

Duluth Airport Master Plan

Runway 3/21 Technical Advisory Committee (TAC) Meeting #2

October 4, 2019

Meeting Agenda

- Welcome and introductions
- Meeting #1 takeaways
- Preliminary alternatives discussion and feedback



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Introductions

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Mentimeter Activity

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Runway 3/21 - Overview

Existing Runway 3/21

5,719' x 150'

Non-Precision
Instrument Runway

Air Carrier and General
Aviation runway



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Meeting #1 Takeaways

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.
 - Commercial Air Service:
 - 7,800 feet for current fleet
 - General Aviation
 - 7,900 feet for critical aircraft
 - Cirrus: A longer Runway 3/21 would be beneficial to their operations at DLH.
 - A longer Runway 3/21 would provide value for those, including Lake Superior College, who conduct flight training operations at DLH.



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
 - General Aviation and many (and growing number of) commercial service aircraft can use GPS approaches.
 - Approach lighting to one or both ends would add value

Runway 3/21 - Stakeholder feedback

- Taxiway Network:
- The taxiway network for Runway 3/21 should be improved.
- Move taxiway C away from Runway 3/21 (it is currently too close to the runway).
- Taxiway C at the Runway 3 end and Runway 9/27 intersections contains non-standard geometry.
- Taxiway D should intersect Runway 3/21 at 90 degrees.
- Taxiway F currently does not connect to Runway 3/21 at a standard angle and is unavailable for fighter jet use because it exceeds grade standards.

Note: *A more detailed analysis of taxiway needs will take place during the Taxiway Network evaluation in the Master Plan. Additional and more detailed analysis of needed improvements and alternatives to the taxiway network for Runway 3/21 will be considered in that upcoming evaluation.*

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.
- Impacts improvements to Runway 3/21 may have on aircraft parking and building areas should be considered in the alternatives.

