

Spokane County Briefing

Felts Field Airport Master Plan Update

April 18, 2022

Agenda

- Introduction & Background
- Existing Issues and Challenges
- Forecast Summary & Critical Aircraft Determination
- Facility Requirements Summary
- Alternatives Evaluation Summary
- Proposed Airport Layout Plan
- Proposed Capital Improvement Program (CIP)
- Q&A and Discussion



Cessna Citation CJ2

Introductions

Felts Field Airport Master Plan

Prepared by:



with:



Tower Siting Study



*AGIS 18B Aerial
Mapping and Survey*



*Stakeholder
Engagement*

Background – 2020 WSDOT Airport Economic Impact Results

The study revealed the state's 134 public-use airport system contributes 407,042 jobs, \$26.8 billion in labor income, and \$107 billion in total economic impact (business revenues) to the state's economy and communities.

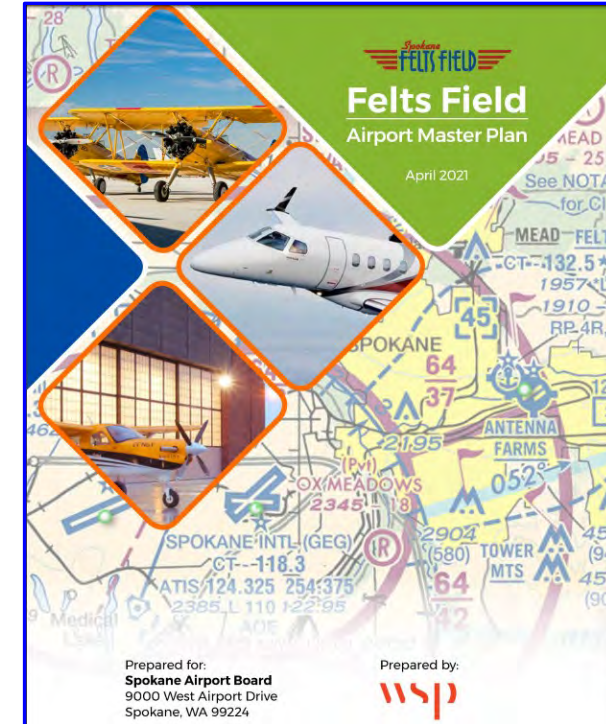
SFF & GEG Contributions:

Airport Name	FAA ID	Jobs	Labor Income (\$)	Value Added (\$)	Business Revenue (\$)
Felts Field	SFF	462	\$27,356,000	\$45,515,000	\$78,749,000
Spokane International	GEG	11,566	\$548,693,000	\$936,832,000	\$1,551,346,000

Background – What is an Airport Master Plan?

An airport master plan provides a road map for efficiently meeting aviation demand through the foreseeable future while preserving the flexibility necessary to respond to changing industry conditions. Specifically:

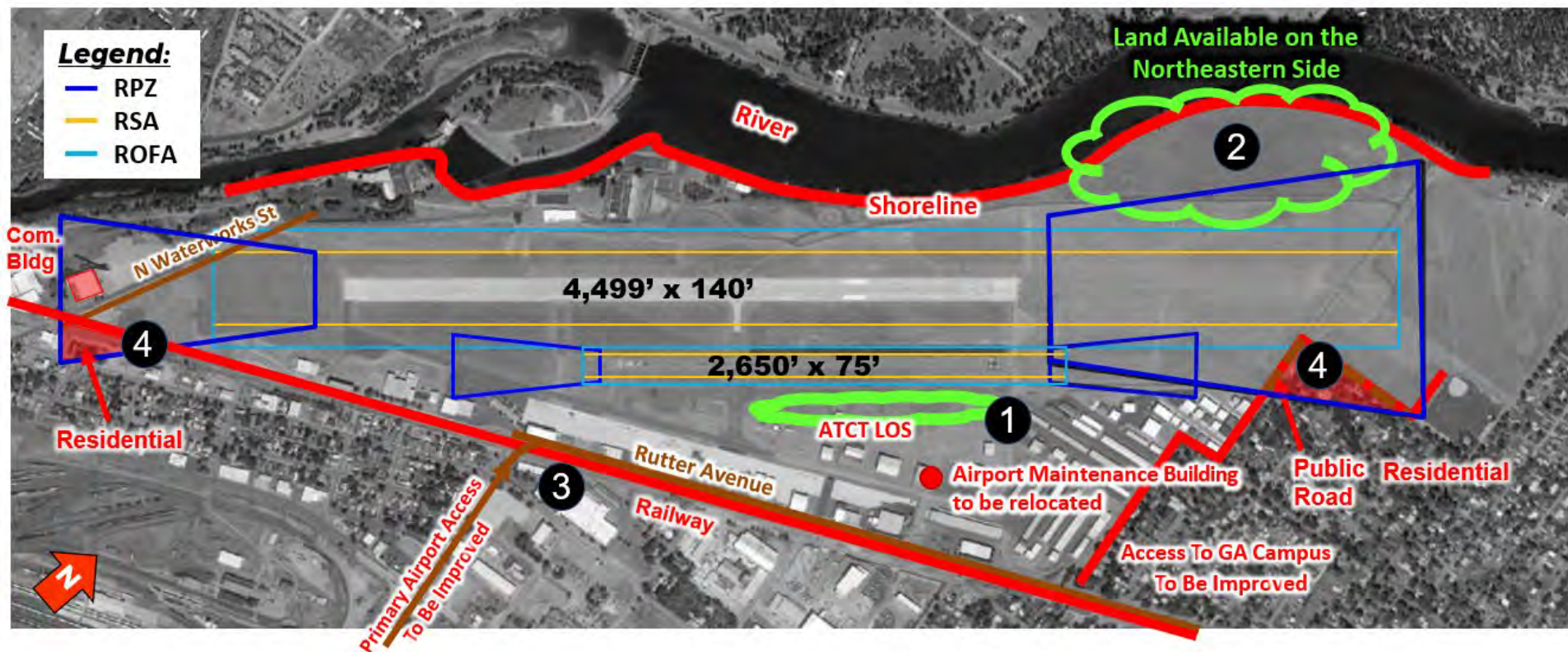
- To provide a framework or “roadmap” for long-range planning (2038)
- To graphically present preferred airport development concepts
- To comply with FAA applicable requirements
- To assure compatible land use development
- To identify facility requirements for all airport users



- The Master Plan process provides a blueprint for the future.
- The proposed plan is implemented when actual demand warrants and when funds become available.
- The recommendations contained in a Master Plan may require further environmental review and financial planning.
- Projects must be on the ALP in order to be eligible for FAA funding.



Existing Issues and Challenges at Felts Field (SFF)

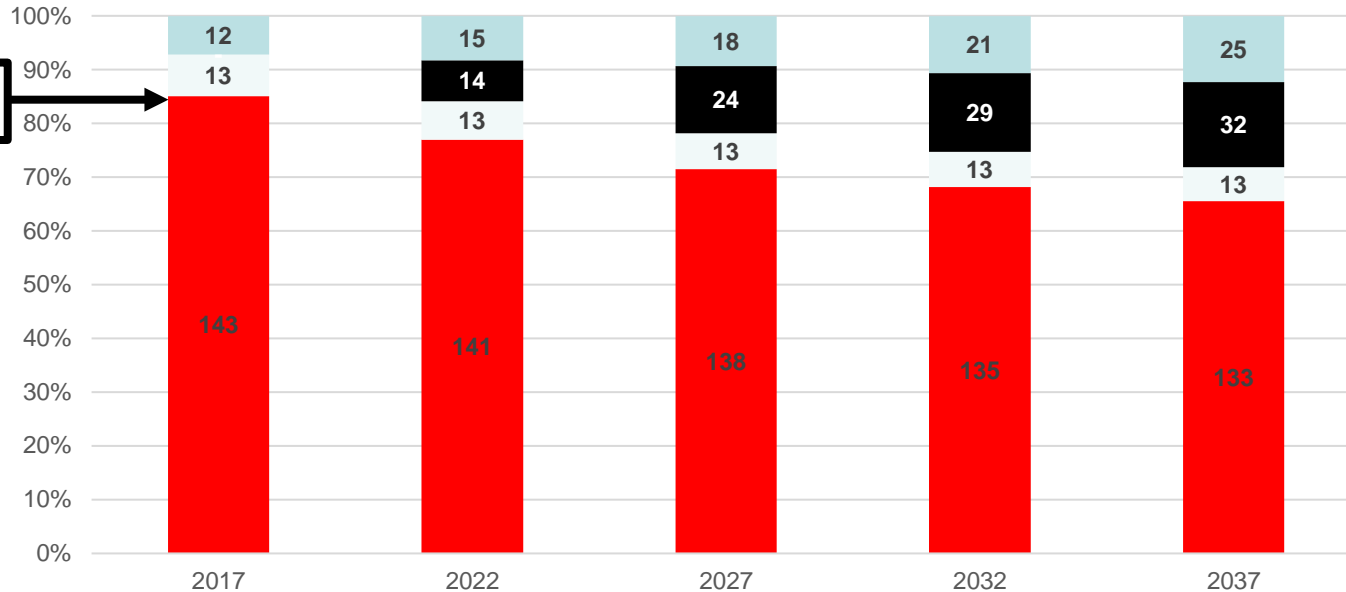


1. **Limited hangar development area** due minimal available space and existing ATC Tower line of sight.
2. **Spokane River** limits developable land area due to City's 200-foot buffer requirement.
3. Airport access issues due to **Union Pacific railway stoppage** along E. Rutter Avenue.
4. **Incompatible land uses** (e.g. public roads and residential buildings) within the existing **Runway Protection Zones**.
5. Airspace limitations due to terrain north of the airport (**limits usable runway length**)

FAA Approved Forecast Summary thru 2037

FAA Approved Forecast Dec. 2018

Projected Based Aircraft by Type



0 Jets

Actual
Dec. 2021
3 based jets

Forecast Summary

	2017	2022	2027	2032	2037
Annual Operations	51,364	55,566	59,664	63,988	68,534
Average Day, Peak Month Aircraft Operations	163	176	189	203	218
Based Aircraft	168	183	193	198	203

Actual
Dec. 2021
71,732

227

Source: WSP Analysis

SFF Facility Requirements Summary

- For Primary Runway 4L-22R, a **5,500-foot runway** is required to accommodate the **FUTURE critical aircraft—Learjet 25/31s** (60% useful load).
- Facility Requirements identified the need for an **additional 32 hangars** by 2037 (some T-hangars and Tiedowns have already been constructed).



