About the Alternatives Evaluation Process

The San Antonio Airport System started a Strategic Development Plan (SDP) in 2018 to examine whether the existing San Antonio International Airport (SAT) site could accommodate expected long-term growth and expansion needs. The first phase of the data-driven study determined that the 50-year airport could be made to fit at the current location.

As part of Phase II of the study, potential policy and development alternatives were developed for SAT. These alternatives are now being evaluated to produce (by the end of 2020) a preferred airport development plan for the airfield, terminal, and airport multimodal access. This document represents the results of Rounds 3A and 3B of the alternatives evaluation, as of February 2020.

Alternatives Evaluation Process Highlights

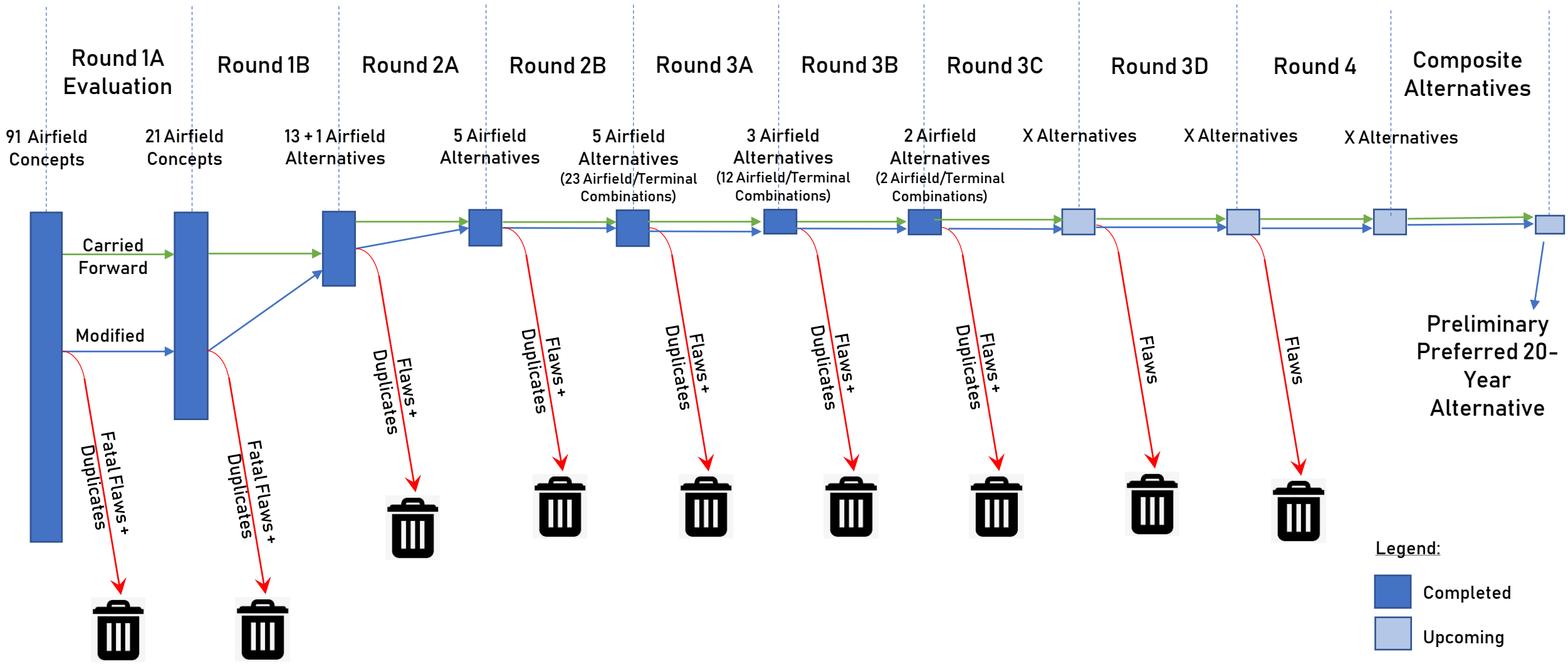
The goal of the Strategic Development Plan (SDP) Sketch Planning process was to get all ideas about development of SAT on the table. Six technical sketch planning sessions took place, which included 107 participants who identified a total of 91 initial airfield concepts.

The SDP technical team screened the 91 concepts to identify technically feasible alternatives that will undergo further evaluation. This two-step screening (Round 1) resulted in 13 airfield alternatives that moved ahead for further evaluation (Round 2), using objective and technical criteria. In Round 2, a 14th airfield alternative was identified and added for evaluation. After the Round 2 evaluation process was completed, 5 airfield alternatives remained, resulting in 23 airfield/terminal combinations. In Round 3, 12 airfield/terminal combinations remained after Round 3A, then 10 combinations were eliminated, so 2 airfield/terminal combinations remain at the end of Round 3B. Round 3 will also include additional evaluation as part of Rounds 3C and 3D, and be followed by Round 4.

Preliminary preferred 20-year alternative. The final evaluation results will be the basis for preparing the Preferred Development Plan, illustrating SAT's proposed projects for the 20-year planning period, and a potential 50-year concept. The plan will depict proposed airfield, terminal, access, support, and tenant facilities, and include high-level phasing for the 6, 10, and 20-year planning periods.

The proposed projects that will eventually be recommended can proceed only if the need actually materializes. All eventual SDP proposed projects will be subject to further financial and environmental approvals.

