

JUNEAU RUNWAY INCURSION MITIGATION (RIM) PROGRAM

April 10th 2017





Agenda

- Recap
- Potential Mitigation
- Response to Stakeholder Questions
- Next Steps





Recap





Background

- ➔ Master Plan considered the runway incursions data and found solutions for TWY E and TWY D
- ➔ Recommended further study for TWY C
- ➔ FAA funded a Runway Incursion Mitigation (RIM) Study



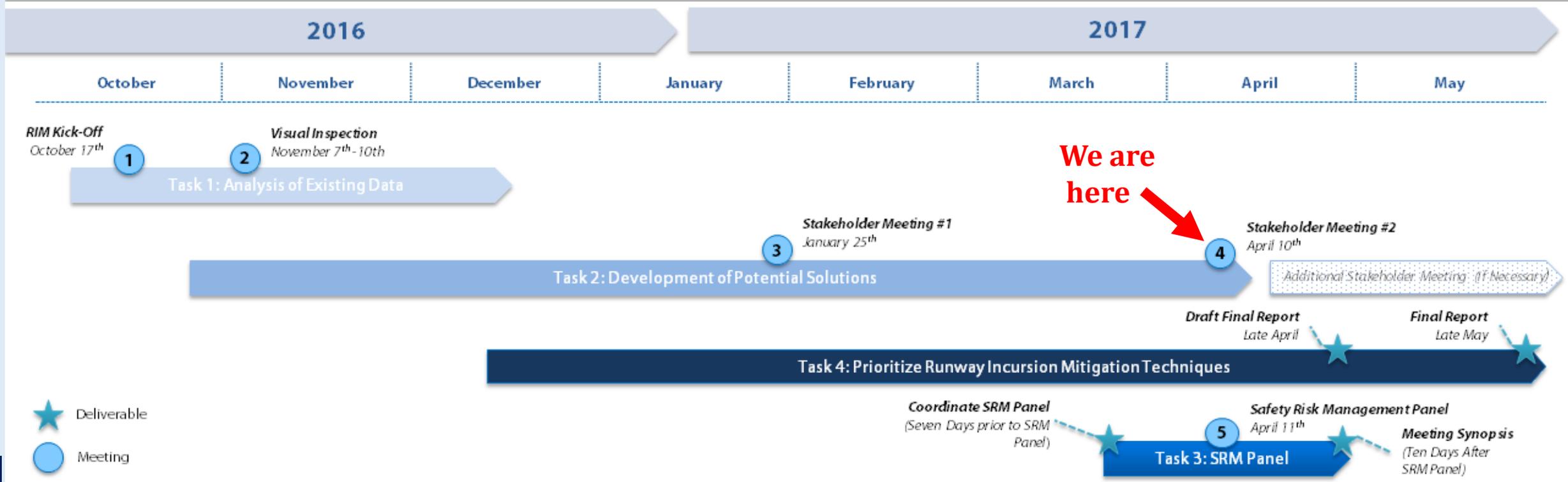


Goals and Objectives

- ➔ The goal of the JNU RIM Program is to determine mitigation solutions for Taxiway C that will reduce the risk of runway incursions at the Airport.
- ➔ The objectives are:
 - » Examine runway incursions data related to Taxiway C, D, E
 - » Consider airfield design and geometry
 - » Develop potential solutions
 - » Priorities mitigation techniques



Schedule





Stakeholders

→ Group Includes:

» Airlines, Airport Staff, Air Traffic Controllers, FAA and Pilots

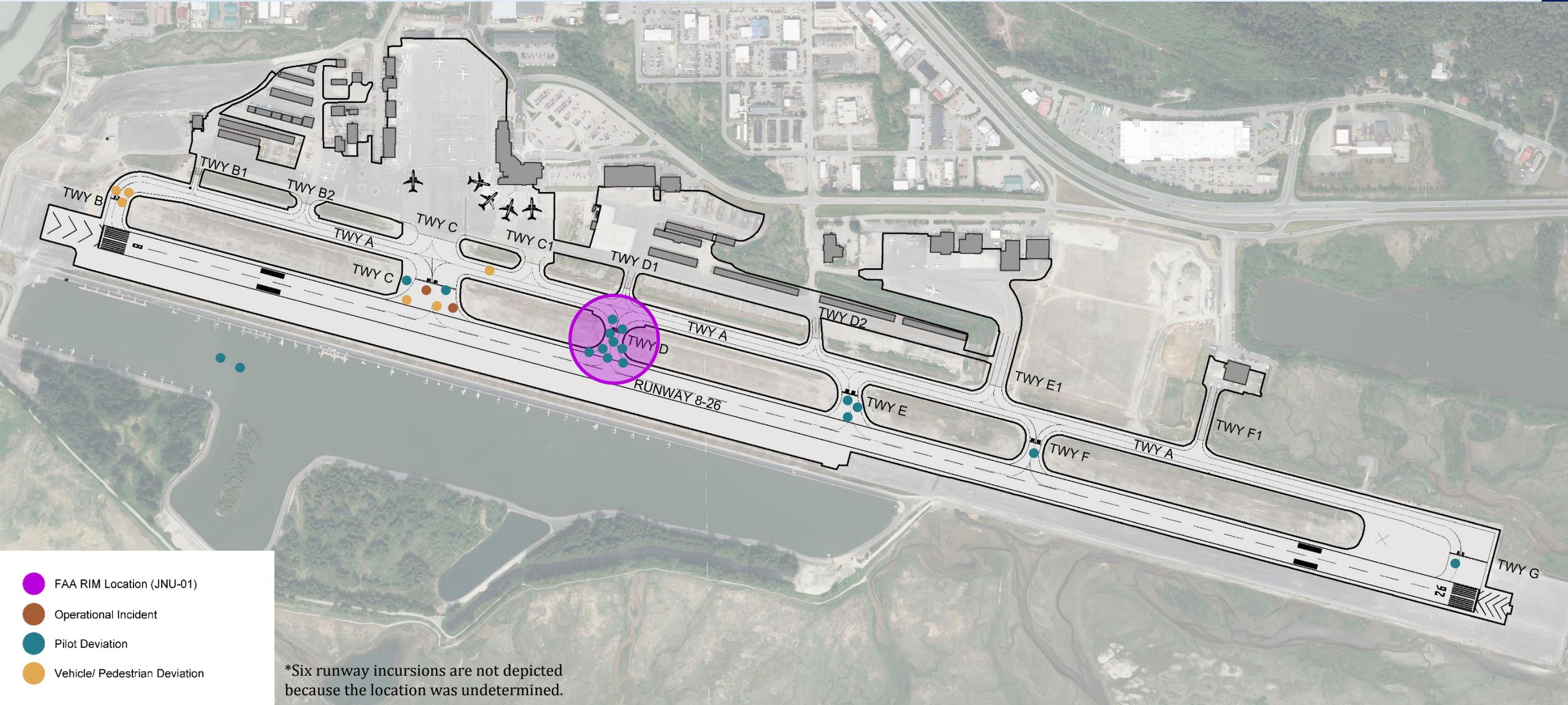
→ Vital to have those most familiar with the operations at JNU

→ We NEED the feedback to develop solutions that work





Juneau Runway Incursions



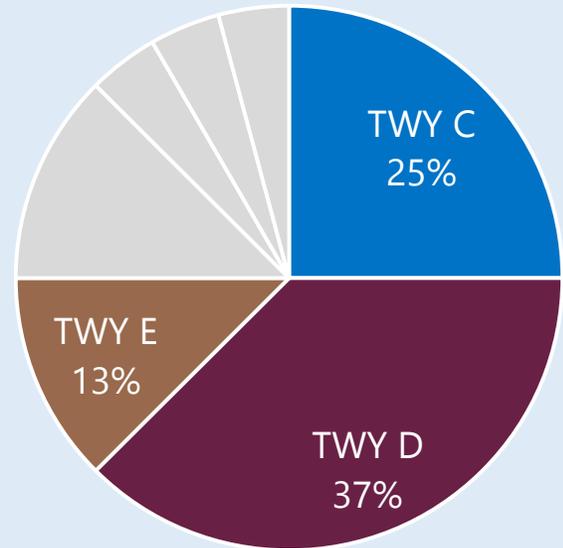
- FAA RIM Location (JNU-01)
- Operational Incident
- Pilot Deviation
- Vehicle/ Pedestrian Deviation

*Six runway incursions are not depicted because the location was undetermined.