Facility Requirements – SFF Runway Length Needs

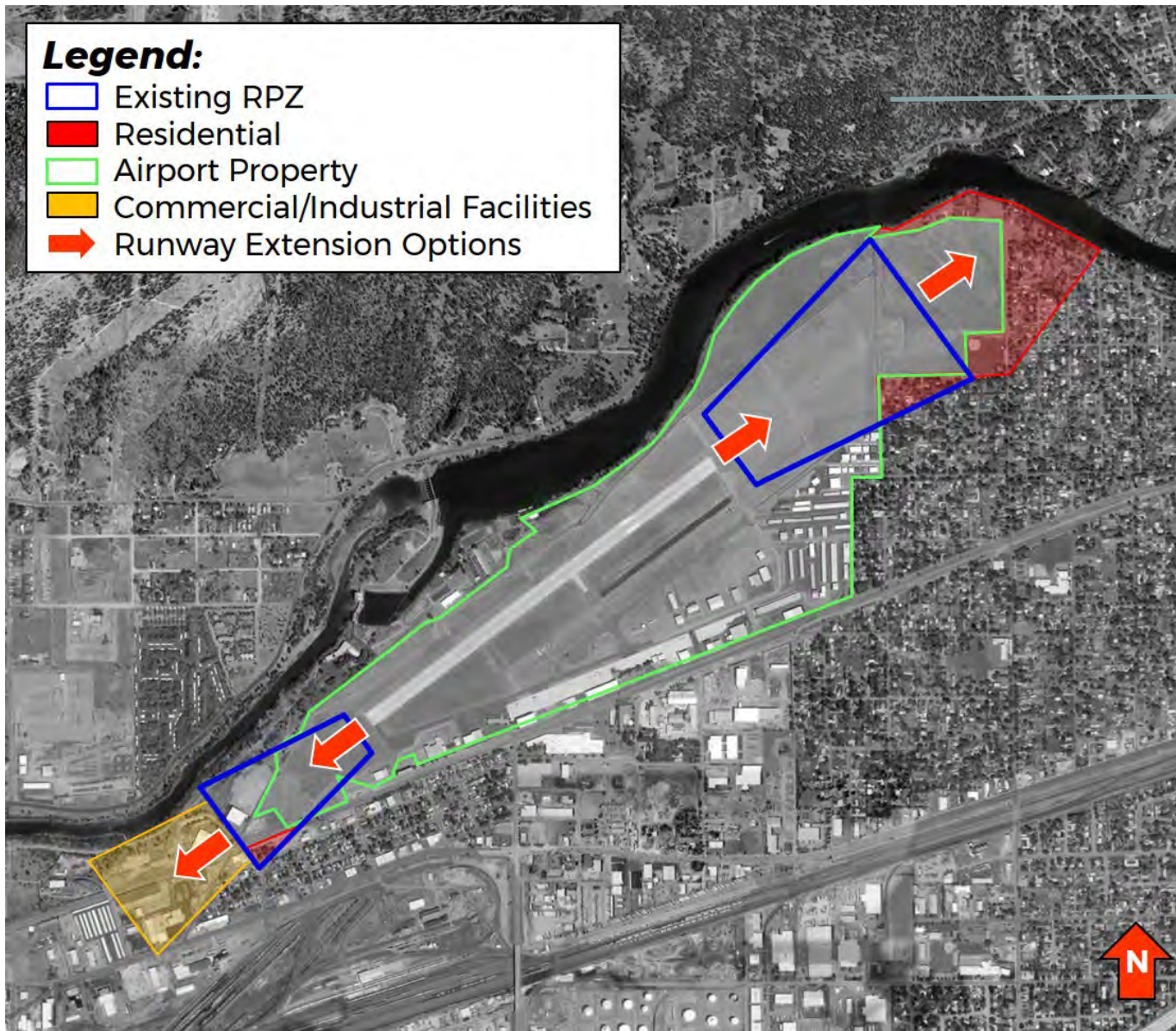
Table 3-8. Runway Length Requirements

CONDITION	PROPOSED RUNWAY REQUIREMENTS (FEET)	
Existing Runway 4L-22R	4,499	
60% useful payload (Cessna Citation)	5,000	Short-term
90% useful payload (Cessna Citation, Learjet 25/36)	6,800	
75% payload (Learjet 25/36) and 60% useful payload (Hawker 800)	6,100	Long-term
90% useful payload (Hawker 800)	9,000	



Airfield Alternatives – Accommodating Runway Needs

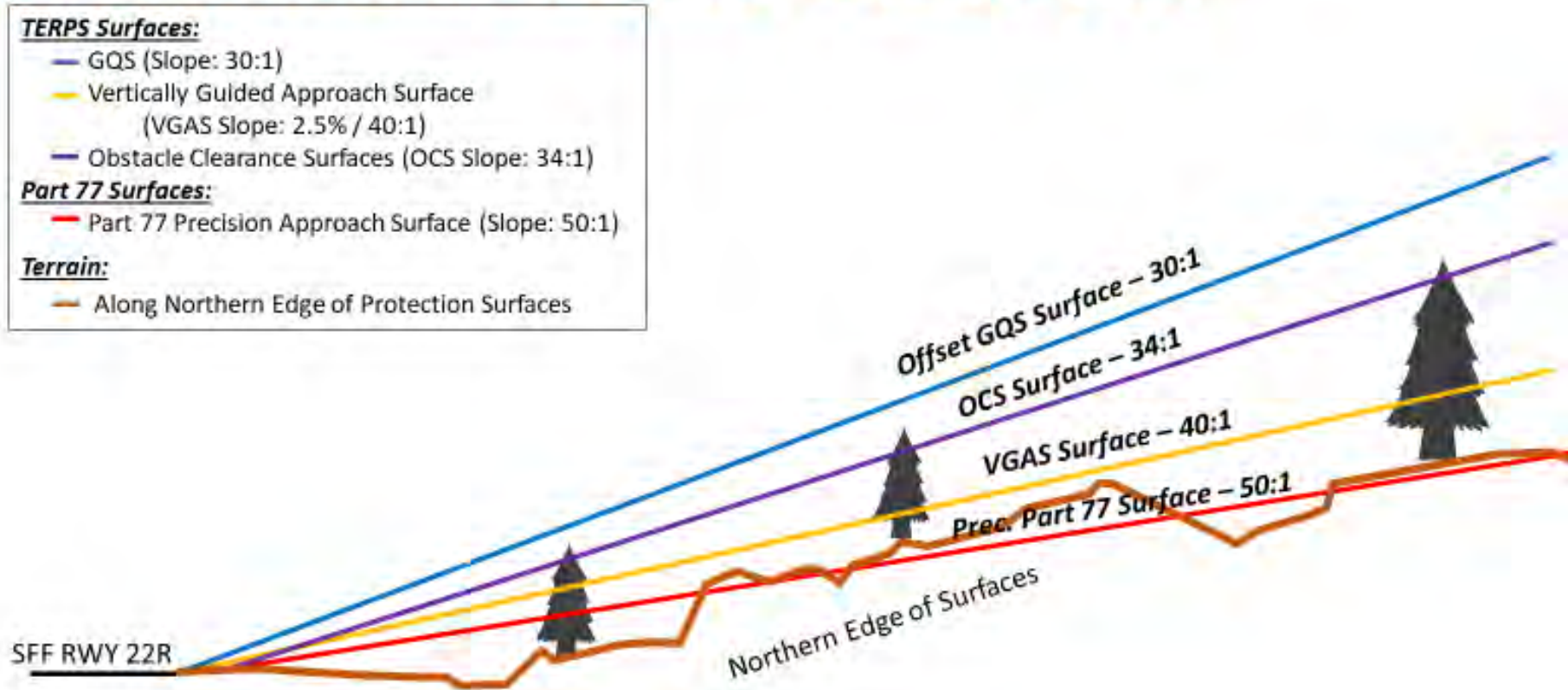
Runway 4L-22R Extension Considerations for 6,100 feet



