

Duluth Airport Master Plan

Master Plan Advisory Committee (MPAC) Meeting #5

June 30, 2021

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Introductions

- Name
- Organization
- Role

Meeting agenda

- Welcome and introductions
- Master Plan progress update
- Stakeholder Involvement Update
 - Updates from the Technical Advisory Committees
 - Alternatives
- Master Plan next steps

DLH Vision 2040

At the conclusion of DLH Vision 2040 the Duluth Airport Authority will:

- Provide opportunities for businesses to grow and or relocate
- Anticipate the evolving demand for air service in our region
- Better respond to the needs of general aviation
- Improve agility in responding to tomorrow's opportunities and challenges
- Complement its neighboring communities
- Maintain the DAA's financial sustainability




DLH Vision 2040 – Key Process Objectives Relative to Today’s Discussion

- Develop a decision tree that guides short, medium and long term land use planning while allowing for flexibility in a dynamic environment
- To provide a graphic representation of existing airport features, future airport development and anticipated land use.
- To establish a realistic schedule for implementation of the proposed development.
- To identify a realistic financial plan to support the development.
- Develop a comprehensive Capital Improvement Plan (CIP) document
- Technically and procedurally validate the plan through investigation of concepts and alternatives on technical, economic and environmental grounds.
- Prepare and present the plan to the public after seeking their input that adequately addresses all relevant issues and satisfies local, state and federal regulations.






Stakeholder and Public Outreach

Stakeholder Outreach Overview

Written:

-  Newsletters
-  Website blog posts
-  Social media posts

In Person/Virtual:

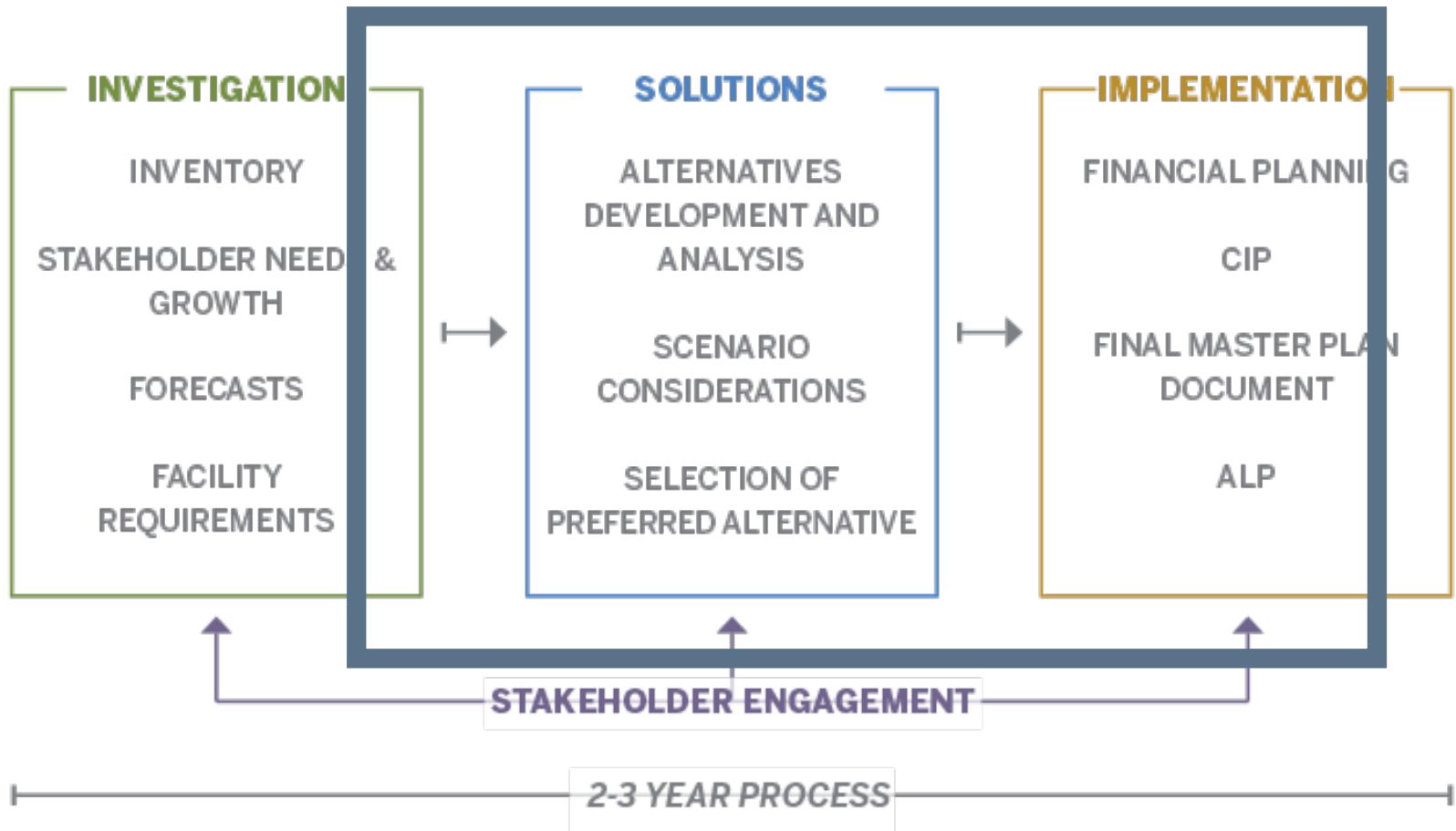
-  Public Open House
-  Master Plan Advisory Committee
-  One-on-one stakeholder meetings
-  Technical Advisory Committees (TACs)
 - Runway 3/21
 - Taxiway network and aircraft parking
 - Economic Development
 - Air Traffic Control Tower
-  Stakeholder presentations and events

Master Plan Advisory Committee (MPAC) Role

- Represent the broad range of stakeholders
- Review, understand and share project updates
- Provide input and serve as a voice for key stakeholders
- Validate the overall process and DAA progress on commitments for stakeholder outreach

