OPEN HOUSE

Thursday, September 26, 2019
from 4:00pm to 8:00pm
Note: Presentations will be given at
4:15pm and 6:15pm,
followed by Q&A after each presentation.

T.F. Green Airport
Warwick, Rhode Island
Rhode Island Airport Corporation
Mary Brennan Board Room - 2nd Level.
Parking will be validated.

Rhode Island Airport Corporation
Agenda

4:00 – 4:15: Welcome
4:15 – 5:15: Presentation
5:15 – 6:00: Questions & Answers
6:00 – 6:15: Break
6:15 – 7:15: Presentation (repeat)
7:15 – 8:00: Questions & Answers
Master Plan Update

• Required by the Federal Aviation Administration (5 to 7 years)
• Linked to federal grant eligibility
• Last full update was completed in 2002
• No Runway Extensions or Realignment
• Proposed Development Alternatives within Airport Property Limits
Introduction and Status

- **Inventory**
  - Working Draft Paper Completed

- **Forecasts of Demand**
  - Requires FAA Approval

- **Demand/Capacity Facility Requirements**
  - O - Current Effort

- **Alternatives Development and Evaluation**
  - TAC #1
  - TAC #2

- **Phasing and Financial Strategy**

- **Stakeholder and Public Involvement**

- **Environmental Overview and Considerations**

- **Master Plan Report**
  - X - Pending Start Up

- **ALP Set**
  - Requires FAA Approval
  - X
Outreach Activity

- Monthly Key Stakeholder Group Outreach
- Press Releases Issued
- Social Media Announcements
- Master Plan Webpage
- Technical Advisory Committee (TAC) Meetings
- Meetings with City of Warwick, Mayor’s Office
- Public Workshop
- Open Houses

Website: PVDAIRPORT.COM
Technical Advisory Committee

Committee Members

• Business Community Representative
• City of Warwick Planning
• Customs and Border Protection
• FAA – Regional Airports Division
• FAA – Air Traffic Control Management
• FAA – Technical Operations Office
• Fixed Base Operator
• GA Corporate (2)
• GA Flight School
• PVD Airline Airport Affairs Committee
• PVD Concessionaire Food
• PVD Concessionaire Retail

• PVD Parking Operator
• PVD Ground Handler
• RI Department of Transportation (Office of Transit)
• RI Statewide Planning Office (Metropolitan Planning Organization)
• RI Department of Health
• RI Department of Environmental Management
• RI Chamber of Commerce
• RI Commerce Corporation
• RI Convention and Visitors Bureau
• Transportation Security Administration
WELCOME!

T. F. Green Airport (PVD)
Master Plan Update
Public Workshop

TUESDAY, JUNE 25TH
4pm-8pm
THE CROWNE PLAZA HOTEL
801 Greenwich Ave,
Warwick, RI 02886

WEDNESDAY, JUNE 26TH
4pm-8pm
WYNDHAM PROVIDENCE HOTEL
1850 Post Rd, Warwick, RI 02886

PLEASE SIGN IN HERE
Public Workshops – June 25th and 26th

- Excellent presentation – Great idea to keep public informed with the latest information of improving TF Green.

- I want to thank you for the noise reduction work on 44 Palace Ave. We appreciate the excellent workmanship.

- Flight path over hospital which is most important building in area, 3000+ people and needed in emergency.
Forecast Summary and Passenger Activity Levels (PALs)

- **Total Annual Aircraft Operations**: 72,000 -> 89,000
- **Annual Enplanements**: 1.9 m -> 3.7 m
- **PMAD Peak Hour Enplanements**: 708 -> 1,335
- **PMAD International Arriving Passengers**: 252 -> 488

**PMAD – Peak Month Average Day**

**2017 to 2037**
- 3.2% compound annual growth rate for annual enplanements
- 1.5% compound annual growth rate for annual operations
Activity Forecast Tracking

Planning Activity Level (PAL) Tracker

- Actual
- TAF Jan 2018
- TAF Feb 2019
- Master Plan Enplanements Forecast
- Enplanements Tracking Forecast

Years: 2008 to 2037

Enplanements:
- 2022 PAL 1
- 2027 PAL 2
- 2037 PAL 3

Green Airport
Develop Preferred Concepts and Alternatives

• Assess stakeholder inputs on preliminary development concept(s).