Beacon Hill

Airfield Alternatives – Accommodating Airspace Constraints

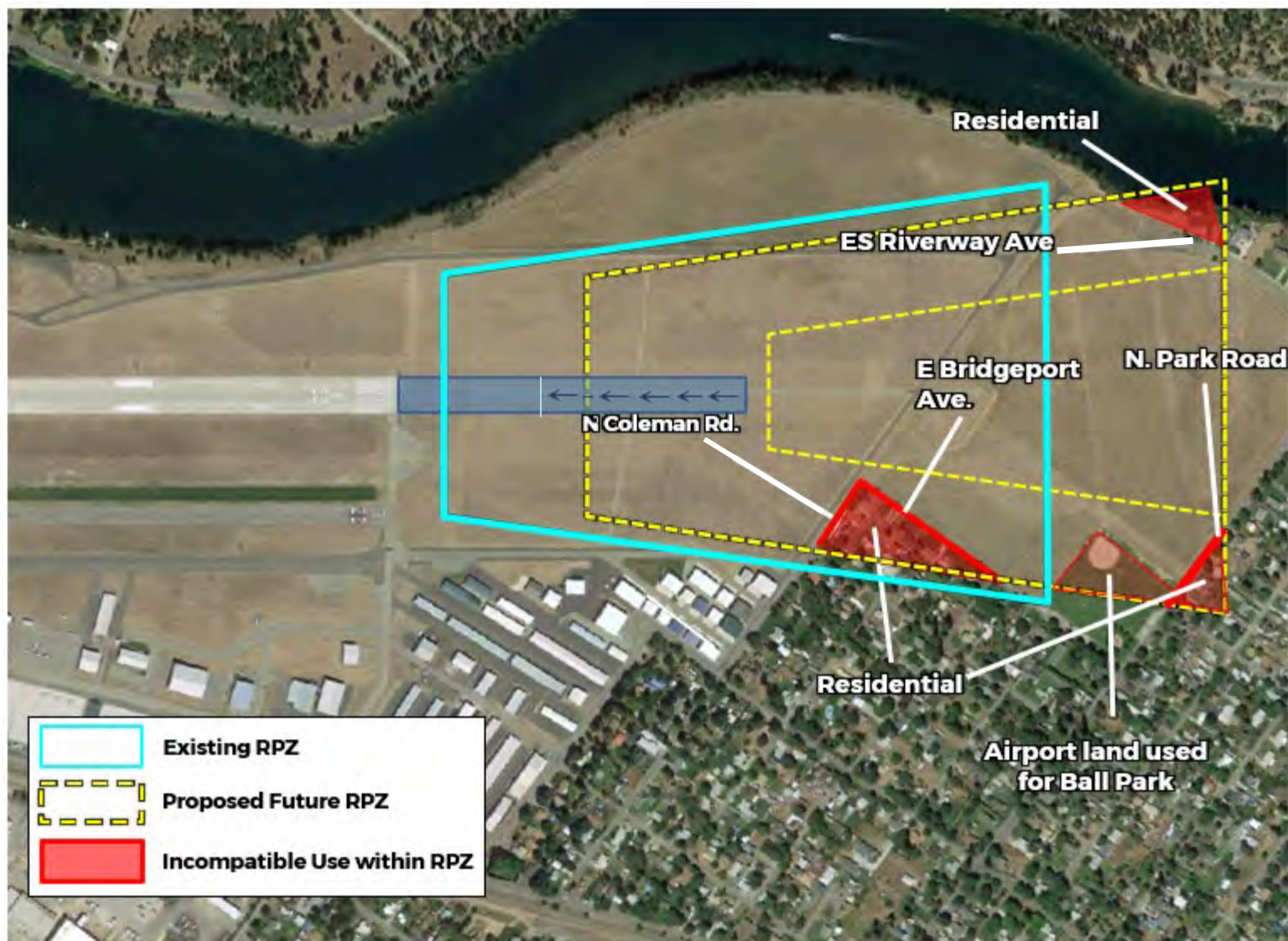
SFF Protection Surfaces – Profile view



Note, Jan. 2020 Discussed terrain issues with FAA NW Flight Procedures. FAA estimated 580 ft. limit for a runway extension to maintain existing ILS approach minimums.

Conclusion: only 580' runway extension possible for arrivals to Rwy 22R

Airfield Alternatives – Addressing Runway 22R RPZs



Conclusion: 1,002' Runway extension limited due to Rwy 22R RPZs

Runway Alternative: 1,000-foot Extension Southwest



Recommended Ultimate Runway 4L-22R Extension

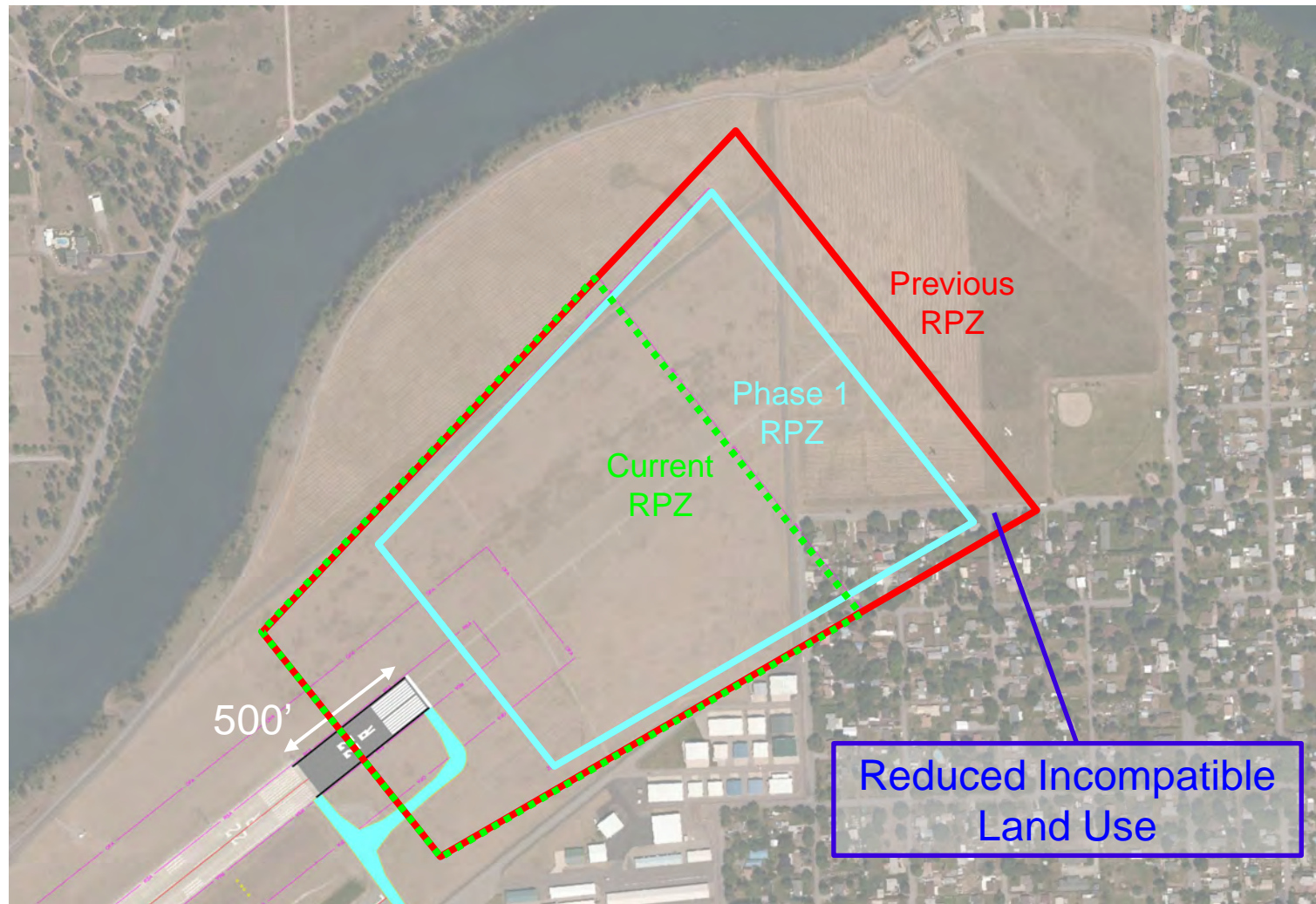


Recommendation: Extend Rwy 22R 1,002' (5,500' total) with 422' Displaced Threshold

Note:

- RW4L existing RPZ has incompatible land uses: 2 homes (HUD), 1 business, 2 public roadways and railroad.
- A future RW4L RPZ could increase in size if improved minimums for <1 mile visibility is obtained, thus not recommended.
- Future Runway 22R RPZ would encompass some homes, ball park and public roads.