Master Plan Progress Update

Master Plan Stages

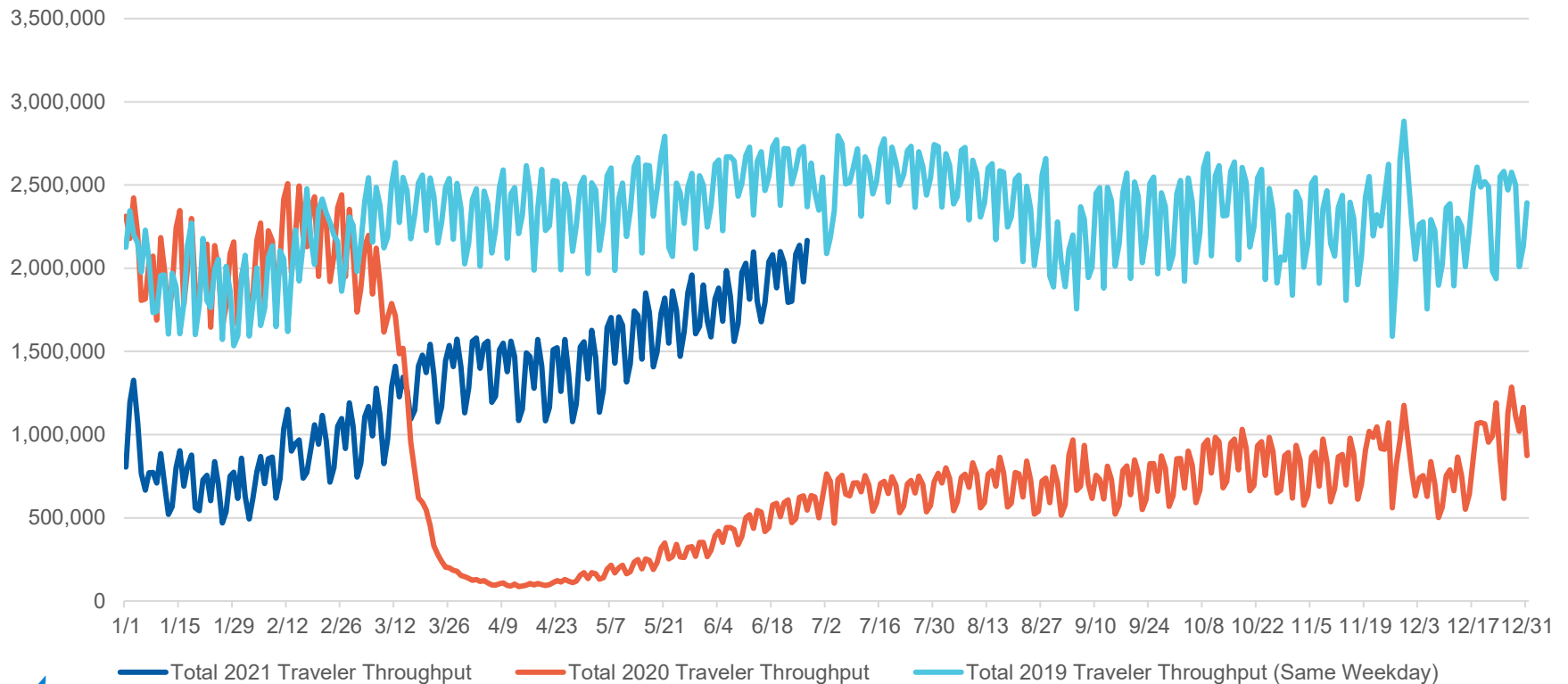


Aviation Forecast and Air Service

Airline Service – Forecasts Update

- COVID-19 continues to impact air travel nationally. Passengers traveling increasing

TSA Checkpoint Travel Numbers (same weekday)

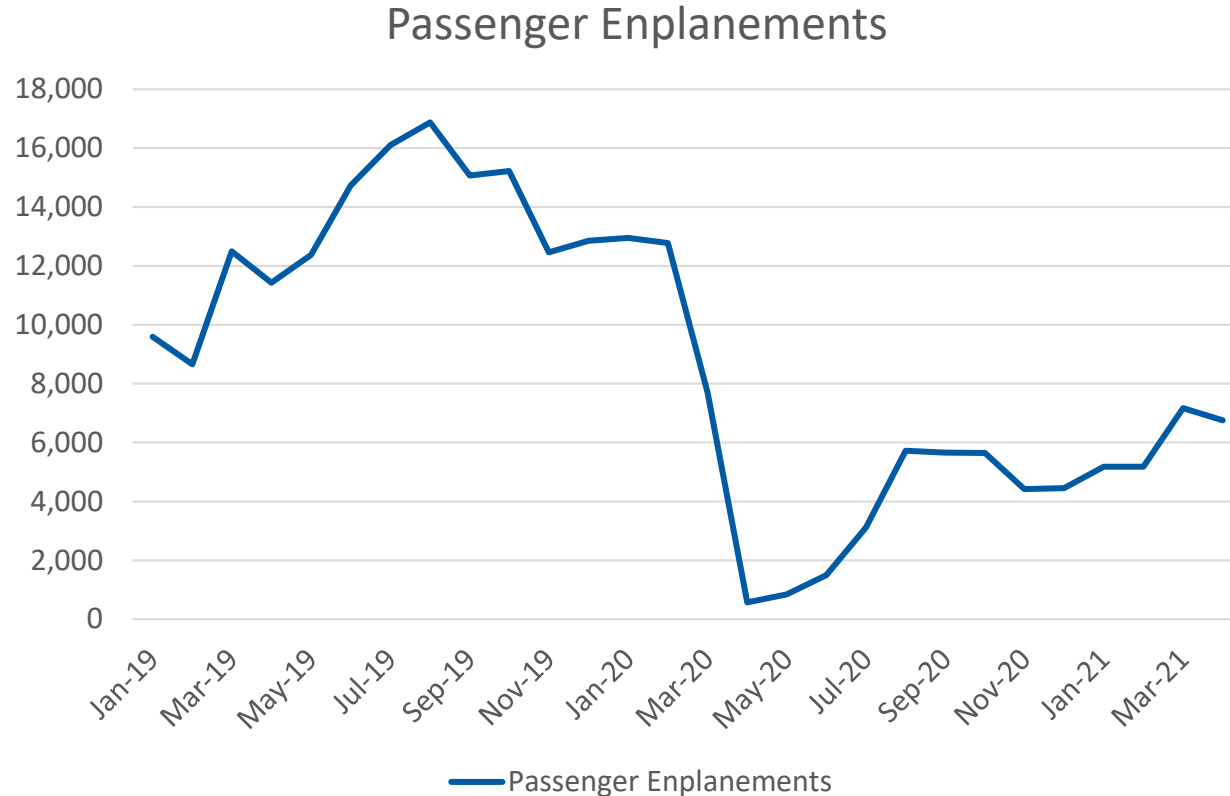


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Airline Service – Forecasts Update

- And locally at DLH



Aviation Activity Forecast

	Base Year (2018)	20-Year Forecast (2038)
Based Aircraft	68	85
Total Aircraft Operations	62,600	78,739
Total Passenger Enplanements	140,485	177,720

Aviation Activity Forecast

- The draft activity forecast was re-evaluated during the COVID-19 Pandemic
 - Forecast was conservative in growth and the project team felt it still accurately reflected anticipated growth
 - Discussion of COVID-19 impacts was added to the forecast chapter
 - FAA has approval authority over the aviation activity forecast
 - Forecast guides the design standards throughout the Master Plan process
 - Is also utilized to develop the Noise Exposure Maps created as part of the Part 150 Noise Study (separate project)
- ✓ **Forecasts were approved by the FAA on June 8, 2021**

Runway 3/21 TAC Update

Runway 3/21 TAC Members

- City of Duluth
- City of Hermantown
- City of Rice Lake
- Canosia Township
- Lake Superior College
- General aviation tenants
- Duluth International Airport Tenant Association (DIATA)
- Citizens Committee for Environmental Concern (CCEC)
- FedEx
- DLH Joint Airport Zoning Board (JAZB)
- ALLETE
- 148th Fighter Wing
- FAA Air Traffic Control Tower
- FAA ADO
- MnDOT Office of Aeronautics
- Envoy/American Airlines
- Unify/Delta/United
- Bemidji Aviation
- Hermantown Chamber of Commerce

Stakeholder Outreach – Runway 3-21

- Meeting #1 - July 25, 2019 – Inventory of Runway 3/21 and discussion of needs and goals for Runway 3/21
- Meeting #2 - October 4, 2019 – Preliminary alternatives presented to the TAC and gather TAC member feedback on presented alternatives
- Meeting #3 - June 21, 2021 – Presented preferred alternative to the TAC and asked for any additional feedback

The Part 150 Noise Study and the JAZB Airport Zoning Ordinance development process concurrently considered the runway extension as part of their separate efforts during this time.