Concept Evaluation Considering all ideas



Summary of Rounds 3A and 3B Findings

Round 3A Steps:

- Refine remaining 5 airfield alternatives
  - Shorten or close Runway 4-22
  - Rename refined alternatives:
    - Eg: “A14” becomes “AF14”
- Evaluate refined airfield/terminal combinations:
  - Special purpose environmental laws:
    - 20-year horizon
    - Applied to airfield, then terminal. In NEPA, if impact to the following resources is **avoidable**, **it MUST be avoided**:
      - Wetlands
      - Section 4(f): public park, recreation area, wildlife and waterfowl refuge, historic site
      - Floodplains
    - Moved some terminal concepts to mitigate flaws
  - 20-year implementability:
    - Eliminated concepts when not able, in the 20-year planning period, to:
      - acquire all needed land without using eminent domain and
      - build new terminal complex on that land
    - Eliminated terminal concepts that required closure of Runway 4-22 in the short term

Alternatives Eliminated in Round 3A, due to:

Note: some alternatives were eliminated for more than one reason.

- Special purpose environmental laws *[2 airfield alternatives eliminated]*
- 20-year implementability *[3 terminal alternatives eliminated]*

➢3 airfield alternatives remain, thus12 airfield/terminal combinations remain

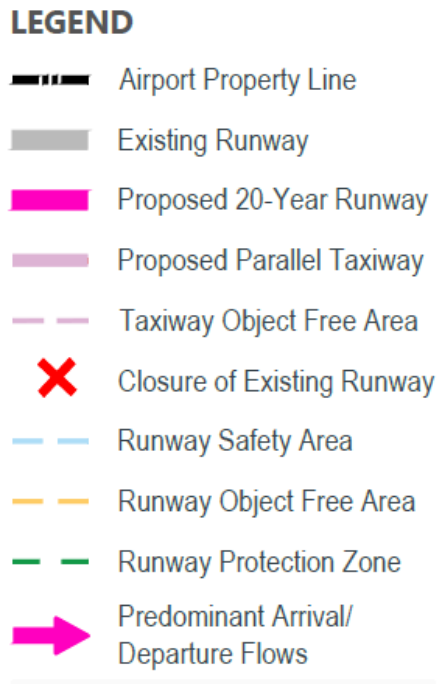
About the Following Figures

The following figures represent the airfield/terminal combinations that survived the Round 3A evaluation.

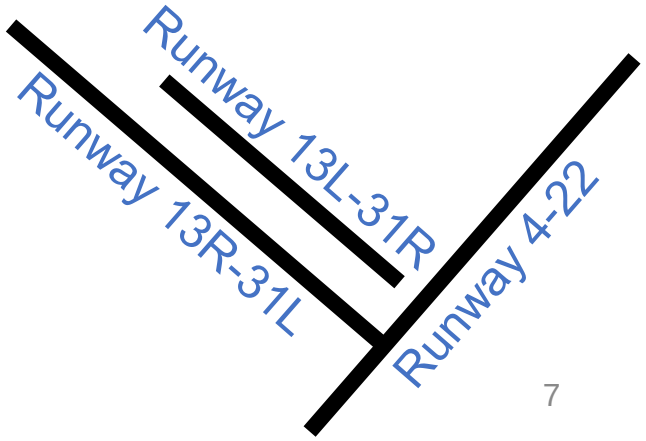
Although potential 50-year runways are depicted (dashed magenta lines), evaluation criteria only apply to 20-year runways (continuous magenta lines).

The footprints of the proposed terminal concepts are depicted in continuous lines (20-year development) and dashed lines (50-year development).

Legend for the Figures:



SAT Runway Layout:



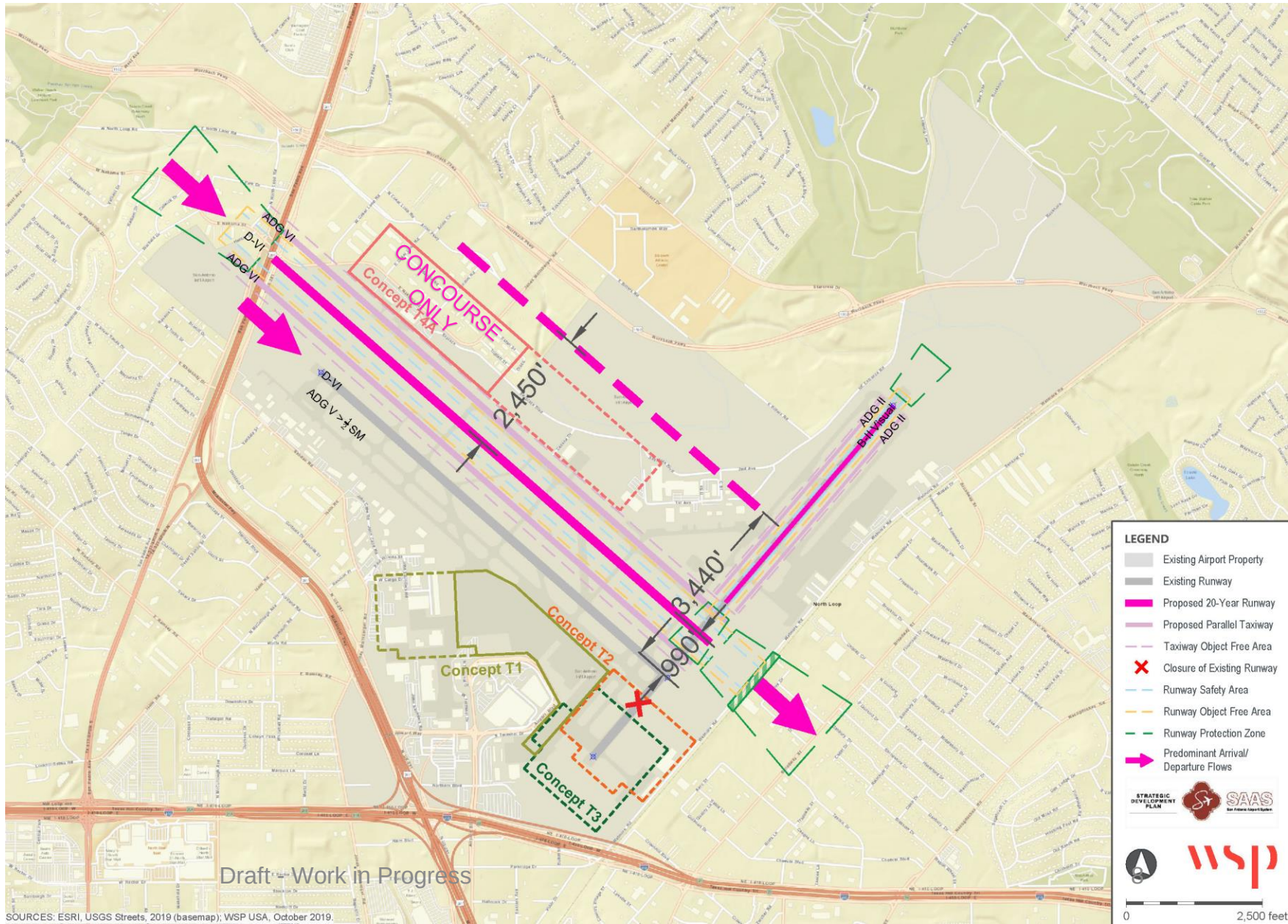
Remaining Airfield AF2/Terminal Combinations after Round 3A