• Evaluate airfield, terminal, landside, and cargo/general aviation concepts for:
  • Engineering (design and construction phasing)
  • Operational (efficiency and traffic flow)
  • Environmental (impact and permitting)
  • Financial (cost)
  • Feasibility (implementation)

• Conclude with preferred alternatives and FAA approved Airport Layout Plan (ALP).
Evaluation of Alternatives

- Each criterion qualitatively analyzed using a ranking system.
- Ranking will result in a preferred alternative.
- Preferred alternatives will be combined to create airport-wide development plan.
The following conclusions were reached:

- No runway extensions or realignments required.
- The critical aircraft remains a C-IV, with future critical aircraft considerations for C-V (500 or more annual operations).
- Airfield geometry improvements are required to meet FAA design standards and maximize safety.
- Airfield lighting improvements are required to enhance safety.
Airfield Alternatives

The following airfield issues were reviewed and evaluated:

1. Runway 16-34 Design Code
2. Runway 16-34 to Taxiway C Separation
3. Runway 16-34 Parallel Taxiways
4. Runway 5-23 Exit
5. Direct Access from North Apron to Runway 23
6. Runway 5-23 to Taxiway M Separation
7. Other Runway/Taxiway Improvements
Airfield Alternatives
Runway 16-34 Design Code
## Airfield Alternatives
### Runway 16-34 Design Code

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1 - CIII</th>
<th>Alternative 2 - BII</th>
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</thead>
<tbody>
<tr>
<td>Design Standards</td>
<td>No or minimal impacts</td>
<td>Moderate impacts</td>
</tr>
<tr>
<td>Operational</td>
<td>No Aircraft Larger than B-II</td>
<td>Significant Runway Closures</td>
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<tr>
<td>Environmental</td>
<td>Add shoulders</td>
<td>Remove Pavement; Relocate Signage, Lighting and Markings</td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feasibility</td>
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</tr>
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</table>

Preferred Alternative: Alternative 1 - CIII

- **Green**: No or minimal impacts
- **Yellow**: Moderate impacts
- **Orange**: Significant impacts
Airfield Alternatives

Taxiways

Legend:
- Property Line
- Existing Buildings
- Existing Airfield Pavement
- NAVAID
- Proposed Taxiway
- Proposed Pavement Demo

Alternative 1: Do Nothing (Keep Modification to Standards)
- Keep existing 300' Separation

Alternative 2: Increase Separation to 400 feet
- 400' Separation

Source: WSP USA
Airfield Alternatives

Taxiways
# Airfield Alternatives

## Taxiways

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alt 1</th>
<th>Alt 2</th>
<th>Alt 3</th>
<th>Alt 4</th>
<th>Alt 5</th>
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<tbody>
<tr>
<td>Design Standards</td>
<td>Do Nothing</td>
<td>Full Parallel Txwy C</td>
<td>Partial Parallel Txwy C</td>
<td>Full Parallel Txwy B</td>
<td>Partial Parallel Txwy B</td>
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<tr>
<td>Operational</td>
<td>Occasional Restrictions</td>
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<td>Wetlands</td>
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<td>Wetlands, Noise</td>
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<td>Runway 34 End Access During Construction</td>
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<td>Preferred Alternative</td>
<td>✔️</td>
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<td></td>
<td>✔️</td>
<td></td>
</tr>
</tbody>
</table>

- **Green**: No or minimal impacts
- **Yellow**: Moderate impacts
- **Orange**: Significant impacts
Preferred Airfield Layout – ADG IV

Legend:
- Property Line
- Existing Buildings
- Existing Airfield Pavement
- NAVAID
- Proposed Shoulders
- Proposed Pavement Demo
- Proposed Taxiway
- Potential Terminal Area
- Potential GA/Cargo Area
- Proposed Blast Pad
- Proposed Taxiway Lighting Improvements