Phase 1 Runway 4L-22R Extension



Phase 1 Recommendation: Extend Rwy 22R by 500' (5,000' total)

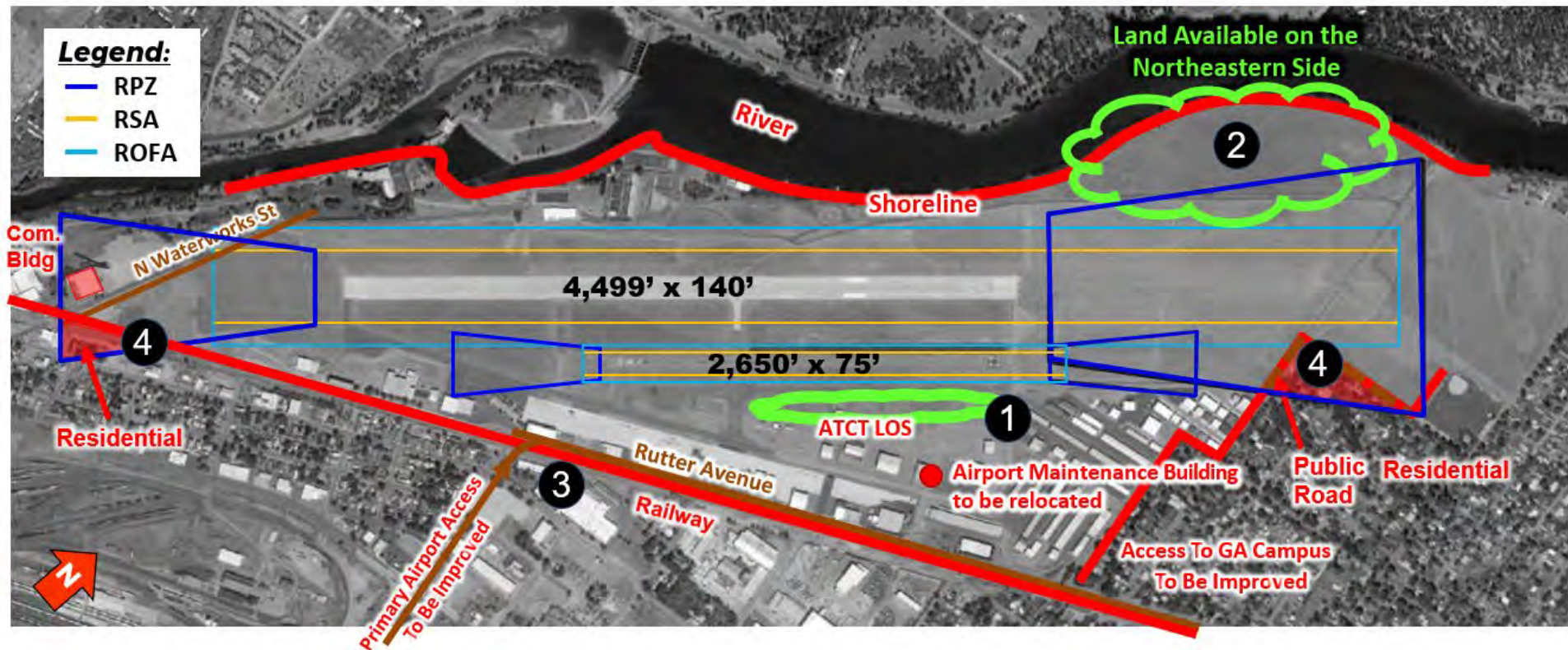
ATCT Constraints on Hangar Development

Due to the lack of available developable land at SFF, two scenarios were developed for the hangar alternatives:

1. Existing ATCT remains at its current location
2. Relocate ATCT



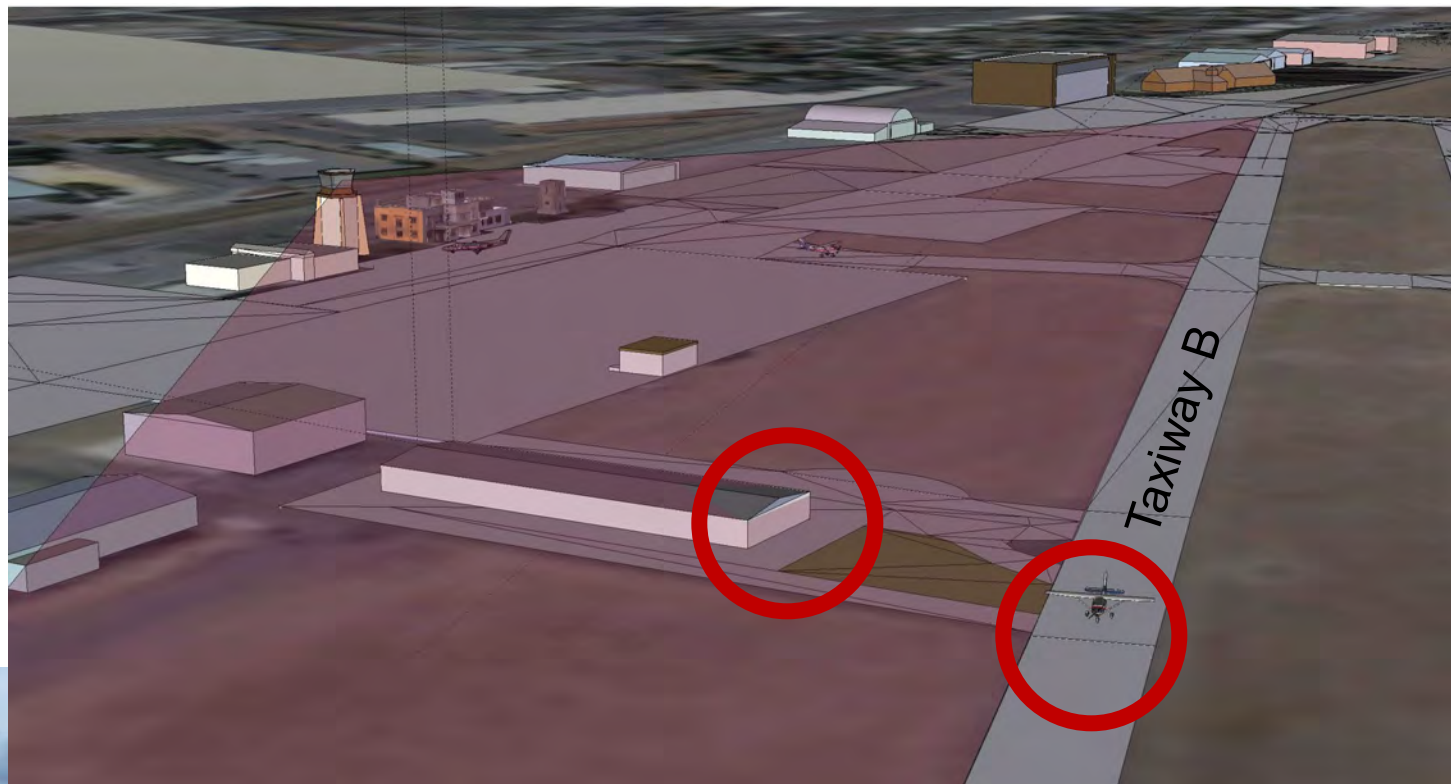
Issues and Challenges at SFF – Existing ATC Tower



1. Limited hangar development area due minimal available space and existing ATC Tower line of sight.

- Tower is over 50 years old (1968)
- Tower is too short (Height: 65ft. AGL)
- Not ADA compliant
- Existing Line-of-Sight issues

SFF Existing ATC Tower Line-of-Sight Issue



SFF ATC Tower Siting Study



Recommended New ATC Tower Location – Site 2

Conclusion:

- Site 2 solves existing Tower LOS issue
- Provides 3 acres for more and taller hangar development

RW End 22R

RW End 22L

Taxilane B

Taxiway B

~3 acres for Hangars

SITE 2

Taxilane A

Taxilane A

Current
LOS Issue

Existing ATCT

Recommended
Tower Location



Aircraft Storage Needs – Accommodating 2037 Hangar Demand

Facility Requirements:

2017-2037 Growth: +32 jet hangars

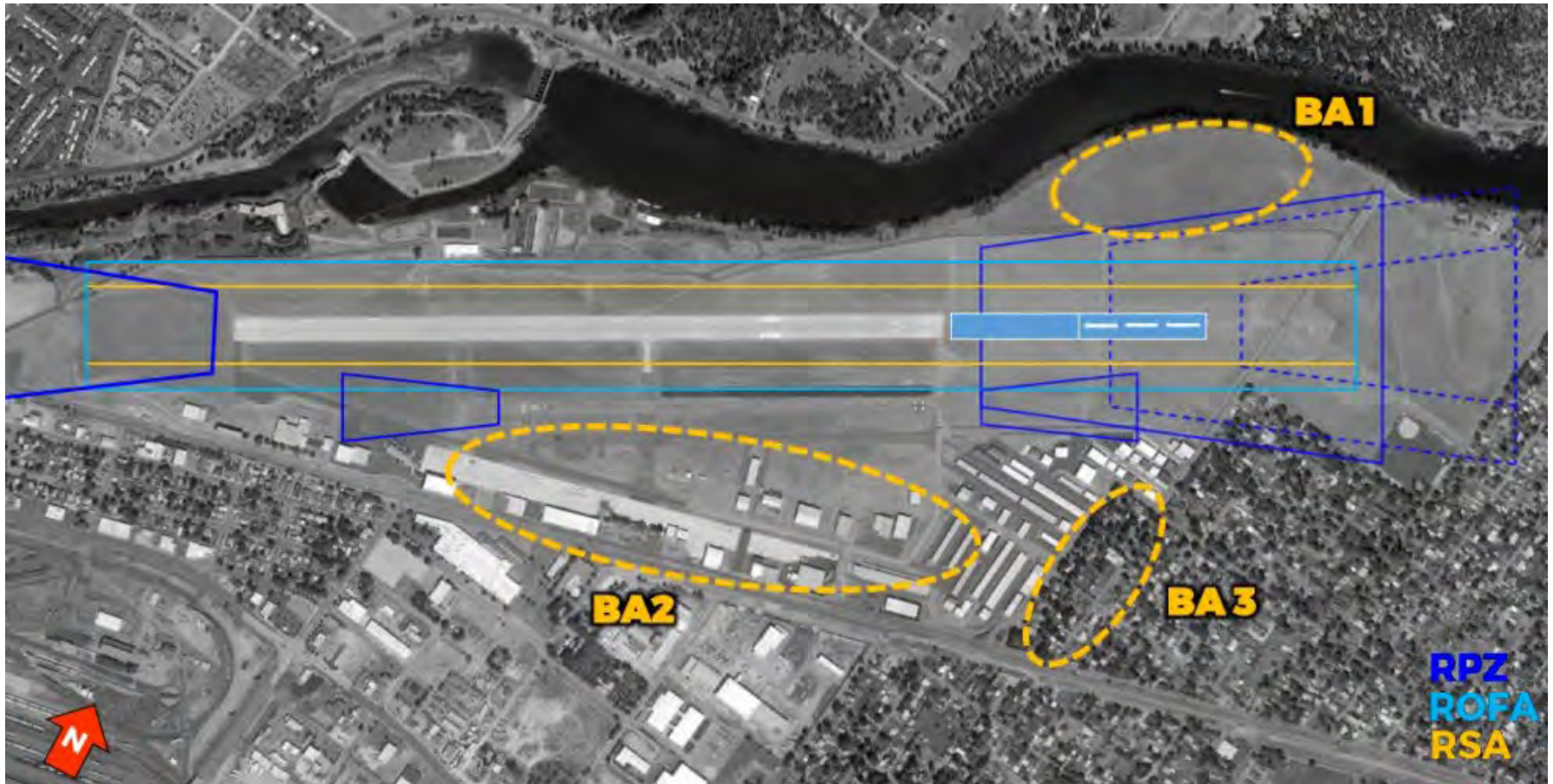
Proposed Hangar Sizes:

- Assumes one aircraft per hangar for the jet fleet mix:
 - 10 large and mid-size aircraft (design aircraft: Bombardier Challenger 600)
 - 22 small aircraft (design aircraft: Cessna Citation II)

Note: 20ft. spacing provided between hangars to meet local codes to avoid fire suppression requirement.

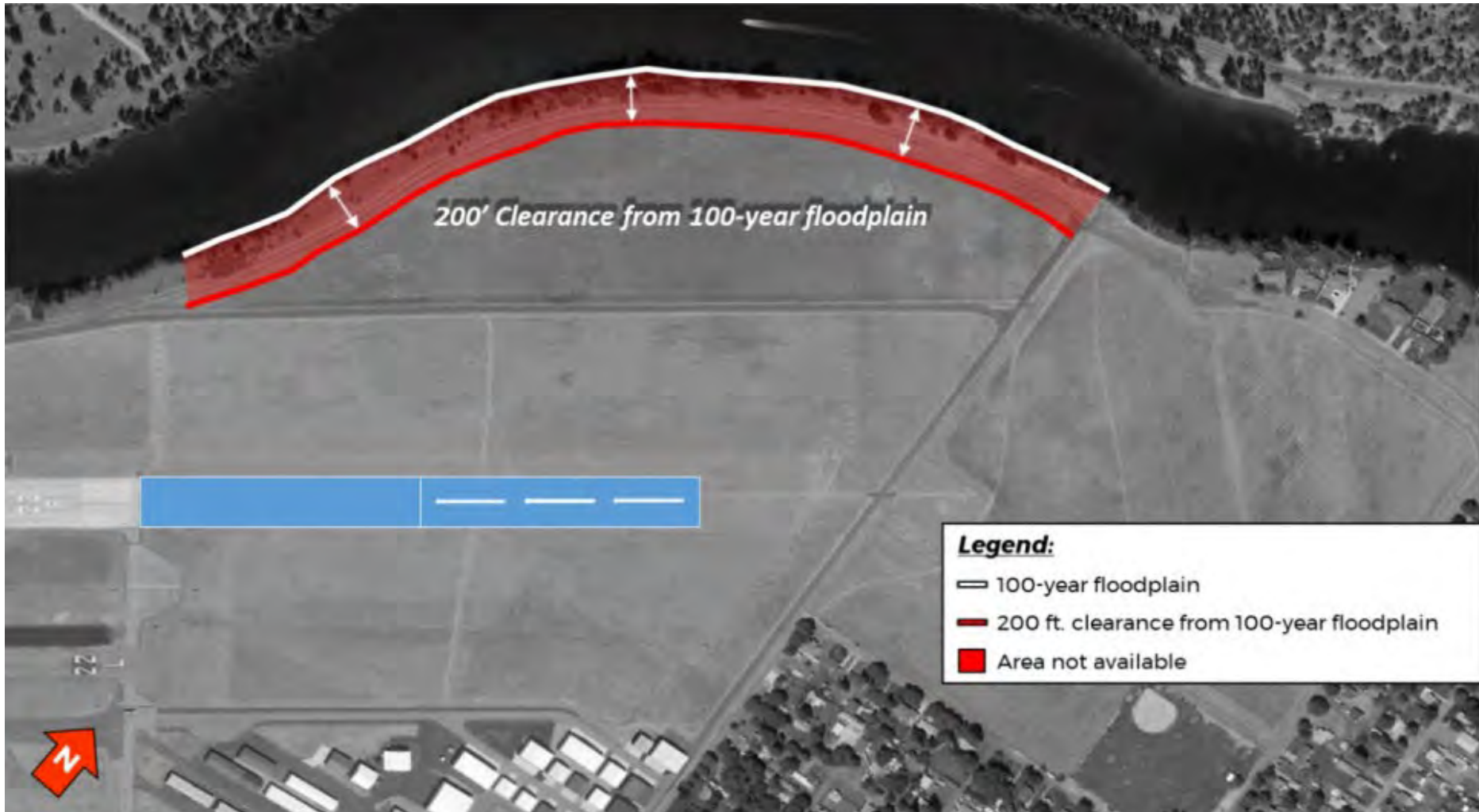


Aircraft Storage Alternatives – Accommodating Hangar Needs



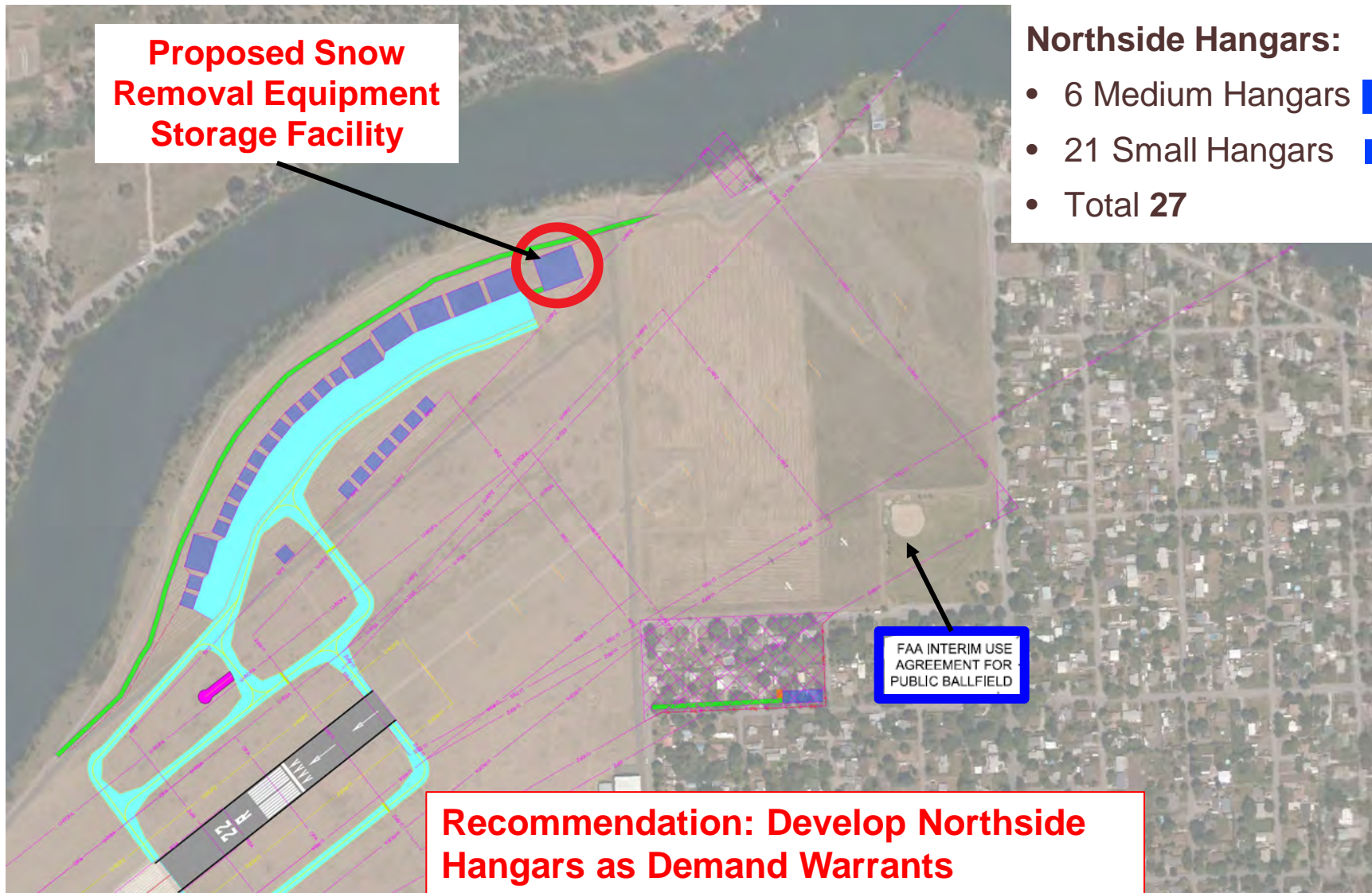
Aircraft Storage Alternatives – North Developable Space

River Shoreline Setback Area 200 ft.



