

# CHAPTER 4: DEVELOPMENT ALTERNATIVES

## *Ed Carlson Memorial Field – South Lewis County Airport 2022-23 ALP Update for 2017 Airport Master Plan*

**August 2023 Update:** As defined in the FAA-approved scope of work for this project, a minor update of the 2017 Airport Master Plan is being performed. This work primarily focuses on completion of the Airports GIS obstruction survey, updating the 2017 Airport Layout Plan (ALP) drawing set, and updating the airport’s 20-year capital improvement program (CIP) for the 2022-2042 planning period. The 2017 master plan chapters are refreshed with updated information, including evaluations based on current FAA standards, but the original format, methodologies and content are maintained where possible.

For this chapter, the preferred alternative depicted on the 2017 FAA-approved airport layout plan (ALP) will be reviewed, evaluated, and updated as needed to reflect current conditions and airport sponsor preferences. This is **Part 1** of this chapter. This process will not include a comparison of new facility development alternatives. The original chapter content from the 2017 master plan update is maintained without any modification to preserve the analyses previously performed. This is **Part 2** of this chapter.

### Part 1 – Updated Review of 2017 Master Plan Update Preferred Alternative

#### 2022-2042 AIRPORT LAYOUT PLAN UPDATE FOR 2017 MASTER PLAN UPDATE

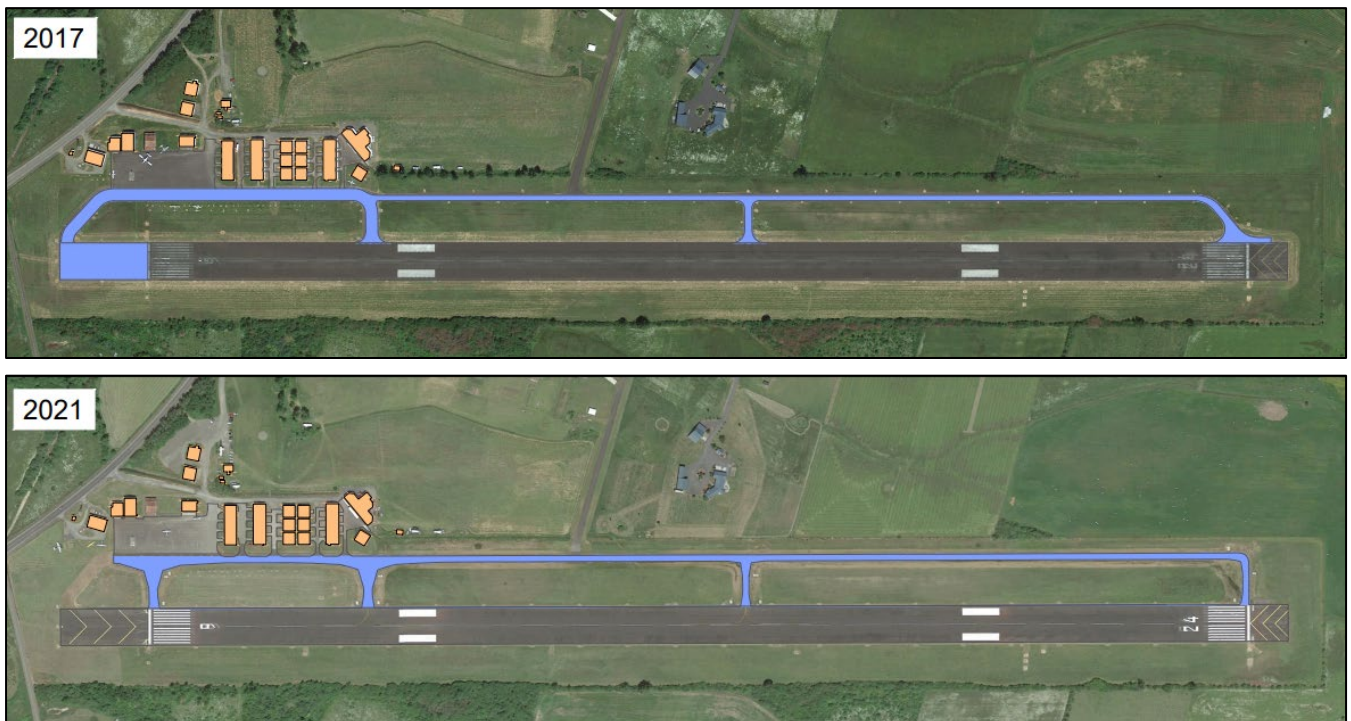
Several airfield projects have been completed since the airport master plan update was finalized in 2017, including:

- Parallel Taxiway & Exit Taxiways Reconstruction & Reconfiguration (Taxiway A, A1-A4) Project:
  - Taxiway A widened to 25 feet;
  - Runway-to-parallel taxiway centerline separation established at 270 feet for full taxiway;
  - Taxiways A1-A4 design based on new FAA “hourglass” exit taxiway fillet geometry;
  - New Taxiway A1:
    - The original acute-angled Taxiway A1 providing access to an aligned taxiway at the Runway 6 end was removed and replaced with a new 90-degree connecting taxiway at the Runway 6 threshold;
  - New Taxiway A4:
    - The original acute-angled Taxiway A4 providing access to the Runway 24 end was removed and replaced with a new 90-degree connecting taxiway;
  - The aligned taxiway leading to the Runway 6 threshold was converted to a non-movement area (paved overrun);

- New LED medium intensity taxiway lighting (MITL) and internally lighted airfield signage installed; and
- Grass tiedowns located adjacent to the former taxiway and main apron were removed.

**Figure 4-1** illustrates the “before and after” taxiway configuration for Runway 6/24. Some modifications to the original conceptual configuration were made during project design and will be reflected as existing facilities on the updated ALP.

**Figure 4-1: Taxiway Configuration (Changes made since 2017 ALP)**



As noted in previous chapters, the long-term planning assumptions contained in the 2017 master plan update included a future upgrade to RDC B-II standards and several “ultimate” runway and taxiway projects were recommended. The aviation activity forecast approved by FAA for this project does not support a change to RDC B-II standards during the current 20-year planning period. As a result, several projects previously identified as “ultimate” in the preferred alternative will be maintained as development reserves, at the direction of Lewis County, to preserve long-term options for the Airport. This includes a future runway extension, widening the parallel taxiway to 35 feet, and land acquisition. These projects will not be included in the Airport’s updated 2022-2042 CIP but will be depicted on the ALP as reserves.

## Updated (2023) Review of 2017 Preferred Alternative

The recommended improvements associated with the preferred alternative depicted on the 2017 ALP drawing have been updated in this evaluation (see **Figure 4-2**, below) to reflect completed projects and to identify areas where refined evaluations were performed. Additional detail is provided for planned terminal area improvements in **Figure 4-3**. The updated recommendations are summarized below.

Figure 4-2: 2017 ALP Preferred Alternative Improvements (2023 Refinements)

