

Preliminary Alternatives Summary

Airside Alternatives Introduction

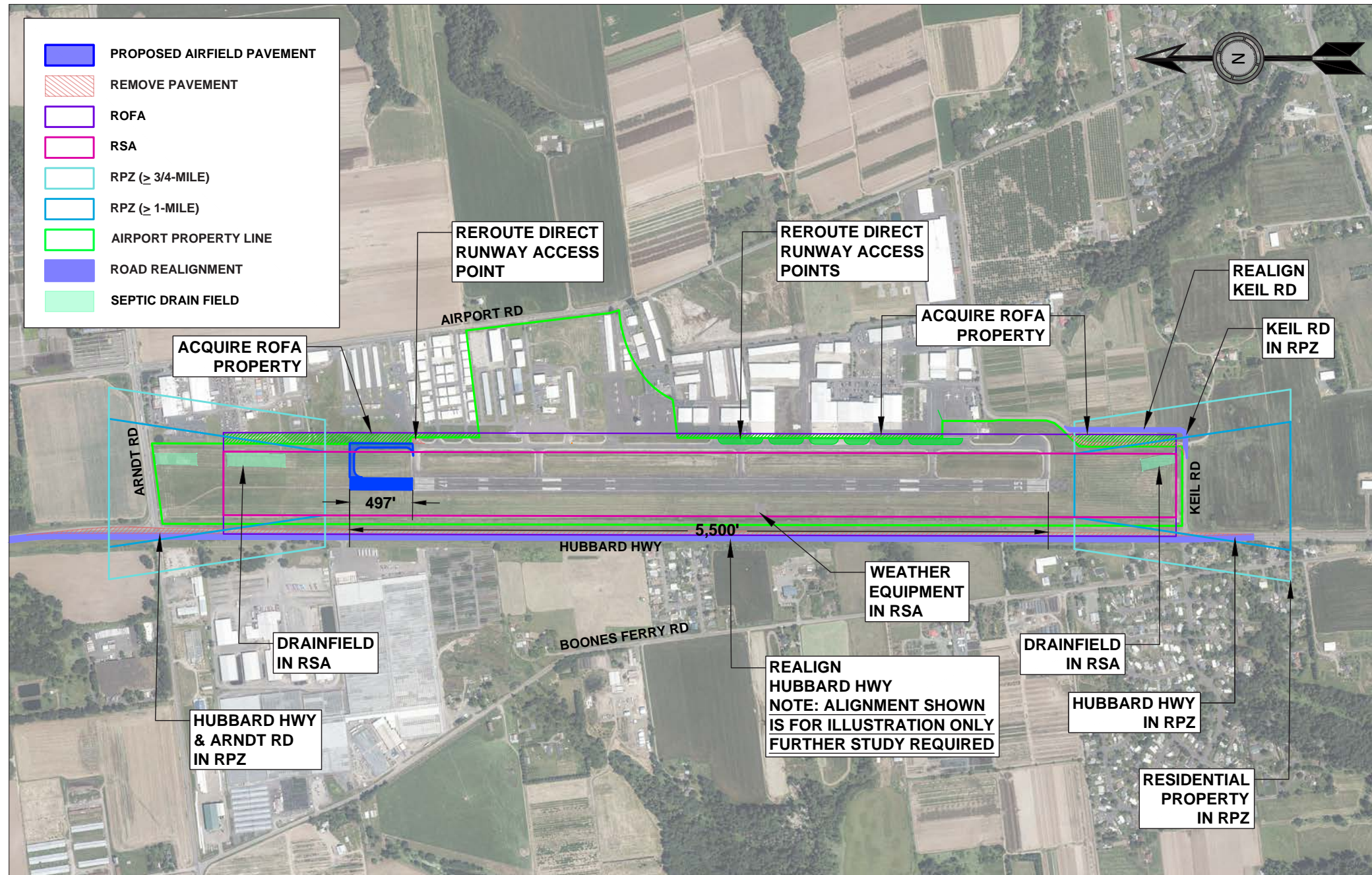
The preliminary airside development alternatives described below are intentionally conceptual to facilitate discussions surrounding the “big questions” that will guide the Oregon Department of Aviation (ODAV) on how best to meet the facility requirements for Aurora State Airport identified in Chapter 4.

The airside concepts primarily focus on bringing the Runway 17/35 Object Free Area (ROFA) and Runway Safety Area (RSA) into compliance with Federal Aviation Administration (FAA) standards and to maintain compliance for the preferred design. Other non-conforming items such as incompatible land uses in Runway Protection Zones (RPZ) or mitigating airspace obstacles will be evaluated further once the preliminary development alternatives have been narrowed to the most viable options.

As noted in Chapter 4, RPZ dimensions are determined by the aircraft approach category and airplane design group (AAC/ADG) associated with the design aircraft and the lowest approach visibility minimums available for the runway. For each airside development alternative, two sizes of RPZs are depicted to allow direct comparison for each concept. The larger RPZ footprint corresponds to the FAA-defined RPZ visibility increment ($\geq 3/4$ -mile) nearest to the $7/8$ -mile visibility minimums approved by the FAA for the runway’s current non-precision instrument approaches. The smaller RPZ footprint corresponds to the next higher increment of visibility minimums (1-mile) commonly used for instrument flight procedures. FAA land use compatibility guidelines and airport control standards are applied to RPZs, including any portions that extend beyond airport property.

For instrument approaches, lower visibility minimums allow aircraft to execute an approach when measured visibility is reduced. In contrast, higher minimums may marginally reduce approach capabilities for the runway. Increasing approach visibility minimums is an option that may be considered to reduce RPZ dimensions and in turn, mitigate incompatible land uses within the RPZ. A 10-year summary of Aurora State Airport visibility data was presented in the Chapter 4 (Table 4-2), with several visibility increments documented.

**FIGURE 1: AIRSIDE ALTERNATIVE 1
MAINTAIN C-II, REALIGN HUBBARD HIGHWAY AND EXTEND RUNWAY NORTH**



Maintain C-II, Realign Hubbard Highway and Extend Runway North

Primary Components:

- Realigns Hubbard Highway outside of Runway Object Free Area (ROFA). As proposed, the highway is shifted approximately 30 to 35 feet west, within existing ODOT-owned highway right-of-way.
 - » Note: The roadway alignment depicted is for illustration only. Further study and coordination with ODOT will be required to identify final roadway alignment needed to clear/control ROFA.
- Maintains 100 feet runway width (C-II standard).
- Extends runway 497 feet to the north resulting in a total length of 5,500 feet.
- Extends parallel taxiway (Taxiway A) to the north with runway.
- Property acquisition is required to accommodate east sections of ROFA (northeast and southeast).
- Keil Road is realigned to the outside of the ROFA.
- Reconfigure/relocate existing TTF access taxiway connection at current north end of Taxiway A to remove direct runway access at that location.
 - » Realigned TTF access to be coordinated with adjacent property owner.
- Install painted islands between Taxiway A and the adjacent southern TTF properties to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