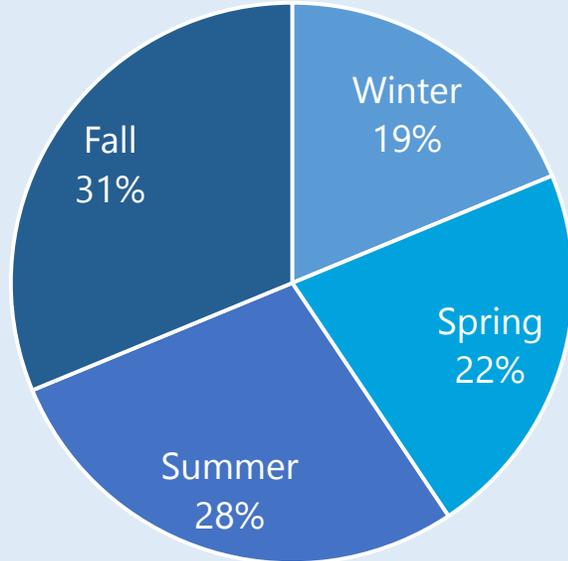


Juneau Runway Incursions

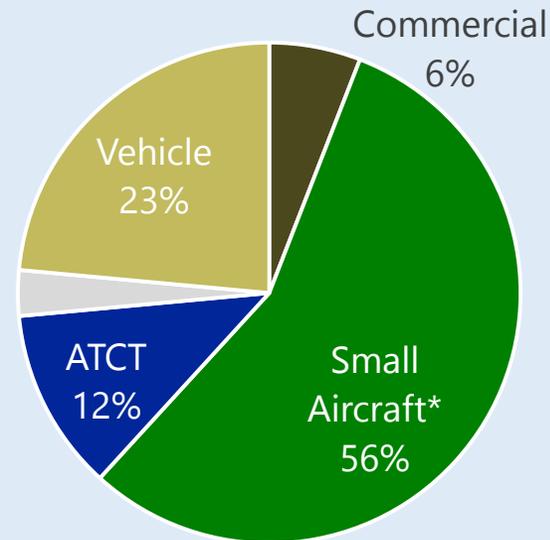
By Location



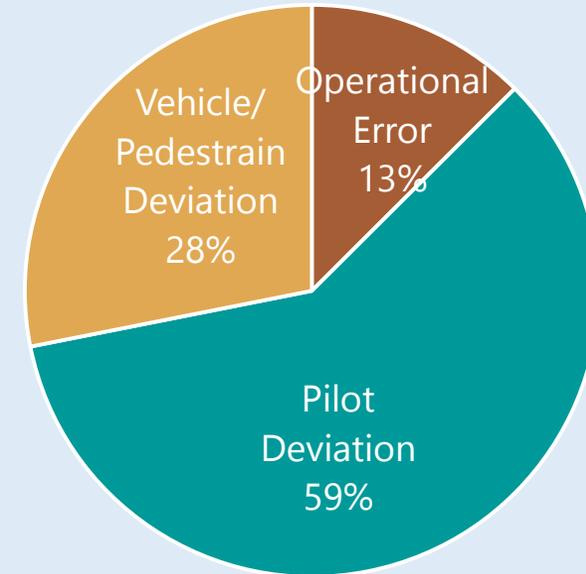
By Season



By User



By Category



Taxiway Design Deficiencies

Taxiway Delta

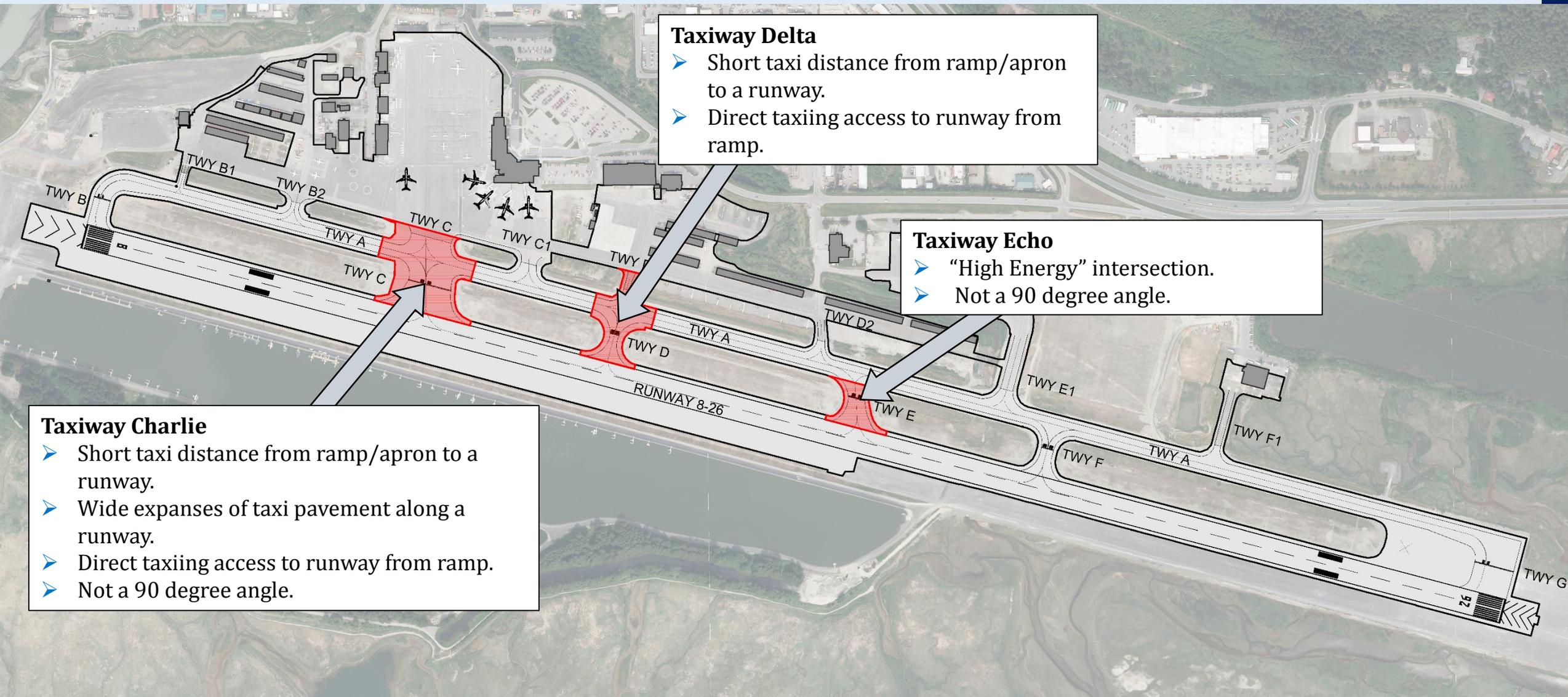
- Short taxi distance from ramp/apron to a runway.
- Direct taxiing access to runway from ramp.

Taxiway Echo

- "High Energy" intersection.
- Not a 90 degree angle.

Taxiway Charlie

- Short taxi distance from ramp/apron to a runway.
- Wide expanses of taxi pavement along a runway.
- Direct taxiing access to runway from ramp.
- Not a 90 degree angle.





Taxiway C - Design Challenges

- Wide Expanse of Pavement
- Direct Taxiing Access to Runway from Ramp
- Taxiway Intersects Runway at other than Right Angle
- Short Taxi Distance from Ramp to Runway





Potential Mitigation



Potential Mitigation

➔ Non-Construction Mitigation

- » New Training Programs
- » New Communication Protocol
- » Revised Operational Procedures

➔ Construction Mitigation

- » Signs, Lighting, Markings,
- » Taxiway Nomenclature
- » Taxiway Geometry

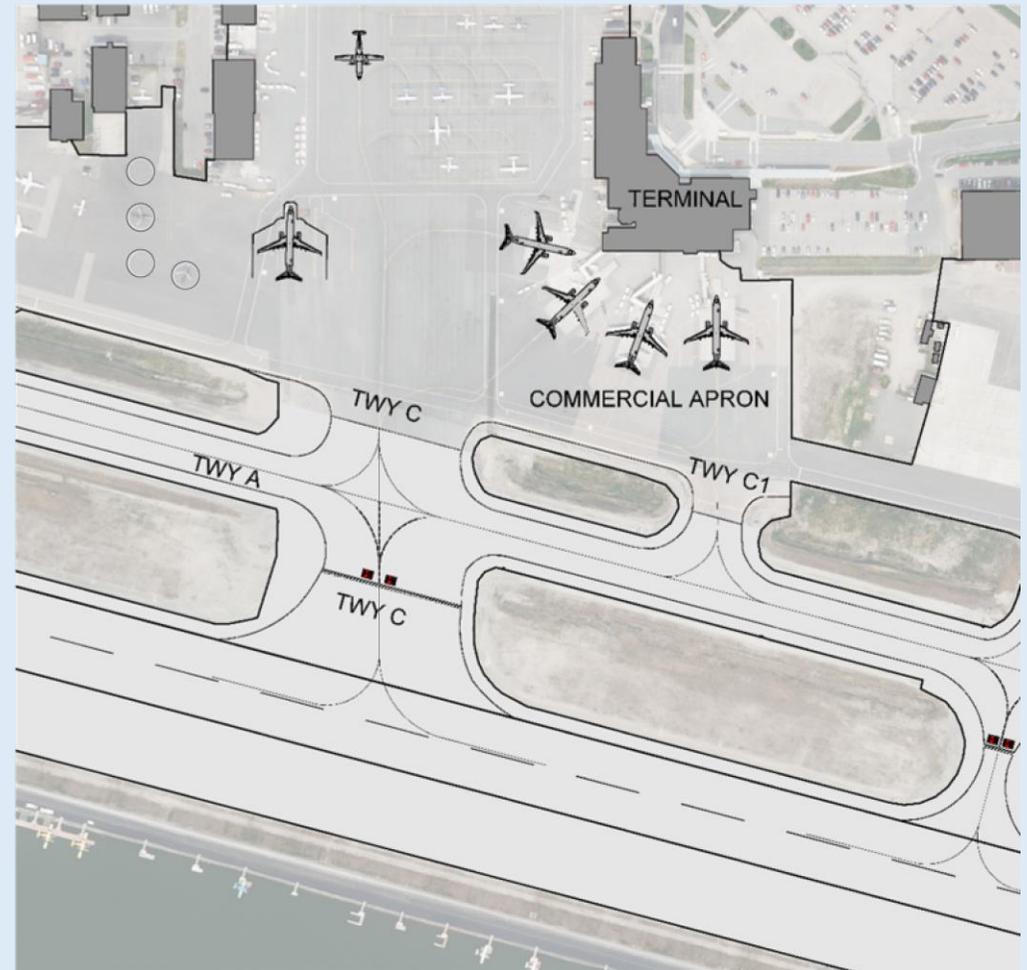


Exhibit Produced By: RS&H, 2016

Potential Mitigation Non-Construction

→ Air Traffic Controllers

- » Encourage use of correct terminology and proper voice cadence.

→ Pilots

- » Maintaining a sterile cockpit during taxiing, departing, and preparing for arrival.

→ Airport Personnel

- » Promote the use of effective communication and encourage educational seminars for operating on an airfield.



Source: wiki.media.org, 2016

Potential Mitigation Construction

➔ Airfield Design Standards

- » Surface Painted Signs
- » Lighting Enhancements
- » Taxiway Nomenclature
- » Taxiway Geometry

➔ Master Plan Solutions

- » Taxiway E, D, and C



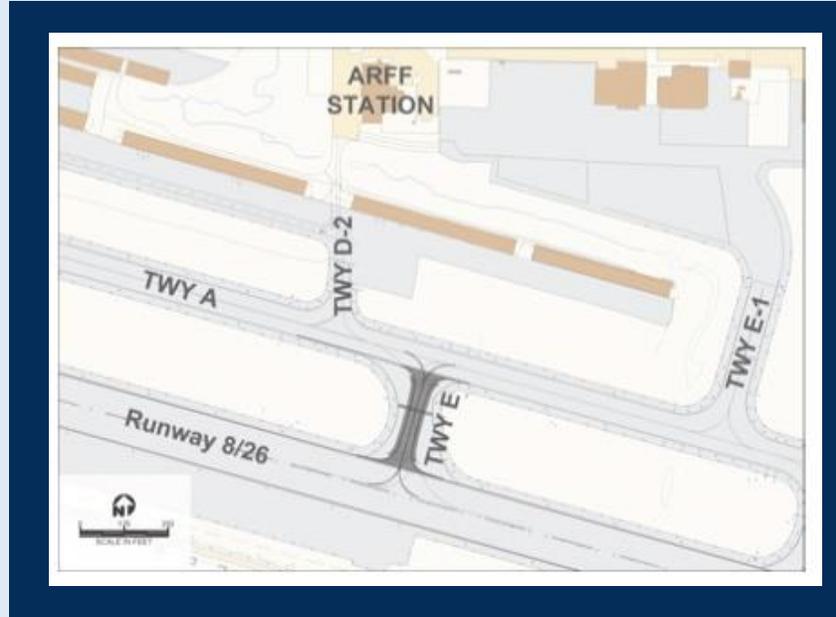
Source: 20/20 HeinSite, 2016

Master Plan Solutions for Taxiway E

Exhibits prepared by URS Corporation.



Alternative 1 – Do-Nothing



Alternative 2 – Realign and Remark
Taxiway



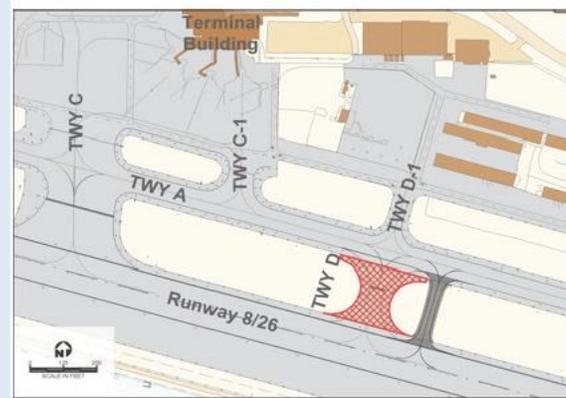
Alternative 3 – Close Taxiway E

Master Plan Solutions for Taxiway D

Exhibits prepared by URS Corporation.



Alternative 1 - Do-Nothing



Alternative 2 - Reposition Taxiway D



Alternative 3 - Reposition Taxiway D-1



Alternative 4 - Close Taxiway D

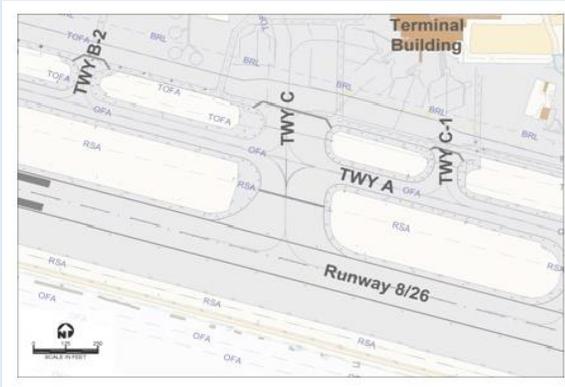


Alternative 5 - Close Taxiway D-1

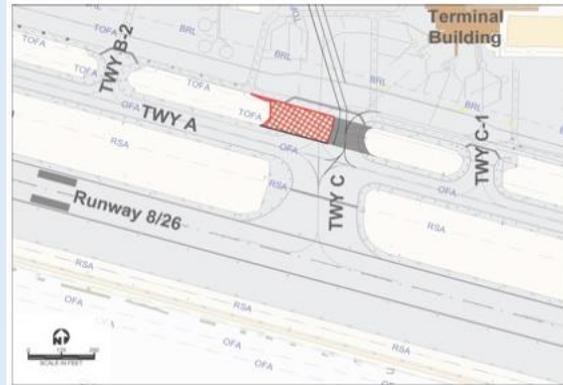


Master Plan Solutions for Taxiway C

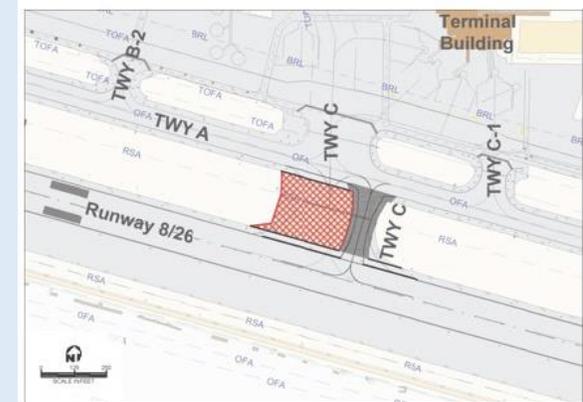
Exhibits prepared by URS Corporation.