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Runway 3/21 - Stakeholder feedback

- Runway length:
 - 148th Fighter Wing:
 - 7,000 feet as an emergency runway
 - 8,000 feet for a secondary use runway.
 - Arresting gear is needed on the departure end.
 - Runway and connecting taxiway network must meet UFC Class B standards
 - Commercial Air Service:
 - 7,800 feet for current fleet
 - General Aviation
 - 7,900 feet for critical aircraft
 - Training and R&D Flights
 - Operations would benefit from a longer runway

Runway 3/21 - Stakeholder feedback

- Instrument approaches:
 - Stakeholders indicated that improved instrument approaches would add value to Runway 3/21.
 - Types of approaches
 - The 148th currently cannot utilize GPS approaches but may be able to in the future.
 - The 148th's weather minimums for training are 1-mile visibility
 - Approach lighting to one or both ends would add value

Runway 3/21 - Stakeholder feedback

- Environmental and Land Use:
 - Environmental and land use impacts of alternatives should be considered and minimized.
 - The JAZB proposed airport zoning ordinance should be considered when developing the alternatives.
 - Proposed zoning ordinance plans for 1-mile visibility minimums
 - Impacts of improvements to Runway 3/21 may have on aircraft parking and building areas should be considered in the alternatives

Initial Alternatives

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts	Cost Estimate
5,719' x 150'	1-Mile	1-Mile	-	\$0
	1-Mile	1-Mile	-	\$23 Million
8,000' x 150'	1-Mile	1-Mile	34.2 Acres	\$72 Million
	1-Mile	$\frac{3}{4}$ - Mile	34.2 Acres	\$75 Million
	1-Mile	$\frac{1}{2}$ - Mile	38.1 Acres	\$77.5 Million
7,000' x 150'	1-Mile	1-Mile	9.3 Acres	\$55 Million
	1-Mile	$\frac{3}{4}$ - Mile	9.3 Acres	\$58 Million
	1-Mile	$\frac{1}{2}$ - Mile	13.2 Acres	\$60.5 Million

Stakeholder Feedback (Oct. 2019 TAC Mtg)

Instructions:

- Use stickers to show how you feel each alternative does not meet (red sticker), somewhat meets (yellow sticker) or meets (green sticker) each of the stated goals.

Stakeholder Goals		Existing Length Alternatives		8,000-Foot Runway Alternatives			7,000-Foot Runway Alternatives		
		1A: No Action	1B: Improve Taxiway Network	2A: No change to instrument approach capability	2B: Approaches to one end improved to 3/4 mile	2C: Approaches to one end improved to 1/2 mile	3A: No change to instrument approach capability	3B: Approaches to one end improved to 3/4 mile	3C: Approaches to one end improved to 1/2 mile
Improve Taxiways	Meet taxiway design standards	[Red stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]
Improve Usability	Military: 7,000 feet for 148th emergency use 8,000 feet for 148th secondary runway	[Red stickers]	[Red stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Red stickers]	[Red stickers]	[Red stickers]
	Civilian: 7,800 feet for full commercial service aircraft 7,900 feet for full GA aircraft	[Red stickers]	[Red stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Red stickers]	[Red stickers]	[Red stickers]
	Improve instrument approach weather minimums	[Red stickers]	[Red stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Red stickers]	[Red stickers]	[Red stickers]
Protect Natural Resources	Minimize impacts to wetlands and other natural resources	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]
Land Use Compatibility	Minimize noise impacts to sensitive land uses	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	Minimize zoning impacts to the surrounding communities	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]

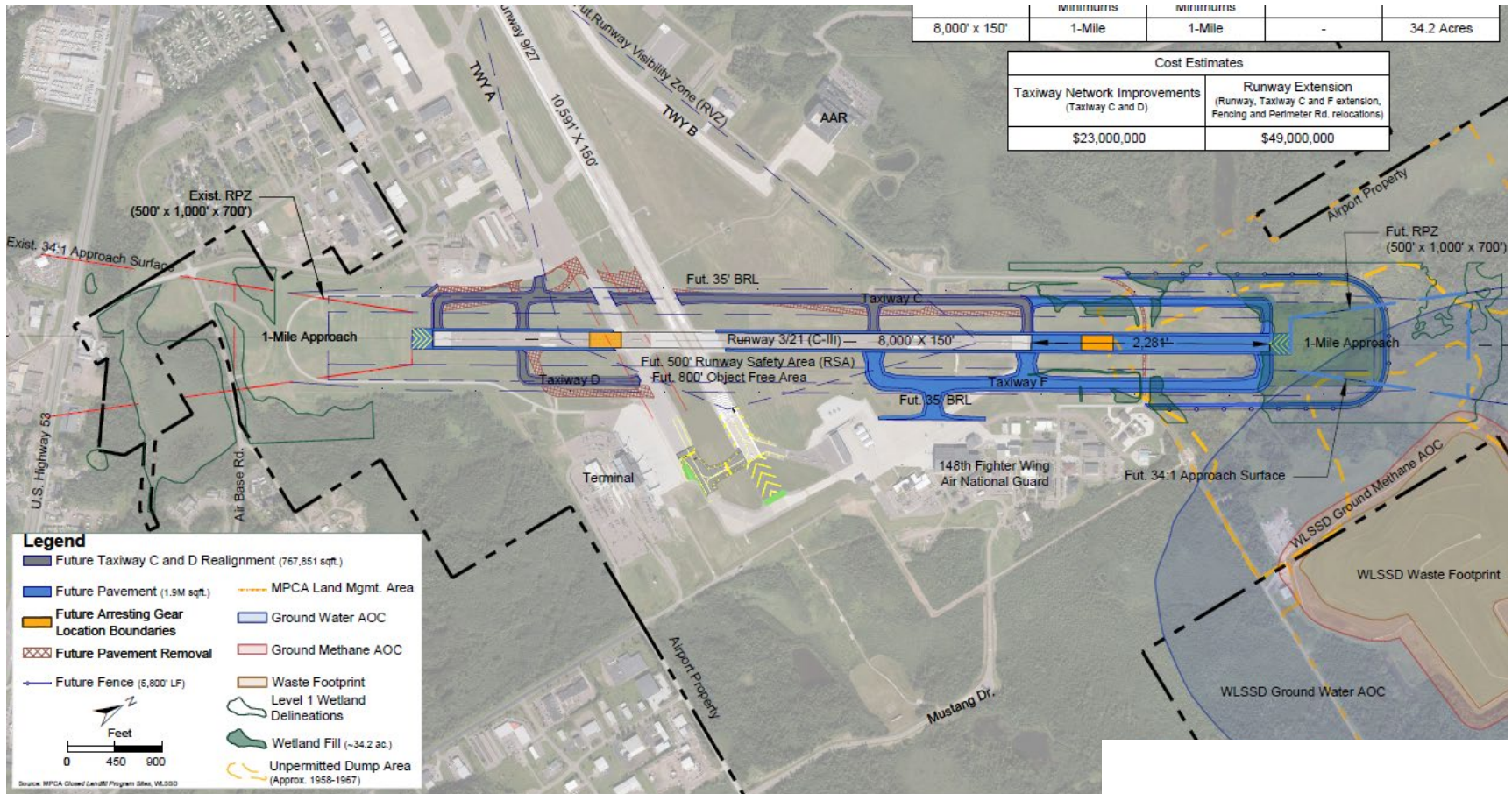
Note: Although stakeholders have identified the stated goals, eligibility to use various funding sources to meet each goal will be determined later in the process.