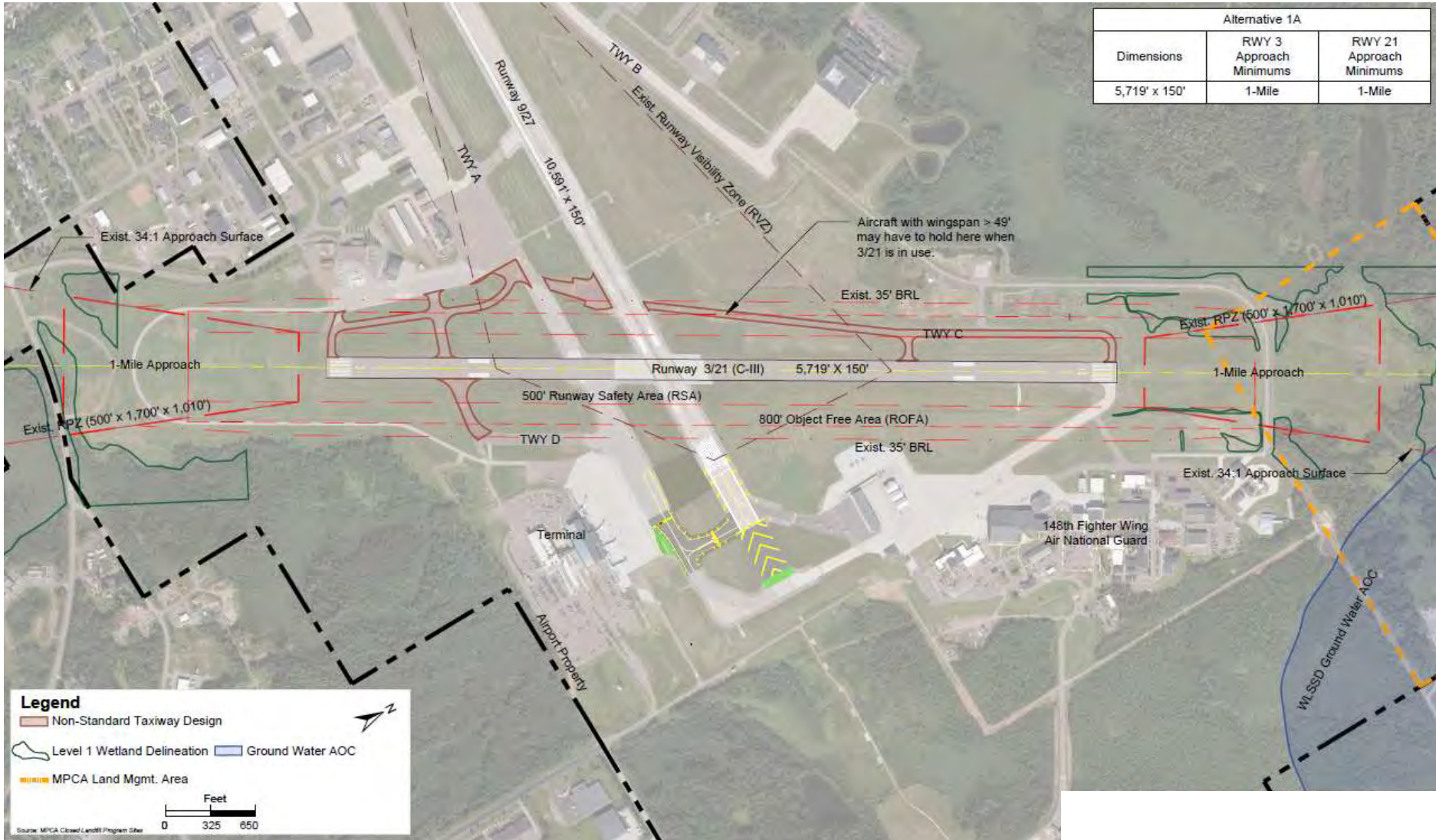


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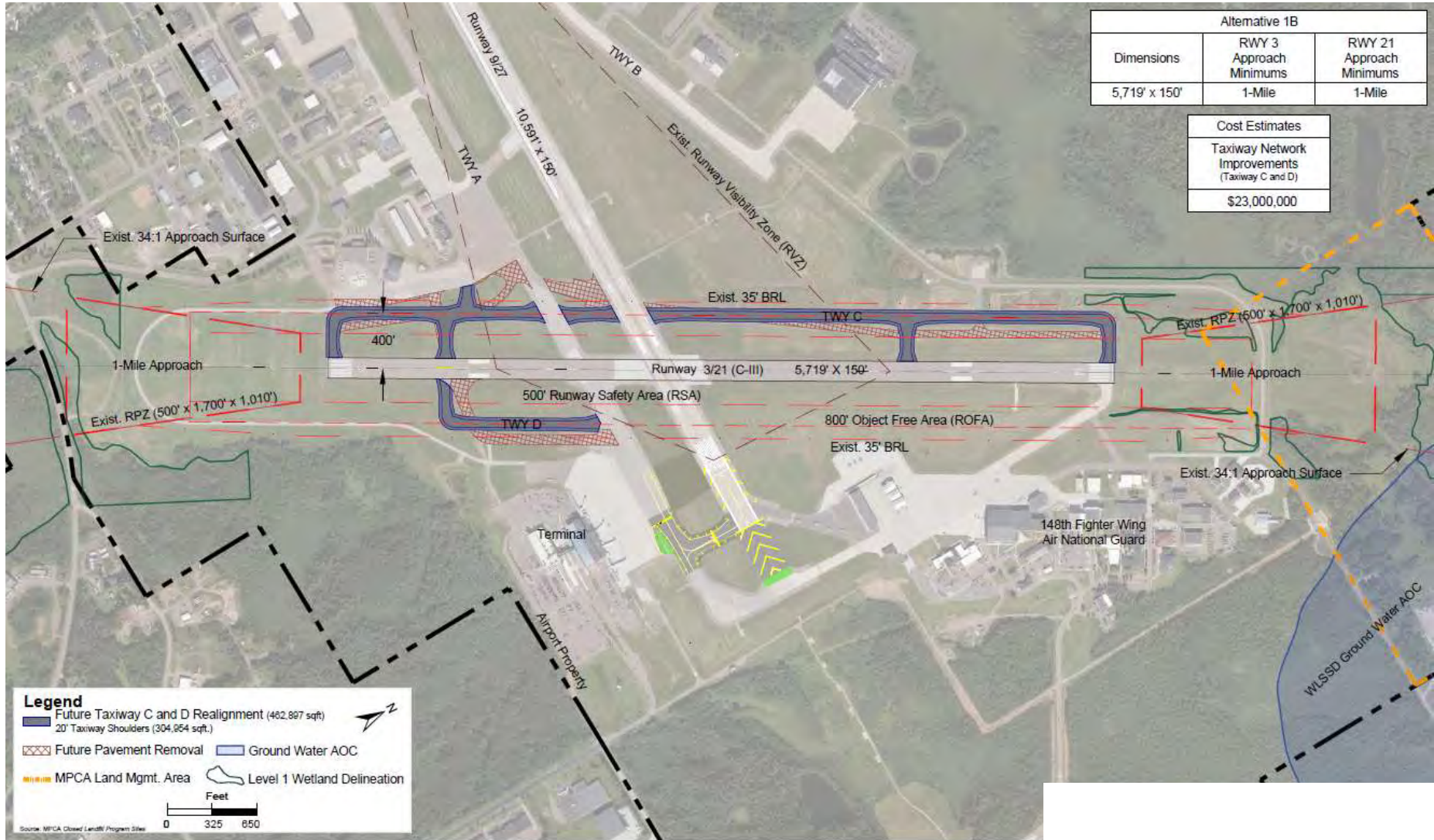


Runway 3/21 Alternatives

Alternative 1A – No Action Alternative



Alternative 1B – Improve Taxiway Network

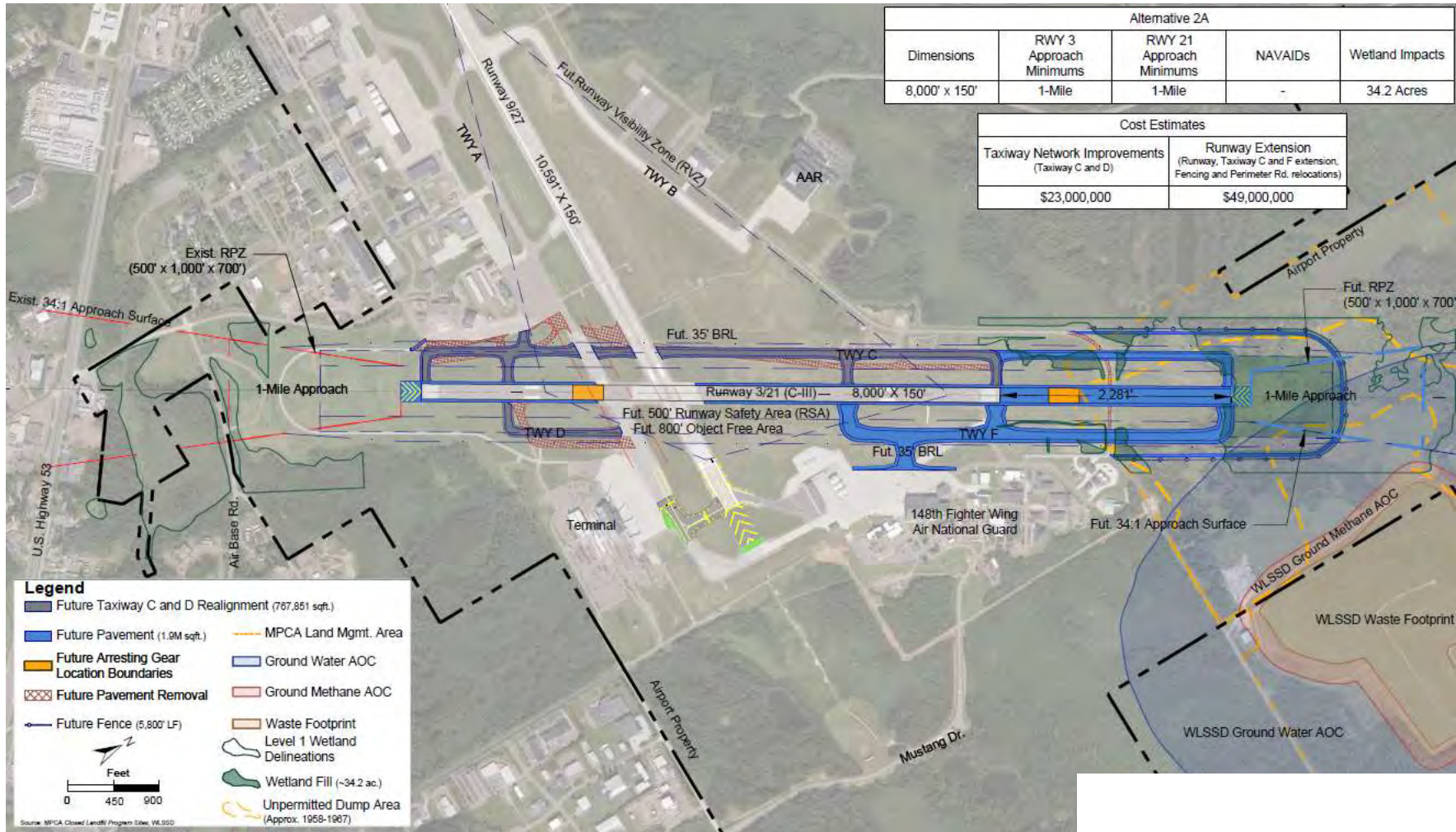


Alternative 1B – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Taxiway Network
5,719' x 150'	1-Mile	1-Mile	Taxiway Network Improvements

Taxiway Network Improvements
\$23,000,000

Alternative 2A – 8,000’ Runway: No Instrument Approach Procedure Improvements



Alternative 2A – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts
8,000' x 150'	1-Mile	1-Mile	34.2 Acres