Note: Upgrade taxiway shoulders and fillets to Taxiway Design Group 5 standards where necessary.
Airfield Alternatives
Runway 5-23 Exit

Legend
- Property Line
- Existing Buildings
- Existing Airfield Pavement
- NAVAID
- Proposed Taxiway

Runway 5-23 to Taxiway M separation is insufficient to accommodate a high-speed exit (minimum of 427' required)
# Airfield Alternatives
## Runway 5-23 Exit

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1 Do Nothing</th>
<th>Alternative 2 Stub Taxiway</th>
<th>Alternative 3 High Speed</th>
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<tr>
<td>Design Standards</td>
<td>Insufficient Rwy-Twy Separation</td>
<td>Occasional High ROT</td>
<td>Stormwater BMB</td>
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<td>Runway/Taxiway Closures During Construction</td>
<td>Runway/Taxiway Closures During Construction</td>
<td>Runway/Taxiway Closures During Construction</td>
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<td>Feasibility</td>
<td>Runway/Taxiway Closures During Construction</td>
<td>Runway/Taxiway Closures During Construction</td>
<td>Runway/Taxiway Closures During Construction</td>
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</tbody>
</table>

Preferred Alternative: ✔

- **No or minimal impacts**
- **Moderate impacts**
- **Significant impacts**
Airfield Alternatives
Direct Access from North Apron to Runway 23 End
## Airfield Alternatives
Direct Access from North Apron to Runway 23 End

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
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<tbody>
<tr>
<td></td>
<td>Do Nothing</td>
<td>Shift A South</td>
<td>Remove A</td>
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<tr>
<td>Operational</td>
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<td></td>
<td>Longer taxi routes, apron bottlenecks</td>
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<td>Environmental</td>
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<td></td>
</tr>
<tr>
<td>Financial</td>
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</tr>
<tr>
<td>Preferred Alternative</td>
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<td></td>
</tr>
</tbody>
</table>

- **Green**: No or minimal impacts
- **Yellow**: Moderate impacts
- **Orange**: Significant impacts

---

**Criteria**

- **Design Standards**
  - Alternative 1: No or minimal impacts
  - Alternative 2: No or minimal impacts
  - Alternative 3: No or minimal impacts

- **Operational**
  - Alternative 1: No or minimal impacts
  - Alternative 2: Longer taxi routes, apron bottlenecks
  - Alternative 3: No or minimal impacts

- **Environmental**
  - Alternative 1: No or minimal impacts
  - Alternative 2: No or minimal impacts
  - Alternative 3: No or minimal impacts

- **Financial**
  - Alternative 1: No or minimal impacts
  - Alternative 2: Moderate impacts
  - Alternative 3: No or minimal impacts

- **Feasibility**
  - Alternative 1: No or minimal impacts
  - Alternative 2: No or minimal impacts
  - Alternative 3: No or minimal impacts
Airfield Alternatives
Runway 5-23 to Taxiway M ADG V Separation 400’ to 500’
Airfield Alternatives
Runway 5-23 to Taxiway M ADG V Separation

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<tr>
<th>Criteria</th>
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<tr>
<td>Design Standards</td>
<td>MOS for when Visibility is &lt; ½ SM (1.1% of the Time) AND ADG V is Landing</td>
<td>Shift Txwy M</td>
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<td>Occasional Restrictions Low Occurrence</td>
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<td>Feasibility</td>
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<td>No Access to Portions of Runway 5-23</td>
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</table>

- **No or minimal impacts**
- **Moderate impacts**
- **Significant impacts**
Airfield Alternatives
Other Runway/Taxiway Improvements (no alternative analysis)

**ADG IV**
- Increase length of Rwy 23 End Blast Pad
- Widen Twy C1 shoulders
- Implement consistent taxiway lighting
- Upgrade taxiway fillets and shoulders to TDG 5

**ADG V**
- Upgrade EMAS Bed
- Widen Rwy 5-23 shoulders 10’
- Widen/lengthen Rwy 23 End Blast Pad
- Widen Rwy 5 End Blast Pad
- Upgrade taxiway fillets and shoulders to TDG 5
Preferred Airfield Layout – ADG IV