Environmental and Land Use Considerations

- Part 150 Noise Study
 - Noise impacts will depend on ultimate F-16 usage of Runway 3/21.
 - Part 150 Study evaluated 2 alternatives
 - Alternative A-5.1 – **20% F-16 ops. on Rwy. 03/21** (0% night departures)
 - Alternative A-5.2 – **10% F-16 ops. on Rwy. 21 only** (0% night departures)
- Joint Airport Zoning Board
 - JAZB submitted draft zoning ordinance to MnDOT
 - JAZB custom zoning ordinance protects people and property for a 8,000' Runway with 1-mile approaches

Runway 3-21 Selected Alternative and Next Steps

Alternative 2A – 8,000' with 1-mile Approaches



Taxiway Network to be finalized with the Taxiway TAC

Stakeholder Feedback

Instructions:

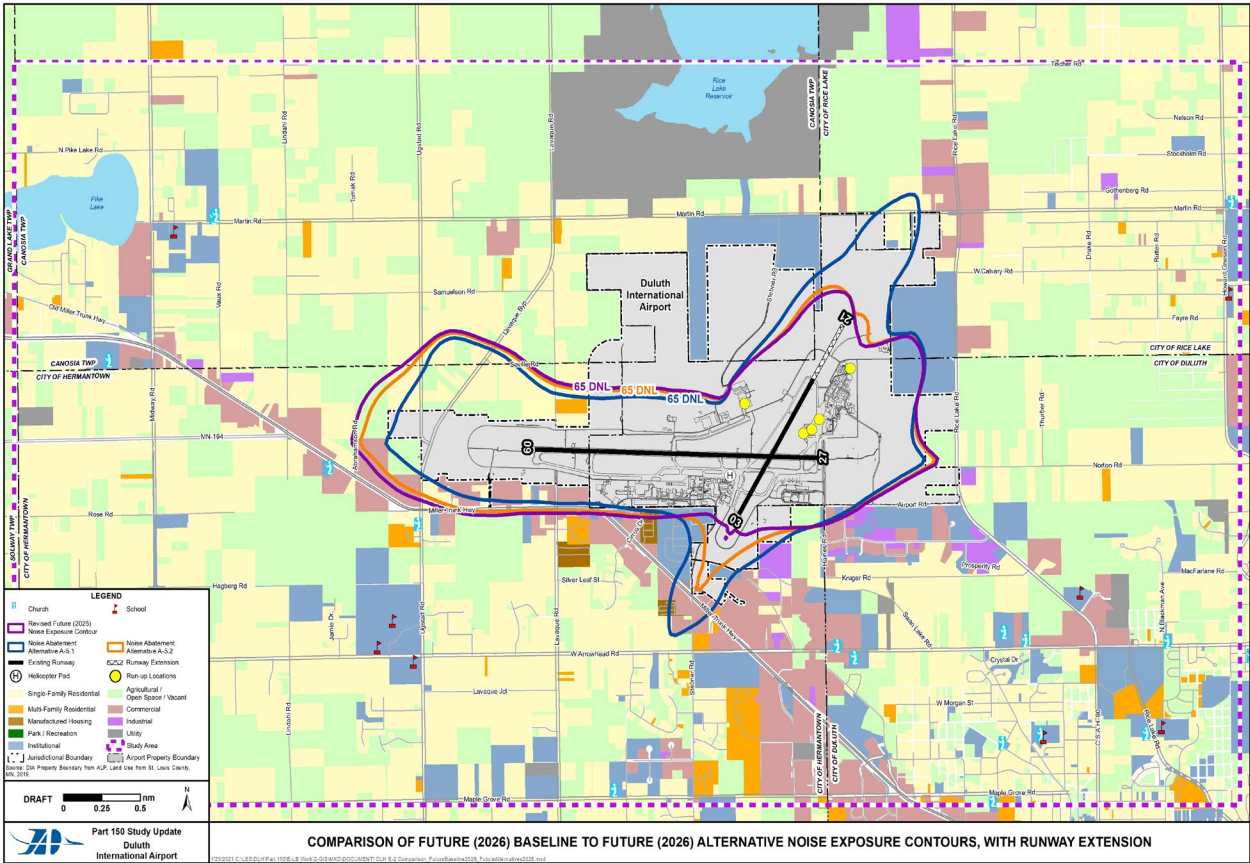
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	Improve instrument approach weather minimums	[Red stickers]	[Red stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]	[Green stickers]
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	Minimize zoning impacts to the surrounding communities	[Green stickers]	[Green stickers]	[Green stickers]	[Red stickers]	[Red stickers]	[Yellow stickers]	[Yellow stickers]	[Yellow stickers]

Note: Although stakeholders have identified the stated goals, eligibility to use various funding sources to meet each goal will be determined later in the process.

Noise Impacts – Considered as part of ongoing Part 150 Study

- Future baseline (purple)
- Alt. A-5.1 (blue) – 20% F-16 ops. on Rwy. 03/21 (0% night departures)
- Alt. A-5.2 (orange) – 10% F-16 ops. on Rwy. 21 only (0% night departures)



Alternative 2A – 8,000' with 1-mile Approaches

- Meets both 148th and civilian aircraft needs
- Accommodates stakeholders needs for a secondary runway for training and R&D Flights
- Aligns with JAZB proposed custom zoning ordinance
- Wind analysis indicated that improved approach minimums would have minimal added benefit.
 - Wind largely favors Runway 9/27 when poor visibility and low ceilings exist

Runway 3/21 Extension - Next steps

1. Identify funding source
 - FAA – Not justified for funding
 - Bonding
 - Air National Guard
 - Other
2. NEPA review
3. Wetland permitting
4. Design
 - FAA reimbursable agreements
5. Multi-year construction
 - Align with related taxiway projects





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Air Traffic Control Tower and Taxiway Network/Aircraft Parking TACs

Air Traffic Control Tower and Taxiway Network

TAC Members

- City of Duluth
 - Lake Superior College
 - General aviation tenants
 - Duluth International Airport Tenant Association (DIATA)
 - FAA Air Traffic Control Tower
 - FAA ADO
 - MnDOT Office of Aeronautics
 - Citizens Committee for Environmental Concern
- (CCEC)
- Airport commercial operators (airlines and cargo carriers)
 - Lake Superior College
 - Lake Superior Helicopters
 - 148th Fighter Wing
 - Fly Duluth Flying Club
 - Cirrus
 - ALLETTE