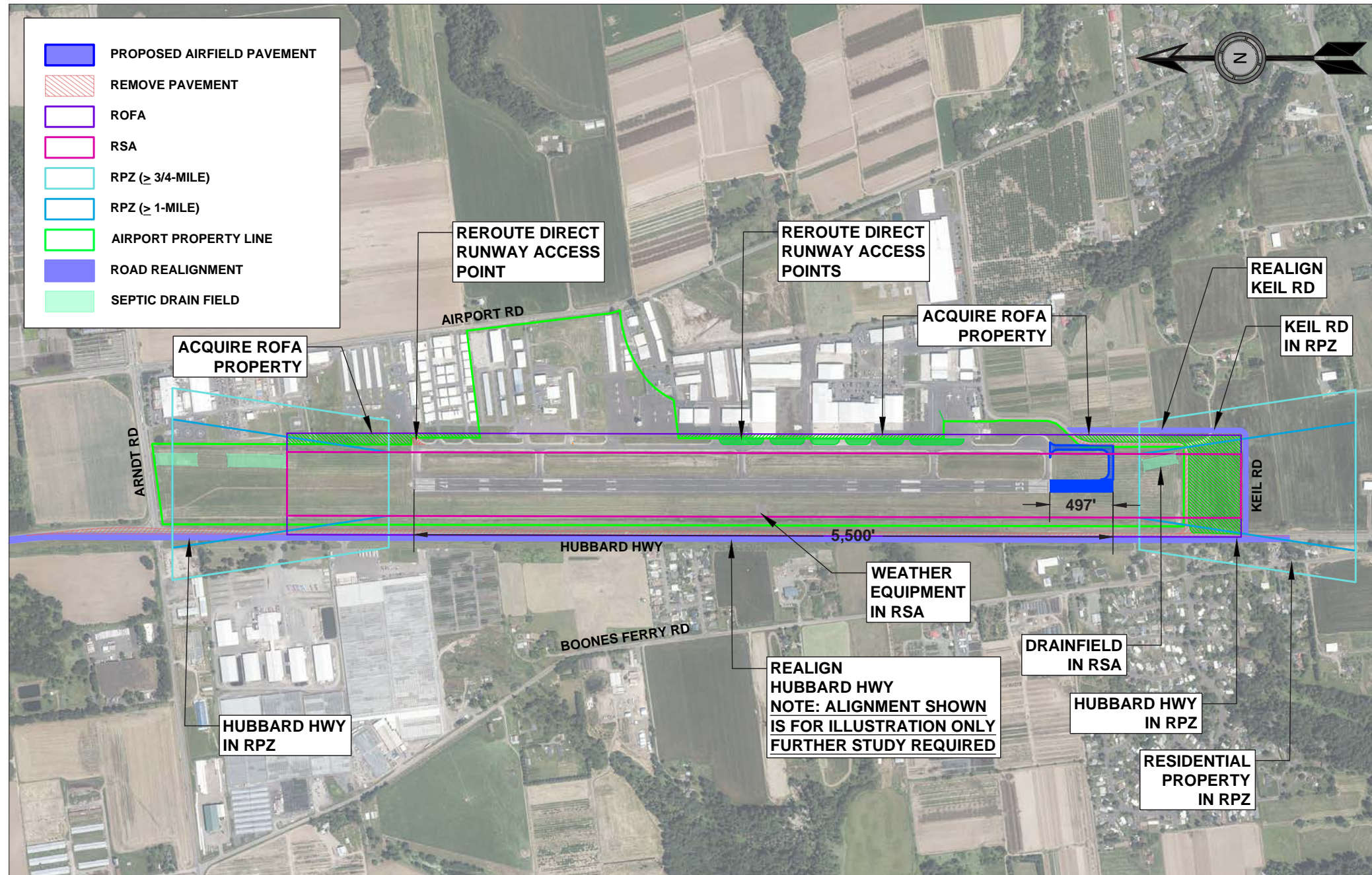
- Extends runway to justified length of 5,500 feet.
- Clears ROFA of existing public roads.
- Airport control of ROFA achieved through property acquisition.
- Addresses direct runway access and V/PD issues through pavement removal and painted islands.

Other Issues to be Addressed:

- Septic drainfield remains in south end of RSA.
 - » Further study is required to relocate drainfield out of RSA.
- Wind cone and weather equipment (ASOS) remain in RSA and ROFA.
 - » Further study is required to identify new locations for equipment.
- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in RPZs.

New Issues:

- New incompatible land use (Arndt Road) in Runway 17 RPZ.
- Septic drainfield located in north end of extended RSA.
 - » Further study is required to relocate drainfield out of future RSA.



Maintain C-II, Realign Hubbard Highway and Extend Runway South

Primary Components:

- Realigns Hubbard Highway outside of Runway Object Free Area (ROFA). As proposed, the highway is shifted approximately 30 to 35 feet west, within existing ODOT-owned highway right-of-way.
 - » Note: The roadway alignment depicted is for illustration only. Further study and coordination with ODOT will be required to identify the final roadway alignment needed to clear/control ROFA.
- Maintains 100-foot runway width (C-II standard).
- Extends runway 497 feet to the south resulting in a total length of 5,500 feet.
- Extends parallel taxiway (Taxiway A) to the south with runway.
- Property acquisition is required to accommodate east sections of ROFA (northeast and southeast).
- Keil Road is realigned to the outside of the existing and future ROFA.
- Reconfigure/relocate existing TTF access taxiway connection at current north end of Taxiway A to remove direct runway access at that location.
 - » Realigned TTF access to be coordinated with adjacent property owner.
- Install painted islands between Taxiway A and the adjacent southern TTF properties to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

- Extends runway to justified length of 5,500 feet.
- Clears ROFA of existing public roads.
- Airport control of ROFA achieved through property acquisition.
- Addresses direct runway access and V/PD issues through pavement removal and painted islands.