Legend:
- Property Line
- Existing Buildings
- Existing Airfield Pavement
- NAVAID
- Proposed Shoulders
- Proposed Pavement Demo
- Proposed Taxiway
- Potential Terminal Area
- Potential GA/Cargo Area
- Proposed Blast Pad
- Proposed Taxiway Lighting Improvements

Note:
Upgrade taxiway shoulders and fillets to Taxiway Design Group 5 standards where necessary.
Preferred Airfield Layout – ADG V

Legend:
- Property Line
- Existing Buildings
- Existing Airfield Pavement
- NAVAID
- Proposed Shoulders
- Proposed Pavement Demo
- Proposed Taxiway
- Potential Terminal Area
- Potential GA/Cargo Area
- Proposed Blast Pad
- Proposed Hold Line Relocation
- Proposed Taxiway Lighting
- Improvements

Note:
Upgrade taxiway shoulders and fillets to Taxiway Design Group 5 standards where necessary.
Terminal Alternatives Evaluation

• Design Standards – accommodates long-term passenger and aircraft facility demands. Enhance the passenger experience through amenities, convenience, ease of movement, and technology.

• Operational – improves operational efficiency of airport and tenants, and improves aircraft circulation around the terminal/concourse.

• Environmental – compares level of new construction vs. incorporation and reuse of existing facilities and pavements.

• Financial – maximizes financial return on investment. Ability to facilitate enhanced concessions and revenue potential throughout the terminal facility.

• Feasibility – Ability to implement in an incremental manner. Impact of relocating or not relocating the VOR.
Terminal Alternative 1

- Possible to expand apron area for ADG-IV aircraft parking positions at concourse extension or RON positions.
- Processing expansion, as needed.
- Approximately 7-9 ADG-III new gates.
- 4 new ADG-III RON positions.
- Fuel farm to remain.
- Modified ADG-IV Taxiway.
- Existing ADG-IV Taxiway.
- New ADG-V Taxiway Centerline.
- Airfield geometry - to be determined.

Aircraft Legend:
- Existing aircraft parking positions.
- New ADG-III aircraft parking positions.
- New ADG-IV aircraft parking positions.
- New ADG-V aircraft parking positions.
Terminal Alternative 2

- Loading dock expansion
- Processing expansion, as needed
- Approximately 3-4 (ADG-III) net new gates
- Possible to expand concourse for additional gates or RGN positions
- Modified ADG IV Taxiway Centerline
- Future terminal expansion beyond the planning horizon
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- Airfield geometry - to be determined

Aircraft Legend:
- Existing aircraft parking positions
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- New ADG-V aircraft parking positions
Terminal Alternative 3

Processing expansion, as needed

Loading dock expansion

Approximately 9-16 ADG-Ill net new gates

Possible to expand apron area for ADG-IV aircraft parking positions at concourse extension or RON positions

Existing ADG-IV Taxiway

New ADG-IV Taxiway Centerline

New ADG-Ill Taxiway Centerline

Existing ADG-IV Taxiway

Hill-in pavement for continued growth

New RON positions

New ADG-Ill Taxiway

Approximately 9-16 ADG-Ill net new gates

Processing expansion, as needed

Loading dock expansion

Future terminal expansion beyond the planning horizon

Airfield geometry - to be determined

Aircraft Legend

- Existing aircraft parking positions
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- New ADG-V aircraft parking positions

Green Airport
Terminal Alternative 4

- Loading dock expansion
- Processing expansion, as needed
- Approximately 4.5 ADG-III net new gates
- Airfield geometry - to be determined
Terminal Alternative 5

Possible to expand open area for ADG-IV aircraft parking positions or concourse extension or ROW positions.

Processing expansion, as needed.

Loading dock expansion.

Approximately 10-11 ADG-III net new gates.

