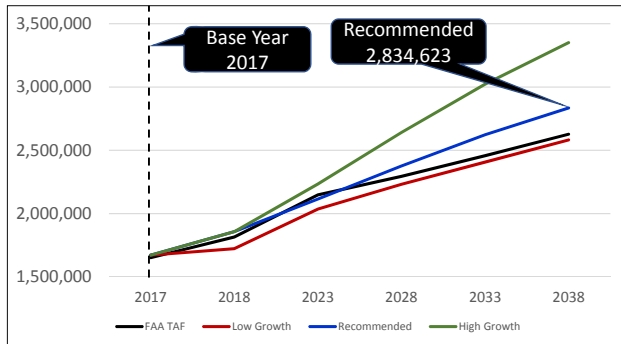
Master Plan Status



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Forecast of Passenger Enplanements

Year	TAF	Low Growth	Recommended	High Growth
2017	1,652,323	1,672,024	1,672,024	1,672,024
2018*	1,815,241	1,723,608	1,857,487	1,857,487
2023	2,147,644	2,035,945	2,115,424	2,234,279
2028	2,294,704	2,231,077	2,376,990	2,640,381
2033	2,458,050	2,407,453	2,622,848	3,022,093
2038	2,627,295	2,582,498	2,834,623	3,350,889
AAGR 2018-2038	1.9%	2.04%	2.1%	2.99%
Growth 2018-2038	44.7%	49.83%	52.6%	80.4%
% Above TAF	-	-1.7%	7.9%	27.5%

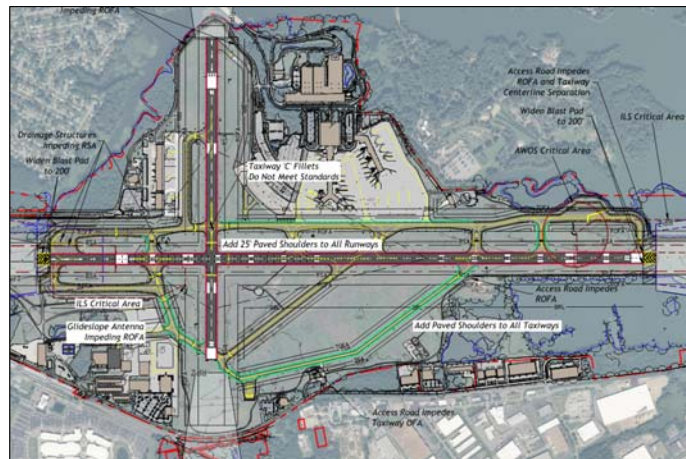


Low Growth: Static Regional Market Share
 Preferred: 5-Year Schedule Build-out and Regression
 High Growth: Historical Trend 3-Year Time Series



Airfield Facility Requirements Summary

- Airfield analysis identifies potential FAA deficiencies related to:
 - Airfield/runway capacity
 - Runway and taxiway system
 - Aircraft parking areas
 - Airfield lighting, signage, navigational aids



Passenger Terminal Facility Requirements Summary

- Passenger Terminal deficiencies:
 - Number of gates
 - Appropriate gate size for aircraft
 - Inbound/outbound baggage processing
 - Building circulation:
 - Ticket lobby
 - Security screening & FIS
 - Holdroom space & concessions
 - Passenger walking distances
 - Remain overnight parking (RON)



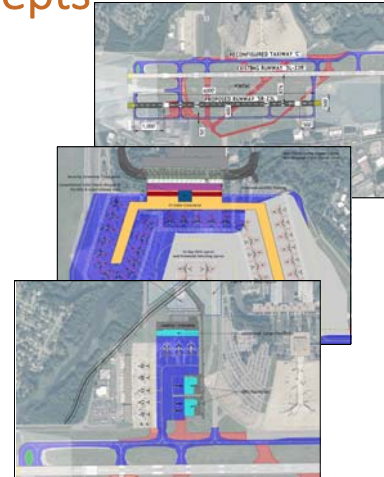
Support Facility Requirements Summary

- Support Facilities Deficiencies:
 - Rental car & vehicle parking operations
 - Air cargo operations area
 - General aviation facilities
 - Aircraft refueling & deicing
 - Airfield maintenance facilities