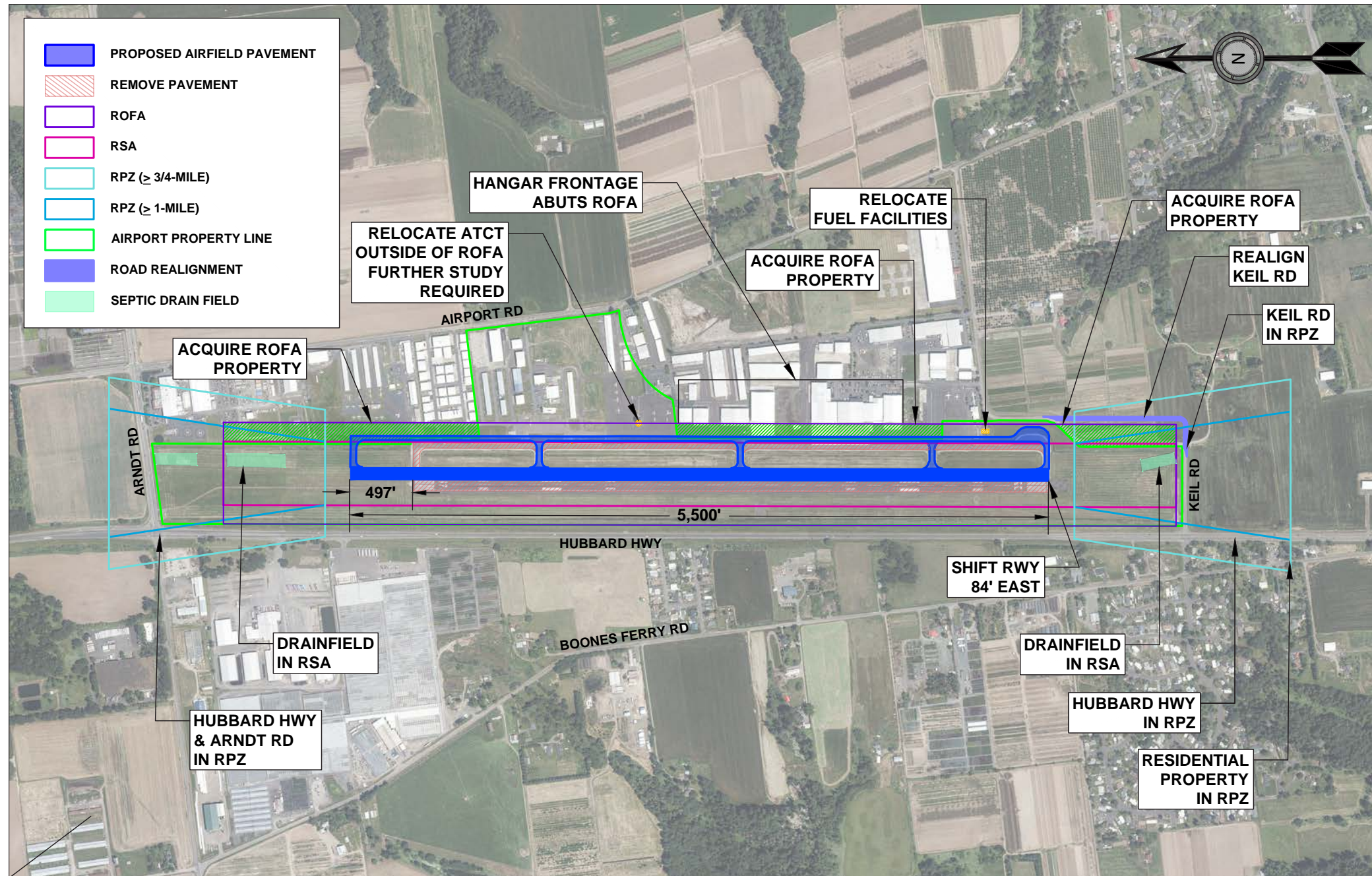
Other Issues to be Addressed:

- Septic drainfield remains in south end of RSA.
 - » Further study is required to relocate drainfield out of RSA.
- Wind cone and weather equipment (ASOS) remain in RSA and ROFA.
 - » Further study is required to identify new locations for equipment.
- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in RPZs.

New Issues:

- Additional incompatible land uses (residential properties, and realigned Keil Road) enter Runway 35 RPZ.
- Requires relocation/replacement or decommissioning of localizer navigational aid (located at Runway 35 end).

**FIGURE 3: AIRSIDE ALTERNATIVE 3
MAINTAIN C-II, SHIFT RUNWAY EAST, AND EXTEND RUNWAY NORTH**



Maintain C-II, Shift Runway East, and Extend Runway North

Primary Components:

- Shifts runway 84 feet east to bring west edge of ROFA onto Airport property.
- All runway and parallel taxiway surfaces (ROFA, RSA, OFZ, RPZ, etc.) are shifted east based on the shifted runway centerline location.
- ATCT and other aviation use facilities (fuel, helicopter parking, etc.) to be relocated outside of ROFA.
 - » Further study is required to determine new locations.
- Maintains 100-foot runway width (C-II standard).
- Extends runway 497 feet to the north resulting in a total length of 5,500 feet.
- Extends parallel taxiway (Taxiway A) to the north with runway.
- All property within the shifted/extended ROFA not owned by the Airport to be acquired.
- Keil Road is realigned to the outside of the ROFA.
- Reconfigure/relocate existing TTF access taxiway connection at current north end of Taxiway A to remove direct runway access at that location.
 - » Realigned TTF access to be coordinated with adjacent property owner.
- Install painted islands between shifted Taxiway A and the adjacent southern TTF properties, where feasible to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

- Extends runway to justified length of 5,500 feet.
- Clears ROFA of existing public roads.
- Airport control of ROFA achieved through property acquisition.
- Direct runway access and V/PD issues to be addressed in redesign of Taxiway A.
- Wind cone and ASOS are no longer in ROFA or RSA.