Aircraft Legend:
- Existing aircraft parking positions
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- New ADG-V aircraft parking positions

Airfield geometry - to be determined.
Terminal Alternative 6

- Processing expansion, as needed
- Loading dock expansion

Airfield geometry - to be determined

Aircraft Legend:
- Existing aircraft parking positions
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- New ADG-V aircraft parking positions
Terminal Alternatives Evaluation

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1</th>
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Good: Brown
Better: Yellow
Best: Green
Terminal Preferred Alternative

Airfield geometry - to be determined

Aircraft Legend
- Existing aircraft parking positions
- New ADG-III aircraft parking positions
- New ADG-IV aircraft parking positions
- New ADG-V aircraft parking positions
Terminal Alternative 4

Phase 1, Level 1
Draft Concept Layout
Cargo/General Aviation Evaluation

- Design Standards – accommodates aircraft and airspace safety.

- Operational – improves operational efficiency of tenants, and improves aircraft circulation around the north ramp. More ramp space is highest operational need.

- Environmental – compares level of new construction vs. incorporation and reuse of existing facilities and pavement.

- Financial – maximizes financial return on investment. Although most of these alternatives would require third-party investment.

- Feasibility – Ability to implement in an incremental manner.
North Side Cargo/GA Alternative 3
South Side Cargo/GA Alternative 1
South Side Cargo/GA Alternative 2

Legend
- Property Line
- Existing Buildings
- Proposed Buildings
- Existing Airstrip Pavement
- Proposed Pavement
- NAYAD

Source: SAS Engineers, Inc.
South Side Cargo/GA Alternative 3
Cargo/GA Alternative Evaluation

North 1:  

North 2:  

North 3:  

South 1:  

South 2:  

South 3:  

<table>
<thead>
<tr>
<th>Criteria</th>
<th>North Alternative 1</th>
<th>North Alternative 2</th>
<th>North Alternative 3</th>
<th>South Alternative 1</th>
<th>South Alternative 2</th>
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Preferred Alternative

- Good
- Better
- Best
Fuel Farm Improvement Alternative

Legend:
- Property Line
- Existing Buildings
- Proposed Buildings
- Existing Airfield Pavement
- Proposed Pavement
- Proposed Fence
- Proposed Fence Demolition

- Existing Access Gate to be Decommissioned
- Potential Future Access Gate
- Truck Circulation Route
- (3) Potential Fuel Tanks 50,000 Gallons Each
## Landside Alternatives

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
<th>Timeline</th>
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<tbody>
<tr>
<td>Issue 1</td>
<td>Airport Loop Road Sight Distance</td>
<td>PAL 1</td>
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<tr>
<td>Issue 2</td>
<td>Airport Loop Road Wayfinding</td>
<td>PAL 1</td>
</tr>
<tr>
<td>Issue 3</td>
<td>Pedestrian Connectivity &amp; Wayfinding</td>
<td>PAL 1</td>
</tr>
<tr>
<td>Issue 4</td>
<td>Airport Loop Road Wayfinding</td>
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<tr>
<td>Issue 5</td>
<td>Curbside Congestion</td>
<td>PAL 1</td>
</tr>
<tr>
<td>Issue 6</td>
<td>Curbside Dwell Times</td>
<td>PAL 2</td>
</tr>
<tr>
<td>Issue 7</td>
<td>Redundant Circulation</td>
<td>PAL 2</td>
</tr>
<tr>
<td>Issue 8</td>
<td>Airport Loop Road at Evans Road Future Capacity</td>
<td>PAL 3</td>
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<td></td>
<td>Future Parking Capacity</td>
<td>PAL 3</td>
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</table>
Landside Alternatives

Issue #1 – Airport Loop Road Sight Distance
Landside Alternatives
Issue #1 – Airport Loop Road Sight Distance
Landside Alternatives
Issue #2 – Airport Connector Wayfinding
Landside Alternatives
Issue #3 – Pedestrian Connectivity & Wayfinding to Post Road

- Improve Lighting, Signage, and Marking
Landside Alternatives
Issue #4 – Airport Connector Road Wayfinding

- Add Redundant or Relocate Signal Heads, Recalibrate
- Add Signage, Striping, and Pavement Markings
Landside Alternatives
Issue #5 – Curbside Congestion