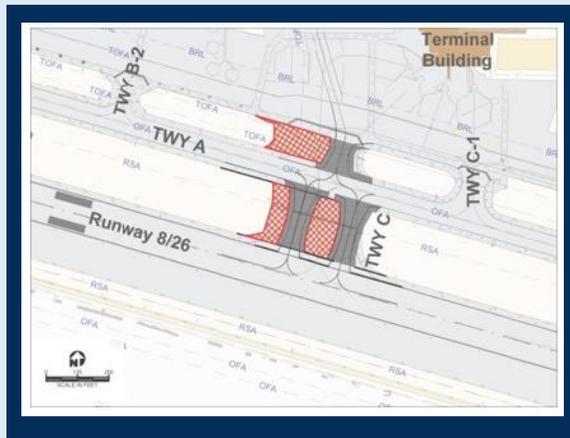
Alternative 1 - Do-Nothing



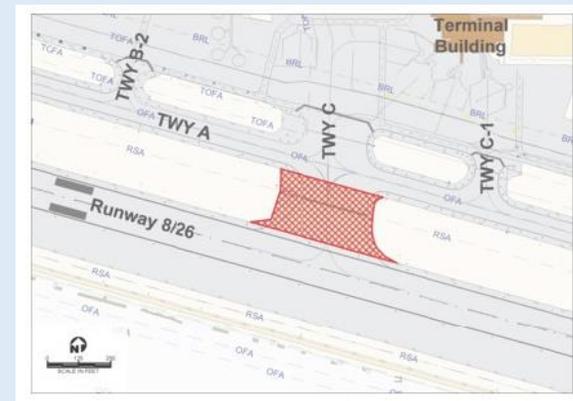
Alternative 2 - Realign Ramp Connection



Alternative 3 - Realign Runway Connection



Alternative 4 - Mark as Dual Taxiway



Alternative 5 - Close Taxiway

Taxiway C – Operational Considerations

- ➔ Apron is very congested during peak periods (queuing of departing aircraft).
- ➔ Location of facilities (helicopters, hardstand, terminal) contribute to apron congestion.
- ➔ Taxiway C is a high priority during snow events.
- ➔ 2-way traffic happens everyday
- ➔ Small aircraft exit Runway 8/26 and conduct intersection takeoffs at Taxiway C

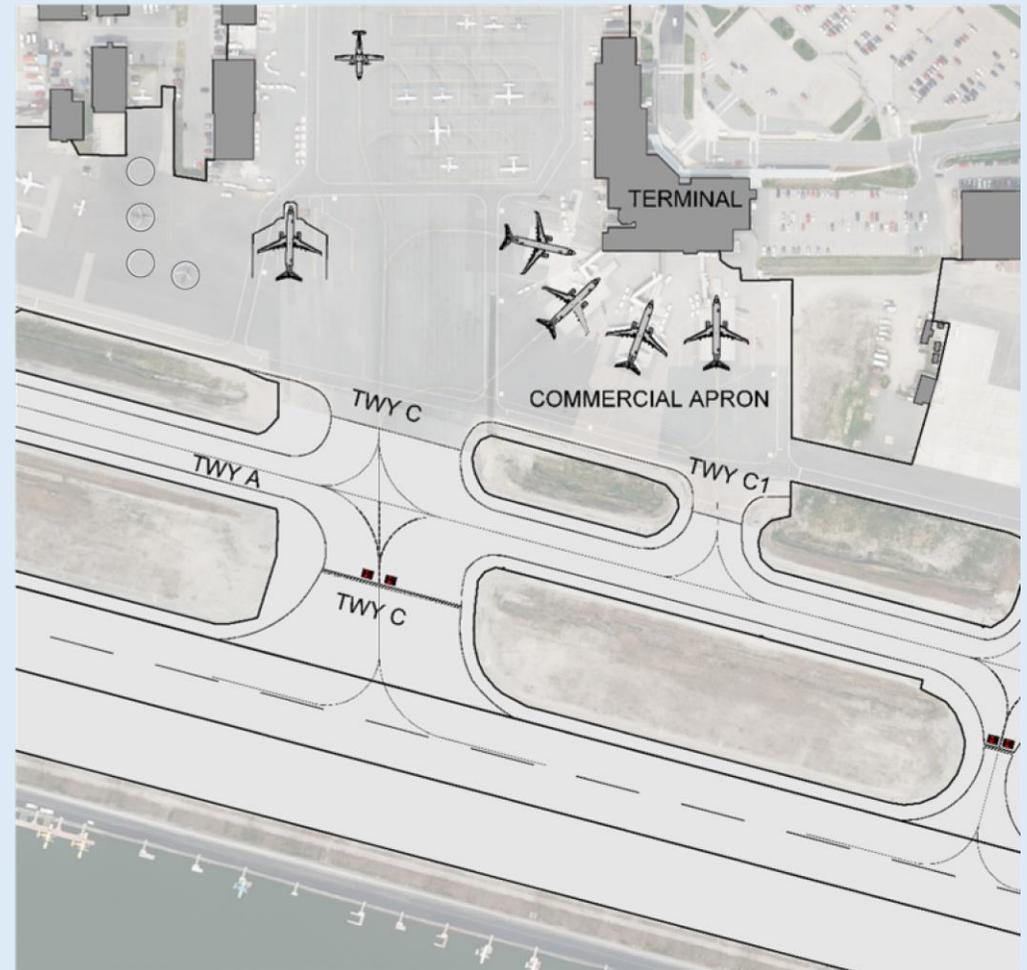


Exhibit Produced By: RS&H, 2016

Considerations for Taxiway C

- ➔ Current geometry established though decades of airfield enhancements
- ➔ No such thing as perfectly safe
- ➔ Balancing safety, operational efficiency and capacity is essential
- ➔ Safety Risk Analyses is a key tool in striking that balance
- ➔ More than just the RIs, geometry and dimensional standards are vital to this solution
- ➔ Three options were developed as a potential solution for Taxiway C

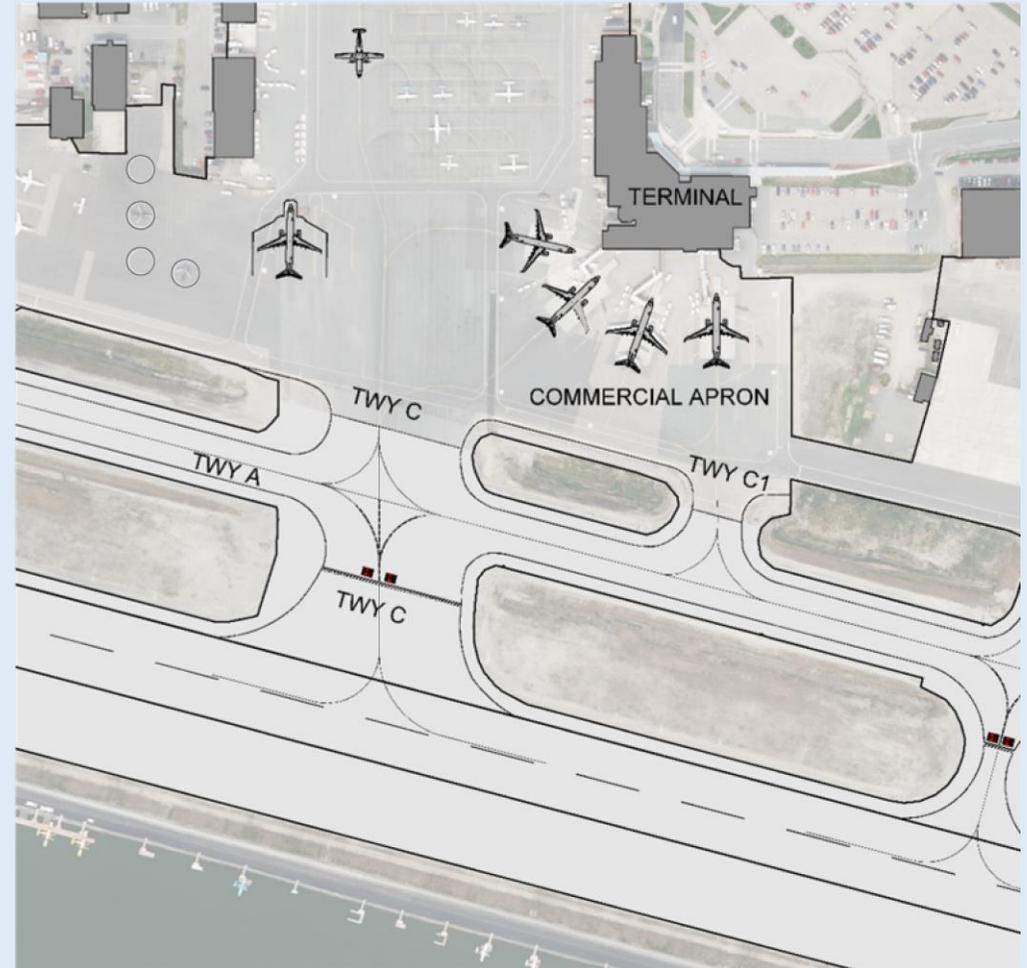
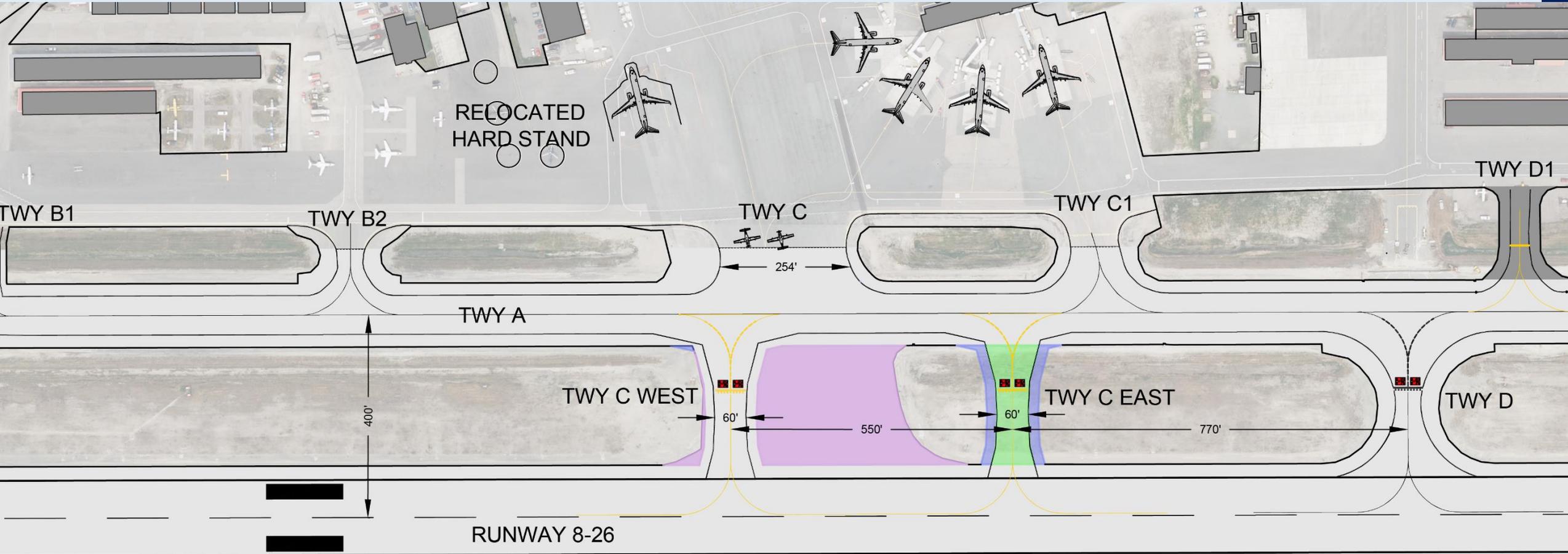


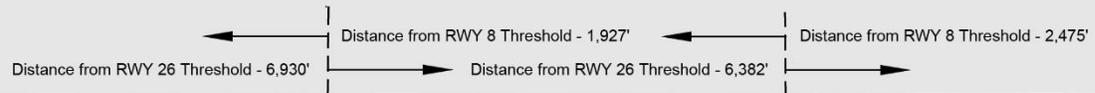
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Option 1