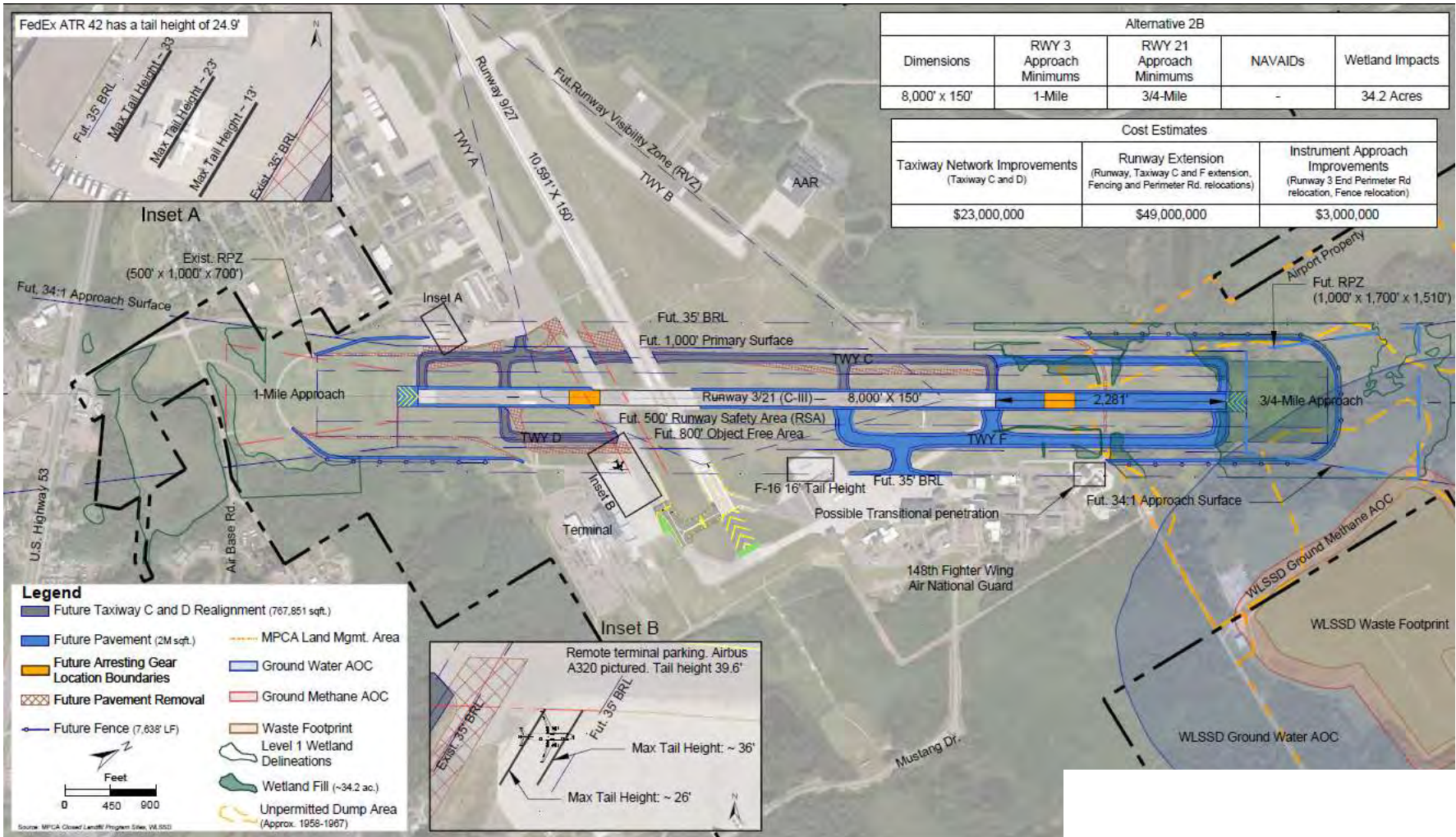
Taxiway Network Improvements	Runway Extension
\$23,000,000	\$49,000,000



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Alternative 2B – 8,000' Runway: Approach to Runway 21 improved to 3/4-Mile



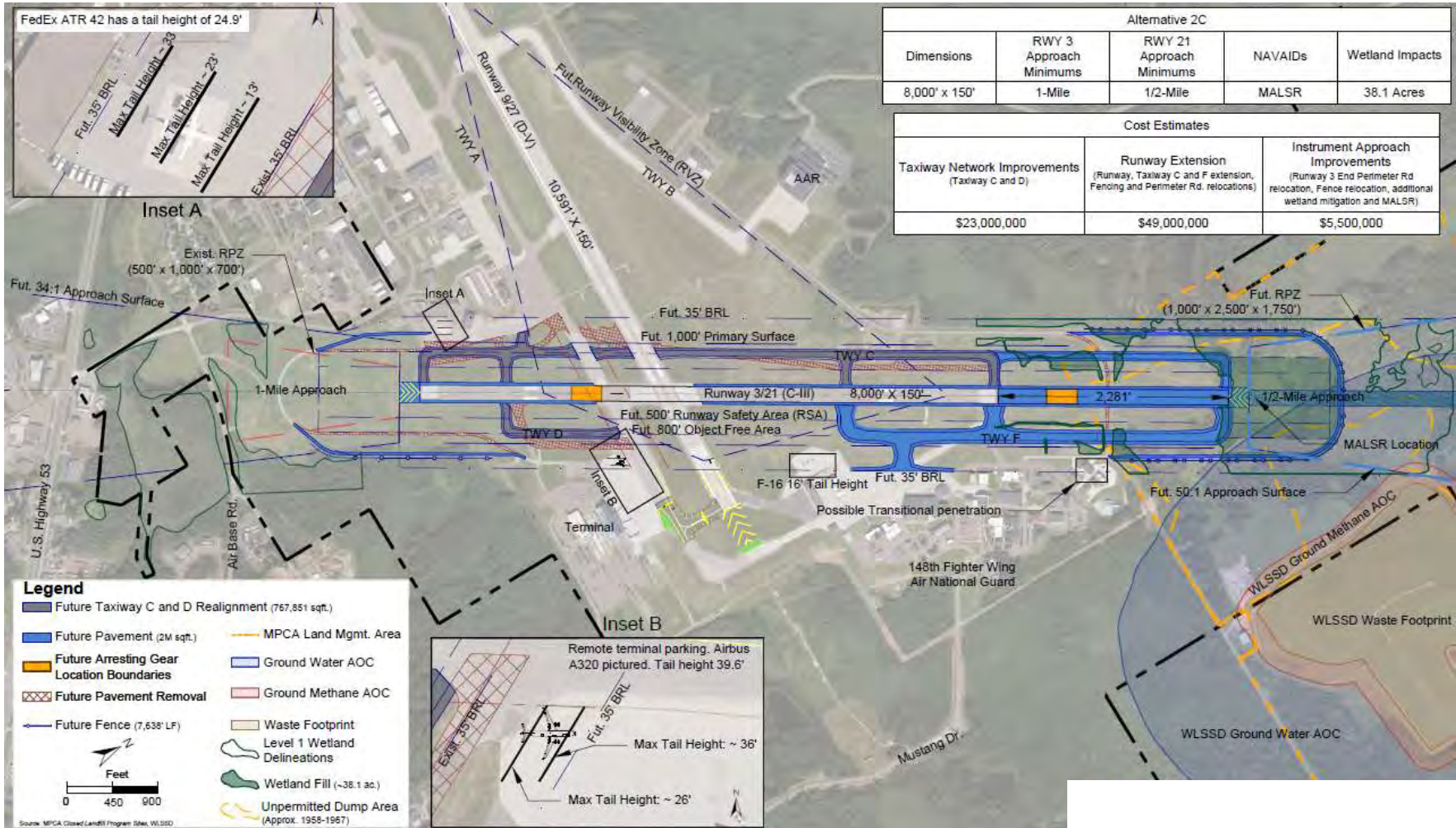
Alternative 2B – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts
8,000' x 150'	1-Mile	3/4-Mile	34.2 Acres

Taxiway Network Improvements	Runway Extension	Instrument Approach Improvements
\$23,000,000	\$49,000,000	\$3,000,000