• Add Overhead Signage
Landside Alternatives
Issue #6 – Curbside Dwell Times

• Alternative 1 – Do Nothing
• Alternative 2 – Optimize Targeted Enforcement
• Alternative 3 – Relocate Cell Phone Lot Adjacent to Lot D
• Alternative 4 – Relocate Cell Phone within Lot E Adjacent to Roadway
• Alternative 5 – Relocate Cell Phone west of Belly Cargo Building
Landside Alternatives
Issue #6 – Curbside Dwell Times – Alt 3
Landside Alternatives
Issue #6 – Curbside Dwell Times – Alt 4
Landside Alternatives
Issue #6 – Curbside Dwell Times – Alt 5
### Landside Alternatives

**Issue #6 – Curbside Dwell Times**

<table>
<thead>
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<th>Criteria</th>
<th>Alternative 1</th>
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<th>Alternative 3</th>
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<td>No or minimal impacts</td>
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<td>Alternative 4 would be most expensive</td>
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<td>Financial</td>
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<tr>
<td>Feasibility</td>
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<td>Coordinate new access with RIDOT</td>
<td>Moderate impacts</td>
<td>Reduces Lot E capacity</td>
<td>Moderate impacts</td>
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</table>

**Preferred Alternative**

- No or minimal impacts
- Moderate impacts
- Significant impacts
Landside Alternatives
Issue #8 – Airport Loop Road at Evans Road Future Capacity & Expand Airport Parking

- Alternative 1 – Do Nothing
- Alternative 2 – Move Signalized Intersection and Increase Capacity
Landside Alternatives
Issues #7 and #8 – Airport Loop Road at Evans Road Future Capacity & Expand Airport Parking

Alt 2
Landside Alternatives
Issue #8 – Airport Loop Road at Evans Road Future Capacity & Expand Airport Parking
Landside Alternatives
Issue #8 – Airport Loop Road at Evans Road Future Capacity & Expand Airport Parking
### Landside Alternatives

**Issue #8 – Airport Loop Road at Evans Road Future Capacity & Expand Airport Parking**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Alternative 1</th>
<th>Alternative 2</th>
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<tr>
<td>Design Standards</td>
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<tr>
<td>Operational</td>
<td>Existing issues remain</td>
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<td>Environmental</td>
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<td>Potential drainage impacts</td>
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<td>Financial</td>
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<td>Cost to expand existing surface parking</td>
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<tr>
<td>Feasibility</td>
<td></td>
<td>Magnitude of construction impacts substantial</td>
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<td>Preferred Alternative</td>
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- **Green** indicates No or minimal impacts
- **Yellow** indicates Moderate impacts
- **Red** indicates Significant impacts

**Green Airport**
Landside – Preferred Alternatives
Environmental Overview

- Developed Environmental Constraints Mapping
- Held Environmental Workshop
- Assessed Based Upon Preliminary Alternatives
  - Development Area
  - Likely Federal Permits/Approvals
  - Likely State Permits/Approvals
  - Likely Municipal Permits/Approvals
  - Potential Resource Impacts
- Refine and Address for Preferred Development Program
- Matrix of Environmental Considerations
# Environmental Overview

<table>
<thead>
<tr>
<th>ID</th>
<th>Project</th>
<th>Development Area</th>
<th>Likely Federal Permits/Approvals</th>
<th>Likely State Permits/Approvals</th>
<th>Likely Municipal Permits/Approvals</th>
<th>Potential Environmental Resource Impacts</th>
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<tbody>
<tr>
<td>1</td>
<td>Runway 5-23 ADG IV vs. ADG V</td>
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<td>EA, Coastal Consistency Determination</td>
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<td>Runway 16-34 classification</td>
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<td>RPHIC Review</td>
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<td>Conventional Hangars/Airports</td>
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<td>Removal of Noise Barrier</td>
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</tbody>
</table>

CATEX — Categorical Exclusion, EA — Environmental Assessment
Key Next Steps

• **September**
  - TAC Meeting #2 input
  - Open House #4 input
  - Select preferred development concept

• **October**
  - Refinements and final documentation review
  - RIAC Board briefing
  - Complete work on financial and implementation plan

• **November and December**
  - Complete draft Master Plan and post full version on website
  - Submittal to FAA for review of draft final document and Airport Layout Plan