Norfolk International Development Concepts

- Development concepts to address deficiencies related to the:
 - Airfield
 - Runway system
 - Taxiway system
 - Terminal Building Facilities
 - Support & Other Facilities
 - Rental car operations
 - Air cargo operations
 - General aviation
 - Parking & roadway
 - Commercial development
 - Airfield maintenance



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Airfield Concepts

- Runway System
 - 16 total concepts evaluated
 - 5 selected for further evaluation
 - 2 concepts for Runway 14-32
 - 3 concepts for Runway 5-23
 - Ongoing Coordination with Navy
- Taxiway System
 - 3 concepts evaluated



Parallel Runway Purpose and Need

Project Purpose

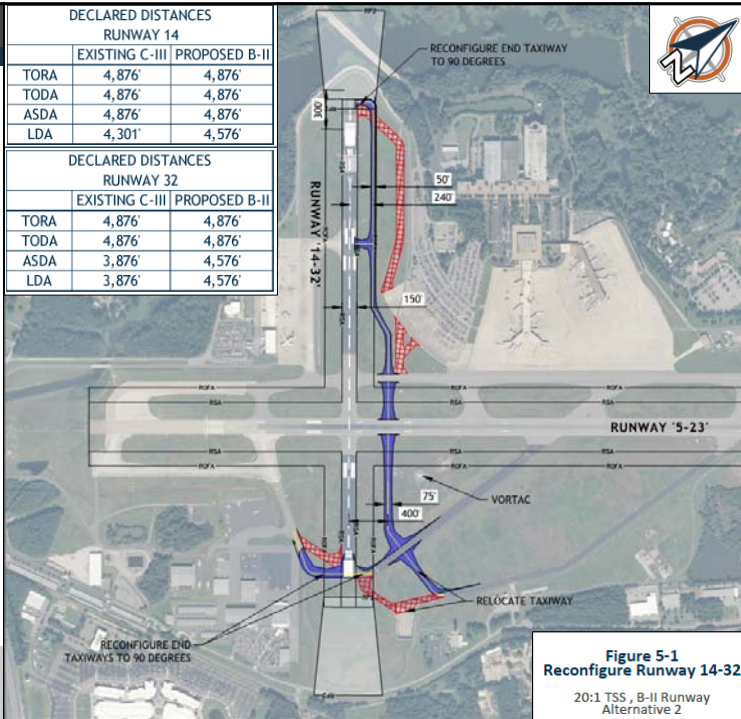
- ✓ Meet FAA design standards & enhance safety
- ✓ Improve airfield operational efficiency
- ✓ To replace the current crosswind runway

Project Need

- ✓ Runway 14/32 does not meet FAA standards
- ✓ Runway 14/32 airspace conflicts with Norfolk & Oceana Naval Air Stations
- ✓ Business aircraft need a longer runway
- ✓ A parallel runway will segregate commercial & General Aviation operations
- ✓ A second runway is needed for flexibility & safety
- ✓ Runway 14/32 prevents improvements to other needed airport facilities & roadway

Airfield Alternatives

- Runway Alternative 2
 - Reconfigure & improve Runway 14-32 & Taxiway D
 - Retains crosswind coverage for light aircraft
 - Occupies critical airport property that could be used for other facilities



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Airfield Alternatives

- Runway Alternative 3
 - Closure of Runway 14-32
 - Recaptures airport property to expand critical aviation facilities
 - Reduces crosswind coverage for light General Aviation aircraft

Notes:

- Runway 14-32 accommodated 1.4% of 2018 operations
- Runway 5-23 provides +95% wind coverage