Alternative 2C – 8,000' Runway: Approach to Runway 21 improved to 1/2-Mile



Alternative 2C – 8,000' Runway: Approach to Runway 21 improved to 1/2-Mile



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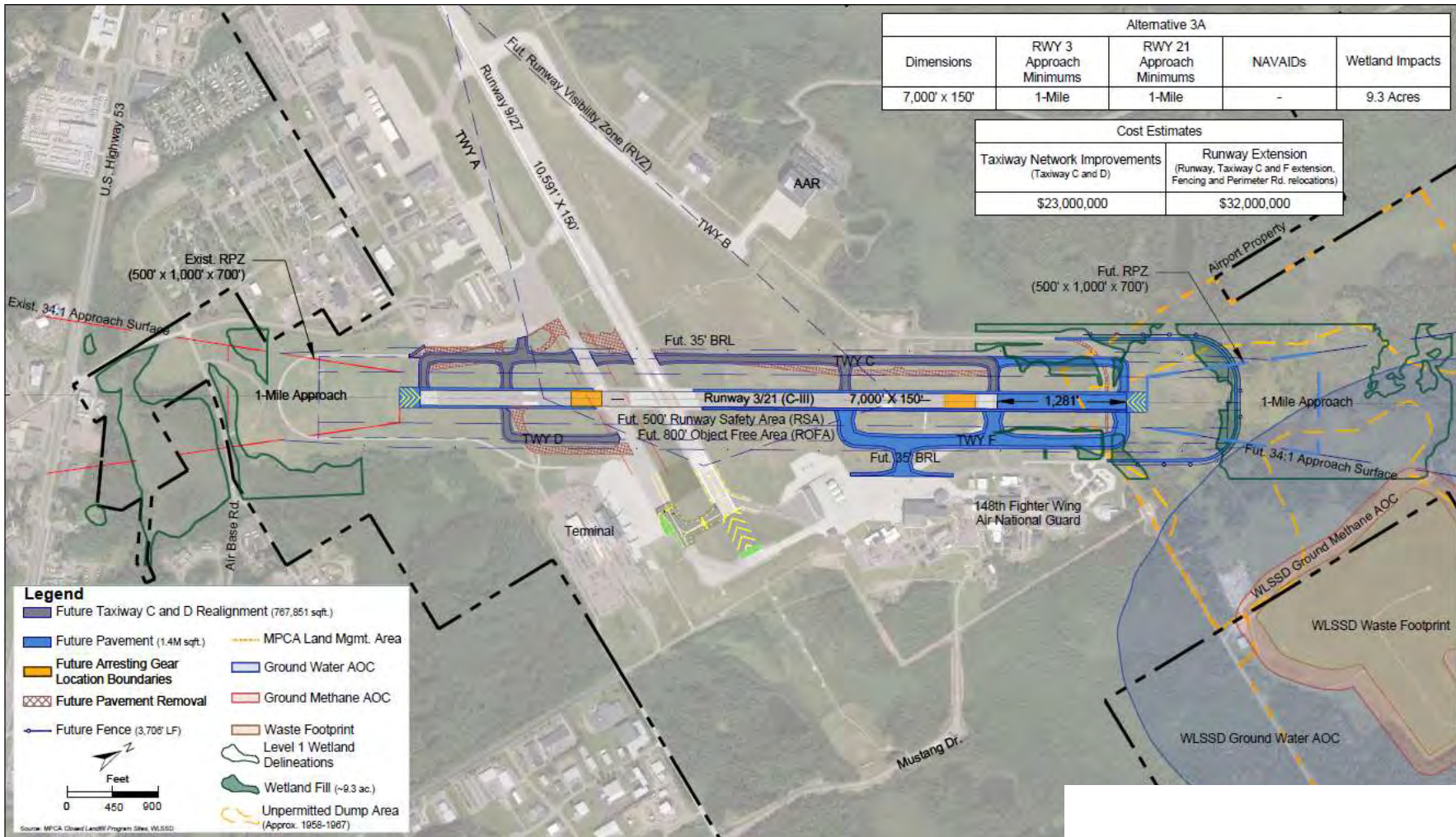
Alternative 2C – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts
8,000' x 150'	1-Mile	1/2-Mile	38.1 Acres

Taxiway Network Improvements	Runway Extension	Instrument Approach Improvements
\$23,000,000	\$49,000,000	\$5,500,000



Alternative 3A – 7,000’ Runway: No Instrument Approach Procedure Improvements



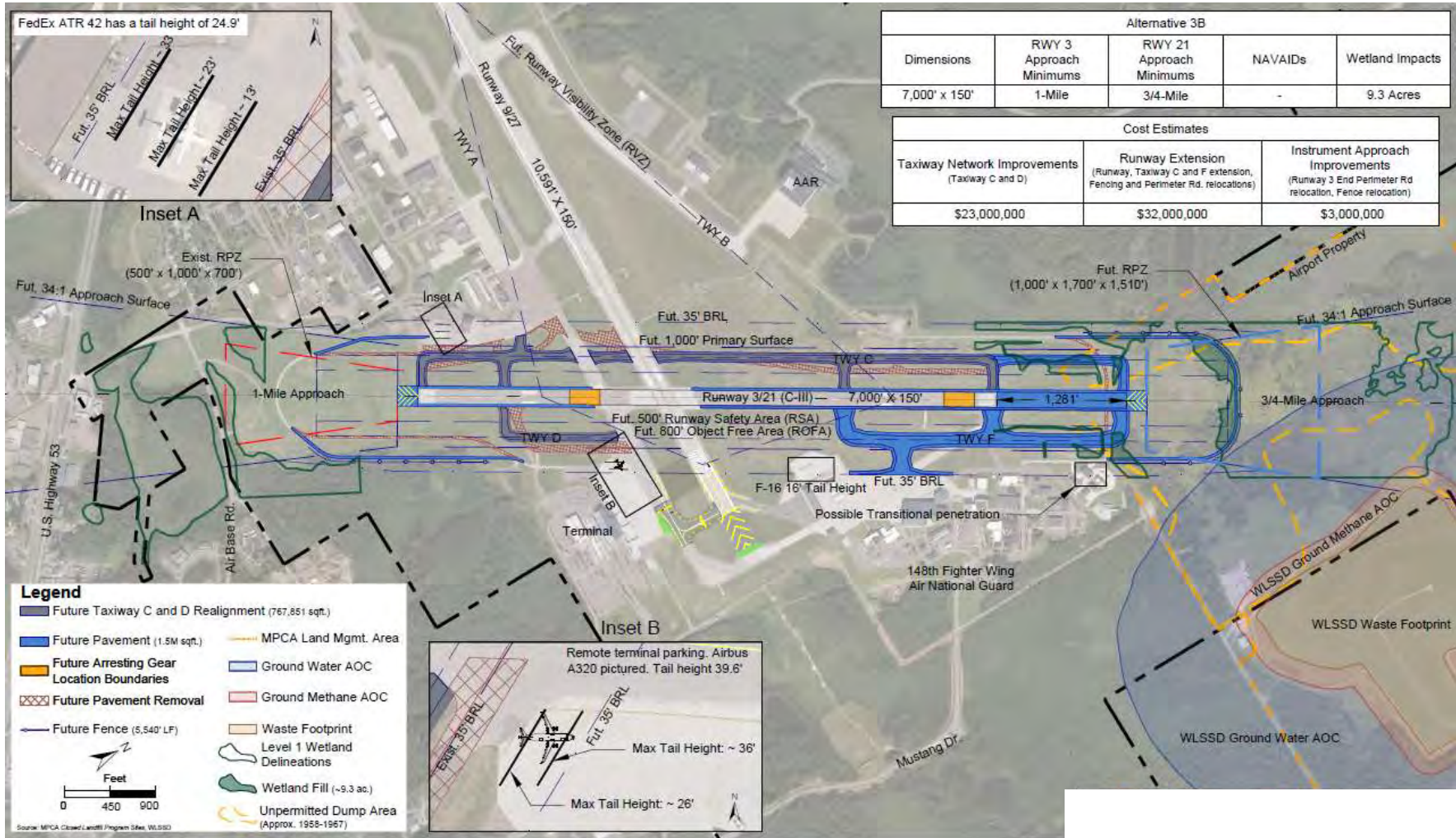
Alternative 3A – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts
7,000' x 150'	1-Mile	1-Mile	9.3 Acres