Remaining Airfield-Terminal Combinations moving to Round 3B:

- AF2-T1
- AF2-T2
- AF2-T3
- AF2-T4A

Notes on Terminal Concept Footprints:

- Continuous line = 20-year footprint
- Dashed line = 50-year footprint
- T2 and T3 20-year footprint is the same as T1



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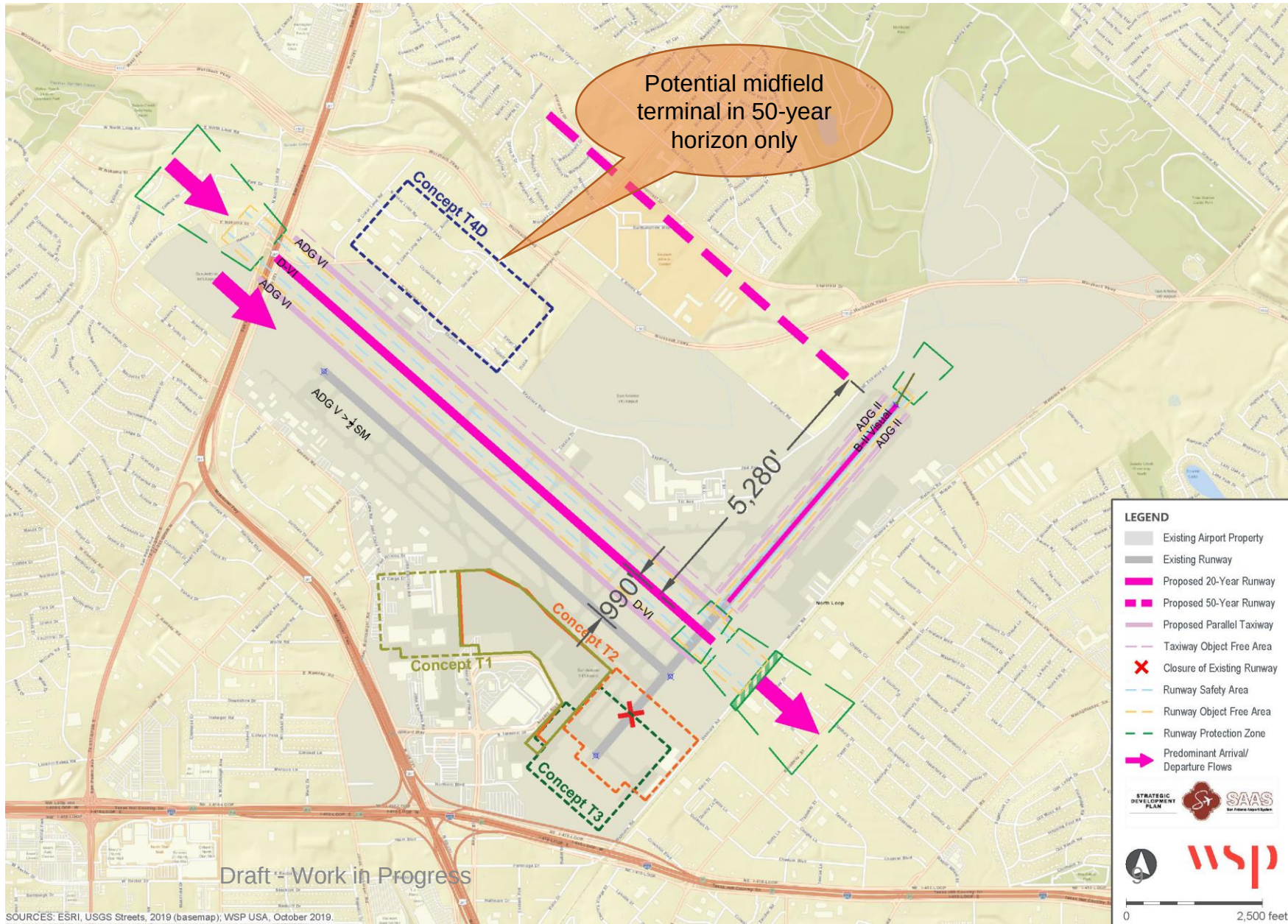
Remaining Airfield AF6/Terminal Combinations After Round 3A

Remaining Airfield-Terminal Combinations moving to Round 3B:

- AF6-T1
- AF6-T2
- AF6-T3
- AF6-T4D

Notes on Terminal Concept Footprints:

- Continuous line = 20-year footprint
- Dashed line = 50-year footprint
- T2 and T3 20-year footprint is the same as T1