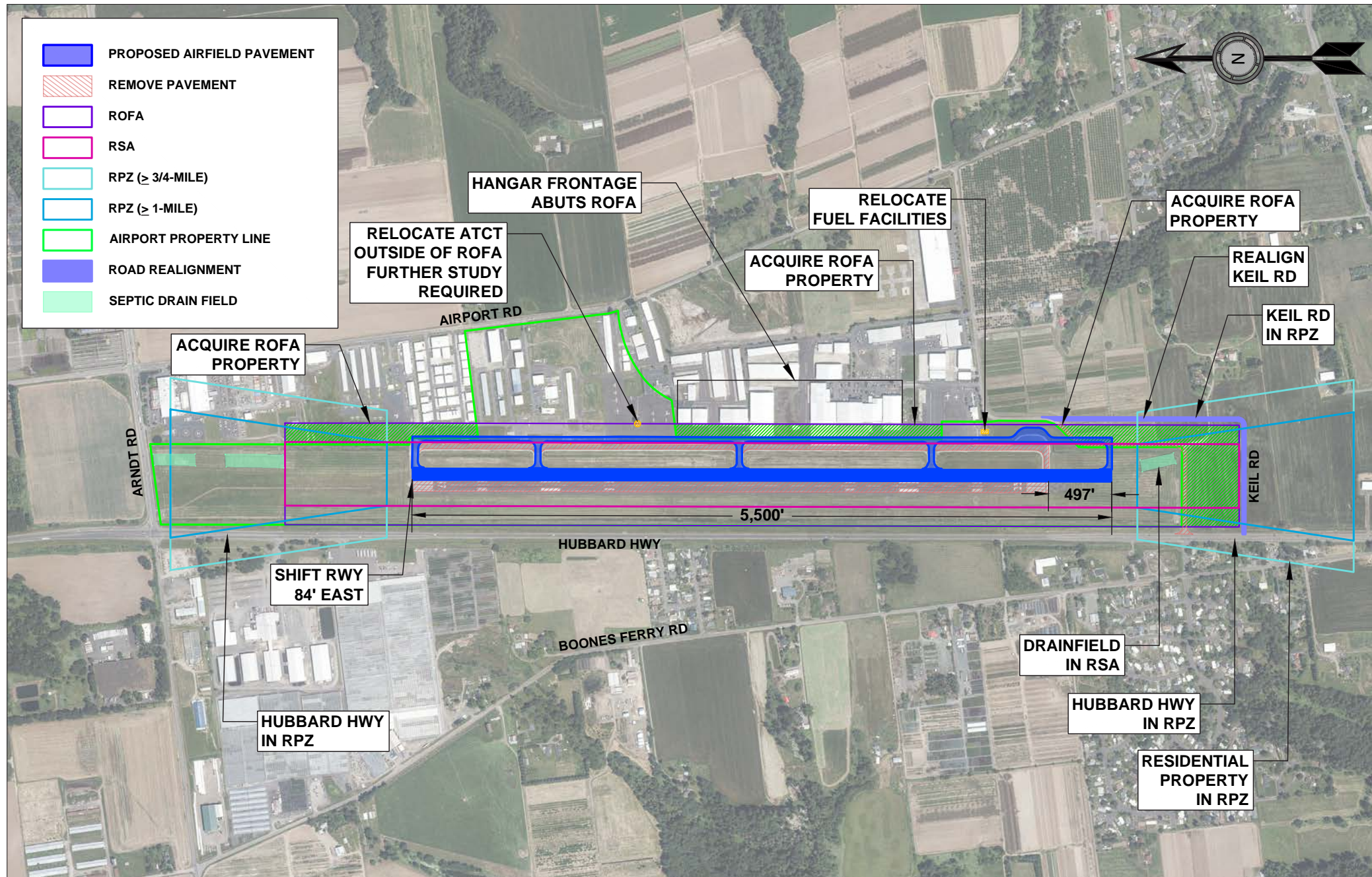
Other Issues to be Addressed:

- Septic drainfield remains in south end of RSA.
 - » Further study required to relocate drainfield out of RSA.
- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in RPZs; some mitigated by runway shift.

New Issues:

- ATCT must be relocated/reconstructed outside of ROFA.
- Atlantic Aviation fuel equipment to be relocated outside of ROFA.
- ROFA directly abuts hangar doors for south TTF properties.
- The septic drainfield is located in the north end of (extended) RSA.
 - » Further study required to relocate drainfield out of future RSA.
- New incompatible land use (Arndt Road) in Runway 17 RPZ.
- Requires relocation/replacement or decommissioning of localizer navigational aid.

**FIGURE 4: AIRSIDE ALTERNATIVE 4
MAINTAIN C-II, SHIFT RUNWAY EAST, AND EXTEND RUNWAY SOUTH**



Maintain C-II, Shift Runway East, and Extend Runway South

Primary Components:

- Shift runway 84 feet east to bring west edge of ROFA onto Airport property.
- Extends runway 497 feet to the south resulting in a total length of 5,500 feet.
- Maintains 100-foot runway width (C-II standard).
- Extends parallel taxiway (Taxiway A) to the south with runway.
- All runway and parallel taxiway surfaces (ROFA, RSA, OFZ, RPZ, etc.) are shifted east with shifted runway centerline.
- ATCT and other aviation use facilities (fuel, helicopter parking, etc.) to be relocated outside of ROFA.
 - » Further study is required to determine new locations.
- All property within the shifted/extended ROFA not owned by the Airport to be acquired.
- Keil Road is realigned to the outside of the existing and future ROFA.
- Reconfigure/relocate existing TTF access taxiway connection at current north end of Taxiway A to remove direct runway access at that location.
 - » Realigned TTF access to be coordinated with adjacent property owner.
- Install painted islands between shifted Taxiway A and the adjacent southern TTF properties, where feasible to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

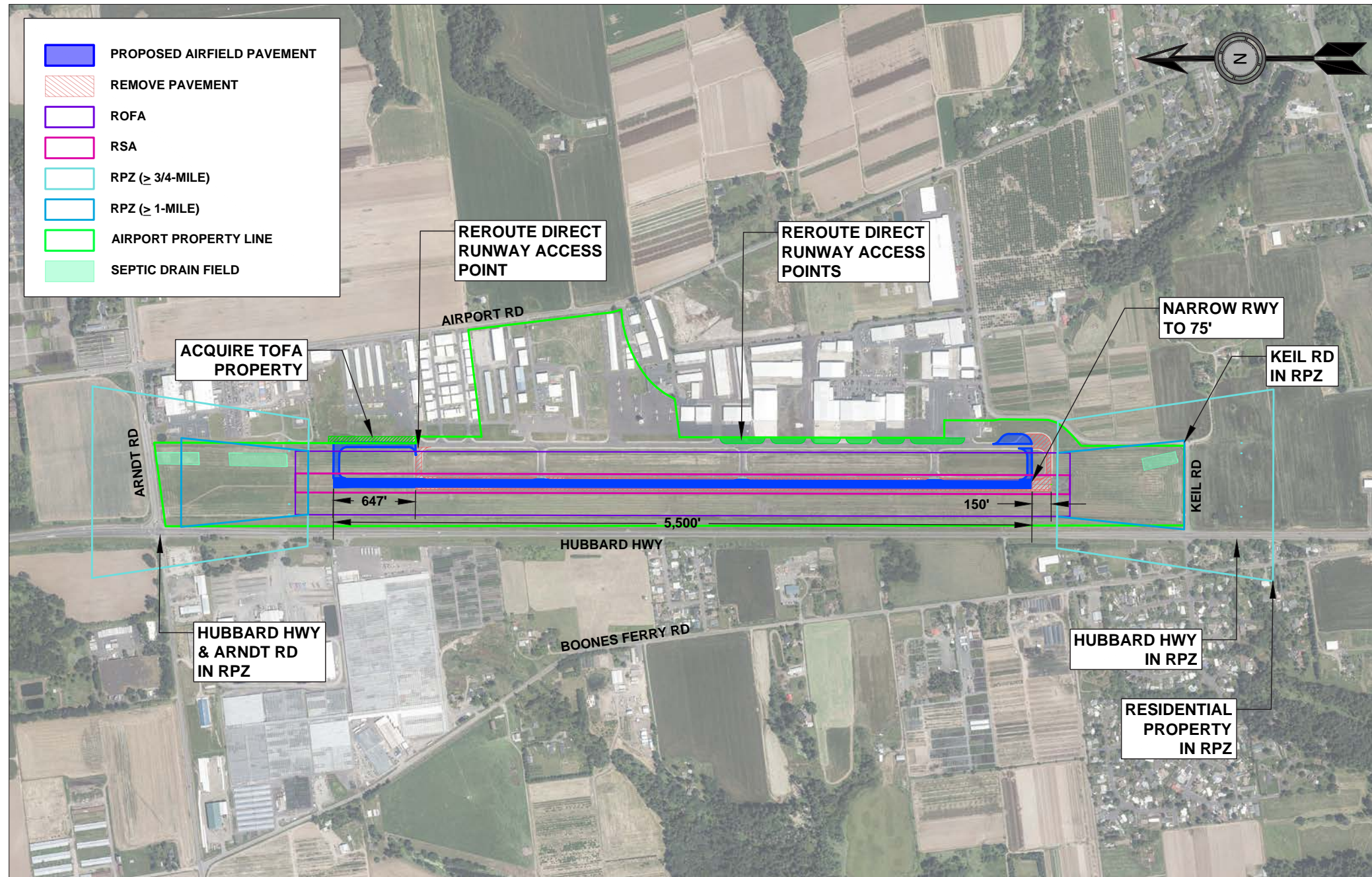
- Extends runway to justified length of 5,500 feet.
- Clears ROFA of existing public roads.
- Airport control of ROFA achieved through property acquisition.
- Direct runway access and V/PD issues to be addressed in redesign of Taxiway A.
- Wind cone and ASOS are no longer in ROFA or RSA.