Taxiway Network Improvements	Runway Extension
\$23,000,000	\$32,000,000



Alternative 3B – 7,000' Runway: Approach to Runway 21 improved to 3/4-Mile



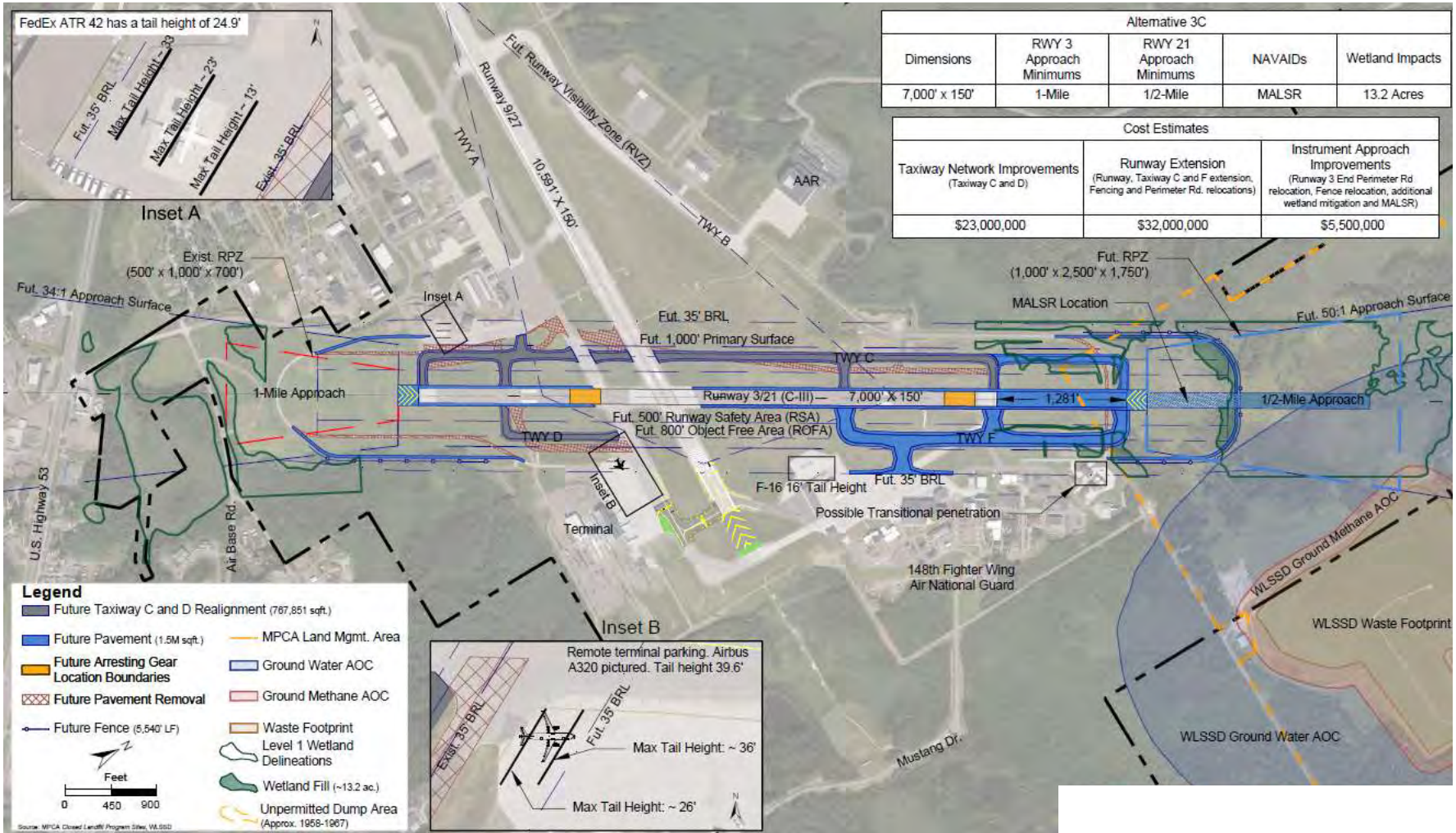
Alternative 3B – Impacts and Cost Estimates

Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	Wetland Impacts
7,000' x 150'	1-Mile	3/4-Mile	9.3 Acres

Taxiway Network Improvements	Runway Extension	Instrument Approach Improvements
\$23,000,000	\$32,000,000	\$3,000,000



Alternative 3C – 7,000' Runway: Approach to Runway 21 improved to 1/2-Mile



Alternative 3C – Impacts and Cost Estimates

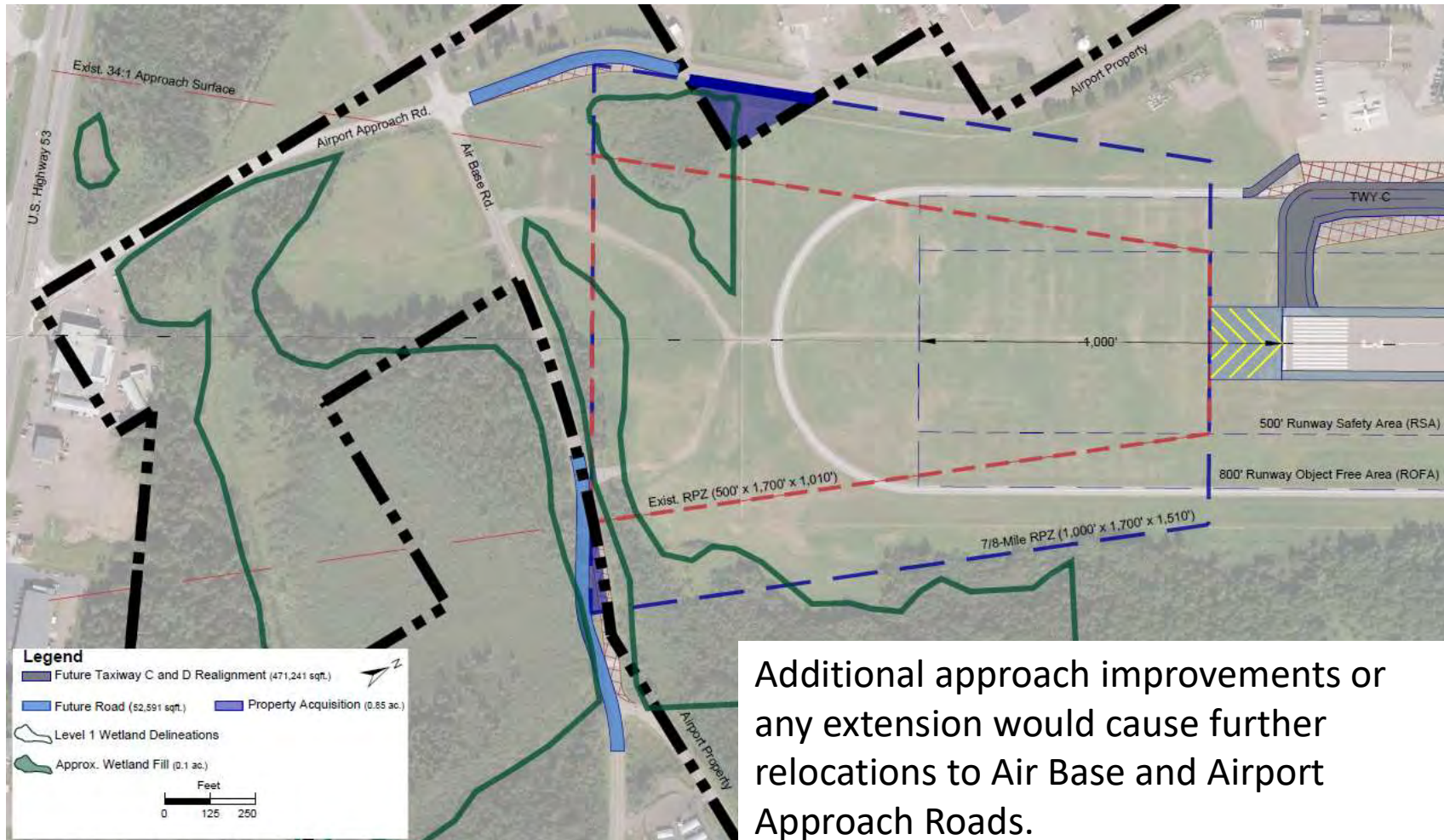
Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	NAVAIDs	Wetland Impacts
7,000' x 150'	1-Mile	1/2-Mile	MALSR	13.2 Acres