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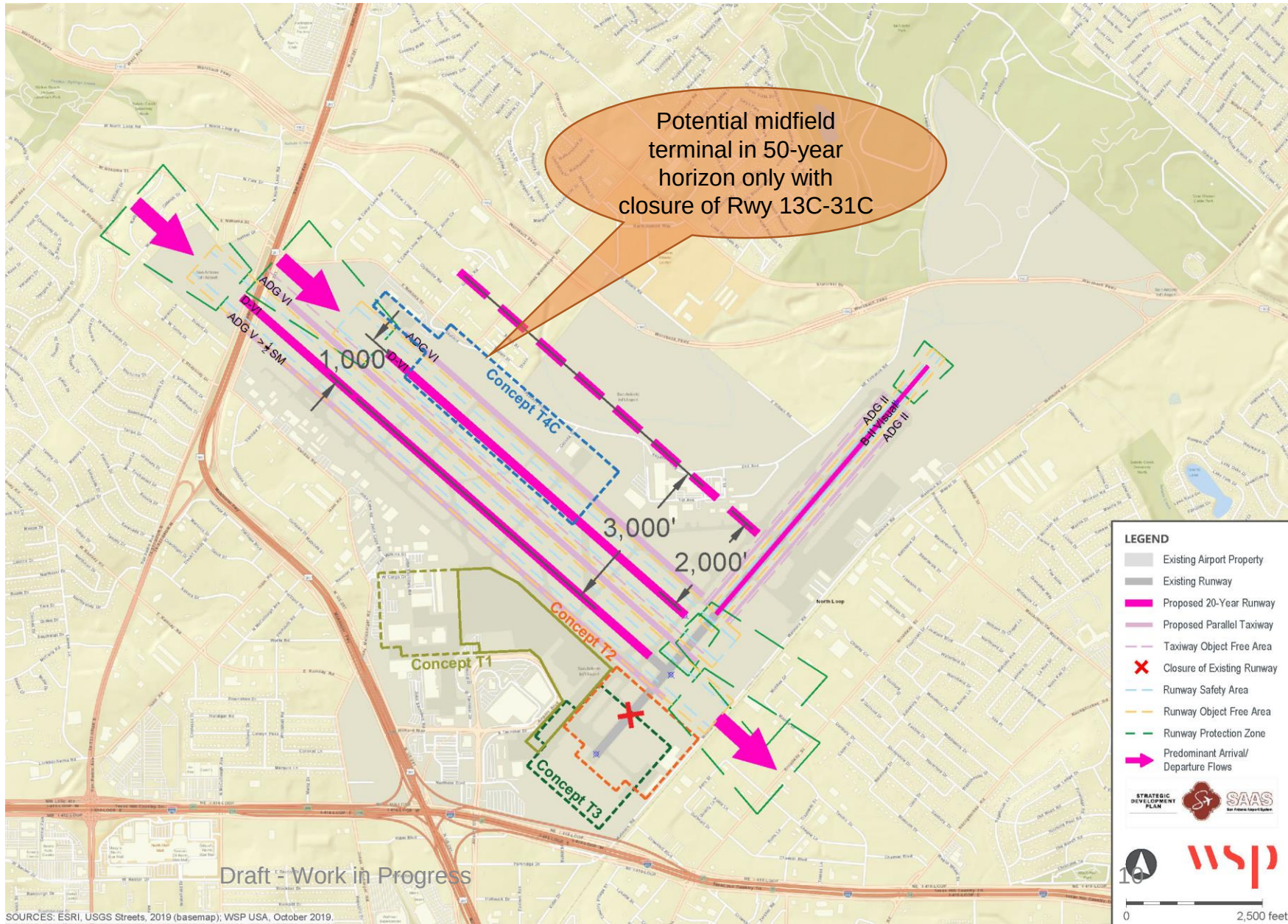
Remaining Airfield AF14/Terminal Combinations After Round 3A

Remaining Airfield-Terminal Combinations moving to Round 3B:

- AF14-T1
- AF14-T2
- AF14-T3
- AF14-T4C

Notes on Terminal Concept Footprints:

- Continuous line = 20-year footprint
- Dashed line = 50-year footprint
- T2 and T3 20-year footprint is the same as T1



Round 3B Steps:

- Refined terminal concepts:
  - 3 airfields, 4 terminal concepts each = 12 combinations
  - Add building outlines, apron layout, aircraft, taxilanes
- Evaluated airfield/terminal combinations for:
  - Aircraft tail airspace surface penetrations
  - World-class terminal (space, passenger comfort)
  - Terminal operational efficiency (walking distances, level changes, train connections)

Airfield/Terminal Combinations Eliminated in Round 3B, due to:

Note: some combinations were eliminated for more than one reason.

- Low passenger convenience *[1 combination eliminated – AF2-T4A]*
- Not implementable within 20 years *[2 combinations eliminated – AF6-T4D & AF14-T4C]*
- Impacts to Runway 4-22 within 20 years *[3 combinations eliminated – all T3 combinations]*
- Duplicate airfield layout within 20 years *[4 combinations eliminated – all AF6 combinations]*
- Duplicate terminal layout within 20 years *[3 combinations eliminated – all T2 combinations]*

➢2 airfield/terminal combinations remain: AF2-T1 & AF14-T1

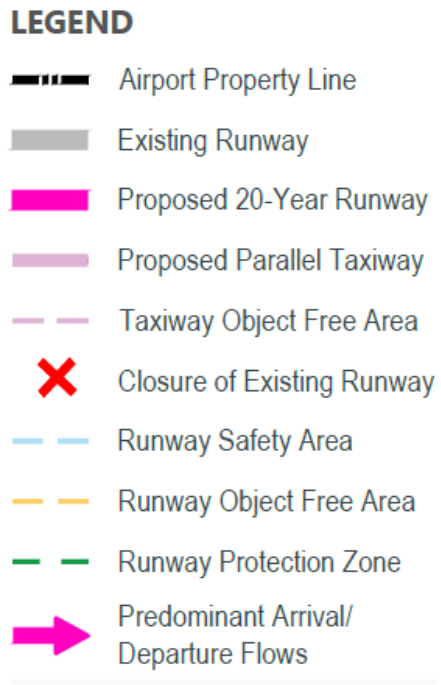
About the Following Figures

The following figures represent the airfield/terminal combinations evaluated in Round 3B.