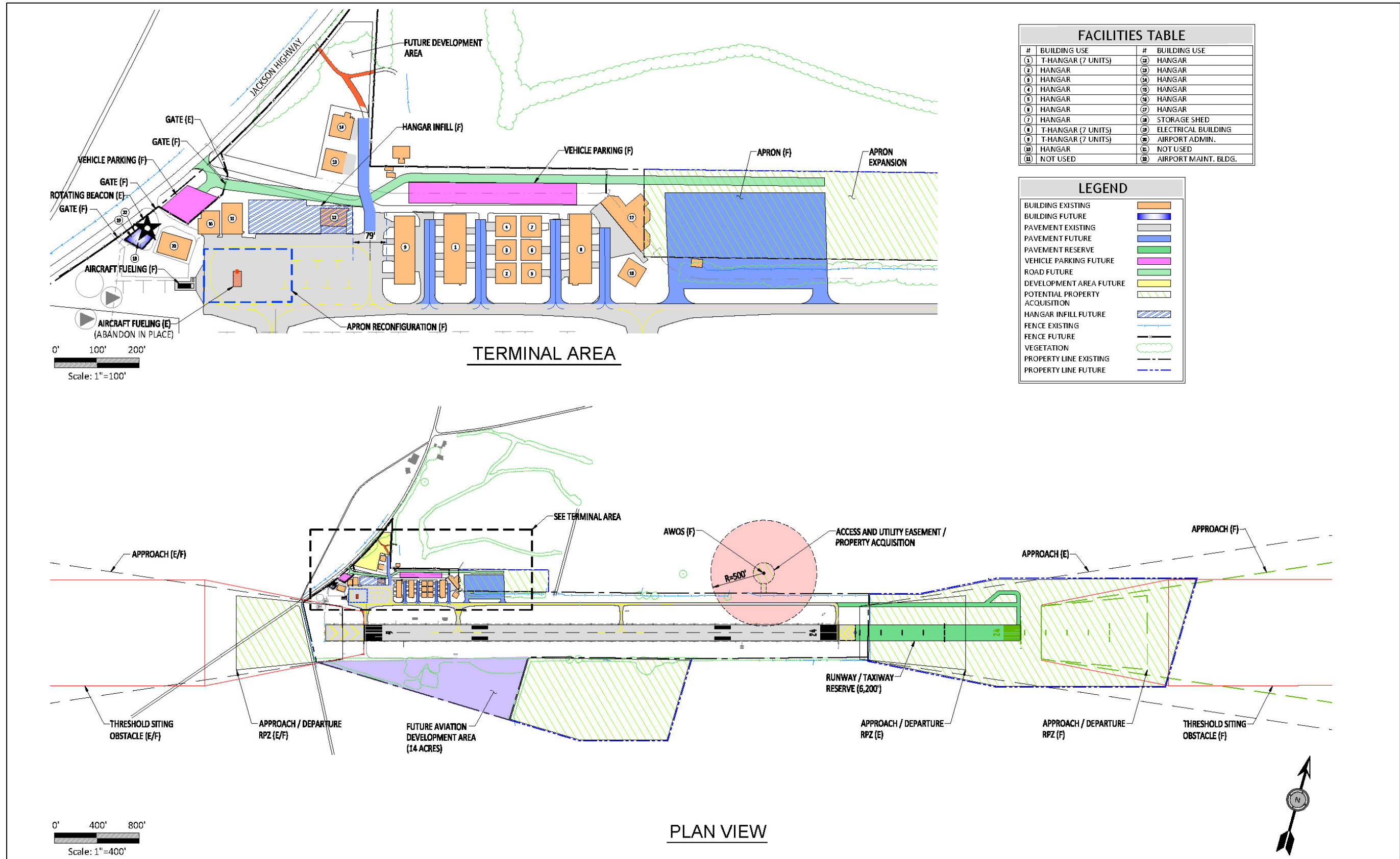
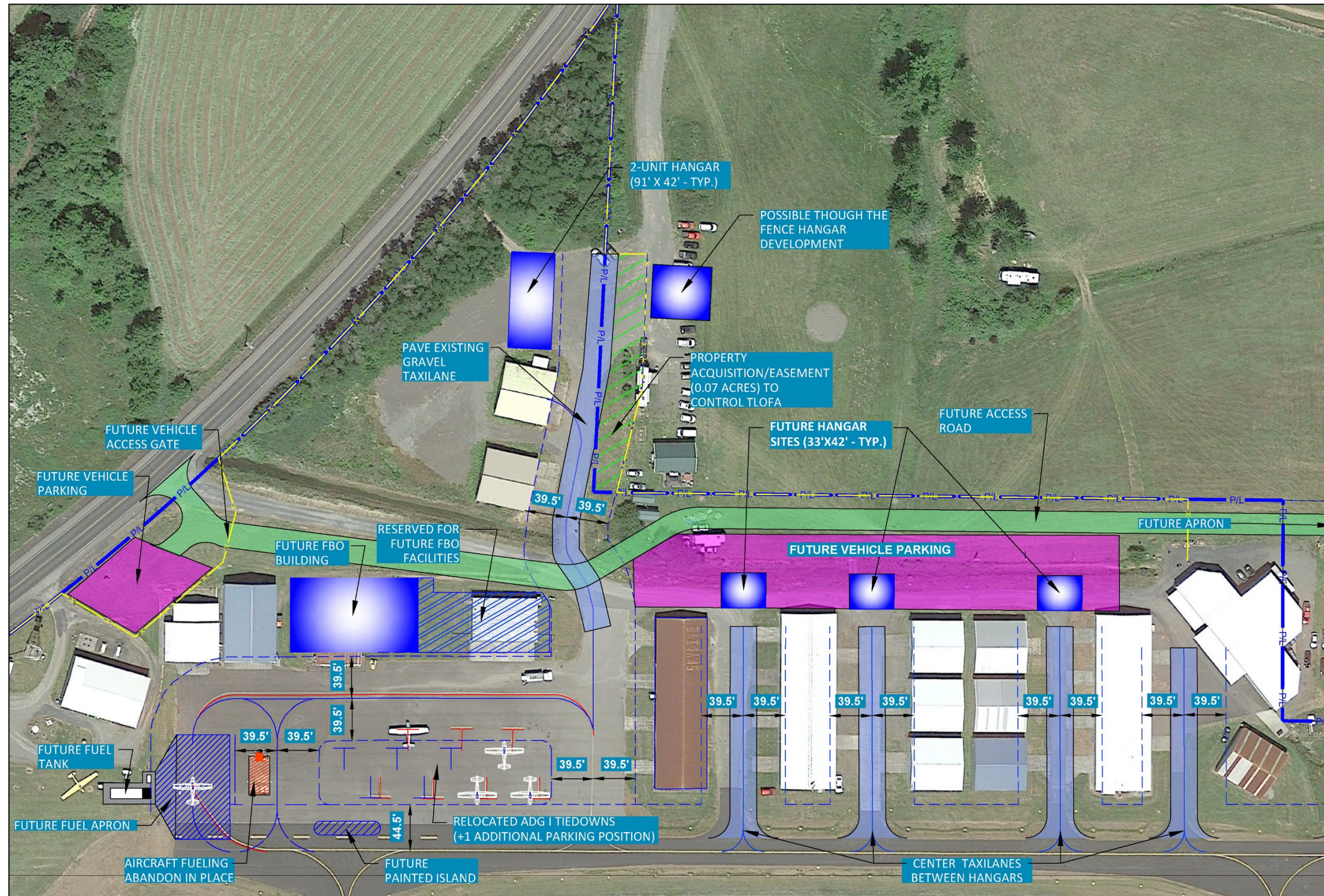