Other Issues to be Addressed:

- Septic drainfield remains in south end of RSA.
 - » Further study required to relocate drainfield out of RSA.
- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in RPZs; some mitigated by runway shift.

New Issues:

- ATCT must be relocated/reconstructed outside of ROFA.
- Atlantic Aviation fuel equipment to be relocated outside of ROFA.
- ROFA directly abuts hangar doors for south TTF properties.
- Additional incompatible land uses (residential properties, and realigned Keil Road) enter Runway 35 RPZ.
- Requires relocation/replacement or decommissioning of localizer navigational aid (located at Runway 35 end).



Change to B-II, Shift and Extend Runway North

Primary Components:

- Downgrades runway to AAC/ADG B-II.
 - » Operational changes to realize B-II use criteria requires further study.
- Narrows runway to 75 feet (B-II standard).
- Extends runway to justified length of 5,500 feet.
 - » Relocate Runway 35 end 150 feet north to bring RPZ (≥1-mile) onto existing property.
 - » Extend Runway 17 end 647 feet north.
- Extends parallel taxiway (Taxiway A) to the north with runway.
- Acquire property in extended Taxiway Object Free Area (TOFA) at north end of future parallel taxiway.
- Remove connector taxiway A1 at north end of Taxiway A to eliminate direct runway access at that location.
- Install painted islands between Taxiway A and the adjacent southern TTF properties to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

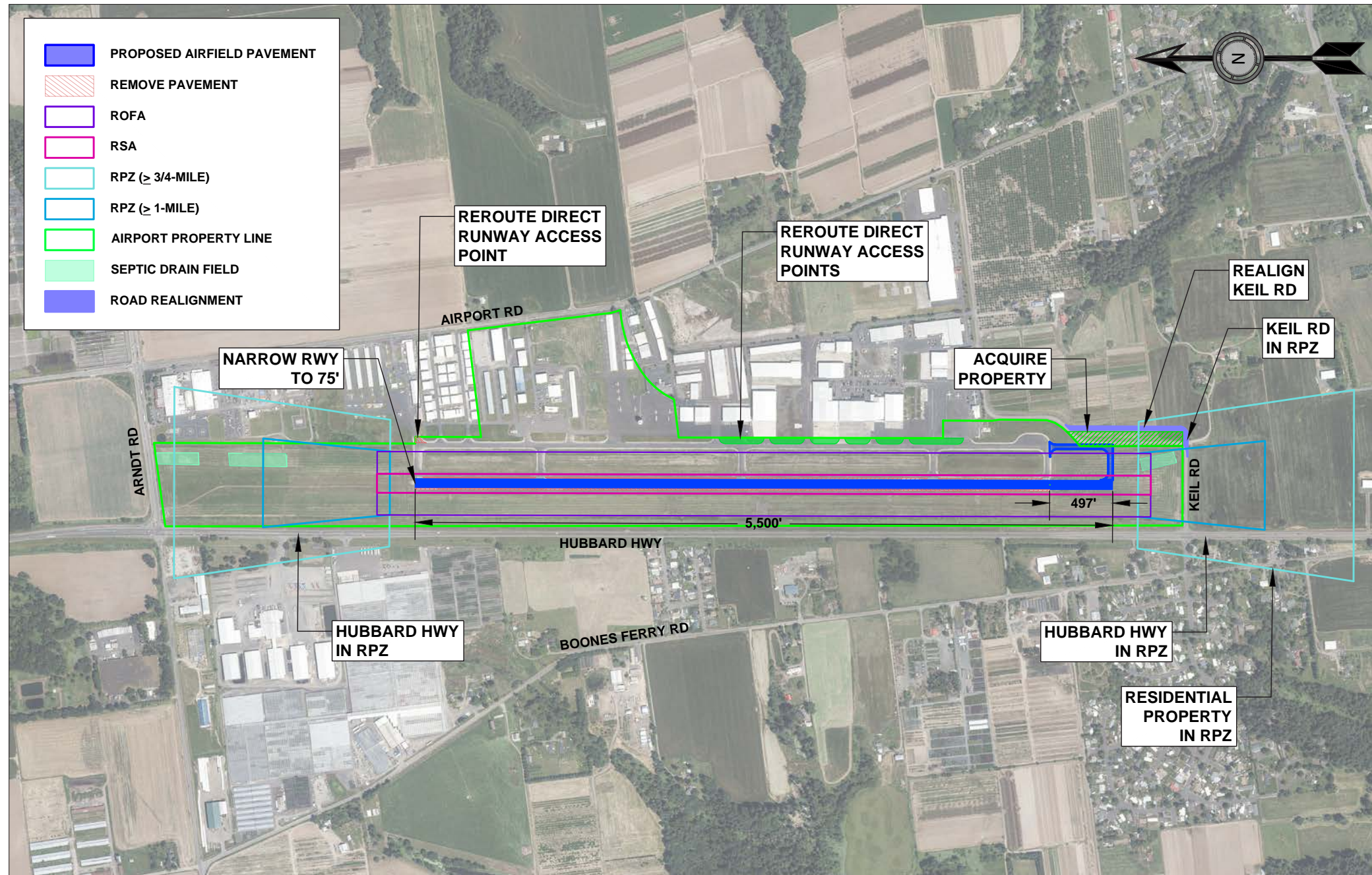
- Extends runway to justified length of 5,500 feet.
- ROFA is clear of existing public roads.
- Airport control of ROFA is achieved through reduction in surface dimension.
- Addresses direct runway access and V/PD issues through pavement removal and painted islands.
- Keil Road is outside of ROFA.
- Septic drainfields, wind cones, and weather equipment do not conflict with smaller RSA or OFA.
- Reduces incompatible land uses - Hubbard Highway, Keil Road, Boones Ferry Road and residential areas do not conflict with smaller > 1-mile RPZ.