Stakeholder Outreach – Taxiway Network and Air Traffic Control Tower TACs

Taxiway and Aircraft Parking Technical Advisory Committee

- Meeting #1 - December 3, 2019 – Overview of Taxiway Network and identification of needs
- Meeting #2 - March 9, 2020 – Preliminary alternatives for Taxiway A and Taxiway C
- Meeting #3 - June 30, 2020 – Selection of Taxiway A preferred alternatives, holding bay layouts
- Meeting #4 - August 12, 2020 – Preliminary Building Area Alternatives and Taxiway A reconstruction phasing



- Combined TAC #1 - December 2, 2020 – Preliminary building area alternatives with high-level preferred ATCT location
- Combined TAC #2 - June 28, 2021 – Refined building area and aircraft parking. Selection of a preferred Taxiway alternative

Air Traffic Control Tower Technical Advisory Committee

- Meeting #1 - June 10, 2020 – Overview of remote tower concept and evaluation if the DAA should consider this as an option
- Meeting #2 - August 11, 2020 - Colorado Remote Tower Program Panel Discussion
- Meeting #3 - August 31, 2020 – Follow-up on Remote tower program
- Meeting #4 - November 31, 2020 – Initial siting analysis of ATCT. Selection of preliminary preferred locations



Air Traffic Control Tower

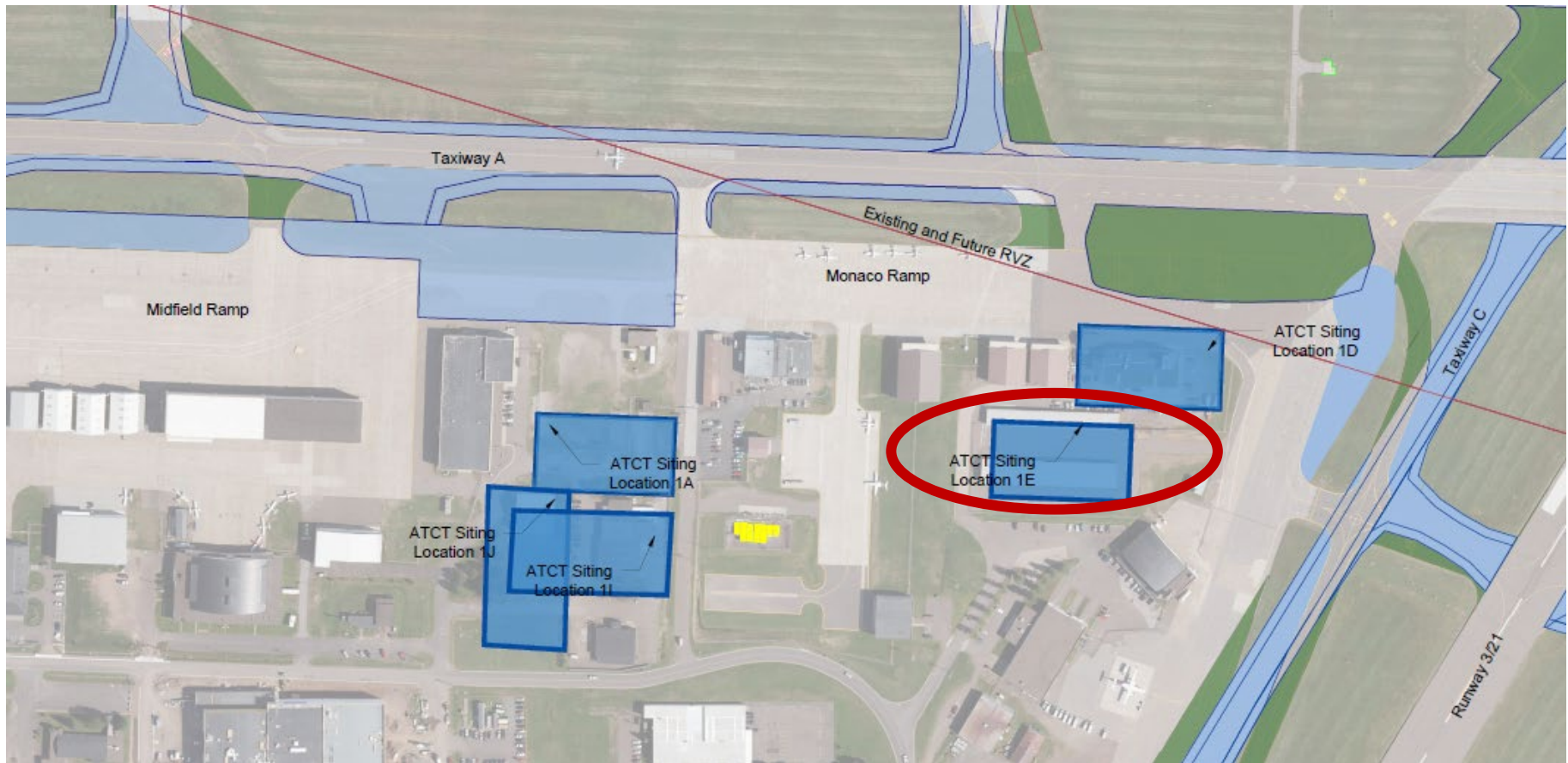
- ATCT is at the end of its useful life
- Does not have adequate site lines to all areas of the airfield
- Evaluate alternatives for replacing aging tower
 - Alternative sites
 - Alternative types (ie. Remote Tower)
- Remote Tower alternative was not carried forward



Air Traffic Control Siting Criteria

- Control Tower Orientation
 - Must be orientated where the primary view faces north or alternately east, west and finally south
 - In areas where snow accumulates, a southern orientation should be avoided.
 - Airport surfaces
- Economic considerations
 - Height, utilities, site access, etc.
 - Limit impacts to potential development and redevelopment sites
- *FAA will determine final siting and height of ATCT through an FAA study prior to project implementation.*

Preferred ATCT Alternatives



More information on the ATCT TAC meetings including full siting analysis and alternatives can be found on the [project website](#)