Figure 4-3: Terminal Area Improvements (2023 Refinements)



As part of the refreshed evaluation of development alternatives, a review was performed for the future improvements depicted on the 2017 ALP drawing that are not yet constructed. This review resulted in several refinements or additions that will be incorporated into the updated ALP, if approved by Lewis County:

- **Expanded Landside Development Area (East Terminal Area)** – Additional definition is provided for the future apron previously recommended to be located east of the existing hangar rows. This proposed improvement requires property acquisition and road access to be implemented. The updated apron evaluation reviewed design standards for both ADG I and II aircraft, including taxilane clearances and usable aircraft parking areas .
- **AWOS** – The proposed off-airport site depicted on the 2017 ALP is maintained, with additional definition provided for the land required to site the system (AWOS unit and sensor array) and extending surface access, power and communications to the site from the Airport. It is recommended that the County work with the adjacent property owner to secure the site through land purchase (fee simple) or a long-term easement.
- **Runway Extension** – The 1,721-foot ultimate runway and parallel taxiway extension at the east end of Runway 6/24 depicted on the 2017 ALP, and the property acquisition required to construct the extension and protect the RPZ and inner approach are maintained as development reserves.
- **Airport Access Improvements** – The 2017 ALP depicts an upgraded main access road that connects to Jackson Highway. Changes include a minor realignment along the south edge of the existing drainage ditch, two future vehicle gates, and a new vehicle parking area. The original concept is maintained and a second phase (road extension) is proposed east of the north hangar taxilane crossing to provide access to the future east apron and the existing east hangar area. The proposed road is realigned to the north side of the drainage ditch on existing airport property near its east end. The extended road will provide access to the future apron and the existing hangar area, while allowing development of three new conventional hangar sites at the ends of the existing hangar stub taxilanes. Redevelopment in this area will require culverting the existing open ditch to accommodate vehicle access to the hangars and parking.
- **Fuel Tank Replacement/Fuel Apron Relocation** – The Airport has two underground single wall fuel storage tanks (1 active, 1 inactive) that have reached the end of their useful life. In 2023, a project was initiated to upgrade the fuel facilities with an aboveground double wall tank for aviation gasoline (AVGAS). The new tank and aircraft fueling area will be located at the west end of the main apron. The new fueling area has the ability to accommodate a second storage tank that may be used for jet fuel or other fuel grades. The underground tanks will be decommissioned and either removed or permanently secured underground, per applicable regulations. The existing fuel station items (fuel pump, shelter, tank vent, etc.) on the main apron will be removed and the apron will be patched. The project will allow the existing fueling area on the main apron to be redeveloped for other uses. This project was not identified on the 2017 ALP but will be reflected on the updated ALP as an existing facility (pending final design & construction).
- **Main Apron Configuration** – Minor reconfiguration of the small airplane tiedowns and taxilanes is proposed to accommodate the relocated aircraft fueling area noted above and to meet FAA OFA clearing standards. Specific FAA design measures are proposed to address existing direct access between the

apron and the runway via Taxiway A1. Additional taxilane changes are proposed to incorporate the aircraft fueling area at the west end of the main apron. This improvement is intended to allow ease of access for the fueling area without obstructing aircraft access for the tiedowns and the adjacent hangars. It is anticipated that some of the proposed improvements would be completed in conjunction with a future overlay/reconstruction of the main apron, while others would be completed as part of the new fuel apron development.