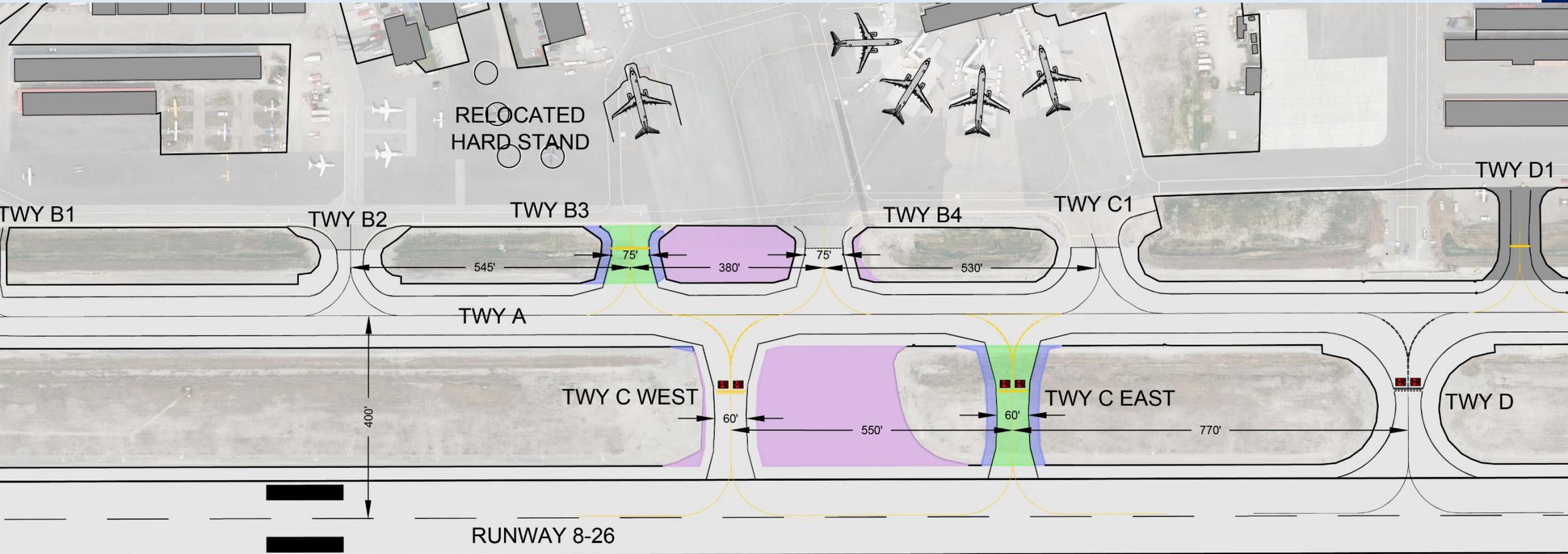


- Removed Pavement
- New Taxiway Pavement
- New Taxiway Shoulder Pavement

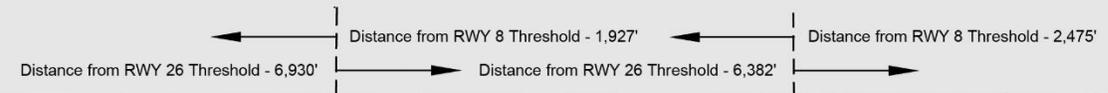




Option 2

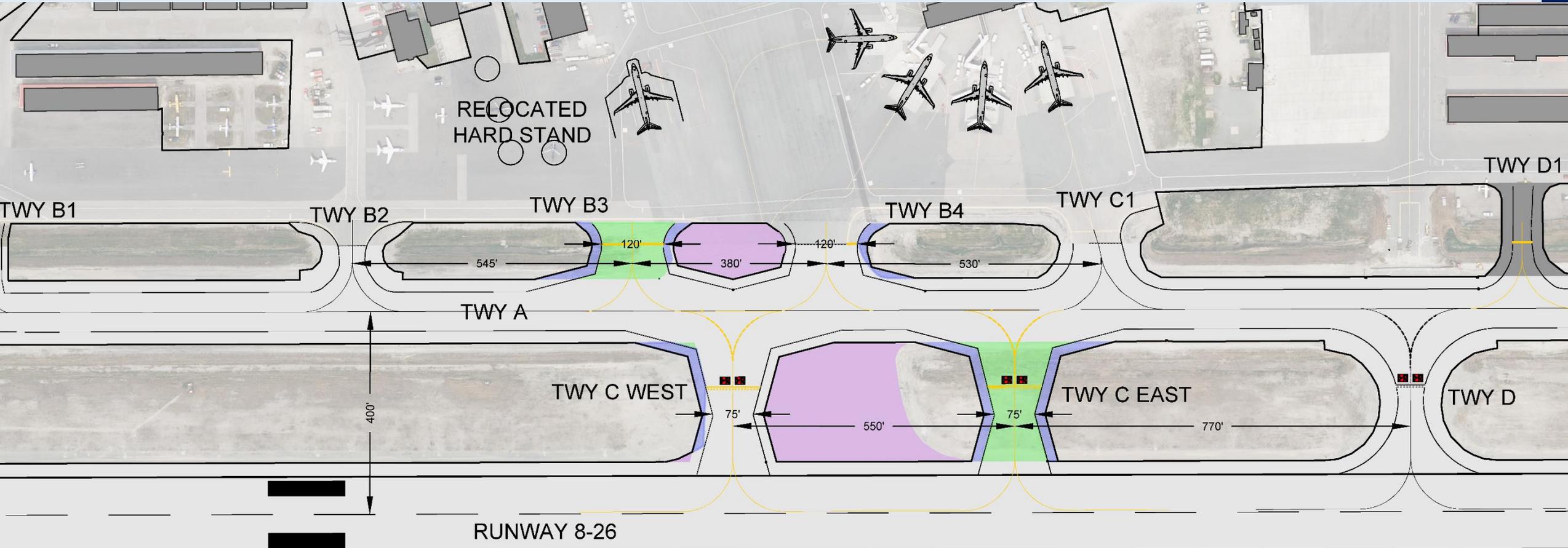


-  Removed Pavement
-  New Taxiway Pavement
-  New Taxiway Shoulder Pavement





Option 3 – Preferred Solution

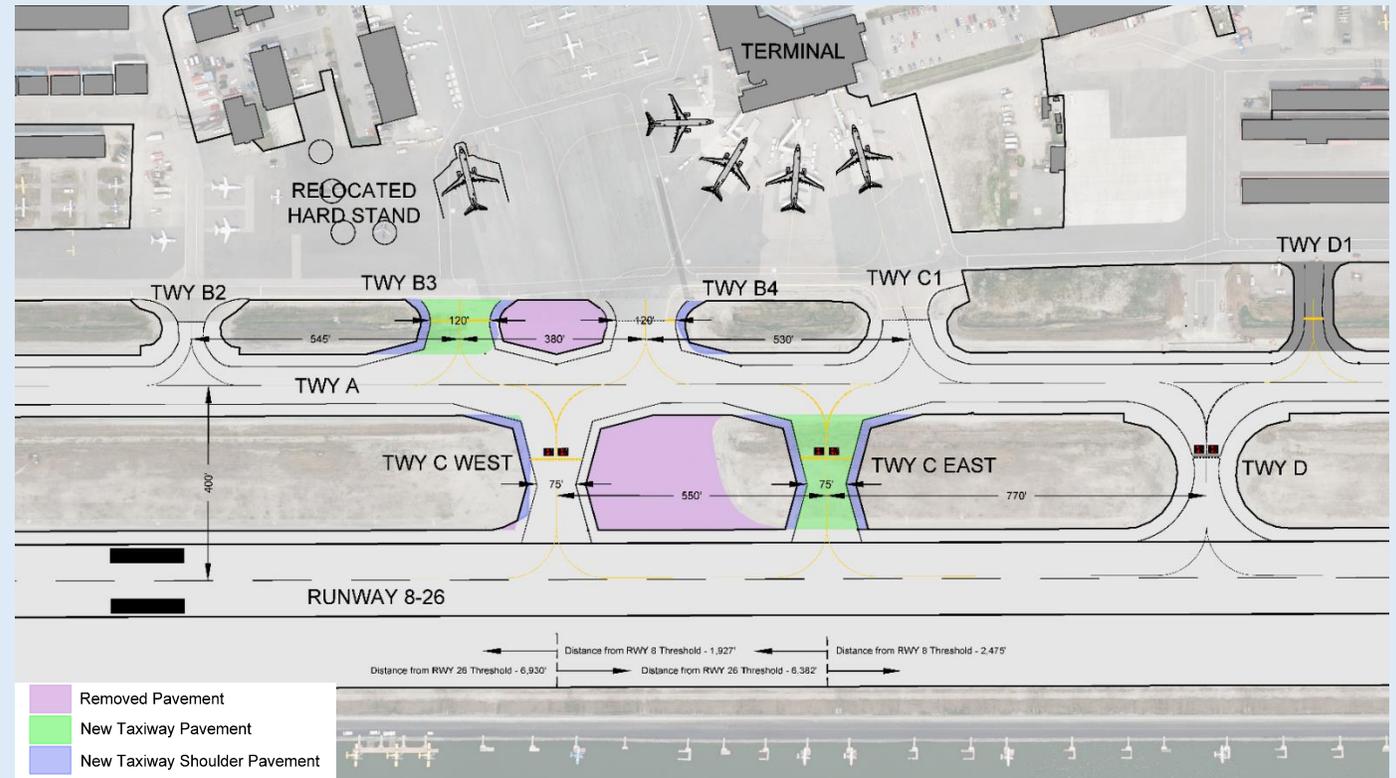


- Removed Pavement
- New Taxiway Pavement
- New Taxiway Shoulder Pavement



Option 3 – Preferred Solution

- ➔ Meets current airfield design standards.
- ➔ Optimizes the configuration based on the aircraft fleet.
- ➔ Improved ATCT flexibility and airfield efficiency.
- ➔ Increase situational awareness and aircraft performance





Stakeholder Involvement



Stakeholder Comments

"What is the new flow from Runway 8-26 to the apron with the change in airfield geometry?"

"What is the effect in exit taxiway utilization with the addition of a new taxiway?"

"From a snow removal standpoint, would Taxiway C East or Taxiway C West have priority?"

"With the change in airfield geometry, what does the queue line on the apron look like during peak times?"

"Is there a concern for the general public being impacted by jet blast walking to and from the helicopter stands?"

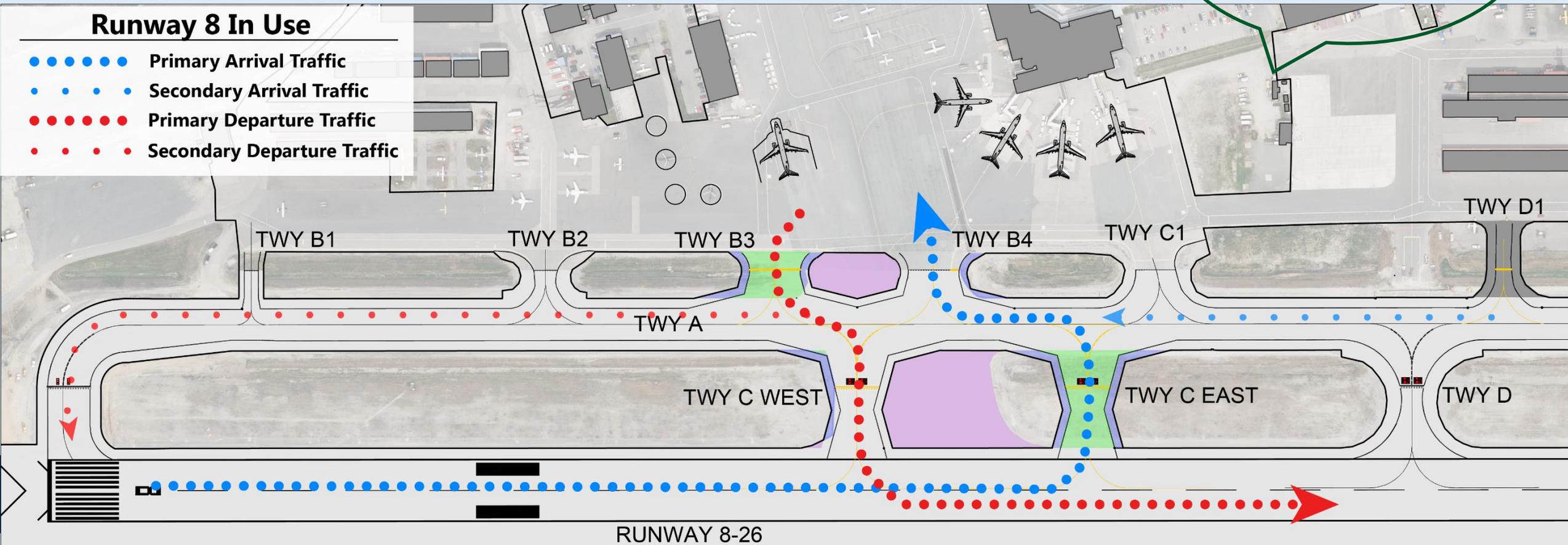


Proposed Flow – Runway 8

“What is the new flow from Runway 8-26 to the apron with the change in airfield geometry?”