Aircraft Storage & SRE Recommendation – Northside

Meets FAA Design Standards, Part 77 and TERPS

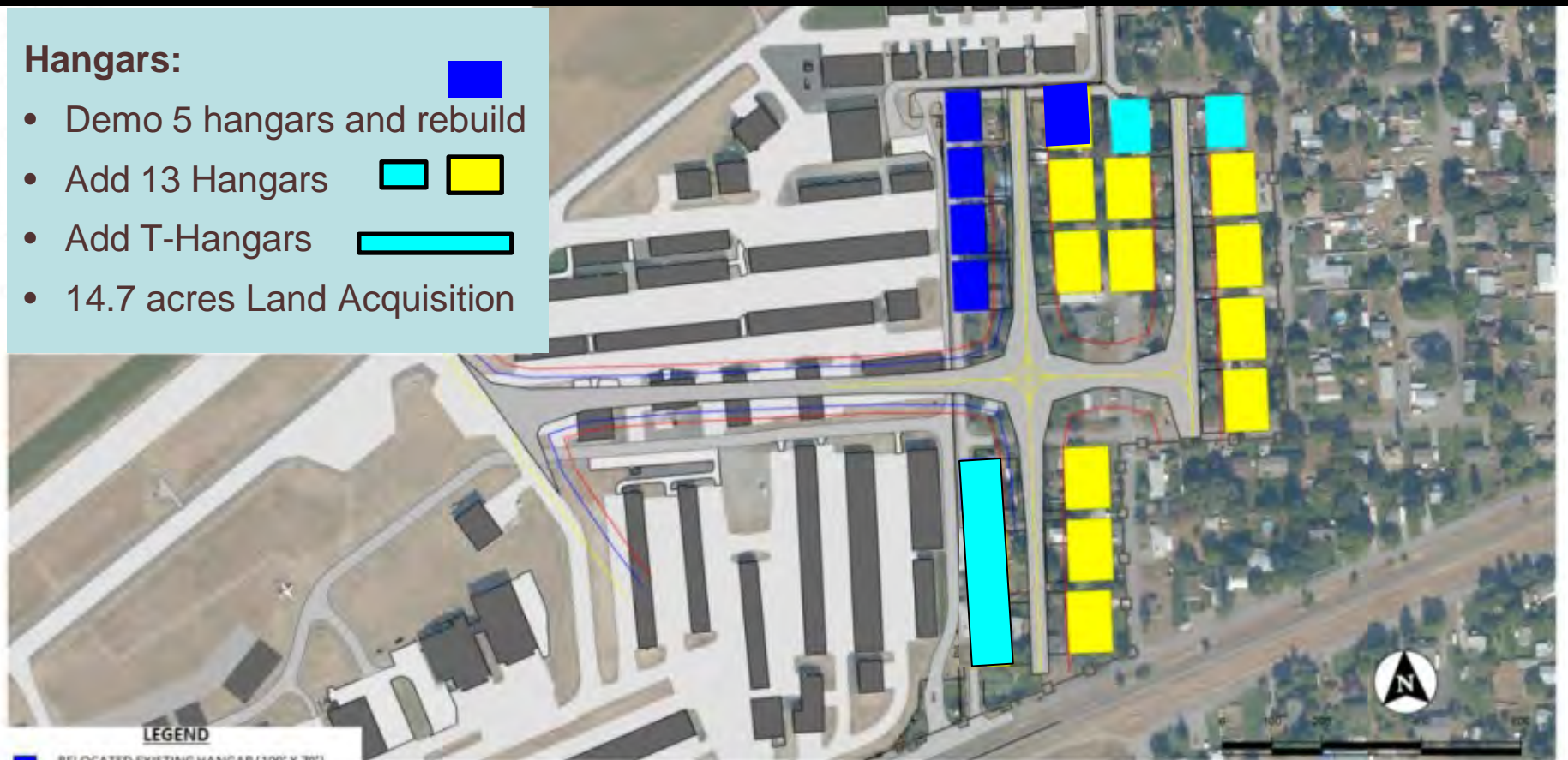


Aircraft Storage Alternatives – Southside

If Existing Tower Remains – Insufficient Space on-Airport to Accommodate Hangar Needs through 2037

Hangars:

- Demo 5 hangars and rebuild
- Add 13 Hangars
- Add T-Hangars
- 14.7 acres Land Acquisition



LEGEND

- RELOCATED EXISTING HANGAR (100' X 70')
- SMALL JET HANGAR (70' X 60')
- MEDIUM JET HANGAR (125' X 90')
- TAXIWAY/ TAXILANE (WIDTH 35')
- TOFA
- NEW FENCE

HANGAR ALTERNATIVE III



WSP USA
999 THIRD AVENUE, SUITE 3200
SEATTLE, WA 98104
PHONE: (206) 362-5200 WWW.WSP.COM



T-O ENGINEERS

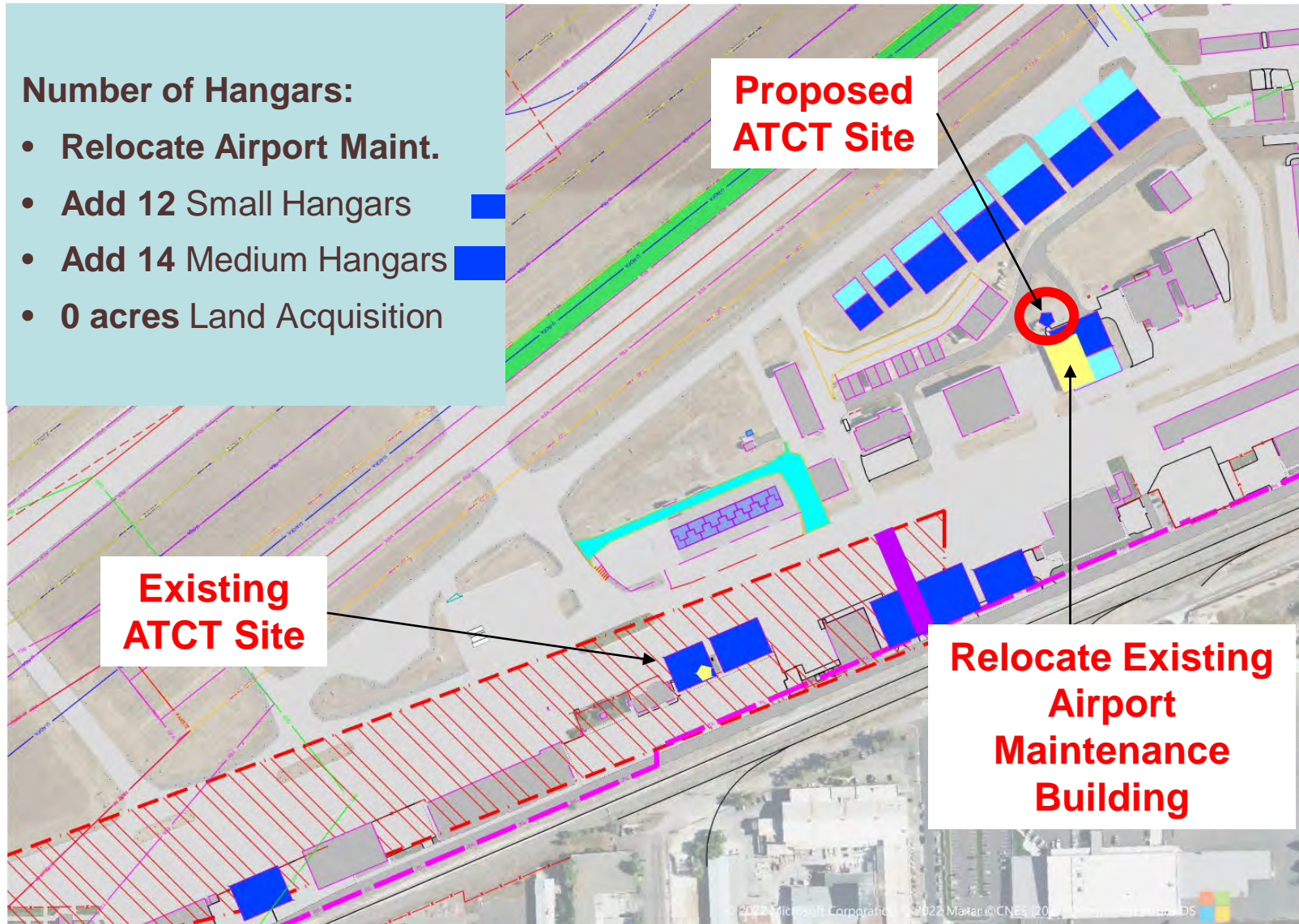
121 W. PACIFIC AVENUE SUITE 200
SPOKANE, WA 99201
PHONE: (509) 319-2580 WWW.TO-ENGINEERS.COM
1745 SP. PROJECT/TRANSPORTATION DATE: 10/11/11 JOB: 10111

Aircraft Storage Alternatives – Southside

Recommendation: Relocate Tower to Meet Hangar Demand and Avoid 14 acres of Land Acquisition

Number of Hangars:

- Relocate Airport Maint.
- Add 12 Small Hangars
- Add 14 Medium Hangars
- 0 acres Land Acquisition