- **Taxilane Improvements** – Several existing hangar taxilanes do not meet FAA standards for width and/or object free area (TOFA) clearance. The four existing stub taxilanes located east of the main apron are in poor condition and will require rehabilitation/reconstruction during the planning period. It is recommended that the new 25-foot wide taxilanes are centered between adjacent hangars when rehabilitated to provide uniform wingtip clearance on both sides of the taxilane when taxiing. Proposed north hangar taxilane improvements (reconstruction, paving) depicted on the 2017 ALP have been updated to reflect standard FAA taxilane object free area (TLOFA) clearances. The upgraded taxilane would serve two existing hangars and future hangar sites.
- **Runway 6 Displaced Threshold (Updated Evaluation)** – The 2017 ALP recommended a 379-foot displaced threshold for Runway 6 to mitigate approach obstacles created by vehicles traveling on the Buckley Road and the Jackson Highway for a 34:1 Larger-than-Utility non-precision instrument (NPI) approach surface. Based on the current FAA-approved aviation activity forecasts, the Part 77 standard for the Runway 6 NPI approach surface is now 20:1. A review of existing obstacle clearance was performed using AGIS survey elevation data developed in this plan update. Based on current elevation data and airspace planning assumptions, a displaced threshold is not required for Runway 6 to clear its standard 20:1 NPI approach surface. This item will be removed for the 2023 update of the ALP drawing. Similar updates will be completed for the affected airspace related drawings in the full ALP set.

## Part 2 – 2017 Master Plan Update Development Alternatives Chapter

The development alternatives chapter contained in the March 2017 Final Report for the Master Plan Update for Ed Carlson Memorial Field, South Lewis County Airport is presented in this section in its original form, as previously approved.

Since the current plan update scope of work is limited to reviewing the 2017 preferred alternative, the updated review is provided in **Part 1** of the chapter. This section retains and documents the evaluations originally used to create the preferred alternative elements. Due to the time interval involved, this section contains some obsolete project descriptions and planning assumptions that differ from Part 1. However, the underlying planning for the Airport remains in place both for the current 20-year planning period and through development reserves for facility improvements that are anticipated beyond the planning period.

# CHAPTER 4: DEVELOPMENT ALTERNATIVES

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## *Ed Carlson Memorial Field - South Lewis County Airport Master Plan Update*

The preceding chapter identified the shortfalls of the Ed Carlson Memorial Field-South Lewis County Airport (Airport) with respect to existing and anticipated aeronautical demand, which are consistent with Federal Aviation Administration (FAA) design standards. This chapter presents development alternative strategies that focus on meeting the Airport's facility needs for the long-term future, along with the No Build Alternative.

The purpose of the build alternatives is to provide variations of how to meet forecasted demand, while the No Build Alternative serves as a baseline for comparison. While the development alternatives incorporate the airport facility needs for the 20-year planning window, they also consider more distant future development needs for prudent planning purposes. Lewis County (County), with input from the FAA, Planning Advisory Committee (PAC), and public – will select a Preferred Alternative that is the foundation of the Airport Layout Plan (ALP) to be presented in Chapter 5. The Preferred Alternative identifies a hybrid alternative developed from the public involvement comments along with FAA reviews. It is a combination of elements from the alternatives presented below.

The alternatives are evaluated using the Master Plan Goals and Issues identified in Chapter 1, which were produced with PAC and public input.

### OVERVIEW OF PROCESS

To address the near- to long-term improvement needs of the Airport, this chapter analyzes three Build alternatives for airside and landside scenarios, as well as a No Build alternative for comparison. These alternatives were presented to the PAC for review and discussion during an April 2014 meeting, which included a public open house where the public had an opportunity review the alternatives, ask questions, provide comments, and consider the PAC's preliminary recommendations.

The selected alternative, referred to as the Preferred Alternative, is the basis for updating the ALP drawing set and the Airport's Capital Improvement Plan (CIP). Each is addressed in subsequent chapters. It's important to note that all proposed development, including possible land acquisition, must be shown on the ALP to be eligible for federal funding.

Four key steps comprise the development alternatives element of the master planning process:

1. Site analysis to include the identification of opportunities and challenges for development
2. Identification of development concepts/scenarios to guide the layout of development alternatives
3. Comparative evaluation of the development alternatives
4. Selection of a Preferred Alternative

Following the PAC and public open house review, the County selected a Preferred Alternative, which is presented at the end of this chapter. Additional review of the alternatives conducted since the County's initial Preferred Alternative selection supplements the alternatives analysis conducted in 2014 confirms that it includes the highest and best use of properties needed to accommodate forecasted demand and provide for growth beyond the planning period. This supplemental analysis is included at the end of this chapter.