Runway 8 In Use

- Primary Arrival Traffic
- Secondary Arrival Traffic
- Primary Departure Traffic
- Secondary Departure Traffic



- Removed Pavement
- New Taxiway Pavement
- New Taxiway Shoulder Pavement

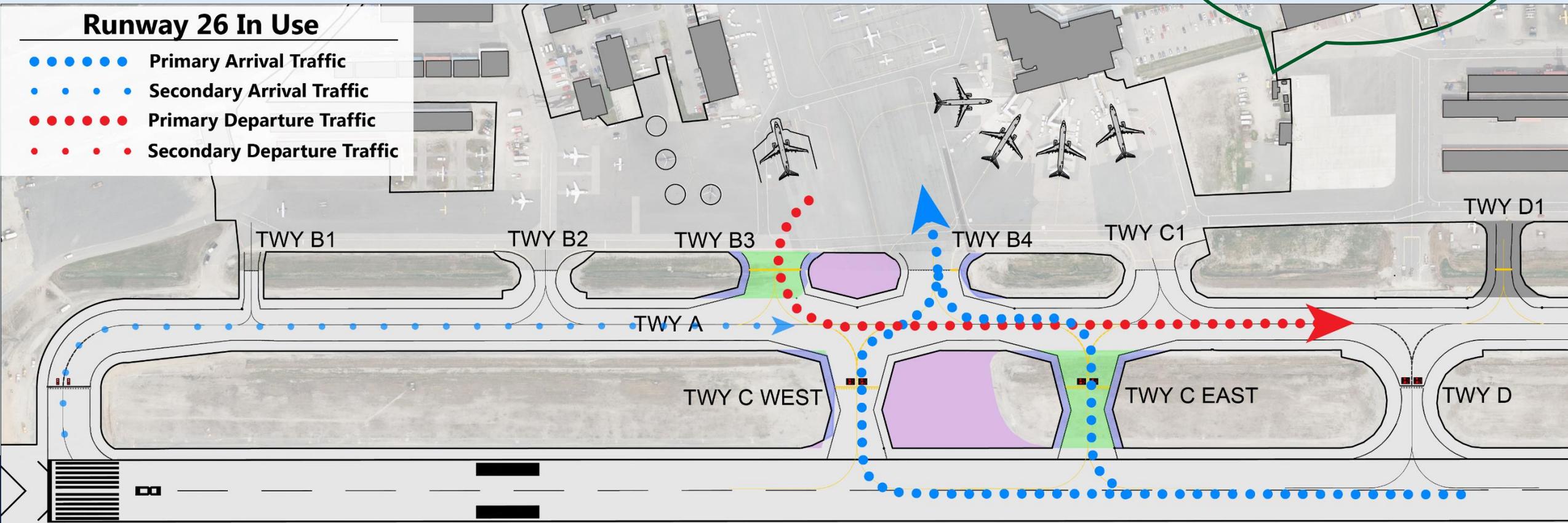




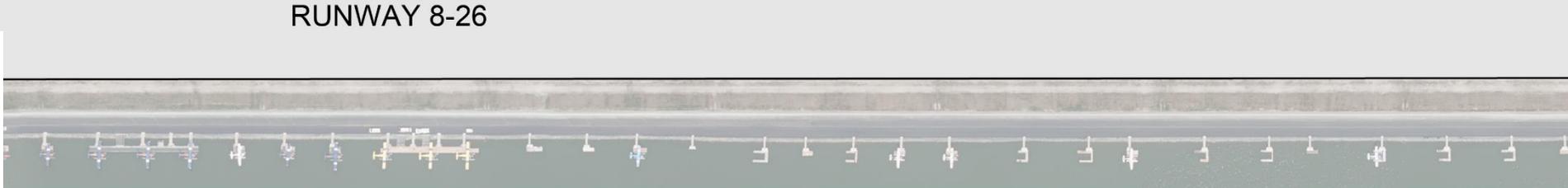
Proposed Flow – Runway 26

“What is the new flow from Runway 8-26 to the apron with the change in airfield geometry?”

- ### Runway 26 In Use
- Primary Arrival Traffic
 - Secondary Arrival Traffic
 - Primary Departure Traffic
 - Secondary Departure Traffic



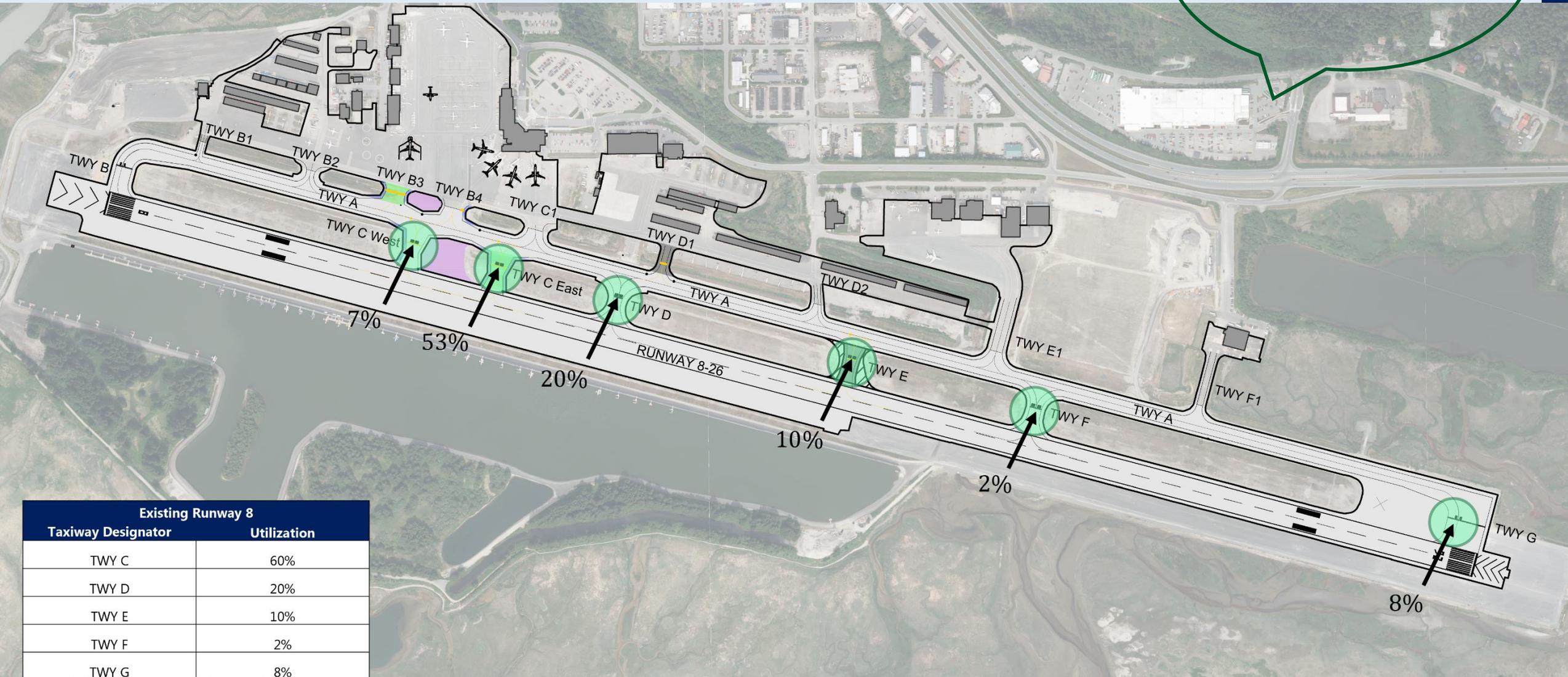
- Removed Pavement
- New Taxiway Pavement
- New Taxiway Shoulder Pavement





Runway 8 Potential Utilization

"What is the effect in exit taxiway utilization with the addition of a new taxiway?"

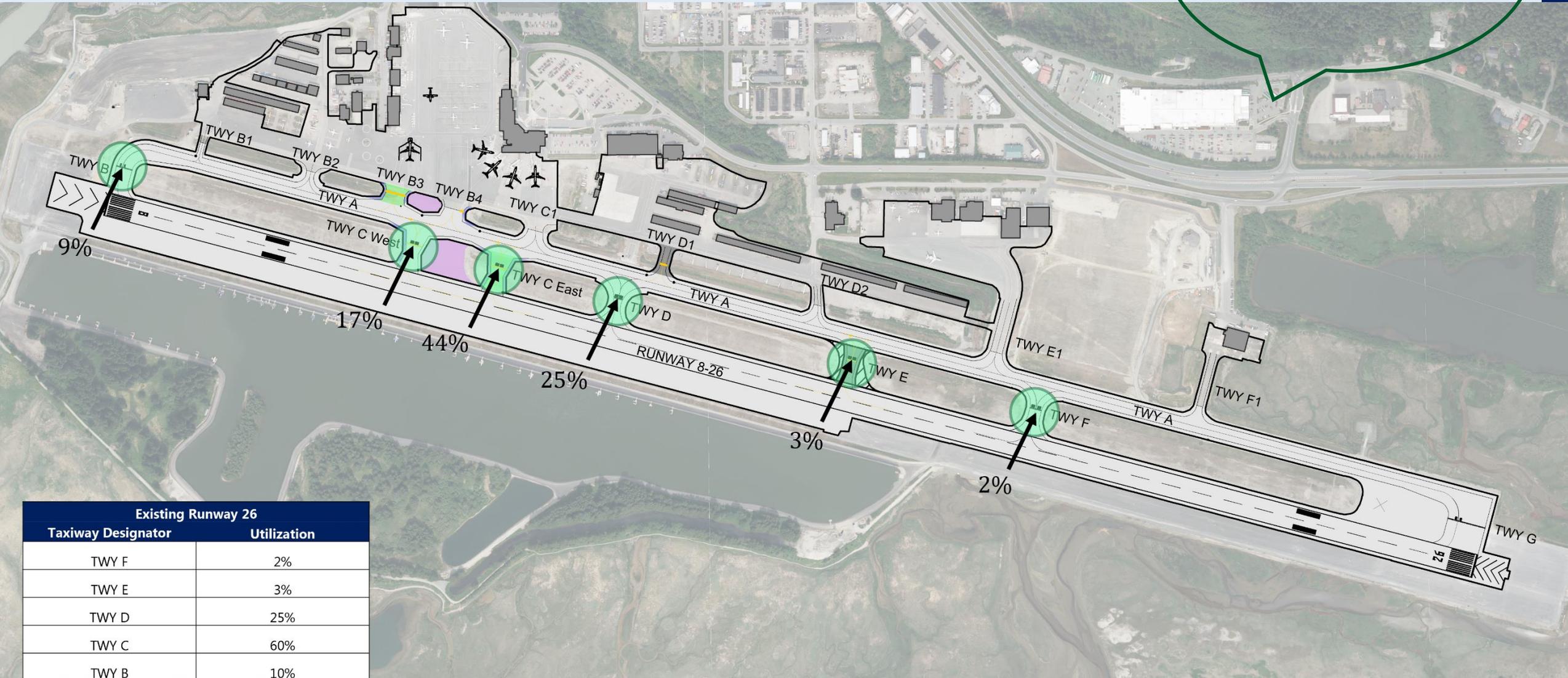


Existing Runway 8	
Taxiway Designator	Utilization
TWY C	60%
TWY D	20%
TWY E	10%
TWY F	2%
TWY G	8%



Runway 26 Potential Utilization

"What is the effect in exit taxiway utilization with the addition of a new taxiway?"