Felts Field Historic District Gateway Study



Felts Field Historic District Gateway Study



Felts Field Historic District Gateway Study



1 | RESTORED CLOCK TOWER



2 | WAYFINDING SIGNAGE ELEMENTS
INTERPRETIVE PYLONS WITH HISTORIC FLIGHT PATH MAPS AND PLAQUES DISPLAYED ON PANELS



3 | FELTS FIELD TERMINAL ROADWAY SIGN

KEY

- 7 | PLAYGROUND SIGN
- 8 | POURED IN PLACE FALL SURFACING
- 9 | GRASSY MOUND (SOUND/VISUAL BUFFER)
- 10 | GRASSY PLAY AREA
- 11 | PEDESTRIAN CORRIDOR WITH ACCENT PAVING
- 12 | RAISED CROSS WALK TO ALLOW FOR ACCESSIBILITY
- 13 | NEW PARKING LOT
- 14 | HISTORIC NEON SIGN
- 15 | CUSTOM FELTS FIELD AIRPORT LIGHTING FIXTURES (TBO)
- 16 | 10' WIDE BIKE/PEDESTRIAN TRAIL (CONTINUATION OF WILLOW TRAIL)
- 17 | VEGETATED ISLANDS ADDING VISUAL INTEREST, MITIGATING HEAT ISLAND AND BUFFERING PEDESTRIANS FROM RUTTER AVE.
- 18 | PARALLEL STREET PARKING
- 19 | EXISTING FLAGPOLE TO BE RELOCATED (LOCATION TBO)

LEGEND

- POWER POLE (EX.)
- COBRA HEAD LIGHTING (EX.)
- FIRE HYDRANT (EX.)
- PEDESTRIAN STREET LIGHT
- PROPERTY PARCELS
- CITY OF SPOKANE LIMITS



11 | ACCENT PAVING OPTIONS



15 | CUSTOM LIGHTING FIXTURE OPTIONS

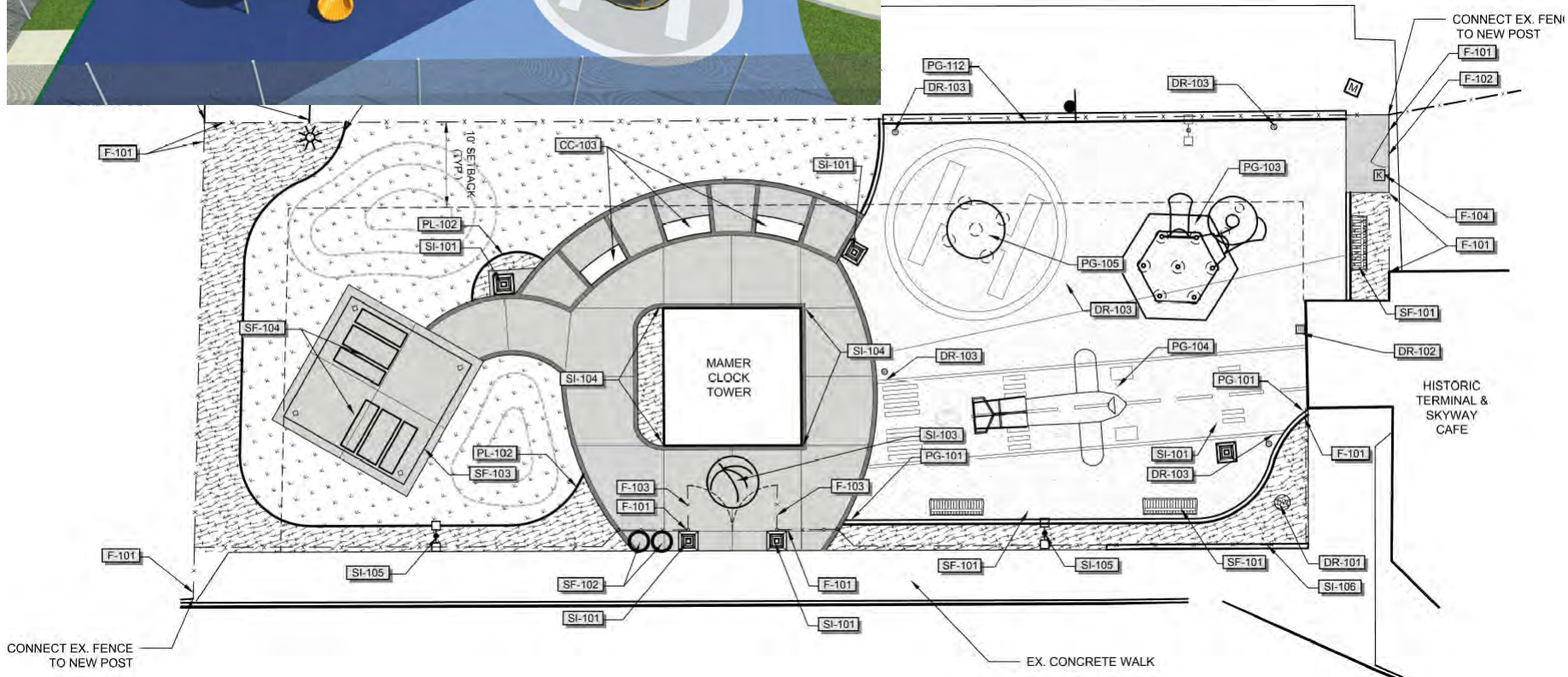
ENVISIONING POWDER-COATED POLE TO MATCH ENTRY GATEWAY MONUMENT OVERHEAD ARCH. LIGHTS WOULD BE SUSPENDED ON STURDY



AIRPORT TERMINAL STUDY AREA

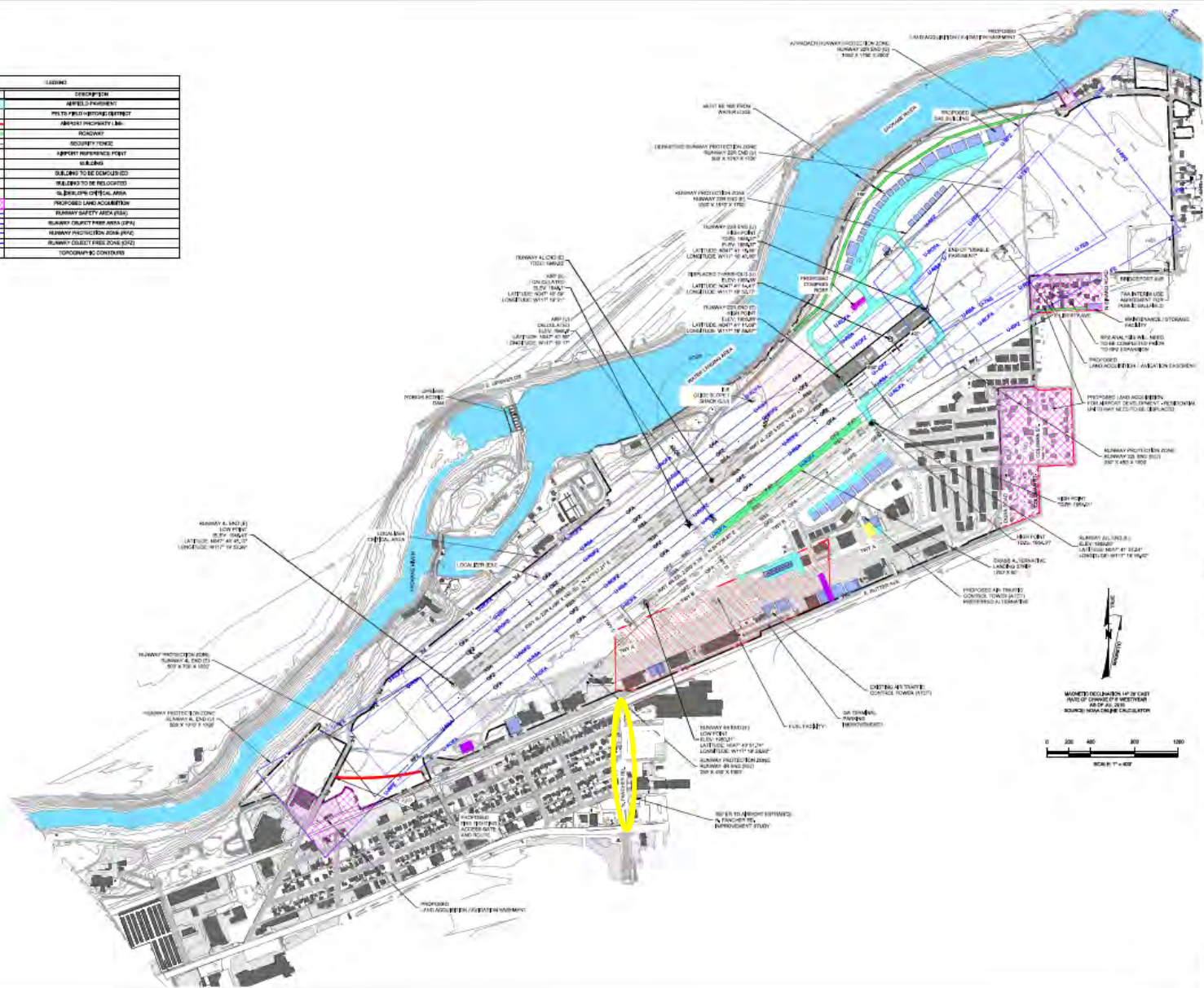


Felts Field Historic District Gateway Improvements



SFF DRAFT Airport Layout Plan

SYMBOL	DESCRIPTION
	REVISED PERMITS
	PROPERTY LINE
	ROADWAY
	SECURITY FENCE
	AIRPORT REFERENCE POINT
	BUILDING TO BE DEMOLISHED
	BUILDING TO BE RELOCATED
	PROPOSED LINE ACQUISITION
	RUNWAY SAFETY AREA (RSA)
	RUNWAY OBSTACLE FREE AREA (OFA)
	RUNWAY PROTECTION ZONE (RPZ)
	RUNWAY COAST FREE ZONE (CFZ)
	TOPOGRAPHIC CONTOURS