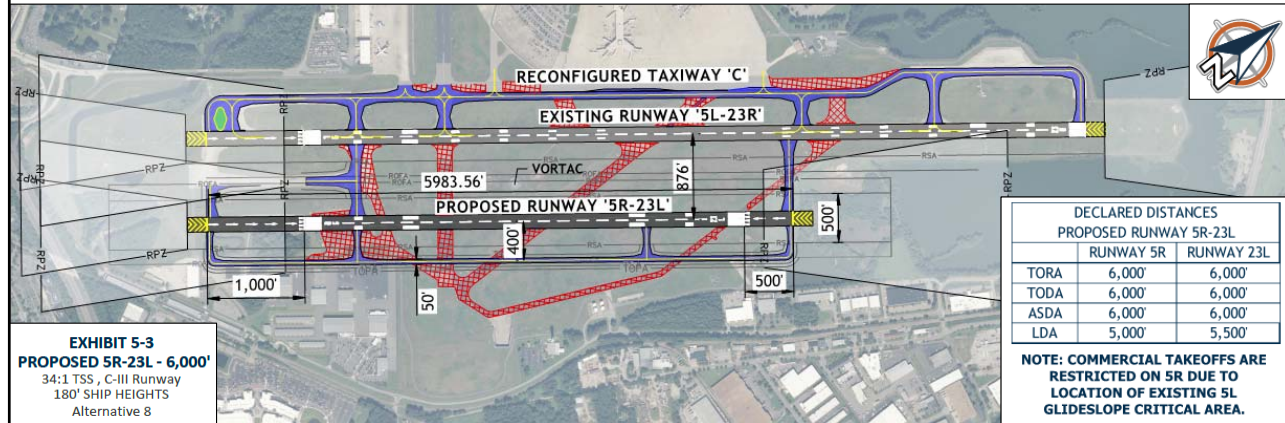
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Airfield Alternatives

• Runway Alternative 8

- 6,000-foot parallel Runway 5-23
- No direct impacts to Lake Whitehurst (some wetland impacts will occur)