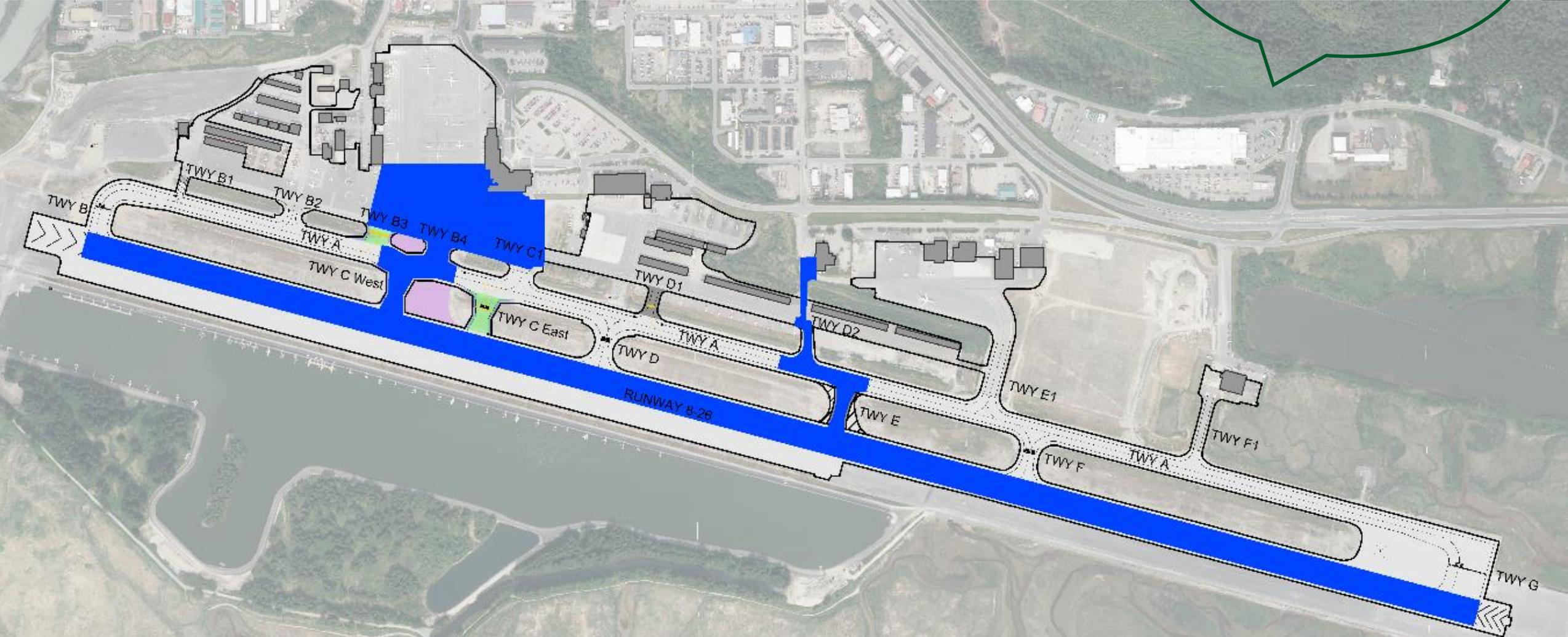


Existing Runway 26	
Taxiway Designator	Utilization
TWY F	2%
TWY E	3%
TWY D	25%
TWY C	60%
TWY B	10%



Proposed Snow Removal

“From a snow removal standpoint, would Taxiway C East or Taxiway C West have priority?”

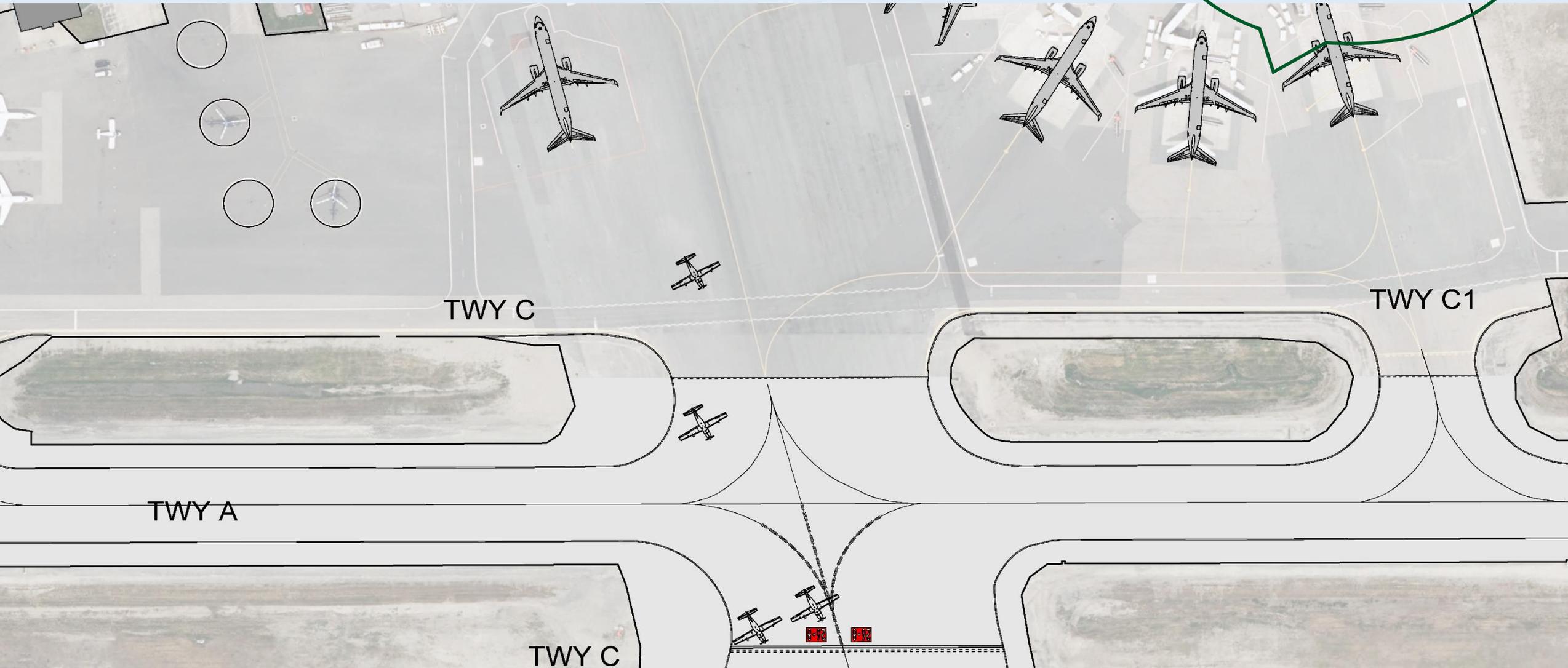


 Priority One



Existing Aircraft Queue Line

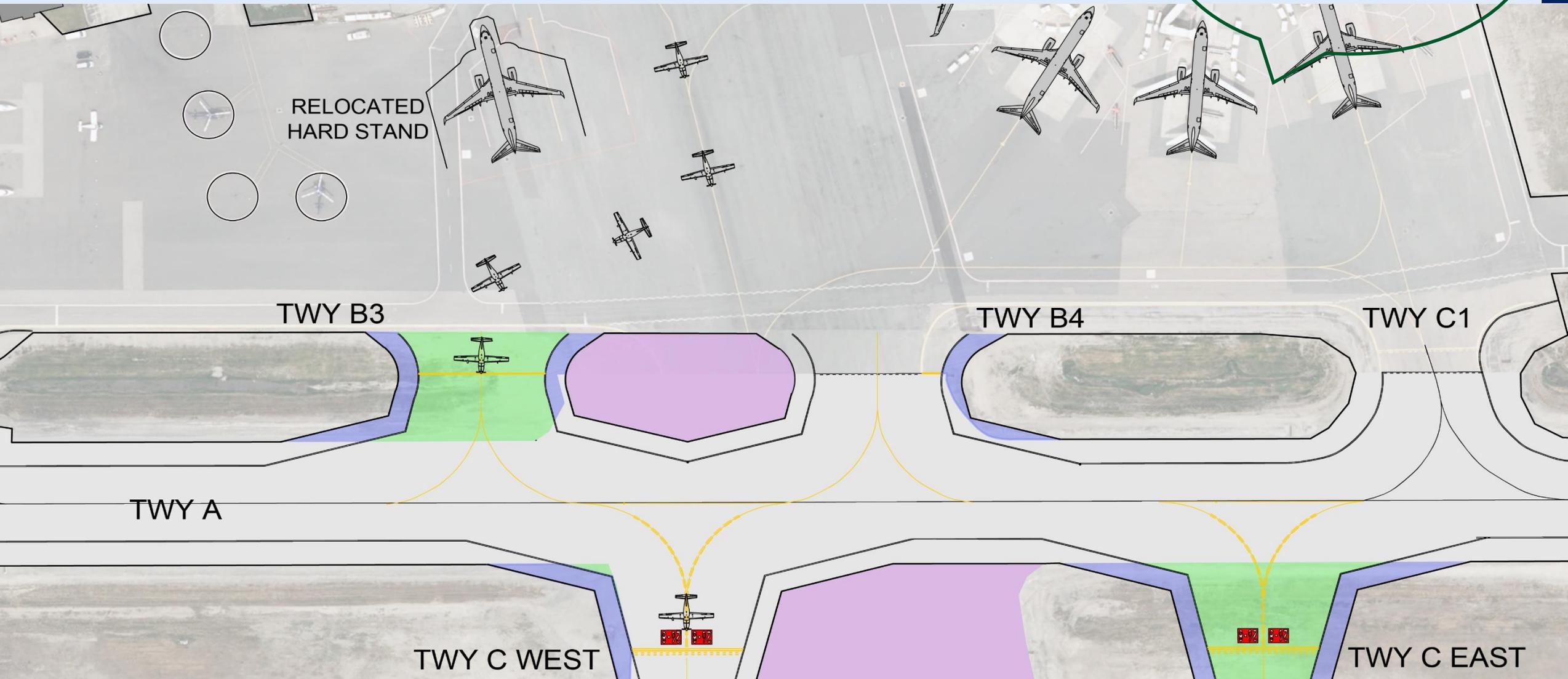
“With the change in airfield geometry, what does the queue line on the apron look like during peak times?”





Potential Aircraft Queue Line

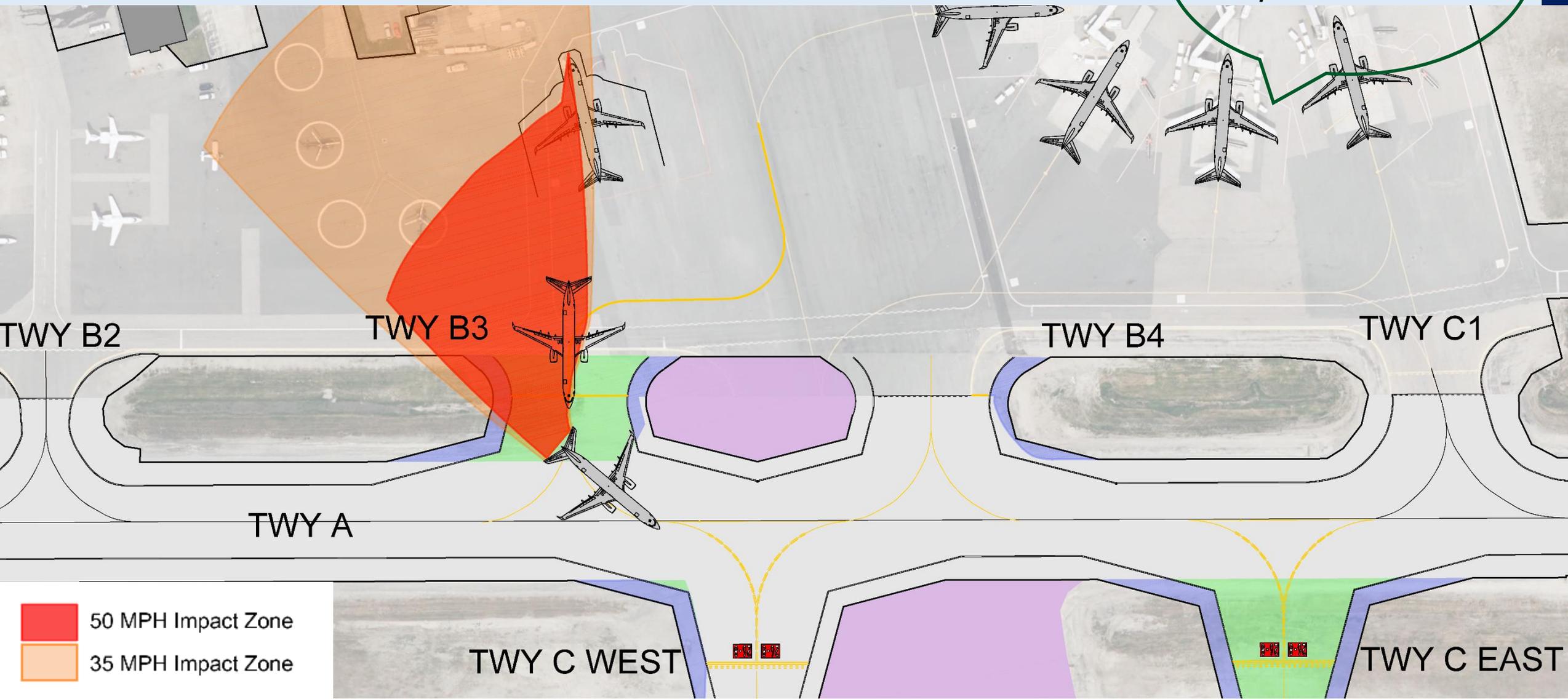
“With the change in airfield geometry, what does the queue line on the apron look like during peak times?”