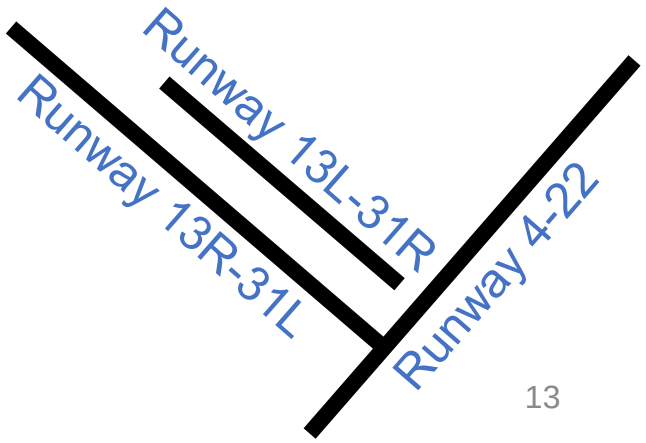
Although potential 50-year runways are depicted (dashed magenta lines), evaluation criteria only apply to 20-year runways (continuous magenta lines).

The footprints of the proposed terminal concepts are depicted in continuous lines (20-year development) and dashed lines (50-year development).

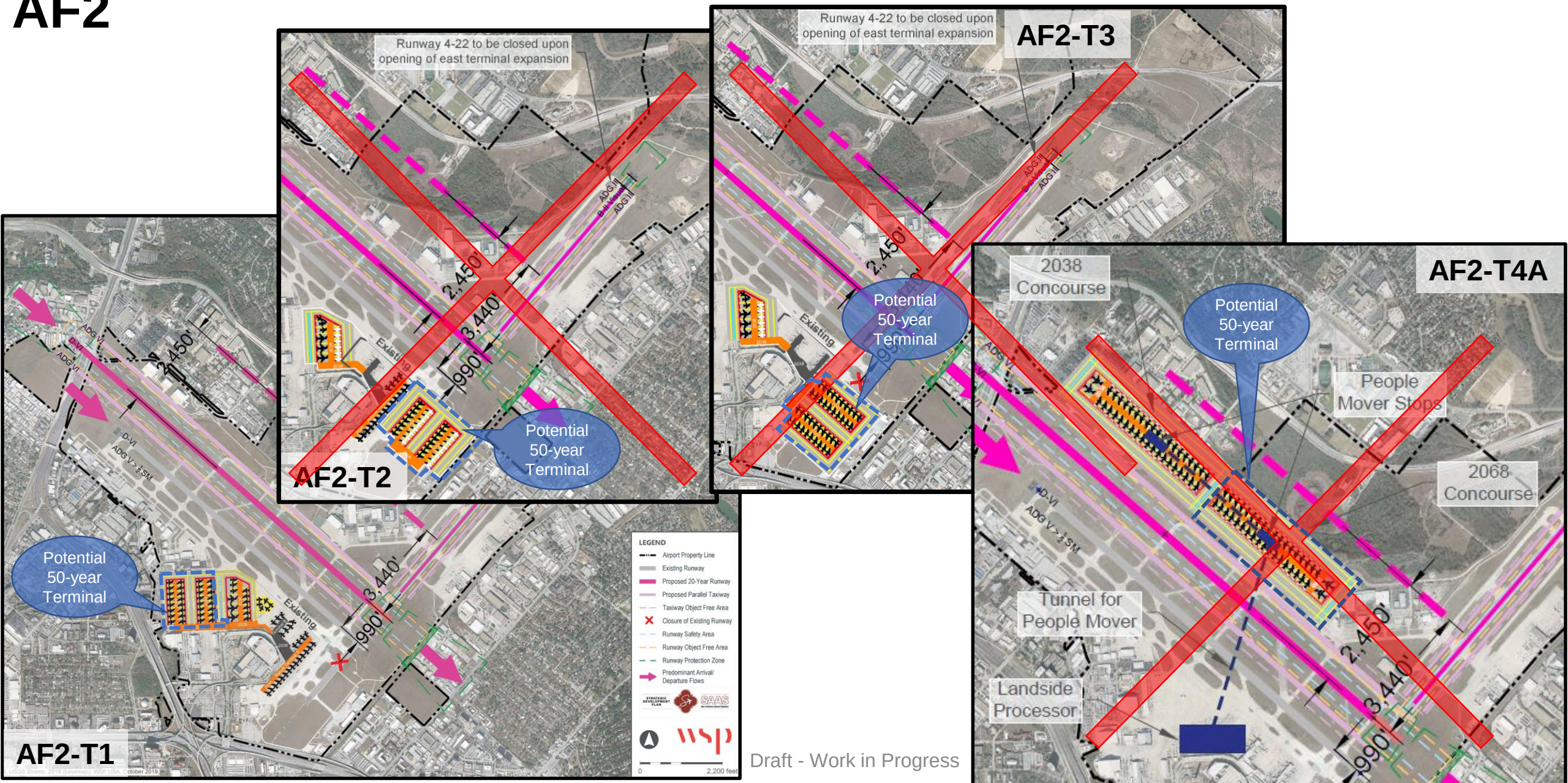
Legend for the Figures:



SAT Runway Layout:



Refined Airfield/Terminal Combinations (Round 3B)
AF2



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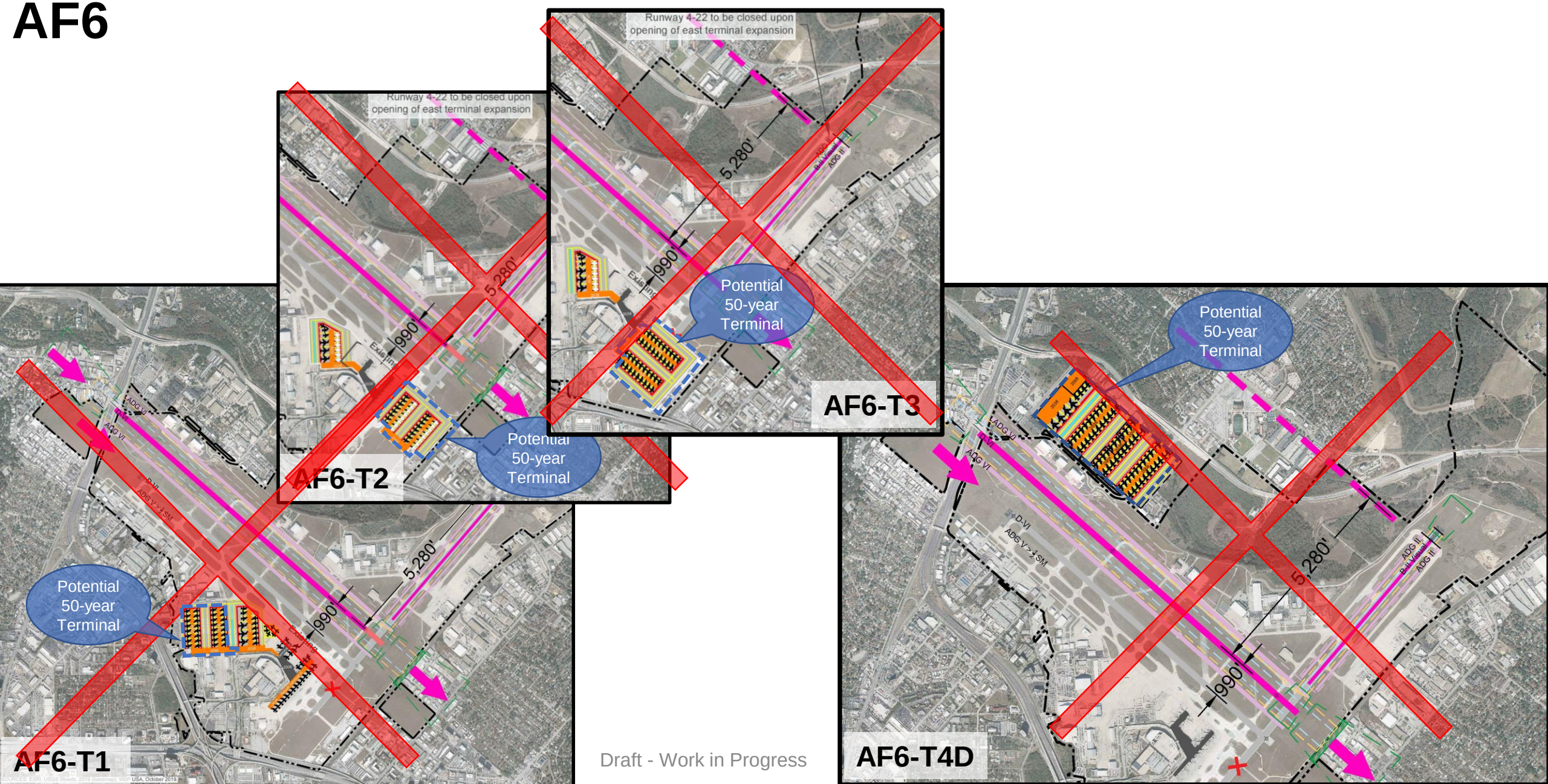
Refined Airfield/Terminal Combinations (Round 3B)
AF6



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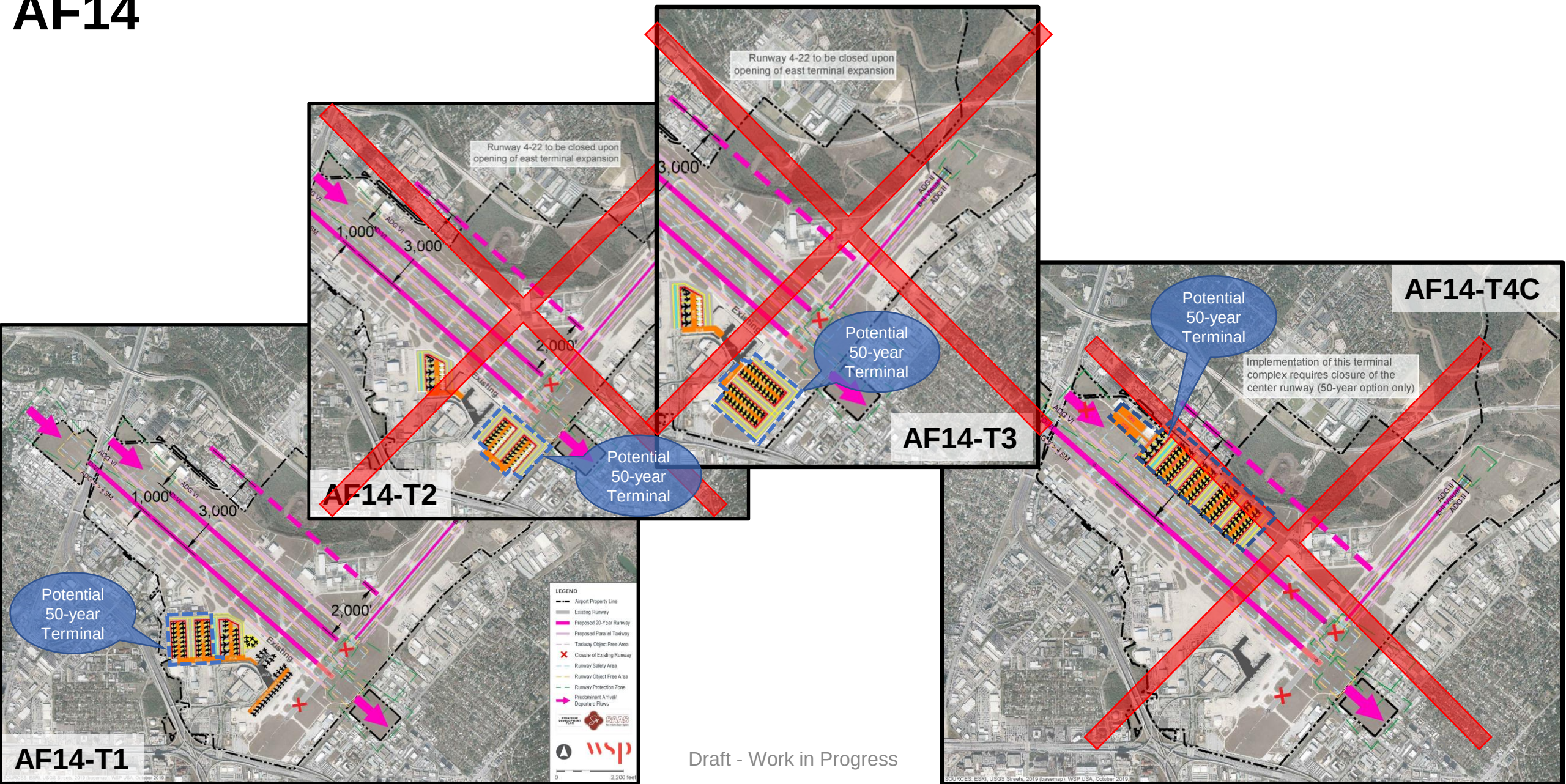
Refined Airfield/Terminal Combinations (Round 3B)
AF14