Air Traffic Control Tower - Next steps

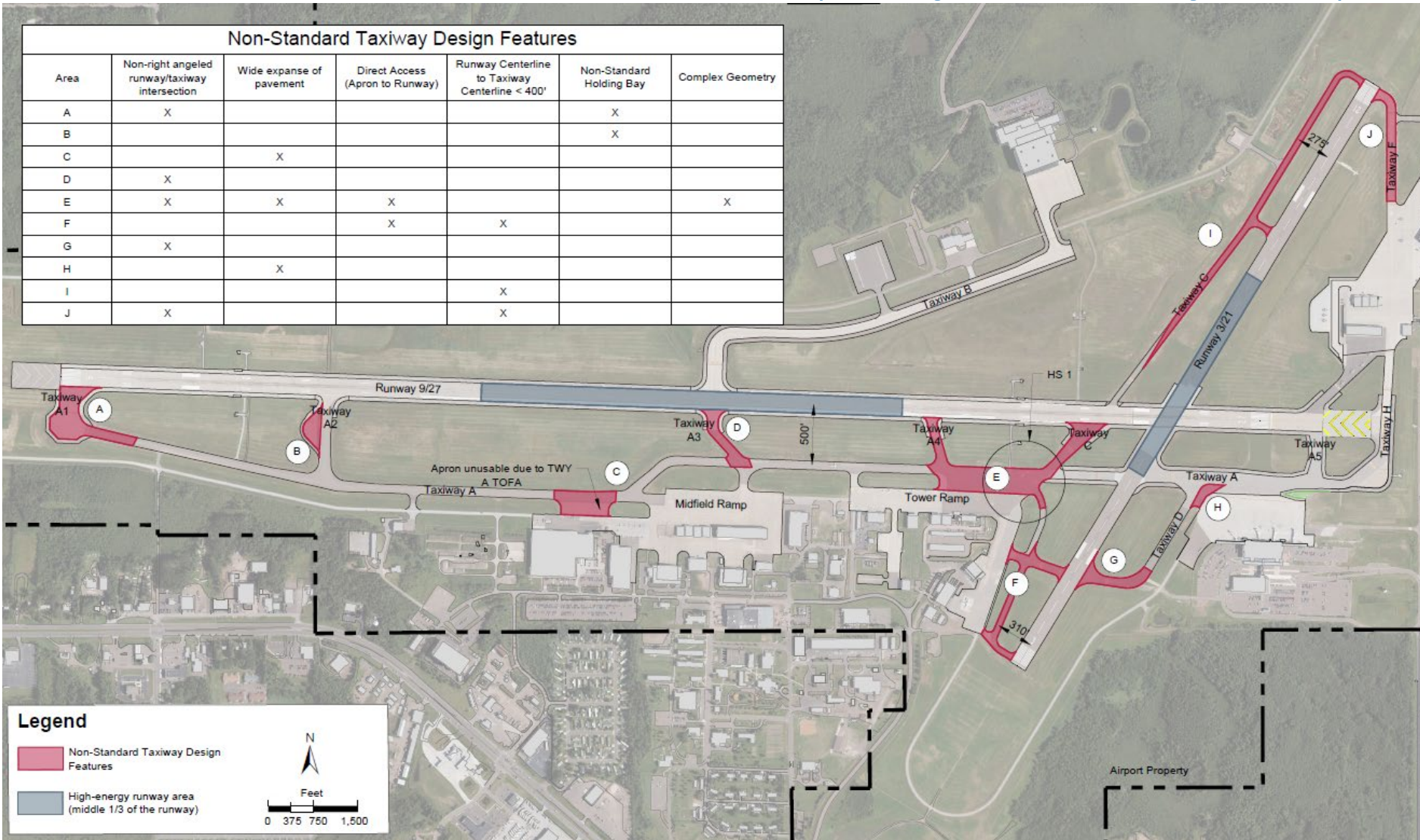
1. FAA Siting Study
 - FAA reimbursable agreements – Will require a funding source
 - DAA is initiating early coordination with FAA in summer 2021
2. Identify funding source
3. NEPA review
4. Design
5. Multi-year construction
 - Site preparation including T-hangar relocation
 - Tower construction



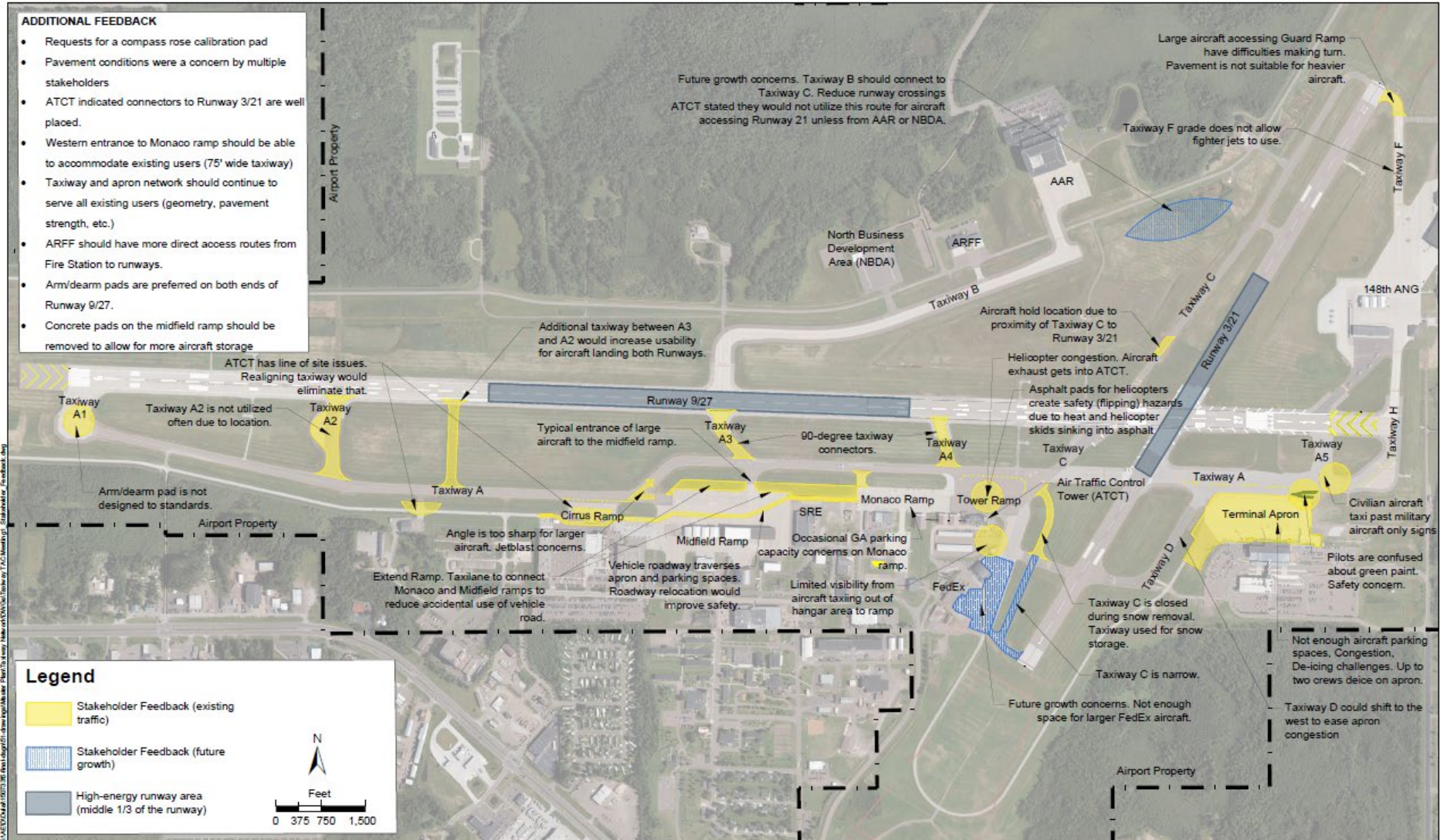
Taxiway Network and Aircraft Parking TAC

FAA Non-Standard Areas (See figure in meeting packet)

Non-Standard Taxiway Design Features						
Area	Non-right angled runway/taxiway intersection	Wide expanse of pavement	Direct Access (Apron to Runway)	Runway Centerline to Taxiway Centerline < 400'	Non-Standard Holding Bay	Complex Geometry
A	X				X	
B					X	
C		X				
D	X					
E	X	X	X			X
F			X	X		
G	X					
H		X				
I				X		
J	X			X		



User Feedback (See figure in meeting packet)