Other Issues to be Addressed:

- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in larger > 3/4-mile RPZs.

New Issues:

- Operational changes required to maintain B-II standards (<500 C-II or larger annual operations).



Change to B-II, Extend Runway South

Primary Components:

- Downgrades runway to AAC/ADG B-II.
 - » Operational changes to realize B-II use criteria requires further study.
- Narrows runway to 75 feet (B-II standard).
- Extends runway 497 feet to the south resulting in a total length of 5,500 feet.
- Extends parallel taxiway (Taxiway A) to the south with runway.
- Acquire property in extended Taxiway Object Free Area (TOFA) at south end of future parallel taxiway.
- Realign Keil Road outside TOFA.
- Install painted islands between Taxiway A and the adjacent southern TTF properties to address direct runway access and V/PD issues.
- Pavement removed at TTF access taxiway at the north end of Taxiway A to remove direct runway access at that location.
 - » Realigned TTF access to be coordinated with adjacent property owner.

Issues Addressed by Alternative:

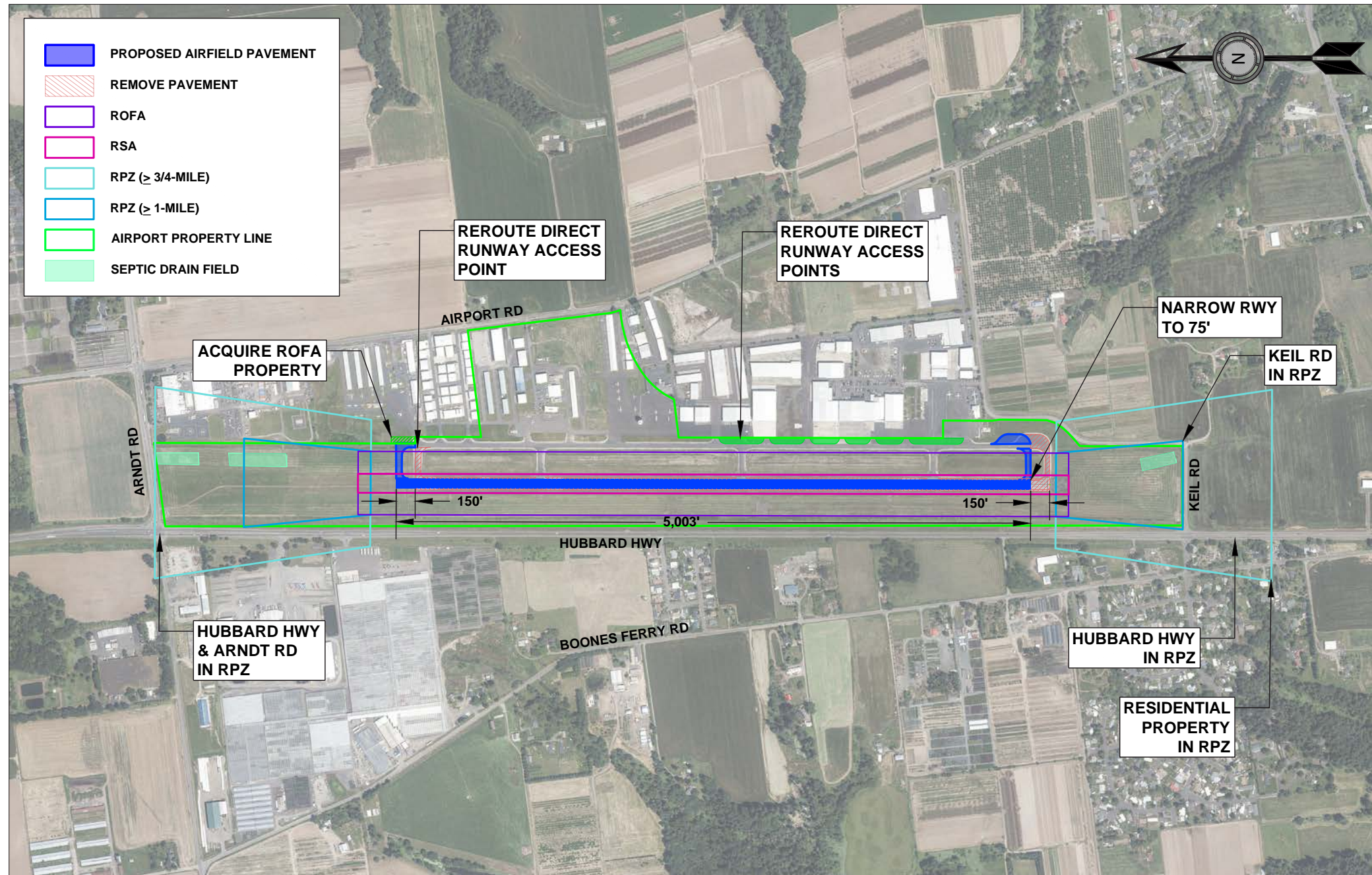
- Extends runway to justified length of 5,500 feet.
- ROFA is clear of existing public roads.
- Airport control of ROFA is achieved through reduction in surface dimension.
- Addresses direct runway access and V/PD issues through pavement removal and painted islands.
- Keil Road is outside of ROFA.
- Septic drainfields, wind cones, and weather equipment do not conflict with smaller RSA or OFA.
- Reduces incompatible land uses - Hubbard Highway, Keil Road, Boones Ferry Road and residential areas do not conflict with smaller > 1-mile RPZ.

Other Issues to be Addressed:

- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in larger > 3/4-mile RPZs.

New Issues:

- Operational changes required to maintain B-II standards (<500 C-II or larger annual operations).
- Requires relocation/replacement or decommissioning of localizer navigational aid (located at Runway 35 end).



Change to B-II, Shift Runway North, and Maintain Current Length

Primary Components:

- Downgrades runway to ADG/AAC B-II.
 - » Operational changes to realize B-II use criteria requires further study.
- Narrows runway to 75 feet (B-II standard).
- Maintains current runway length (5,003 feet).
 - » Shift entire runway 150 feet north to bring Runway 35 RPZ (≥ 1 -mile) onto Airport property.
- Extends parallel taxiway (Taxiway A) to the north with runway.
- Remove/relocate existing Taxiway A1 connector at north end of Taxiway A in conjunction with runway-parallel taxiway shift; eliminates existing direct runway access at that location.
- Acquire property in extended Taxiway Object Free Area (TOFA) at north end of future parallel taxiway.
- Install painted islands between Taxiway A and the adjacent southern TTF properties to address direct runway access and V/PD issues.