Jet Blast – Scenario One

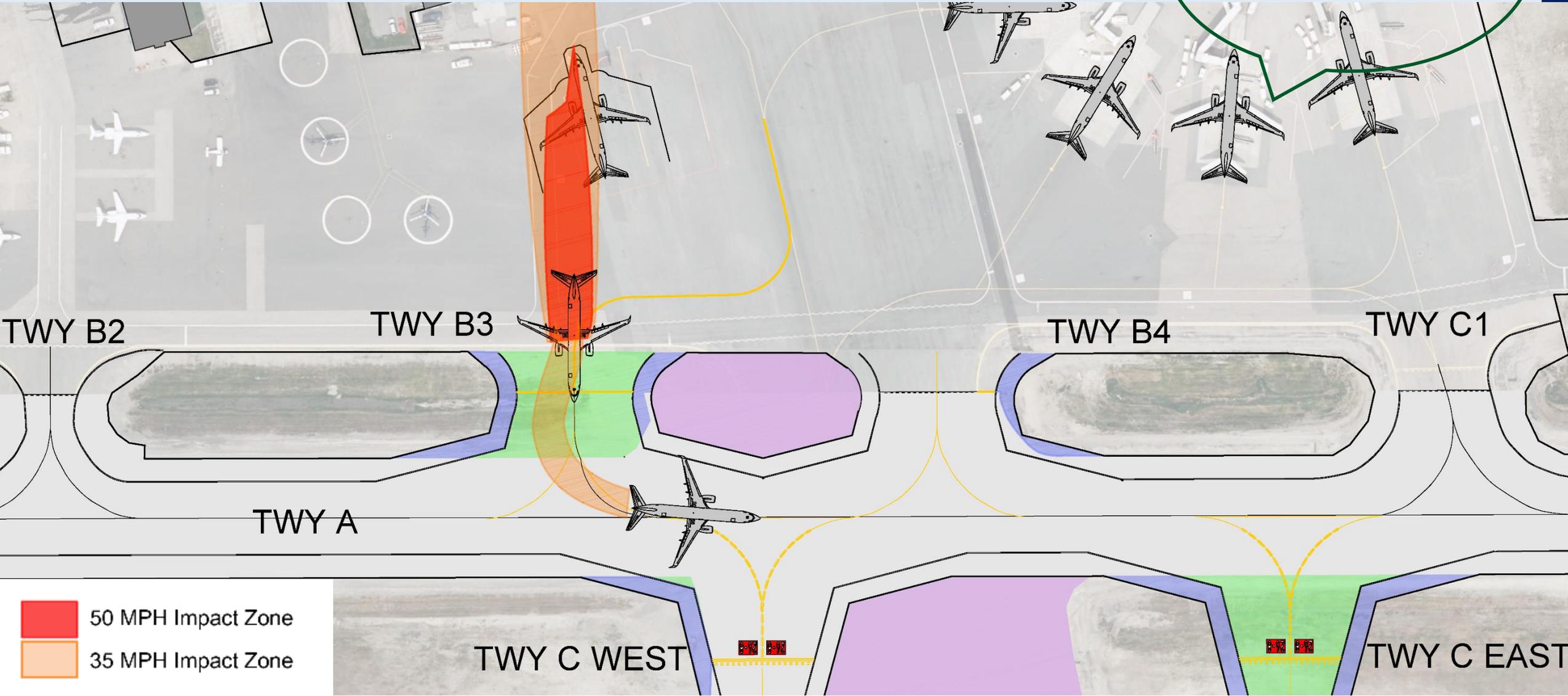
“Is there a concern for the general public being impacted by jet blast walking to and from the helicopter stands?”





Jet Blast – Scenario One

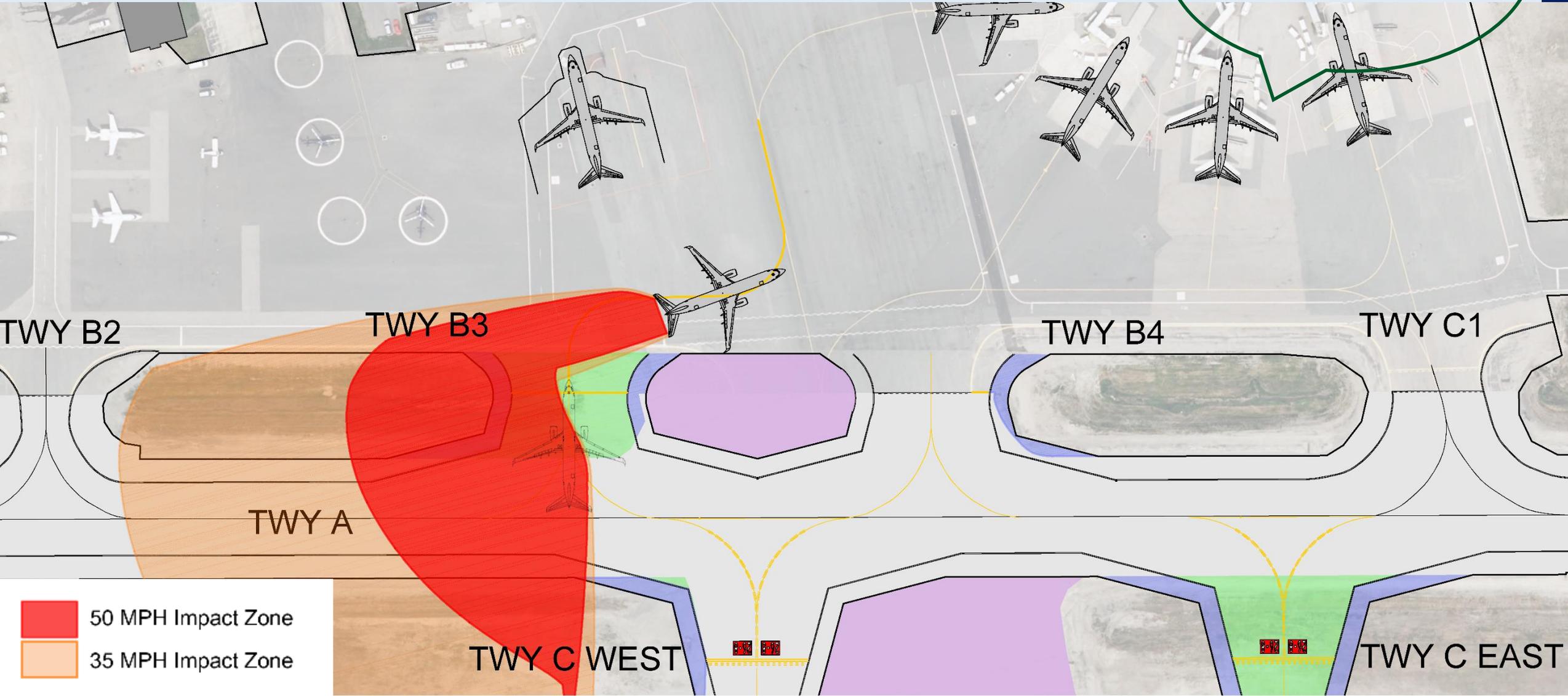
“Is there a concern for the general public being impacted by jet blast walking to and from the helicopter stands?”





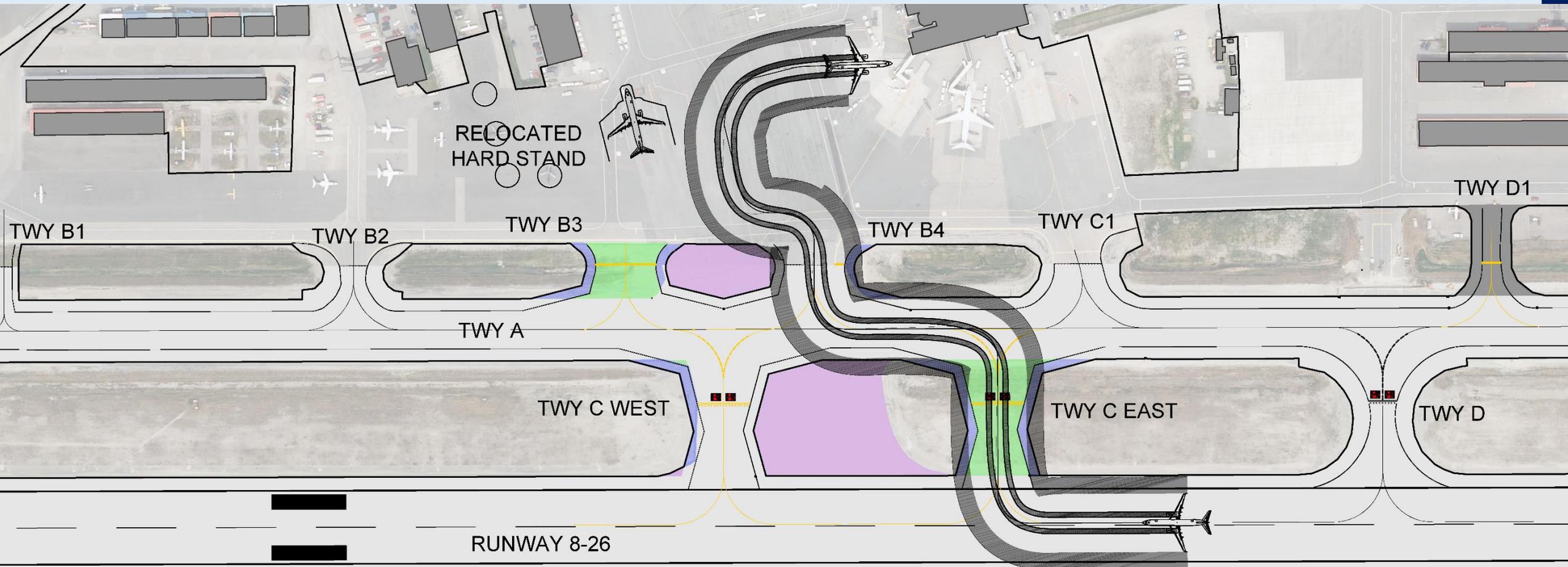
Jet Blast – Scenario Two

“Is there a concern for the general public being impacted by jet blast walking to and from the helicopter stands?”