TDG requirements by aircraft type

	Civilian Aircraft Requirements				UFC / Military Aircraft		
	TDG 2 <i>CRJ-700</i>	TDG 3 <i>A-319</i>	TDG 4 <i>MD-90</i>	TDG 5 <i>A-330</i>	Class A <i>UC-35</i>	Class B <i>F-16</i>	Class B <i>C-5</i>
Pavement Width	35'	50'	50'	75'	50'	75'	75'
Paved Taxiway Shoulder Required	No	Recommended	Yes	Yes	N/A ¹	Yes ¹	Yes ²
Paved Taxiway Shoulder Width	15'	20'	20'	30'	- 1	10' ¹	25' ²
Total pavement width	65'	90'	90'	135'	50'	95'	125'

TDG 3 Eligible for FAA Funding

Notes:

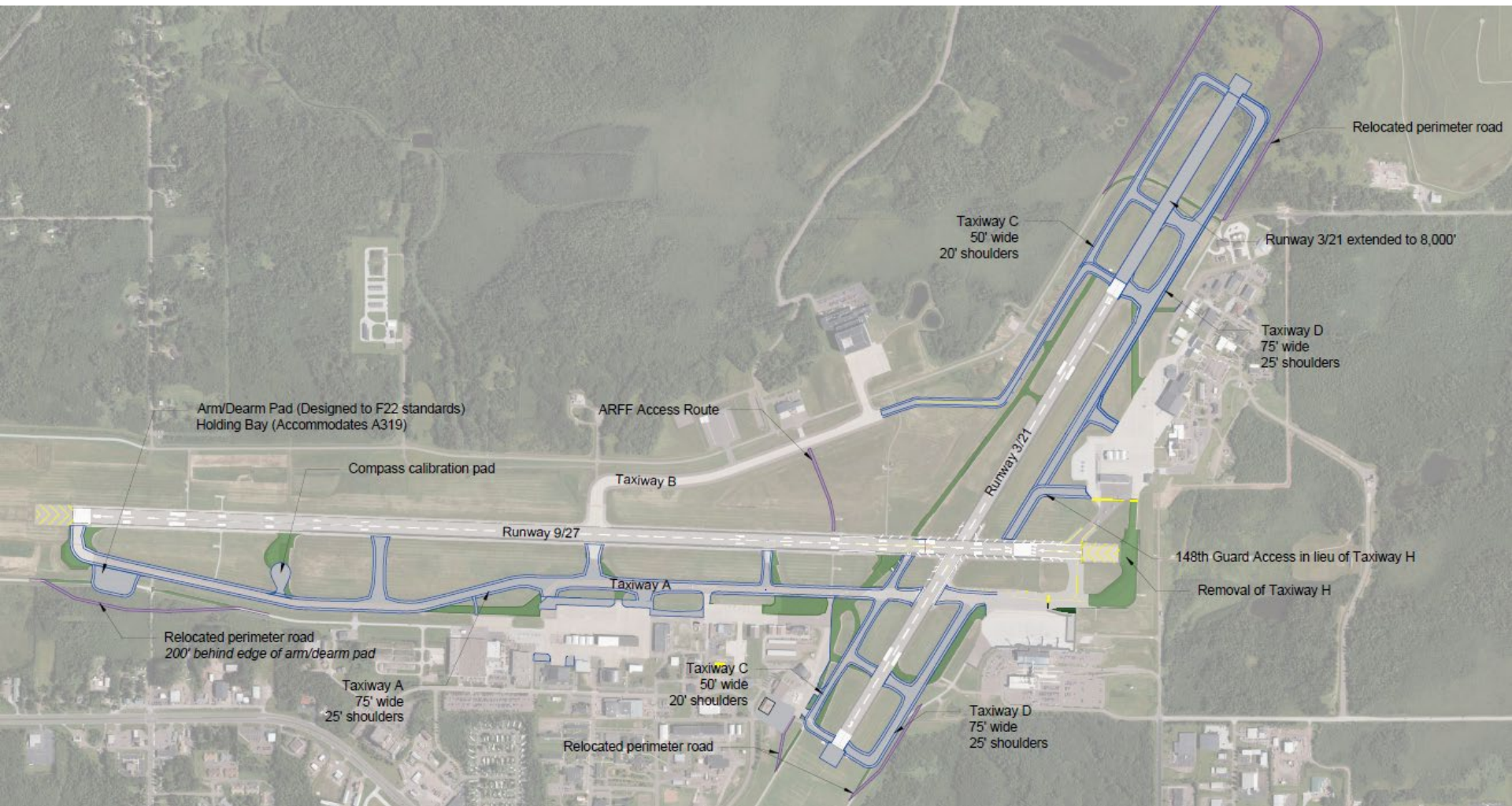
¹Air Force taxiways devoted exclusively for fighter and trainer aircraft

²Army and Air Force airfields

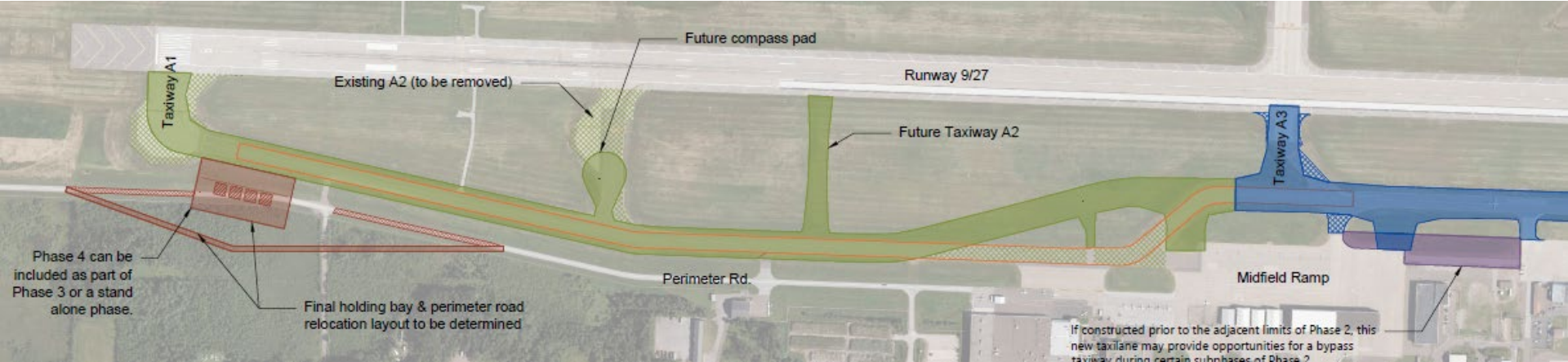
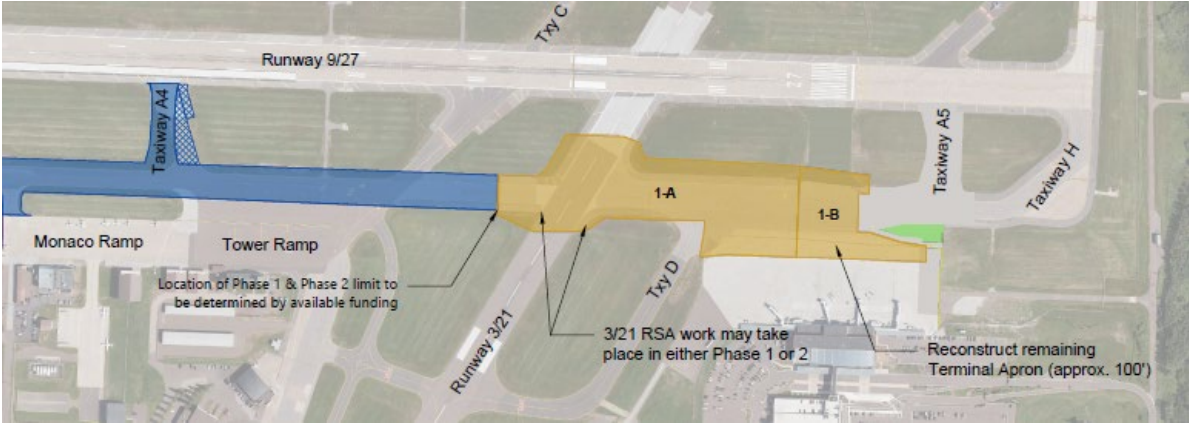
Preferred Taxiway Network – Alternative 1B