## SUMMARY OF FACILITY REQUIREMENTS

The following section summarizes the development recommendations given in Chapter 3, *Facility Requirements*, needed to accommodate forecasted aeronautical activity.

### AIRFIELD REQUIREMENTS

- Runway Length – The current runway length is adequate throughout the planning period; however, preservation of the County's long range ability to extend the runway beyond the 20-year planning window should be consistent with the preferred alternative chosen.
- Taxiway A – Current taxiway width is inadequate and should be widened to 35 feet, in accordance with design standards. Currently, hangars penetrate the Taxiway A object free area (TOFA). When the taxiway is reconstructed to meet the standard width, the location of Taxiway A should be reassessed to move it outside of the TOFA. It is also recommended that edge lighting be installed concurrent with the taxiway widening project.
- Taxiway Intersections – The nonstandard taxiway intersections with the runway should be reconfigured to the standard 90 degree placement.
- Runway Object Free Area (ROFA) – Grass tiedowns located between Runway 6-24 and Taxiway A are within the ROFA and should be relocated.
- Runway Protection Zone (RPZ) – The County should purchase or acquire aviation easements for land within the Runway 6 RPZ that is not currently owned by the County.
- Navigational Aids – Replace the Runway 6 visual approach slope indicator (VASI) with a precision approach path indicator (PAPI).
- Weather Reporting – The County should identify a location to install an automated weather observing station (AWOS).



## LANDSIDE REQUIREMENTS

- Fixed Base Operator (FBO) – The existing terminal building meets Airport needs; however, a location for a future FBO should be identified.
- Hangars – There will be a need for two conventional hangars and one T-hangar with capacity for four aircraft over the planning period.
- Tiedown Apron – The tiedown area is not adequate for existing needs, and the turf tiedowns should be located outside of the ROFA. Area for an expanded tiedown apron should be identified.
- Access Road – Improvements should be made to the existing Airport Access Road.

## SUPPORT FACILITY REQUIREMENTS

- Equipment Storage – Suitable facilities to house airport maintenance equipment should be identified.
- Security – Per Transportation Safety Administration (TSA) recommendations, the tiedown ramp and airport entrance should be lit.
- Fencing – Perimeter fencing and access gates should be installed to enhance airport safety and security.
- Drainage – Upgrades to the Airport's drainage and stormwater management plan are recommended to promote better drainage.

## SITE ANALYSIS

This site analysis task involves assessing the various opportunities and challenges to development at the Airport. This first step provides a framework for identifying potential airside and landside development alternatives. Development opportunities refer to the site conditions that offer flexibility and possibility in development such as undeveloped land. Development challenges are limitations or constraints at or around the Airport that may restrict or prohibit development and/or would require substantial cost, mitigation, and/or complex engineering solutions to overcome. Also notable is that some site conditions may represent both opportunities and challenges. An example of this includes existing roadways adjacent to airport property which may offer opportunities for additional access, but might also limit an airport's ability to expand and/or protect airspace and other surfaces depending on roadway location.

The physical development opportunities and challenges with the greatest influence on the Airport's future growth are outlined here:

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## OPPORTUNITIES

- Large undeveloped area within airport property on the south side of the airfield, although the presence of wetlands create additional considerations.
- Undeveloped land outside, but adjacent to, the southern airport property boundary.
- Undeveloped land on the north side adjacent to existing hangar development.
- Existing utility infrastructure on the north side of the airport. Additionally, the expansion of the utility infrastructure to the south side of the airfield is feasible, as most utility service lines are less than a mile away. These include potable water, sewer, phone, power and fiber optic service lines.
- Roadways (Jackson Highway, Buckley Road) to provide additional airport access and potentially attract aviation-compatible businesses interested in close proximity to Jackson Highway.
- Opportunity to reduce potential wetland hazards in close proximity to the runway. While taking wetland resources should be avoided, the fact remains that the biotic communities associated with wetlands can be incompatible with safe aircraft operations.