Issues Addressed by Alternative:

- ROFA is clear of existing public roads.
- Airport control of ROFA is achieved through reduction in surface dimension.
- Addresses direct runway access and V/PD issues through pavement removal and painted islands.
- Keil Road is outside of ROFA.
- Septic drainfields, wind cones, and weather equipment do not conflict with smaller RSA or OFA.
- Reduces incompatible land uses - Hubbard Highway, Keil Road, Boones Ferry Road and residential areas do not conflict with smaller > 1 -mile RPZ.
- Direct runway access and V/PD issues addressed through painted islands and pavement removal.

Other Issues to be Addressed:

- Existing incompatible land uses (Hubbard Highway, Keil Road, Boones Ferry Road and residential areas) remain in larger $> 3/4$ -mile RPZs.

New Issues:

- Operational changes required to maintain B-II standards (< 500 C-II or larger annual operations).

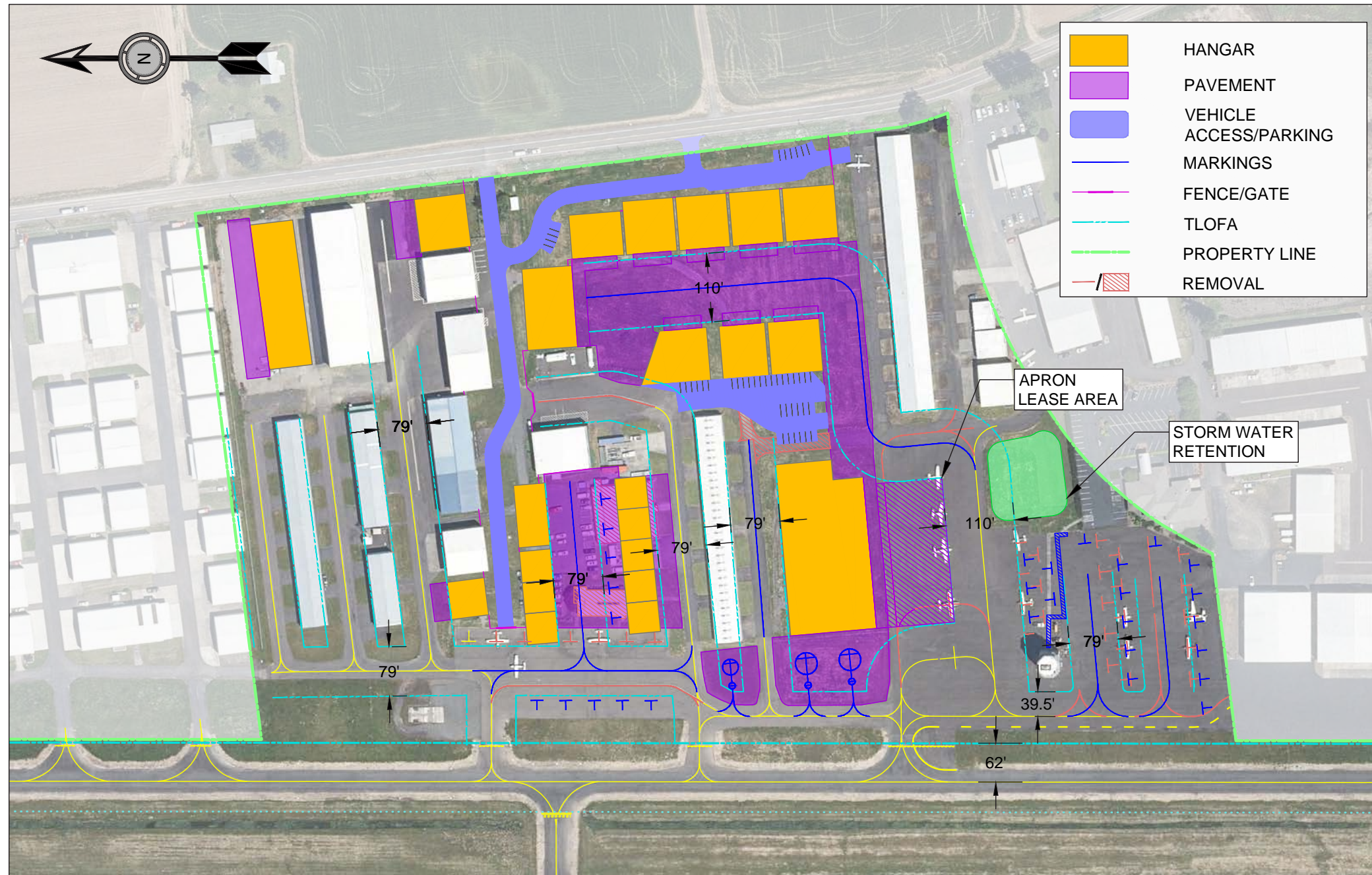
Landside Alternatives Introduction

The landside development alternatives concepts presented below depict proposed improvements capable of meeting the facility requirements identified in Chapter 4. The proposed improvements are limited to the defined landside area on existing ODAV-owned property.

The proposed facility configurations are compatible with the options presented in the preliminary airside concepts that maintain the current runway-taxiway location. A reduction of usable landside facilities would occur with the airside options shifting the runway-taxiway system east.

Aurora State Airport is located on a constrained site and as such, it may not be possible to fully address every facility requirement. The focus of the landside evaluation is to identify the most efficient use of limited space, with aeronautical uses (aircraft storage) considered the highest and best use. This analysis will guide ODAV on the development of landside facilities during the current 20-year planning period, or until additional evaluations may be required.

The concepts are meant to be modular in nature. A selected preferred alternative may be as presented below, it may be a combination of components from different concepts, or it may be an entirely different concept identified in discussions stemming from these concepts.



Primary Components:

- Commercial hangar development with ADG II taxilane access, large FBO hangar, vehicle access and parking.
- The existing apron south of proposed FBO hangar proposed as tenant lease in conjunction with main ADG II access taxilane shift.
- Reconfigured small airplane tiedown apron adjacent to ATCT to provide appropriate wingtip and meet ADG I taxilane object free area (TOFA) clearances.
- Proposed apron reconfiguration to meet FAA standards results in a net decrease of four small airplane tiedowns and one large aircraft drive through parking position compared to the current aircraft parking configuration.
- Two large helicopter (35-foot rotor) parking positions and one small helicopter (25-foot rotor) parking positions are added.
- Realigned taxilane west of current Aurora Flight School facility to accommodate five additional small airplane tiedowns.
- New apron at current flight school area.
- Reconfigured fence and vehicle access road (outside the fence access provided to Aurora Flight School facility).
- Additional hangar infill is proposed for all available lots on the Airport.
- Approximately 154,000 square feet of additional hangar space, as depicted.
- Storm water retention area is identified east of ATCT apron.

Commercial Hangar and FBO Development with Reconfigured Flight School Apron



Primary Components:

- Identical to Landside Alternative 1A with the following exceptions:
 - » A north/south vehicle service road (VSR) is proposed to provide dedicated vehicle access from the north boundary of the landside area to the south boundary of the landside area.
 - » The proposed five tiedowns west of Aurora Flight School, the three proposed helicopter parking positions, and six proposed tiedowns on the ATCT apron are omitted to create space for VSR.
 - » Two additional tiedowns are proposed west of the large FBO hangar, on the west side of the VSR.
 - » This configuration results in a net decrease of 13 tiedowns compared to the existing aircraft parking configuration.