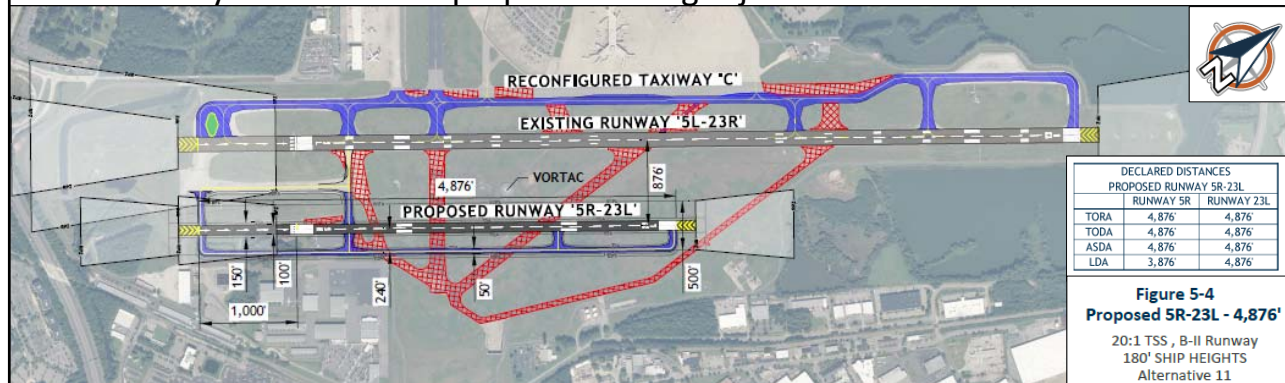


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Airfield Alternatives

• Runway Alternative 11

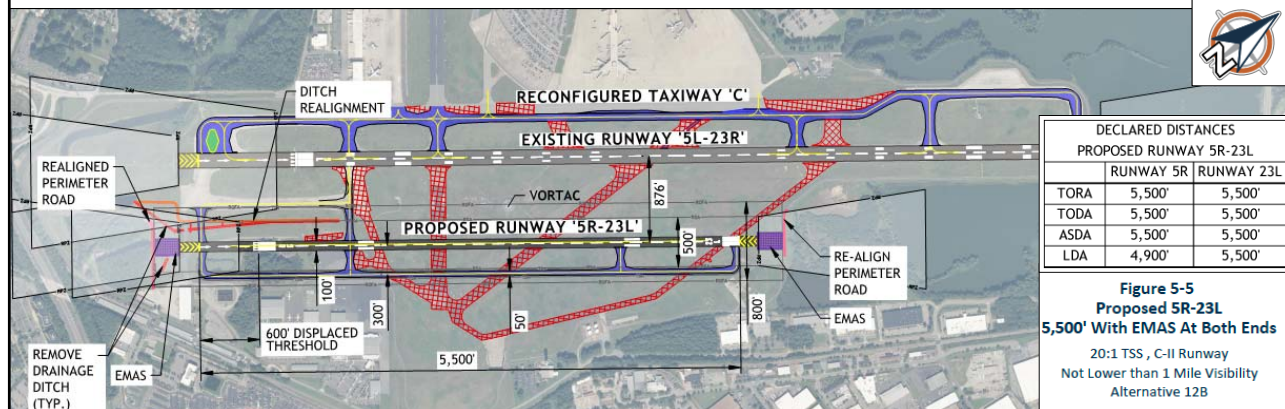
- 4,876' Parallel Runway 5R-23L -B-II
- No impacts to Lake Whitehurst
- Runway use limited to propeller and light jet aircraft



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Airfield Alternatives

- Runway Alternative 12B
 - Proposed Parallel Runway 5R-23L – 5,500’ C-II with EMAS
 - No impacts to Lake Whitehurst or wetlands



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Engineered Materials Arresting System (EMAS)

- Stops aircraft that overrun the runway
- Replaces the 1,000' Runway Overrun



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Terminal Alternatives

- Terminal Alternative 1
 - Builds upon 2009 layout with 3rd Concourse
 - Consolidates
 - Departures curbside
 - Ticketing halls
 - Security Screening
 - Improves
 - Outbound baggage
 - Vehicle access

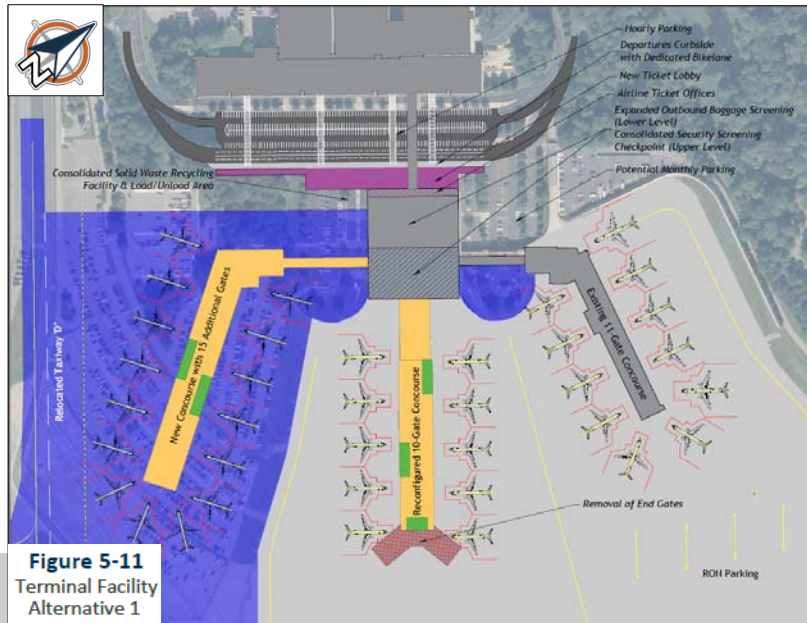


Figure 5-11
Terminal Facility
Alternative 1

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Terminal Alternatives

- Terminal Alternative 2
 - Consolidates curbside, ticketing, and security screening
 - Replaces all gates with single new concourse
 - Centralized concessions / food courts