Taxiway D full-length

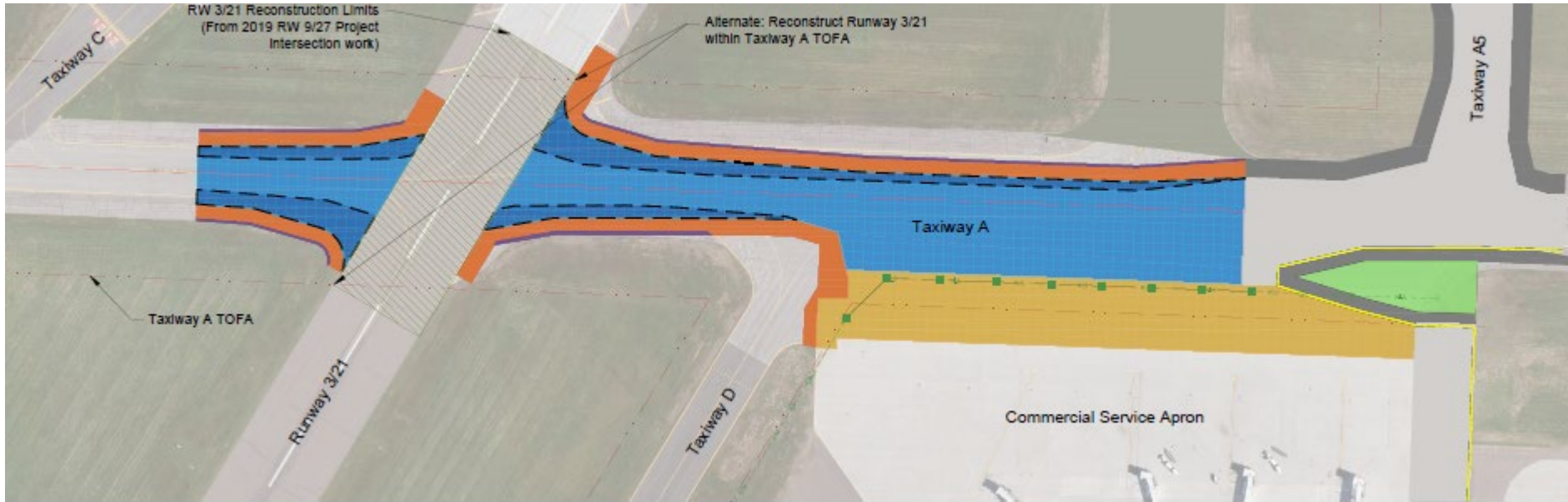
- Stakeholder feedback continues to refine the proposed layout



Next Steps – Taxiway A



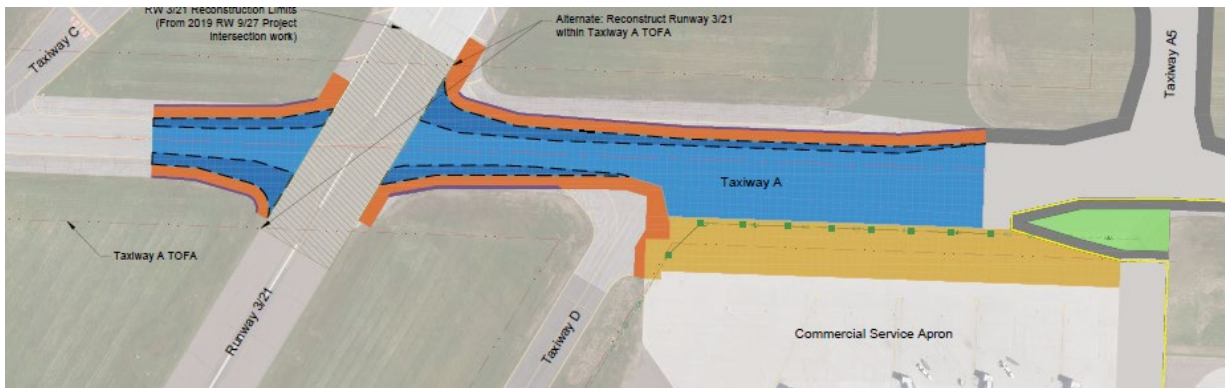
Next Steps – Taxiway A Phase 1



Planned construction in Summer of 2022

Next Steps – Taxiway A Phase 1 Funding

	Funding Sources			
	148 th ANG	FAA (100% Funding)	MnDOT	Airport
Taxiway A Reconstruction	\$796,000	\$6.8 Million	-	-
Design	\$16,800	\$442,500	-	-
Construction Administration	\$95,000	\$800,000	-	-
Total	\$907,800	\$8,042,500	\$0	\$0



Future phases will continue to require investment by the 148th Fighter Wing to fund the taxiway width that is beyond what the FAA will fund.

Note: Numbers are rounded

Aeronautical Building Area Needs

- Provide adequate aircraft parking and improve ability to move aircraft throughout aircraft parking areas
- Maximize aeronautical development and preserve the best use spaces for aeronautical use
 - Group development by use and similar size aircraft where possible
 - Provide
 - Aeronautical manufacturing expansion space
 - Larger hangars
 - Ranch and T-hangars
- Meet FAA design standards
- Eliminate existing ATCT line of sight challenges and avoid future line of sight limitations
- Consider snow storage needs when developing and evaluating alternatives

Building Area Layouts

- Selected alternative for each area will be depicted on the Airport Layout Plan (ALP)
 - The ALP does not limit hangar development to the exact size/type of hangar shown
 - The Master Plan will document alternative layouts that can be considered in each area. If future demand results in the need for a different layout, an ALP sheet update can be completed to document an alternate layout.

Building Area Potential Layout – SW Quadrant

- Stakeholder feedback continues to refine the proposed layout





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Financial Implementation Plan

- Task kicked off in December 2020
- Will evaluate financial feasibility of recommendations
 - Financial feasibility must be considered in the evaluation of development recommendations
- Related Key Process Objectives
 - To establish a realistic schedule for implementation of the proposed development.
 - To identify a realistic financial plan to support the development.
 - Develop a comprehensive Capital Improvement Plan (CIP) document

What are the next tasks?

- Finalize facility recommendations and alternatives
- Economic Development TAC
- Implementation Plan/CIP
- Draft Airport Layout Plan
- Financial Implementation Plan

Thank You!