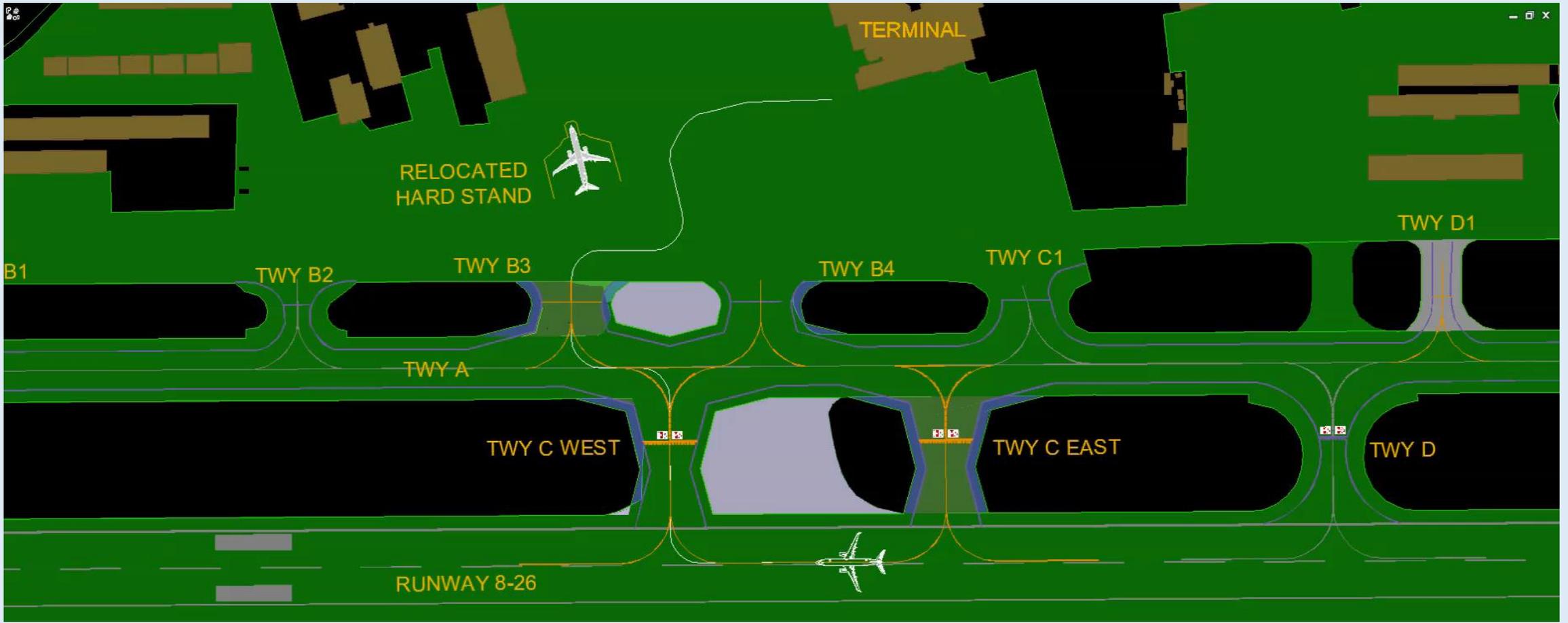




Taxiway C Maneuverability – Scenario One

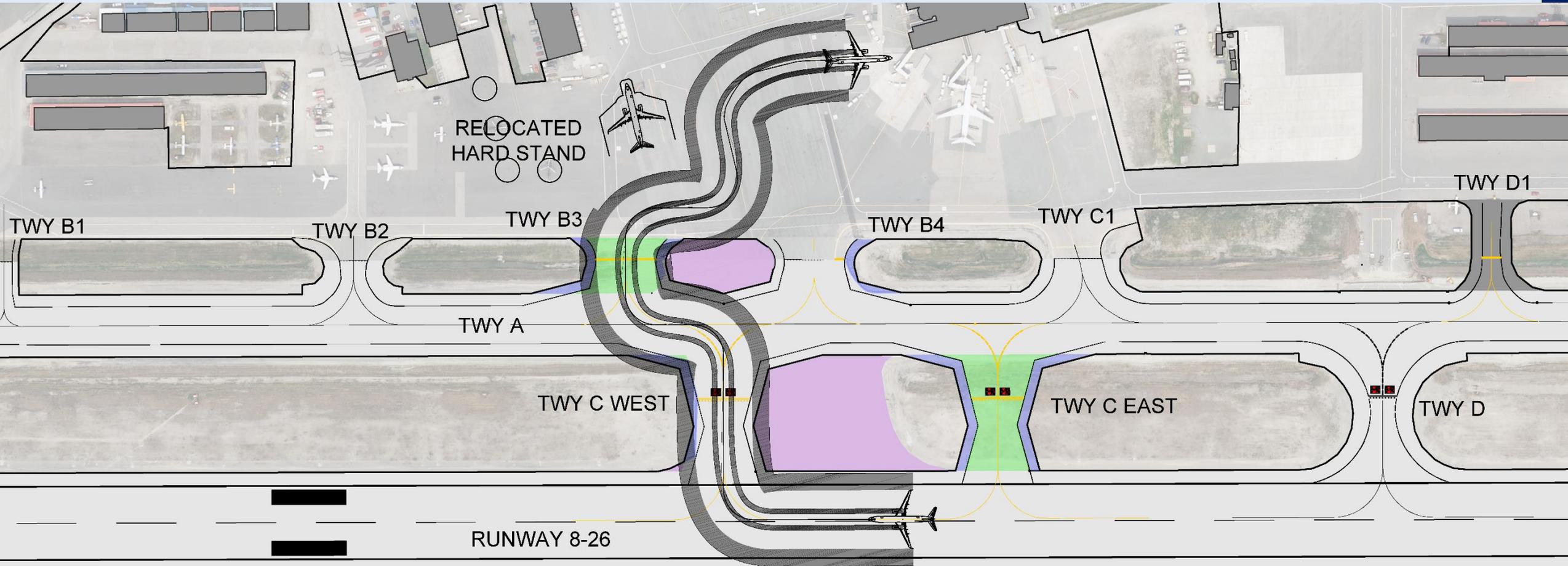


Taxiway C Maneuverability – Scenario Two



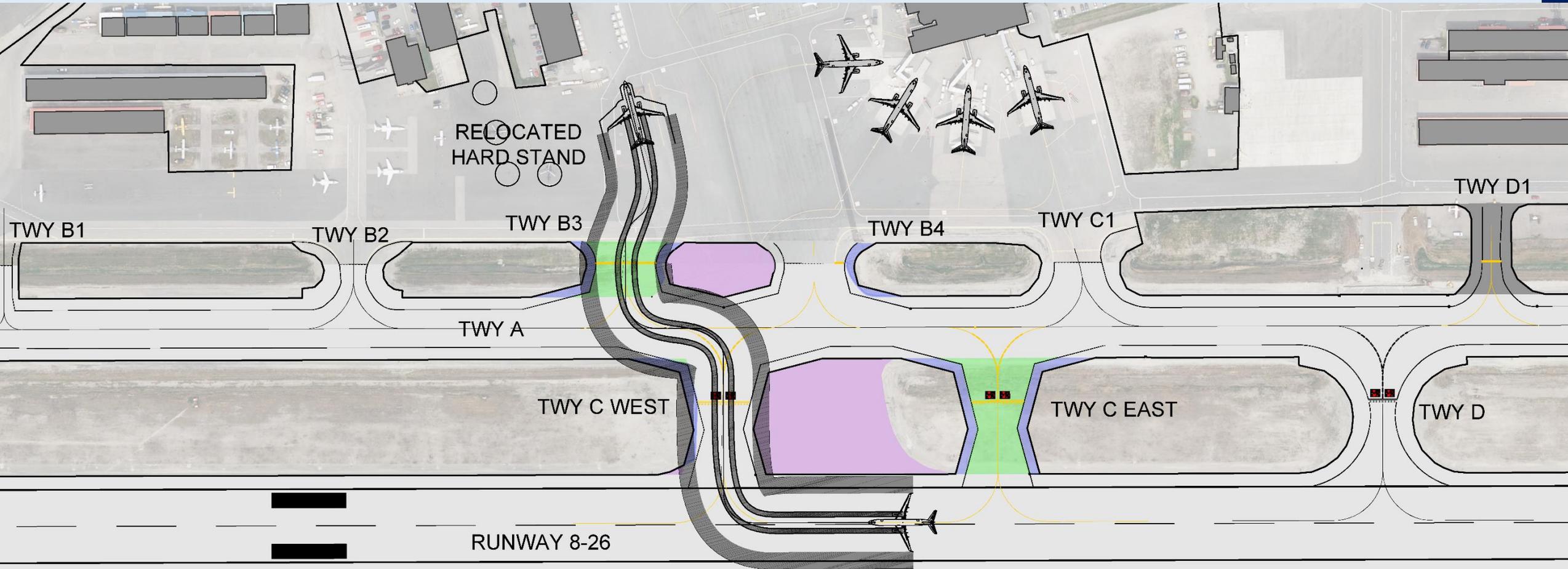


Taxiway C Maneuverability – Scenario Two



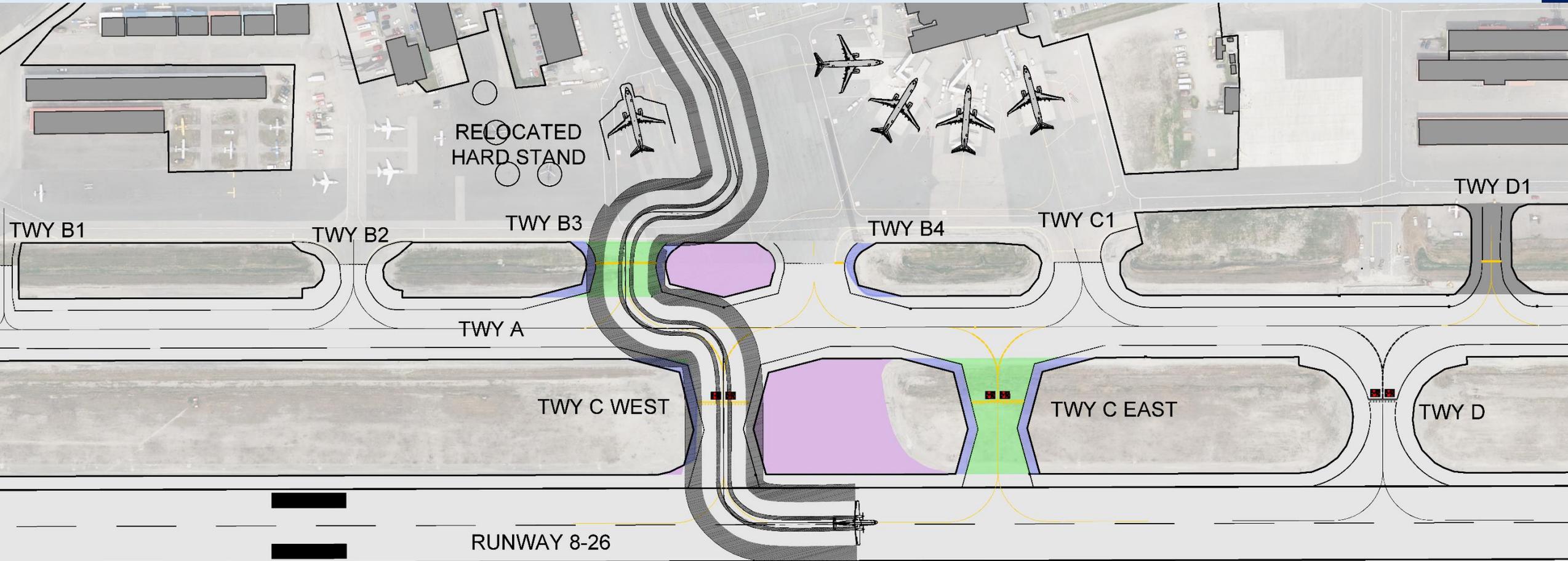


Taxiway C Maneuverability – Scenario Three





Taxiway C Maneuverability – Scenario Four

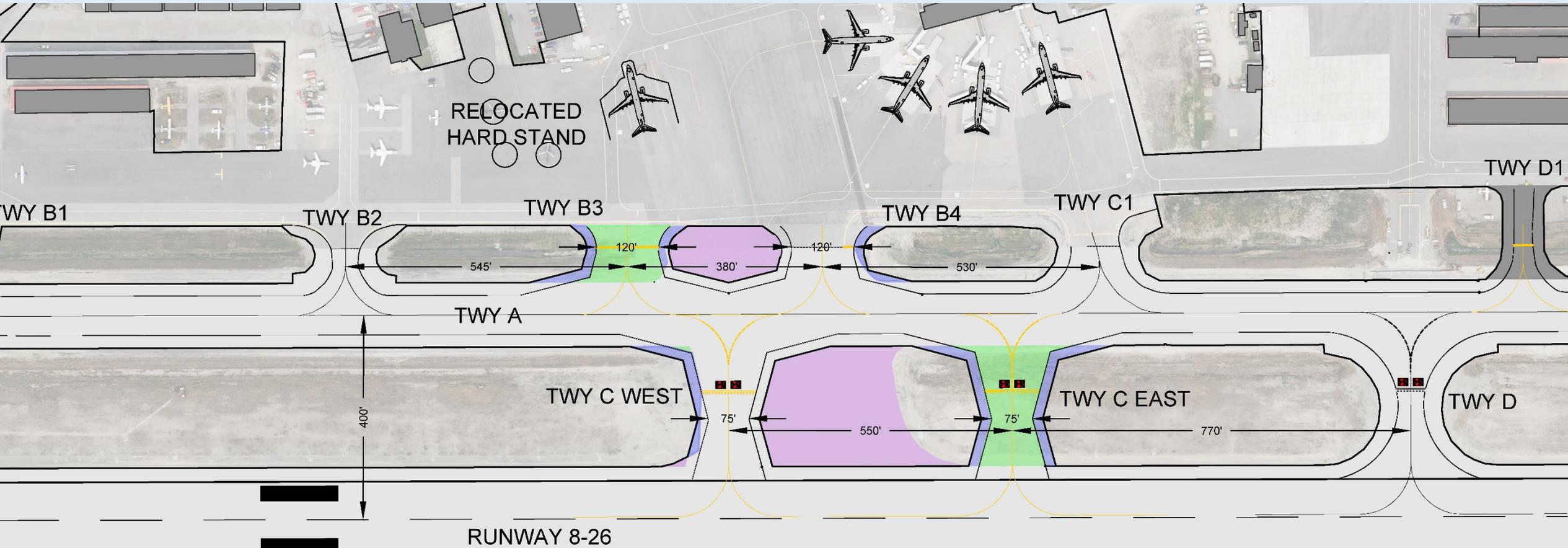


Taxiway C Maneuverability – Separation

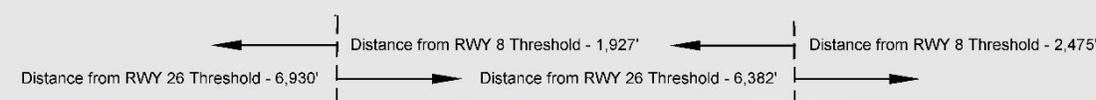




Option 3 – Preferred Solution



- Removed Pavement
- New Taxiway Pavement
- New Taxiway Shoulder Pavement





Next Steps

- SRM panel meets tomorrow
- Finish analysis and documentation in May
- Update on Twy A planning and permitting



Source: Airliners.net, 2016