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## CHALLENGES

- Known/possible presence of wetlands within and near the Airport, which would require off-site wetland mitigation and additional permitting. Without a delineation report to quantify the amount and types of wetlands present, the cost for mitigation is unknown.
- Lack of undeveloped land adjacent to existing airport landside facilities or land that could be easily acquired to support future expansion, due to existing development and/or private land owner's reluctance to sell.
- Close proximity of Jackson Highway to the west and Buckley Road to the west and southwest. Both roads are within the Runway Protection Zone (RPZ) of Runway 6.
- Lack of utilities on undeveloped property on south side. Also, any development east of the existing north side development would require the extension of utilities to serve such development.

## WETLAND/WATERWAY RECONNAISSANCE

As previously mentioned, impacting wetlands and waterways within the airport property and their possible presence in the airport vicinity present challenges and opportunities to development. Wetlands in a project site may trigger the need for an Environmental Assessment (EA) and may lead, depending on the EA findings, to the need for mitigation to replace the lost aquatic resource functions and area.

A site wetland/waterway reconnaissance was conducted as part of this Master Plan to help the County and the PAC in determining the approximate location of wetlands, waterways, and/or their buffers. The findings of the wetland/waterway reconnaissance are shown in **Exhibit 4A**. These findings are sufficient for a master plan analysis; however, an Environmental Assessment (EA) would likely be necessary at the time a project affecting an area identified as wetland and/or waterway is initiated. At that time, a project would be proposed that would be tied to a demonstrated purpose and need. That project would also have been designed to the extent that the proposed wetland impact could be determined, a mitigation strategy proposed, and the proper permits obtained. Therefore, Exhibit 4A should be used as a reference only, as it likely does not capture all wetlands within the Airport area nor does it predict impacts to wetland resources.

### AIRPORT REFERENCE CODE (ARC)

The Airport's ARC is referenced throughout the chapter. As discussed in the Forecasts, the Airport's current ARC is B-I and this ARC is expected to be upgraded to B-II sometime during the planning period. The ARC corresponds to the most demanding aircraft that uses or is forecast to use the airport on a regular basis, where regular basis is defined as a minimum of 500 annual operations. Regardless of when B-II aircraft will be making regular use of the Airport, setbacks from centerlines for the siting of new buildings will be proposed to meet the B-II standard.

The terms "small aircraft" and "large aircraft" are also used throughout the chapter. The FAA defines a small aircraft as an aircraft with a maximum gross takeoff weight of up to 12,500 lbs. A large aircraft is defined as one with a maximum weight greater than 12,500 lbs. but less than 60,000 lbs. For the purposes of this Master Plan, the assumption is that the critical aircraft will fall into the small aircraft category – 12,500 lbs. or less.

### IDENTIFICATION OF DEVELOPMENT ALTERNATIVES

Prior to identifying each development concept to accommodate future demand, a list of basic improvements that are included in all alternatives, is outlined. These improvements are identified as common features.

### COMMON FEATURES

While common features are in all build alternatives, there may be variations in the way they are integrated into the alternatives. Common features for the alternatives include:

- Parallel taxiway width increase to 35 feet to comply with FAA design standards for B-II, at the time when the Airport's ARC has upgraded due to increased operations.
- The realignment of the Airport's main access road to enhance safety for vehicles accessing, circulating, and leaving the Airport.

- Fencing the aircraft operations areas and the provision of vehicular and pedestrian access gates thus improving the safety of the Airport.
- Removal/relocation of tiedowns that are in the Runway Object Free Area (OFA).

## ALTERNATIVES

The identification of long-term development alternatives followed the site analysis and identification of common features. These alternatives address the facility requirements outlined in the previous chapter, as well as potential development beyond the 20-year Master Plan period. This ensures that the future Airport property needed and the Airport environs are protected now. This would be accomplished through a combination of land acquisition and County zoning strategies.

Three individual plans, or alternatives, were prepared for the landside and airside development. Although these plans do not necessarily exhaust all the variations and development design that may be applied to the Airport, they do provide the appropriate base to produce the Preferred Alternative for the development of the Airport. As previously mentioned, the Preferred Alternative often proves to be a blend or a composite of the various alternatives with the most favorable and/or compatible points from each selected.

In addition to the alternatives previously mentioned, a No Build alternative is presented for the purpose of comparison. While no major physical development is proposed, the alternative does not preclude any operational improvements that may enhance efficiency and safety.

All proposed Build Alternatives are consistent with the applicable FAA design standards and FAR Part 77 airspace planning standards. Future airside facilities proposed, including the runway, taxiways, aircraft parking apron, and access taxiways are designed for Airplane Design Group (ADG) II, which is consistent with good planning principles. While the Airport is currently an ARC B-I, it is important to plan future development to ARC B-II so that decisions made now don't create future constraints to upgrading to B-II facilities, when it is pertinent to do so. Aircraft tiedown aprons and hangar taxilanes used exclusively by smaller aircraft are typically designed based on Airplane Design Group I standards. For hangar areas with a variety of hangar sizes, the largest hangar door width determines the maximum size of aircraft to be accommodated.