Taxiway Network Improvements	Runway Extension	Instrument Approach Improvements
\$23,000,000	\$32,000,000	\$5,500,000

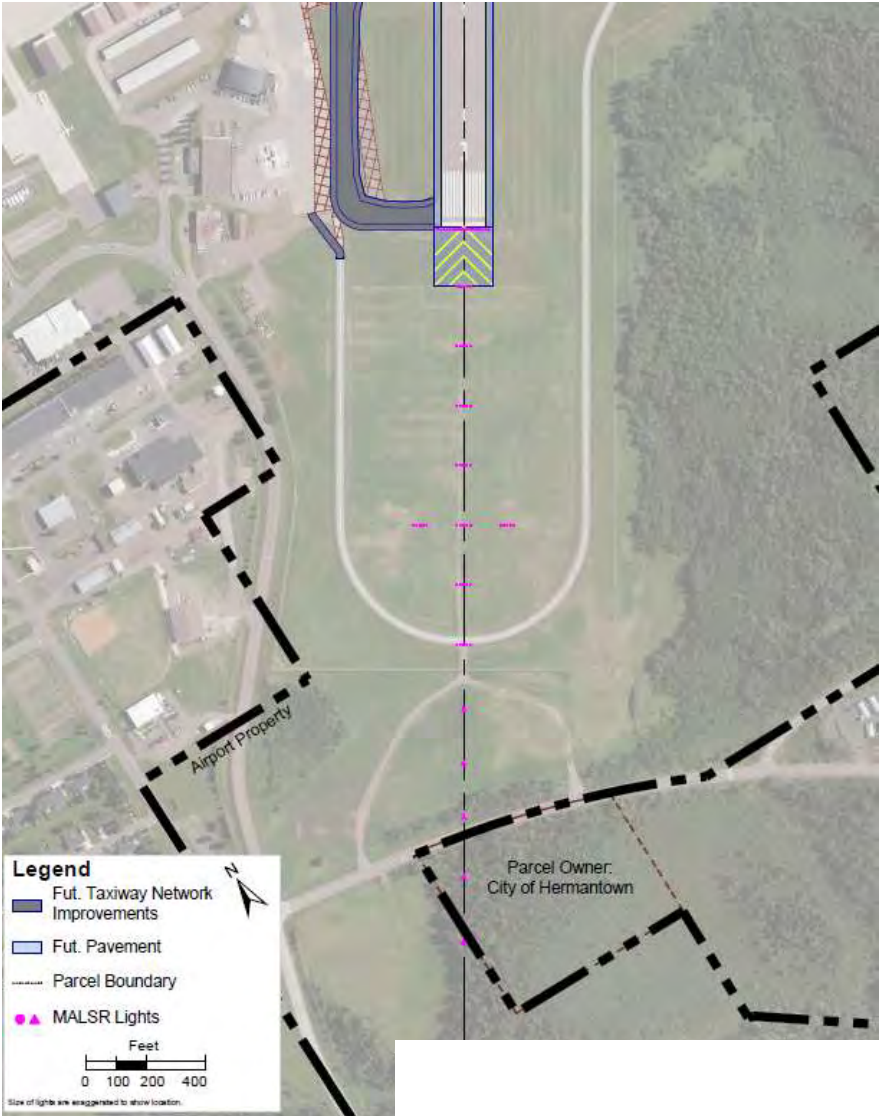


Additional Options for Runway 3 (South) End

Runway 3 Approach Improvements to 7/8-Mile

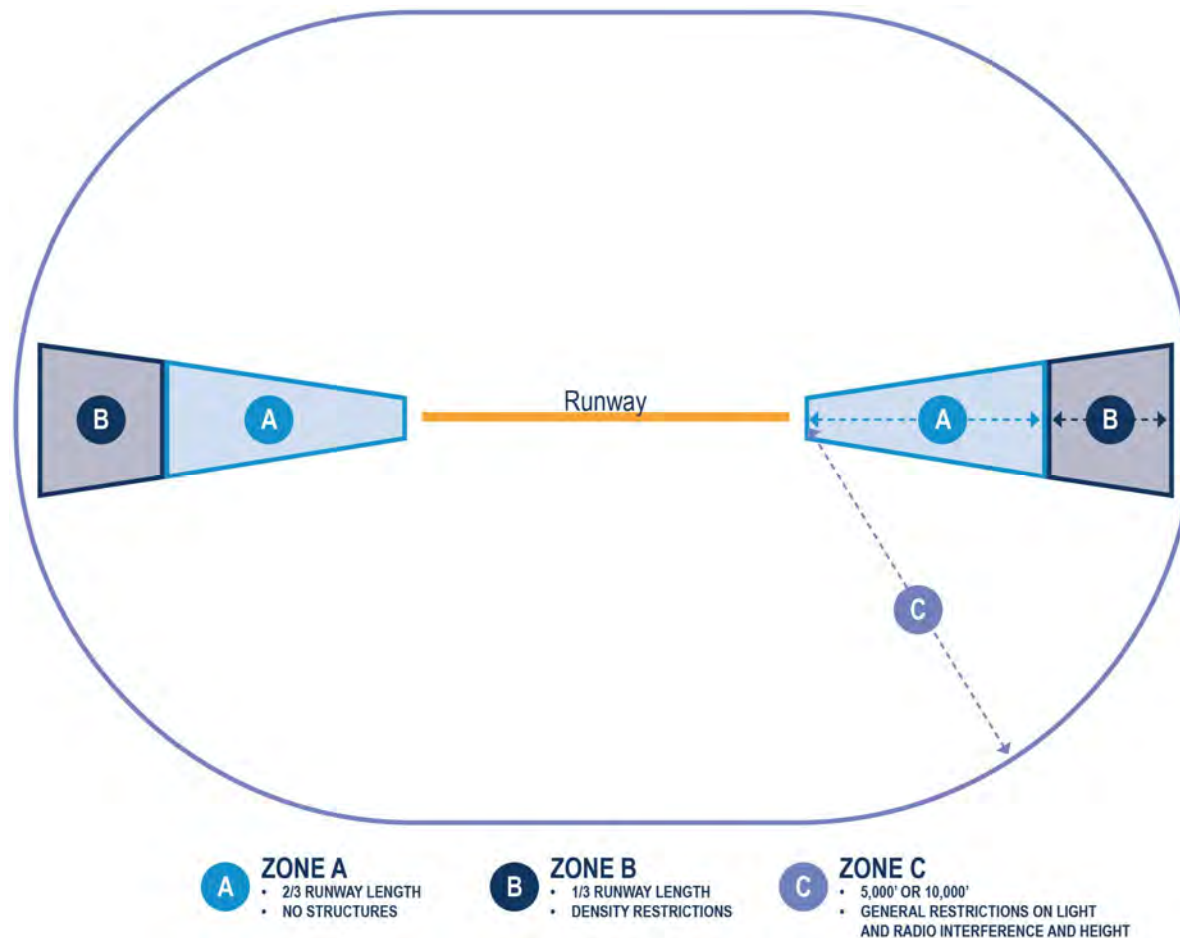


Runway 3 Approach Lighting



Airport Zoning

MnDOT Aeronautics Commissioner's Standard Zoning Ordinance



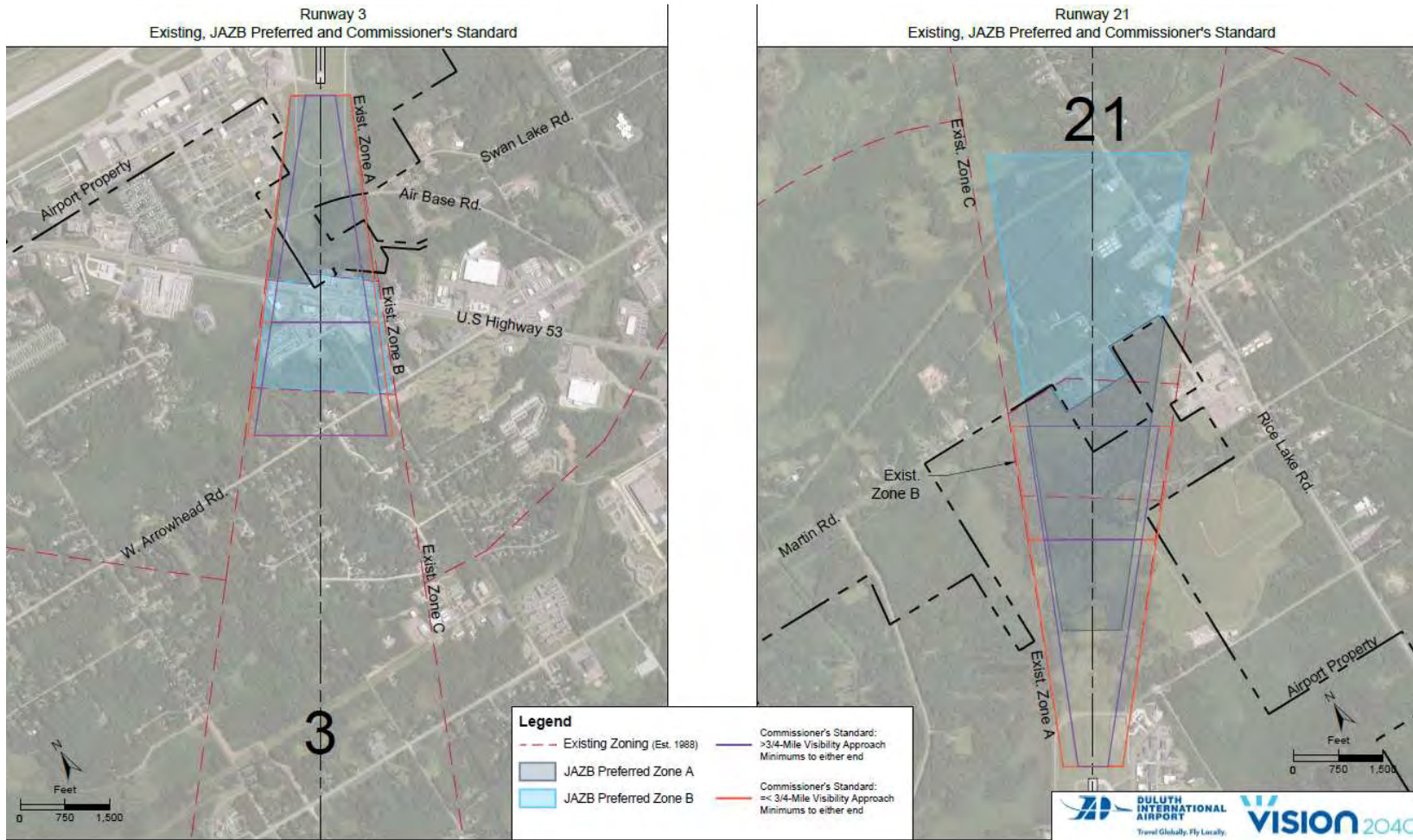
Source: MnDOT 2020 SASP



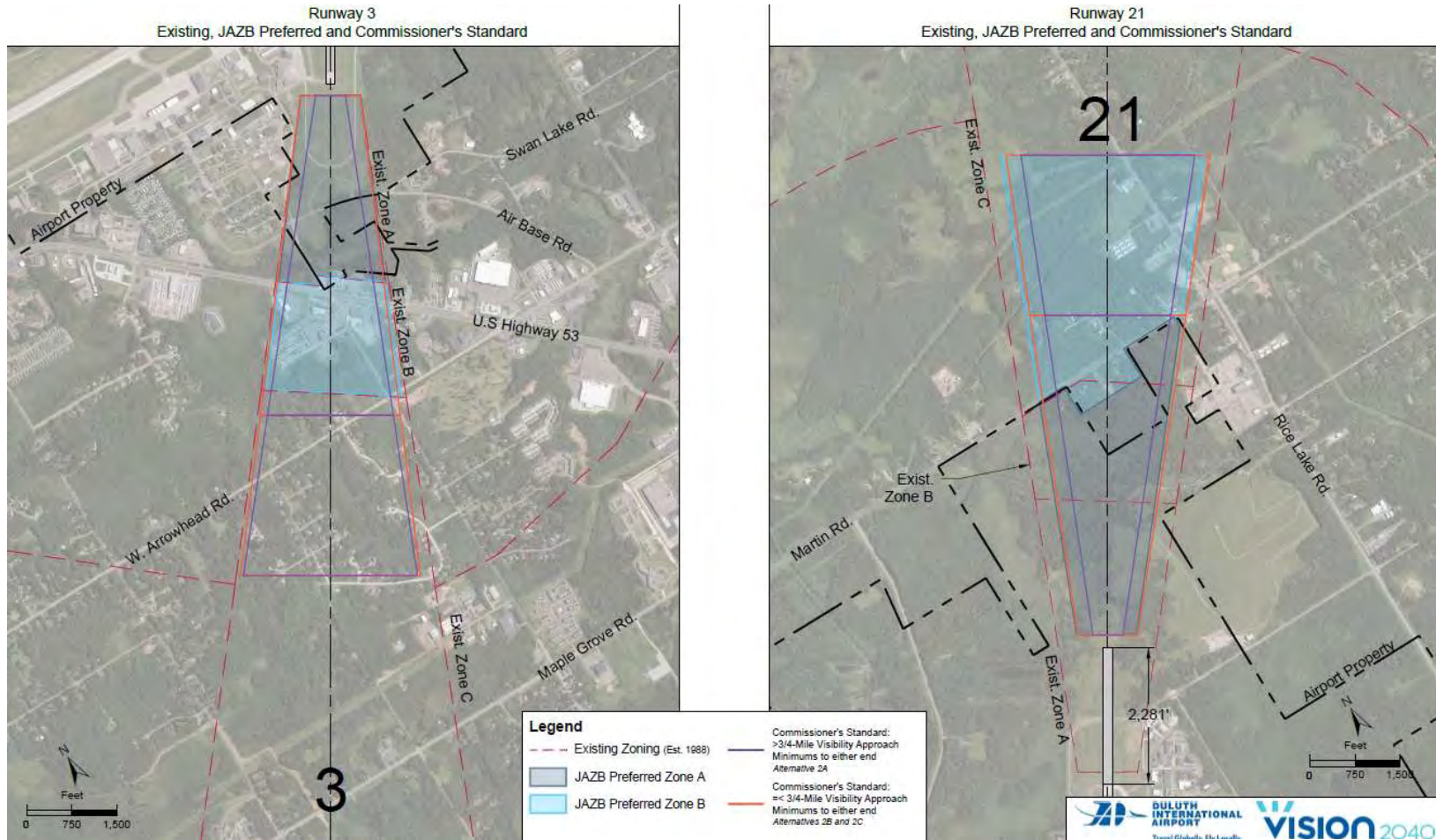
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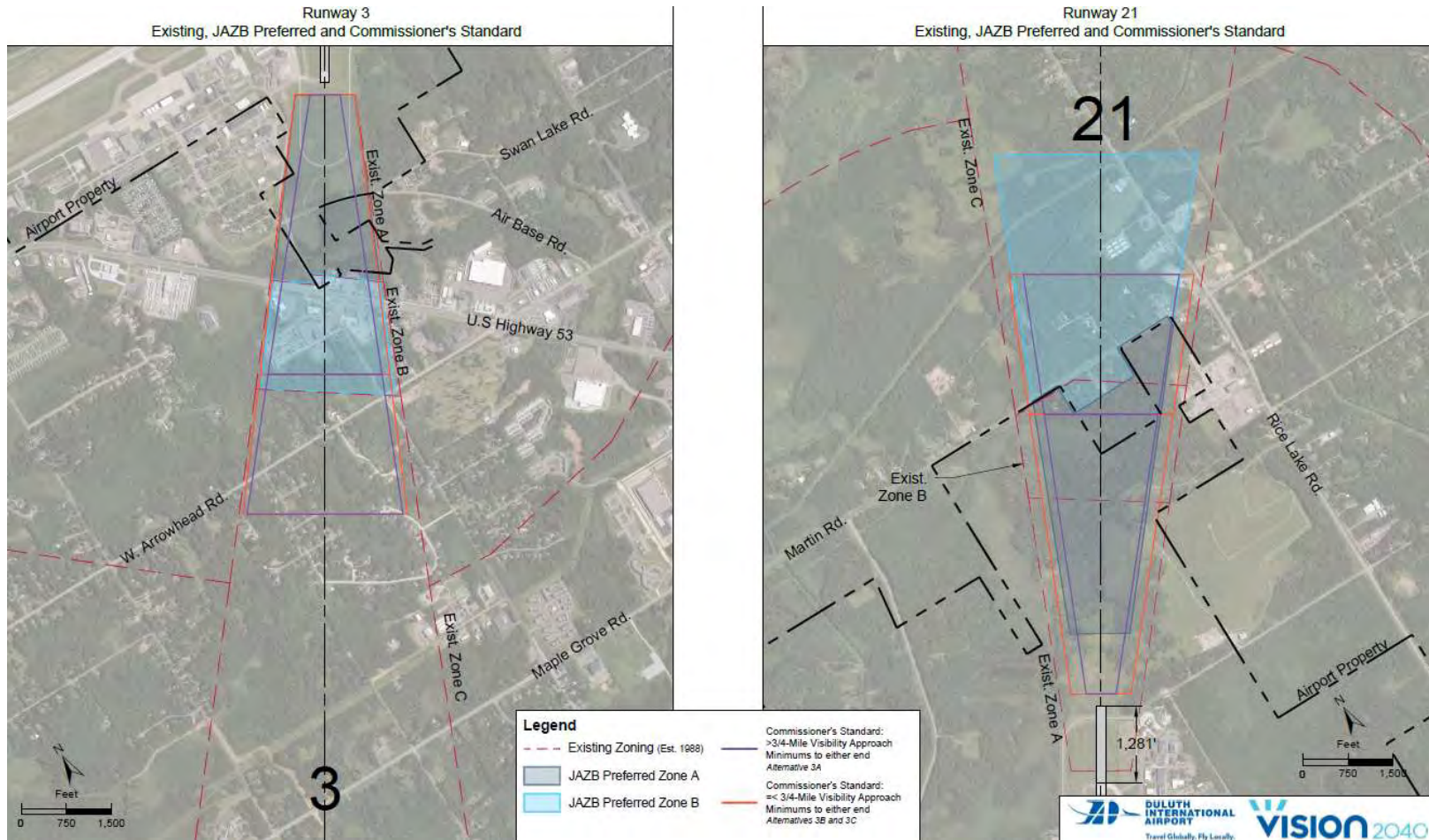
Existing Runway Zoning Impacts