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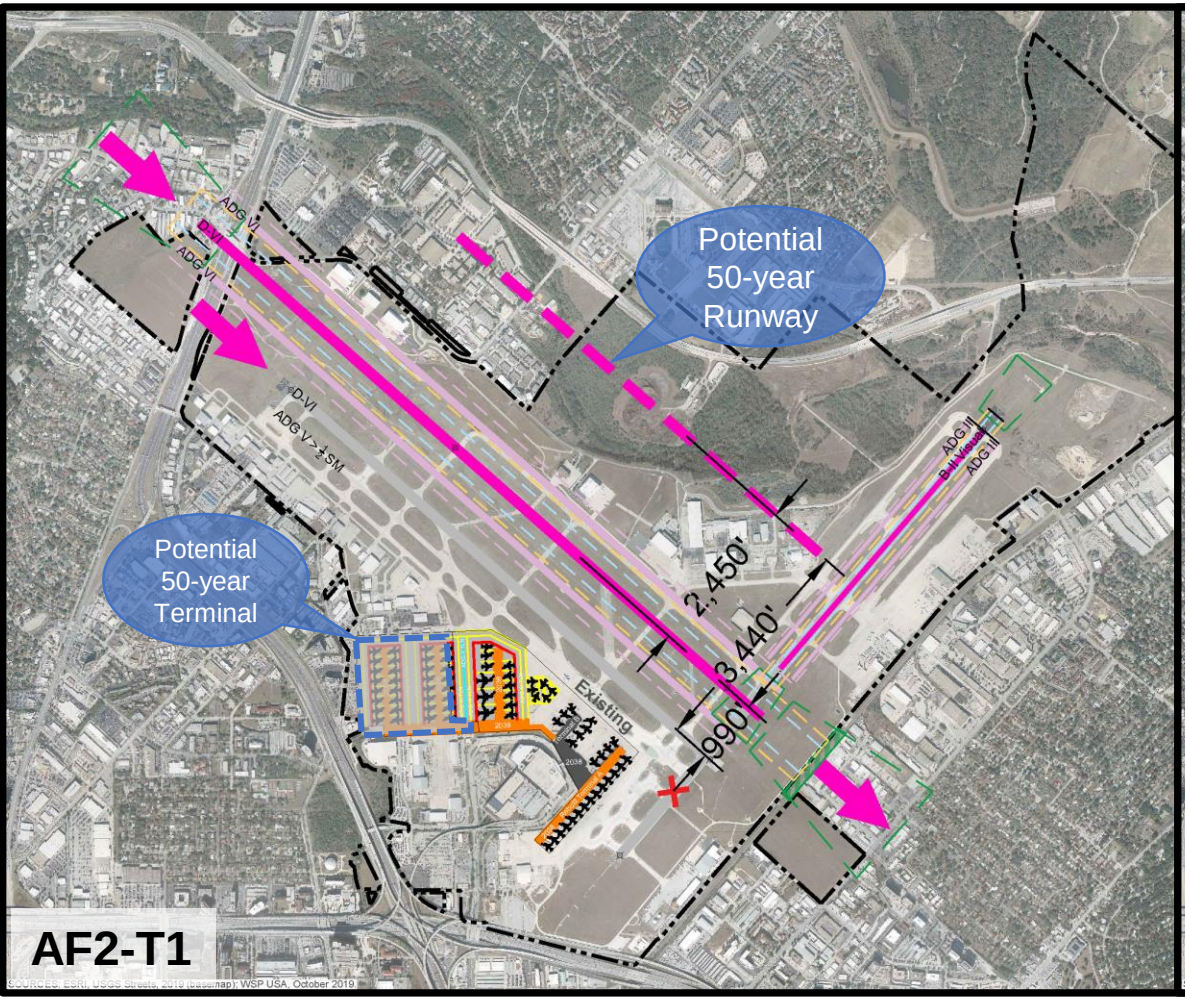
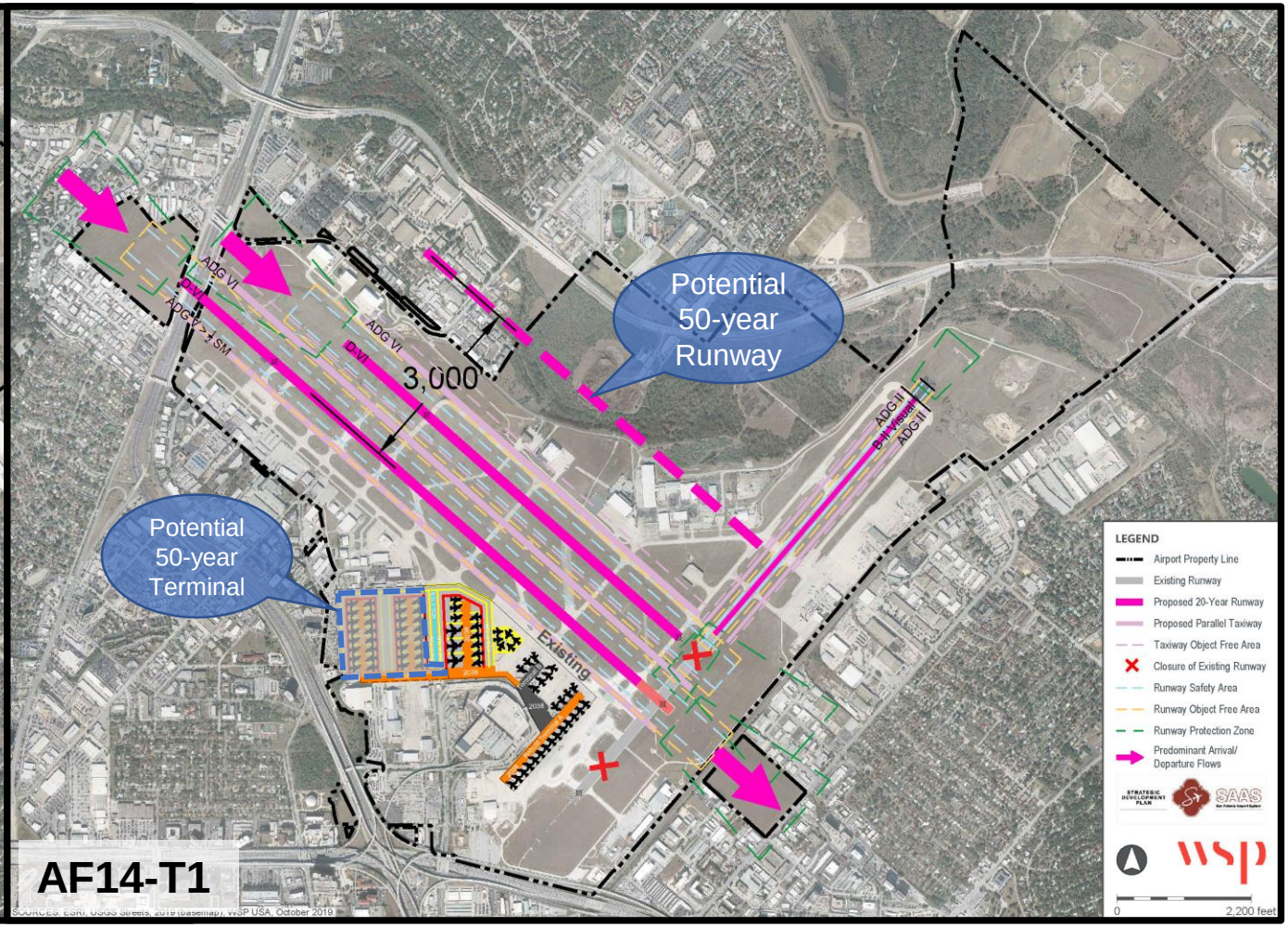
Remaining Combinations After Round 3B