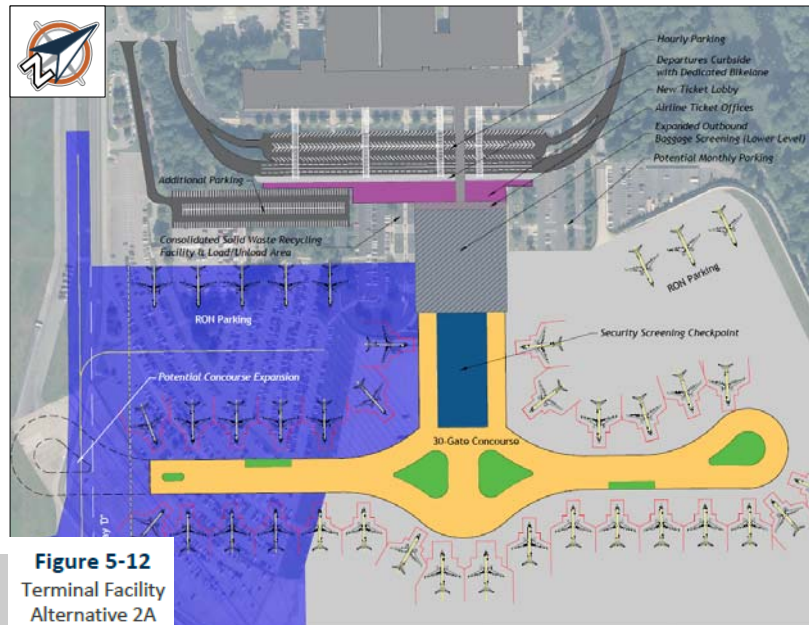


Figure 5-12
Terminal Facility
Alternative 2A



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Terminal Alternatives

- Terminal Alternative 3
 - Consolidates curbside, ticketing, and security screening
 - Replaces all gates with single new concourse
 - Centralized concessions / food courts
 - Future expansion concourses