8,000' Runway Zoning Impacts



7,000' Runway Zoning Impacts



Alternatives Evaluation

Comparative Impacts and Cost Estimates

Alternative	Runway Dimension	Runway 3 Approach Minimums	Runway 21 Approach Minimums	NAVAIDs	Wetland Impacts	Estimated Cost
1A	5,719' x 150'	1-Mile	1-Mile	-	-	\$0
1B	5,719' x 150'	1-Mile	1-Mile	-	-	\$23,000,000
2A	8,000' x 150'	1-Mile	1-Mile	-	34.2 Acres	\$72,000,000
2B	8,000' x 150'	1-Mile	¾-Mile	-	34.2 Acres	\$75,000,000
2C	8,000' x 150'	1-Mile	½-Mile	MALSR	38.1 Acres	\$77,500,000
3A	7,000' x 150'	1-Mile	1-Mile	-	9.3 Acres	\$55,000,000
3B	7,000' x 150'	1-Mile	¾-Mile	-	9.3 Acres	\$58,000,000
3C	7,000' x 150'	1-Mile	½-Mile	MALSR	13.2 Acres	\$60,500,000

Alternatives Evaluation

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								
Improve Usability	Military: 7,000 feet for 148th emergency use 8,000 feet for 148th secondary runway								
	Civilian: 7,800 feet for full commercial service aircraft 7,900 feet for full GA aircraft								
	Improve instrument approach weather minimums								
Protect Natural Resources	Minimize impacts to wetlands and other natural resources								
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								

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.

Break

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Thank You!