DRAFT

NO.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
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9		
10		

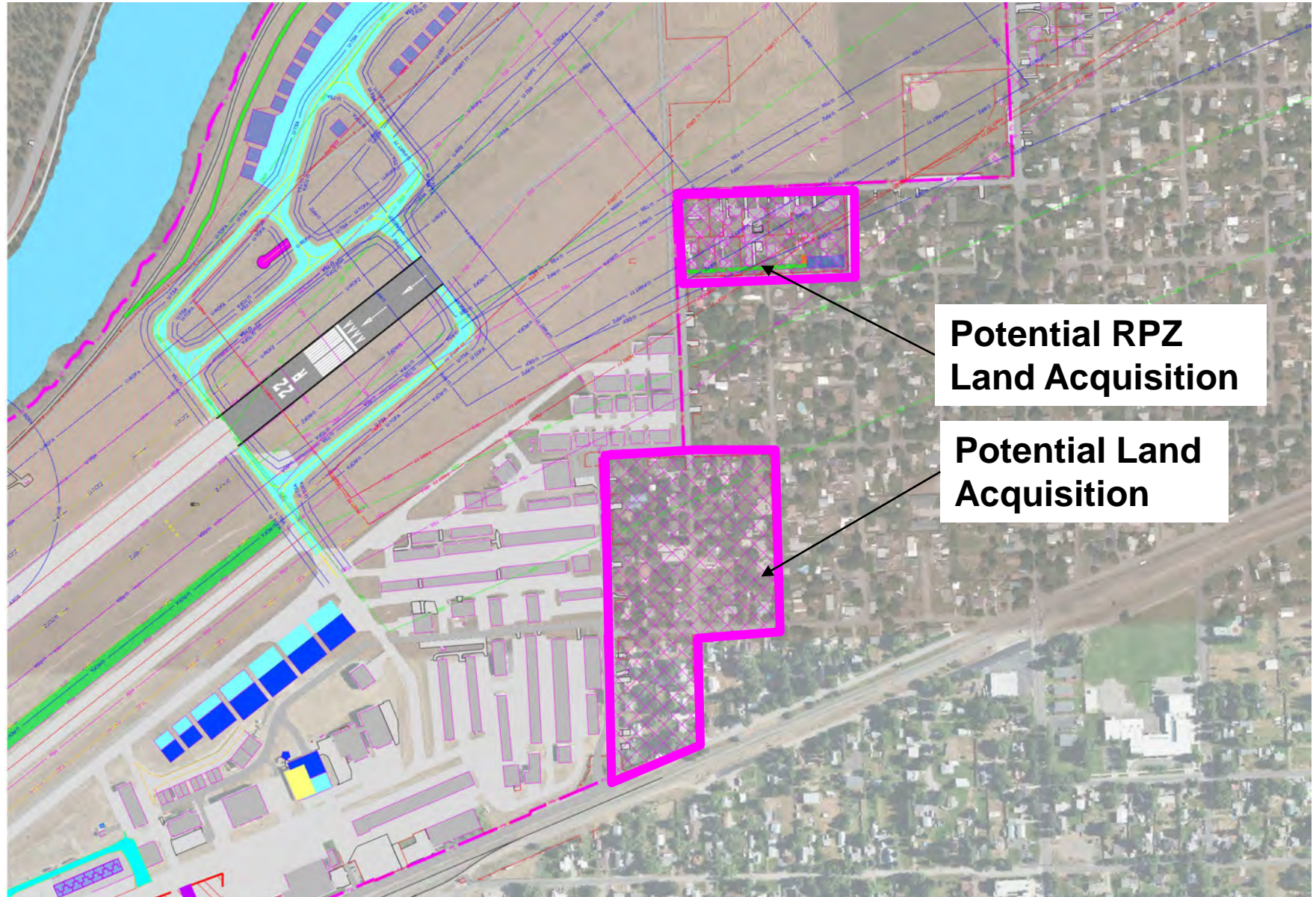
WSP ENGINEERS
CONSULTING ENGINEERS SURVEYORS PLANNERS
101 N. PULASKI AVENUE, SUITE 200
SPOKANE, WA 99201
PHONE: (509) 325-1000 FAX: (509) 325-1001
WWW.WSPENGINEERS.COM
PROJECT: SFF AIRPORT LAYOUT PLAN SET
SHEET: 02 OF 27

wsp
WSP USA
101 N. PULASKI AVENUE, SUITE 200
SPOKANE, WA 99201
PHONE: (509) 325-1000 FAX: (509) 325-1001
WWW.WSPENGINEERS.COM

FELTS FIELD
SPOKANE, WASHINGTON
AIRPORT LAYOUT PLAN SET
SIMPLIFIED ALP SHEET

DATE: 11/18/2021
PROJECT: SFF AIRPORT LAYOUT PLAN SET
SHEET: 02 OF 27

Potential Long-term Land Acquisition (Voluntary)

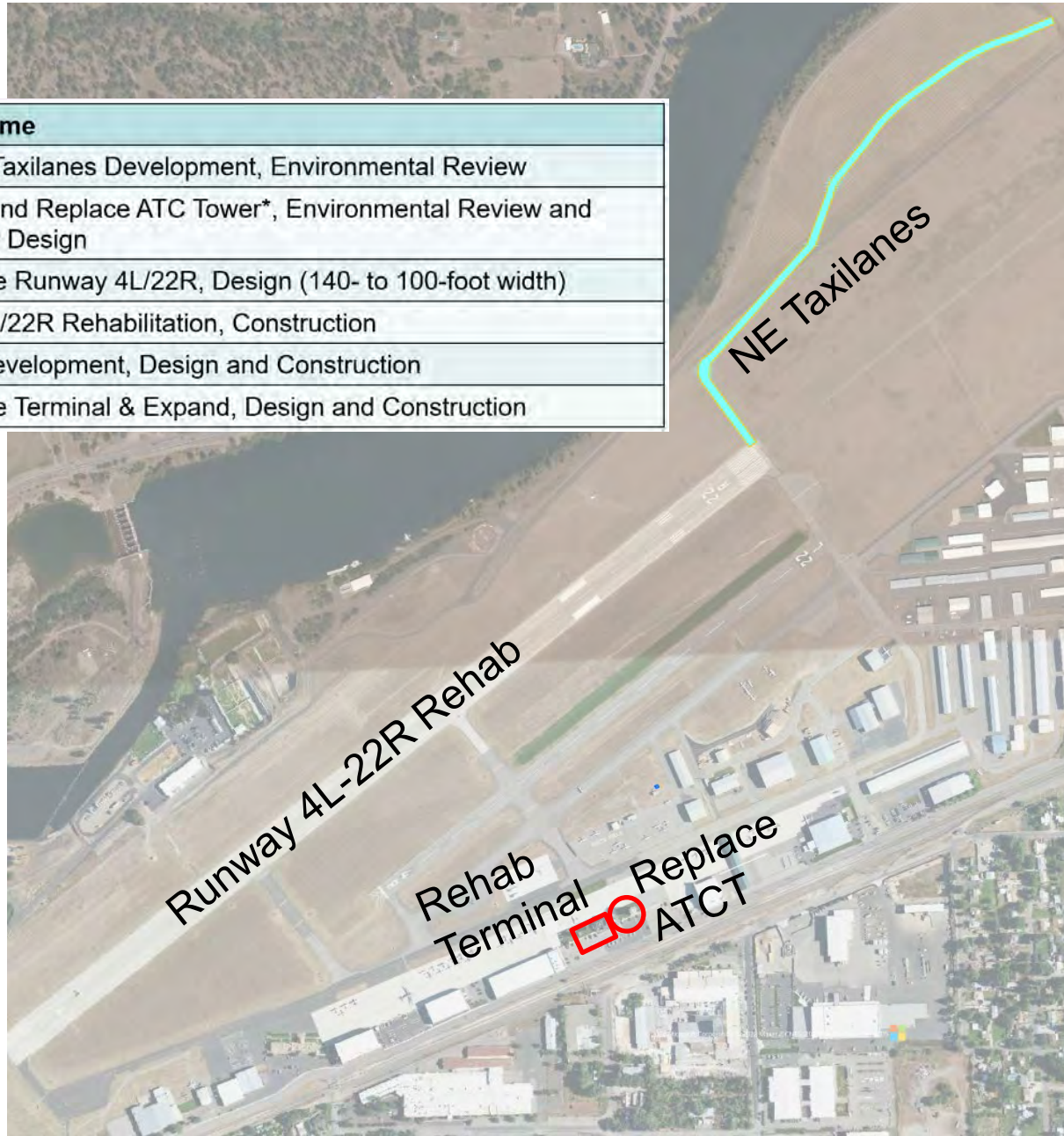


**Potential RPZ
Land Acquisition**

**Potential Land
Acquisition**

Next Step: Proposed Near-term Projects

Year	Project Name
2022	Northeast Taxilanes Development, Environmental Review
2022	Demolish and Replace ATC Tower*, Environmental Review and Preliminary Design
2023	Rehabilitate Runway 4L/22R, Design (140- to 100-foot width)
2024-25	Runway 4L/22R Rehabilitation, Construction
2026-27	Taxilane Development, Design and Construction
2027	Rehabilitate Terminal & Expand, Design and Construction



Q&A?