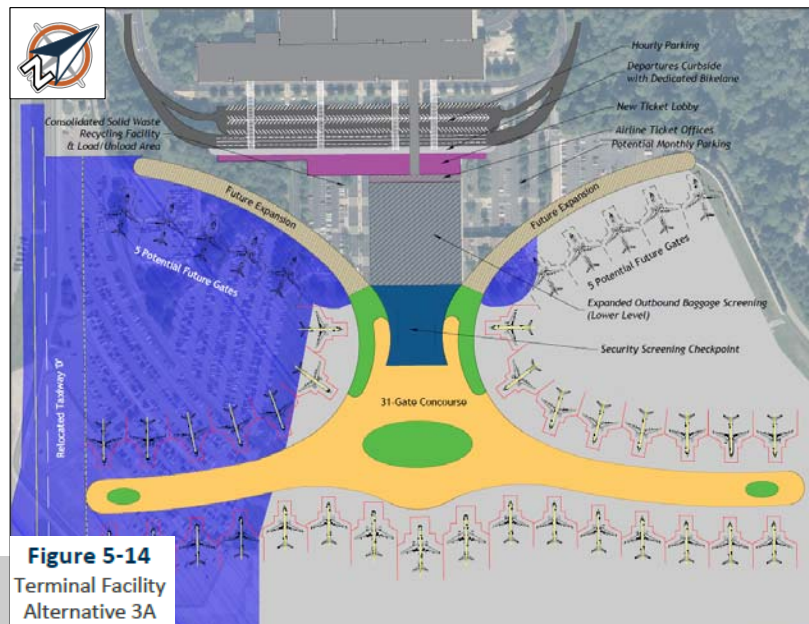


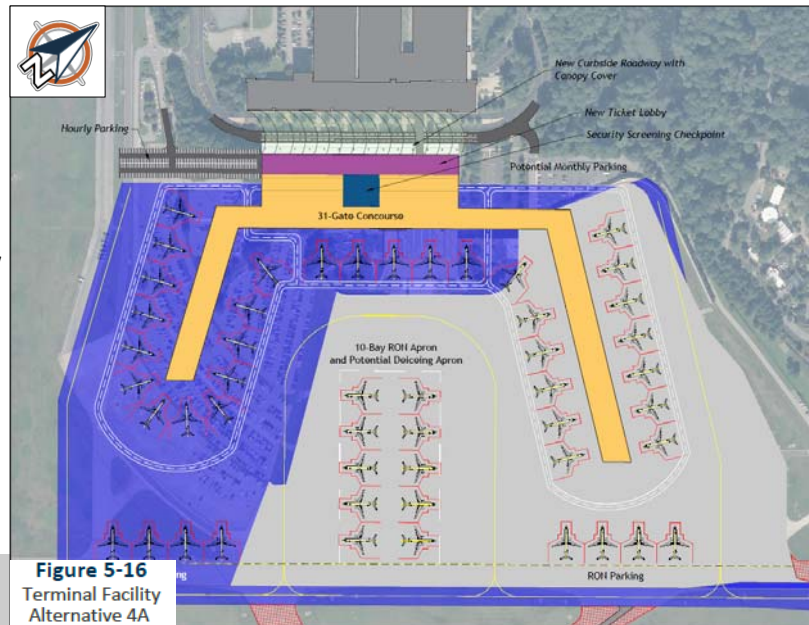
Figure 5-14
Terminal Facility
Alternative 3A



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Terminal Alternatives

- Terminal Alternative 4
 - Consolidates curbside, ticketing, and security screening
 - Replaces gates with new U-shaped concourse
 - Reduced distances to baggage claim/parking
 - Single direction vehicle circulation
 - Curbside canopy



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Terminal Alternative Option (Dual Level Roadway)

- Upper- and lower-level curbside (option for Alternative 2, 3 & 4)
- Relocate Baggage Claim / Repurpose Arrivals Building



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Terminal Alternatives

- Three Additional Alternatives - comparison

Alternative	1	2	3	4
Consolidates Ticketing & Curbside	Yes	Yes	Yes	Yes
Consolidates Passenger Screening / TSA	Yes	Yes	Yes	Yes
Reduces Walking Distances	No	No	No	Yes
Difficulty of Construction Phasing	Modest	Difficult	Difficult	Difficult
Construction Cost	Modest	High	High	High
Potential for Dual Level Curbside	No	Yes	Yes	Yes