Next Steps
Rounds 3 and 4

- Analyze the locations and elevations of the runway ends
- Engineering evaluation
- Rough order-of-magnitude cost estimates
- Noise analysis (20-year comparative footprints)

Round 2 Through Final Plan - Overview

Round 2A (Airfield) ✓
Review of airfield capacity, ease of implementation, and operational flexibility.

Round 2B (Terminal) ✓
Review of airfield impacts and constructability/ phasing feasibility.

Round 3A (Airfield) ✓
Review of special purpose environmental laws and 20-year implementability.

Round 3B (Refined Terminal Concepts) ✓
Evaluation of terminal concepts, including airspace penetrations of parked aircraft, walking distances, and passenger convenience and experience

Round 3C (Runway Ends Siting Analysis)
Review of runway end siting impacts to roadways and railroad, achievable runway length, and runway extension timing.

Round 3D (Airfield & Terminal)
Review preliminary preferred alternative for comparative costs, engineering feasibility.

Round 4 (Terminal/Landside/Support)
Refine terminal concepts. Prepare landside/support alternatives. Prepare noise contours.

Composite Alternatives (Airfield/Terminal/Landside/Support)
Develop overall composite alternatives for all airport functional areas, combining the preferred airfield and terminal alternatives with the preferred access and support alternatives.

Preferred Development Plan
Will illustrate SAT's proposed projects for the 20-year planning period and will depict proposed airfield, terminal, access, support, and tenant facilities, and include high-level phasing for the 6, 10, and 20-year planning periods.

Resources

To learn more about the SDP:

Community members and stakeholders are encouraged to check the airport's Strategic Development Plan (SDP) website for updates: www.sanantonio.gov/SATfuture

Email: SATfuture@sanantonio.gov

Phone: 210-207-3403

In Person: Brook Hollow Library
530 Heimer Rd
San Antonio, TX 78232
210-207-9030

FAA guidance materials:

- FAA Advisory Circular - Airport Design AC 150/5300-13A Airport Design
- Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALP SOP)
- FAA Advisory Circular - Airport Master Plans AC 150/5070-6B