Commercial Hangar and FBO Development with Reconfigured Flight School Apron and Vehicle Service Road



Commercial Hangar and FBO Development with In-fill Hangar Development

Primary Components:

- Commercial development with ADG II taxilane access, large FBO hangar, and vehicle access and parking.
- The apron adjacent to the ATCT is reconfigured to include two drive through large aircraft parking positions on the south end of the apron.
 - » Approximately three feet of the south edge of the taxilane object free area (TLOFA) for the drive through parking encroaches upon private property to the south. Coordination with adjacent property owner and/or an easement may be necessary for development .
- Remaining ATCT apron is reconfigured to provide small aircraft tiedown parking with ADG I wingtip spacing.
- Realigned taxilane west of current Aurora Flight School facility to allow additional small aircraft tiedown parking.
- Proposed apron reconfiguration to meet FAA standards results in a net decrease of five tiedowns compared to the current aircraft parking configuration.
- Two large helicopter (35-foot rotor) parking positions and one small helicopter (25-foot rotor) parking positions are added.
- Storage building east of Aurora Flight School is removed to accommodate additional hangars on north side of existing ADG I hangar taxilane.
- One multi-unit T-hangar is replaced with small condo-style box hangars.
- Reconfigured fence and vehicle access road (outside the fence access provided to Aurora Flight School facility).
- Additional hangars infill is proposed for all available lots on the Airport.
- Approximately 154,000 square feet of additional hangar space is proposed.
- Storm water retention area is identified east of ATCT apron.

The figures below provide additional details on proposed pavement configurations and markings that are referenced in the airside and landside concepts.

FIGURE 11: REMOVE DIRECT ACCESS - NORTH END

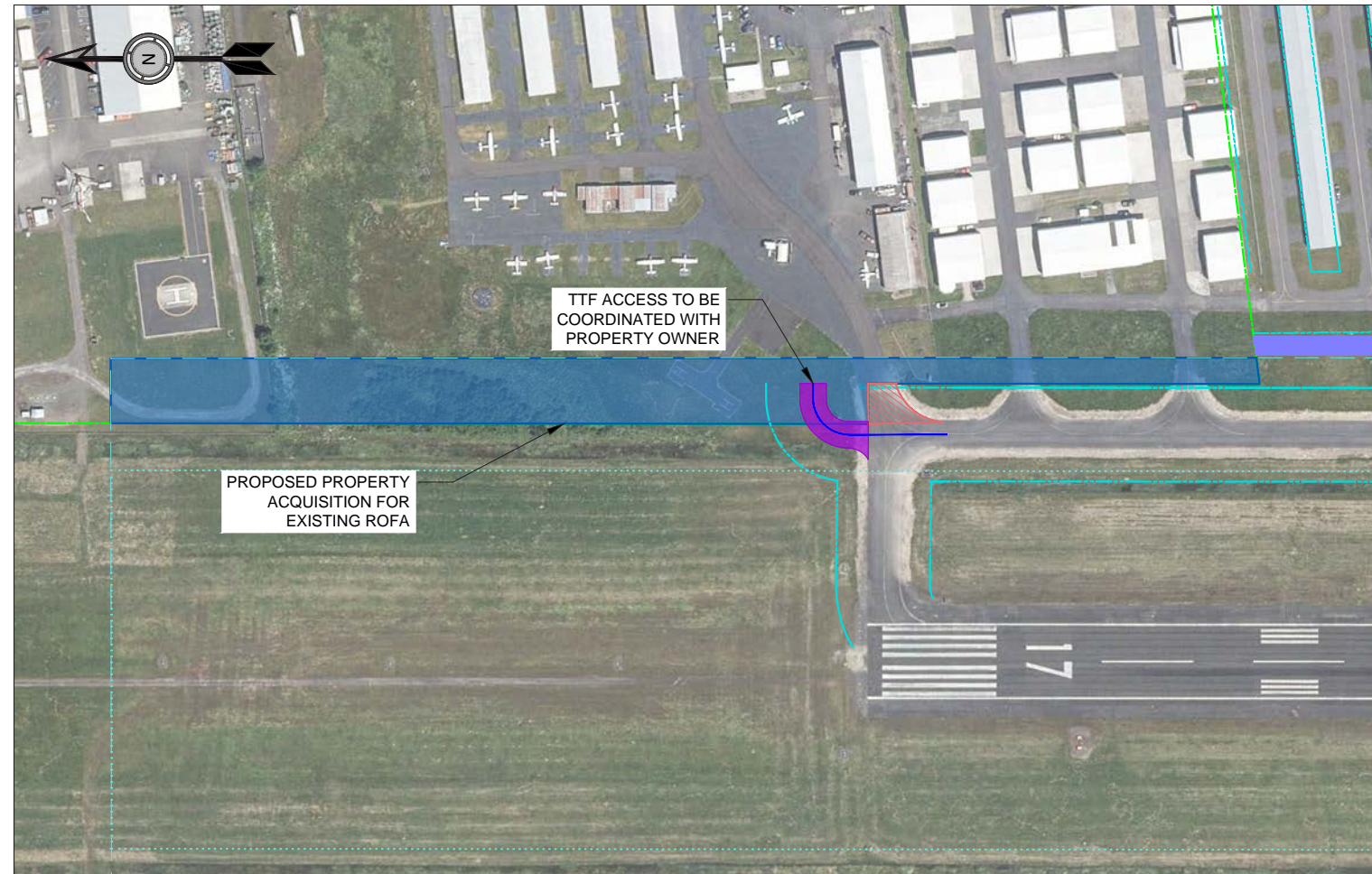


Figure 11 depicts a proposed reconfiguration of the existing TTF taxiway connection to Taxiway A1. The change in configuration would create a new taxi route between the adjacent apron and the runway, including a 90-degree turn to access Taxiway A and a second 90-degree turn to access Taxiway A1. This would eliminate the direct aircraft access configuration on Taxiway A1. The proposed changes require a new taxiway section and coordination with the adjacent private property owner. It is noted that a portion of this private property is also located in the ROFA for the existing Runway 17/35, which is recommended for property acquisition to meet FAA standards.

FIGURE 12: PARALLEL TAXIWAY ISLANDS - SOUTH END



Figure 12 depicts proposed painted islands in the large expanse of airfield pavement to differentiate the apron and parallel taxiway. Limiting the number of direct access points from adjacent aircraft aprons to parallel taxiways is consistent with FAA design guidance. Aircraft movement and hangar access on the apron would be consolidated for the existing TTF users. Longer-term improvements may replace the painted markings with pavement removal as part of a major taxiway reconstruction project that may require additional stormwater drainage improvements.