Rental Car Concepts



Figure 5-19
QTA Alternatives



Figure 5-20
CONRAC Alternatives



Cargo Alternatives

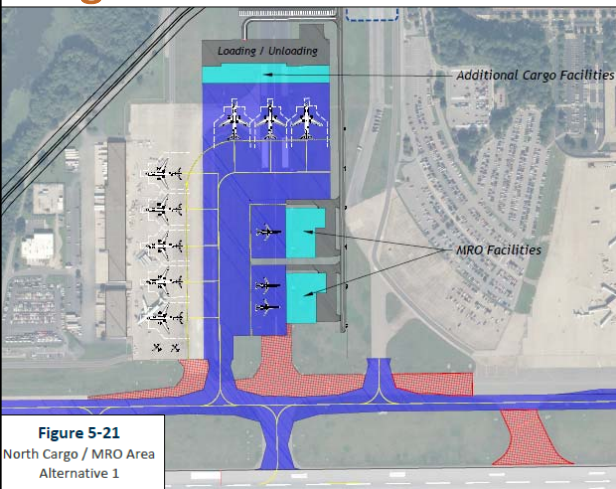


Figure 5-21
North Cargo / MRO Area
Alternative 1

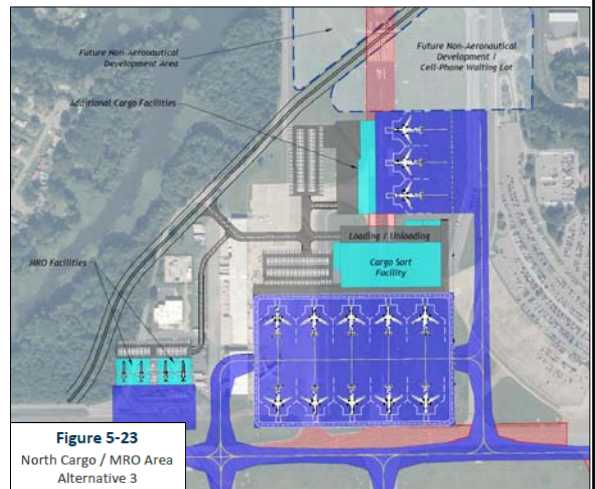


Figure 5-23
North Cargo / MRO Area
Alternative 3



General Aviation Alternatives

- 2 concepts evaluated
- Future expansion dependent upon demand
- Each concept identifies adjacent compatible development areas

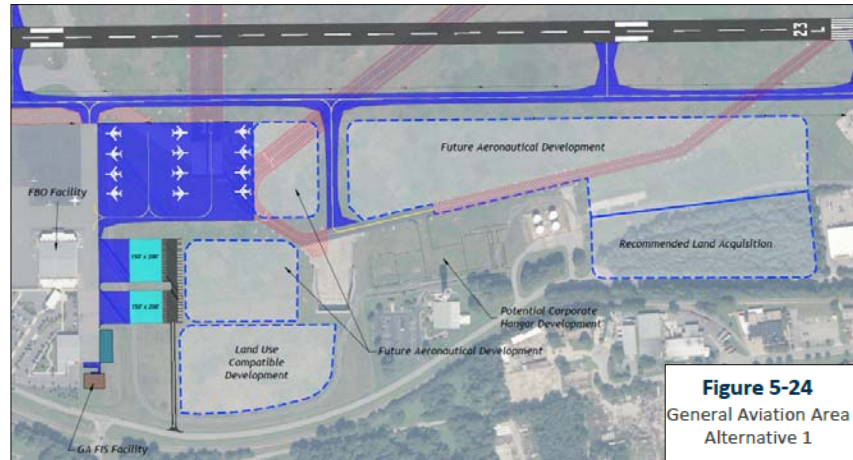


Figure 5-24
General Aviation Area
Alternative 1

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Support Facilities

- Other support facilities examined include:
 - Aircraft Refueling
 - Aircraft Deicing Apron
 - Airfield Maintenance Operations



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Support Facilities: Fuel Storage, Deicing Apron, Maintenance Facility



Exhibit 5-26
Fuel / Glycol Storage Facility Alternatives

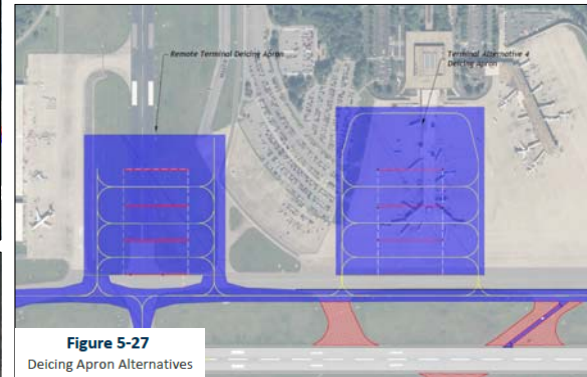


Figure 5-27
Deicing Apron Alternatives



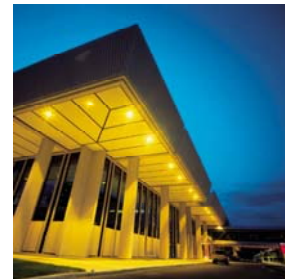
Figure 5-28
Airfield Maintenance Alternatives



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Final Steps

- Collect & review comments (please submit comments by **October 15th**)
- Develop overall Airport Master Plan (**4th Quarter 2019**)
 - Finalize Development Concepts (**Working Paper No. 4**)
 - Phasing and cost estimates
 - Financial Plan
 - Airport Layout Plan (ALP) drawing set
- Release **Draft Airport Master Plan** for review
- Finalize/Approve **Airport Master Plan (1st Quarter 2020)**



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Questions or Comments?

Submit Online: www.orfmasterplan.com

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