The alternatives presented below represent the first step in a multi-step process that involves the public and the PAC and leads to Lewis County selecting a Preferred Alternative to be shown on the Airport Layout Plan (ALP). Also notable is that, because this plan updates the prior master plan, some of the alternatives include elements from previously approved plans shown in the 2004 ALP.

The following sections describe the No Build Alternative, various airside alternatives identified as A1 through A3, and the landside alternatives identified as L1 through L3.

## NO BUILD ALTERNATIVE

The No Build alternative establishes a baseline from which the alternatives can be compared. The No Build alternative preserves the current configuration of the Airport by providing maintenance of existing facilities where needed, particularly maintenance of airfield pavements.

The No Build Alternative, illustrated in **Exhibit 4B**, is inconsistent with the management and development policies of Lewis County and their long-term commitment to providing an efficient and safe public air transportation facility. As previously mentioned, this alternative is presented for the purpose of providing a baseline from which the development alternatives can be compared. Discussion in this chapter regarding the selection of the preferred alternative will make comparisons to the No Build Alternative.

## AIRSIDE ALTERNATIVES

This section examines the airside needs, mainly those of Runway 6-24.

As mentioned in the requirements chapter, the required runway width for a Runway Design Code (RDC) of B-I is 60 feet and for a RDC of B-II is 75 feet. Runway 06-24 is 150 feet wide and based on the County's past actions, including the decision to maintain the 150-foot width made in the last ALP update and the funding of the additional width as part of the last pavement maintenance project, the County supports maintaining the current runway width. The County understands that the FAA will likely not fund the pavement maintenance or improvement of the runway beyond the 75-foot width required for B-II. All alternatives presented show a runway width of 150 feet consistent with the County's vision (per the 2010 Airport Business Plan). However, this does not preclude the County from reducing the width in the future to 75 or 100 feet. Ultimately the County's decision to maintain the current width or to reduce it to the recommended 75 feet must be based on a Cost-Benefit Analysis that accounts for the benefits associated with maintaining the 150-foot width and the additional cost of pavement maintenance and rehabilitation.

The Requirements chapter discussed the fact that two roads, Jackson Highway and Buckley Road, are within the existing and future RPZ for Runway 06. On September 27, 2012, the FAA issued a Memorandum titled "Interim Guidance on Land Uses within a Runway Protection Zone." The guidance states that "Regional and ADO<sup>1</sup> staff must consult with the National Airport Planning and Environmental Division, APP-400 (who will coordinate with the Airport Engineering Division, AAS-I

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<sup>1</sup> Airports District Office

OO), when any of the land uses described in Table 1 would enter the limits of the RPZ as the result of:

1. An airfield project (e.g., runway extension, runway shift)
2. A change in the critical design aircraft that increases the RPZ dimensions
3. A new or revised instrument approach procedure that increases the RPZ dimensions
4. A local development proposal in the RPZ (either new or reconfigured)”

Among the uses described in Table 1 of the Memorandum are transportation facilities such as public roads and highways. The guidance means that any airfield project or any project involving the portion of Buckley Road and Jackson Highway that are within the RPZ would require prior coordination with the FAA. The required coordination is to focus on finding a solution that addresses the incompatible use within the RPZ. The guidance also states that “This interim policy only addresses the introduction of new or modified land uses to an RPZ and proposed changes to the RPZ size or location. Therefore, at this time, the Regional Office and ADO staff shall continue to work with sponsors to remove or mitigate the risk of any existing incompatible land uses in the RPZ as practical.”

Airside Alternatives A1 and A2 presented in this section address the issue of the existing roads in the RPZ. Additionally, the FAA has been engaged in the discussion to determine the best approach to handle this incompatible land use.

#### AIRSIDE ALTERNATIVE A1

Airside Alternative A1 provides for a 1,721-foot extension of the runway to the east, resulting in a runway length of 6,200 feet. The 6,200-foot length was identified in the Requirements chapter as the length necessary to serve 75 percent of large airplanes (over 12,500 pounds but under 60,000 pounds) at 90 percent useful payload.

**Exhibit 4C** illustrates the runway extension and the necessary land acquisition to accommodate it. The land acquisition would also include the area covered by the future RPZ of Runway 24. Further, the exhibit shows the full-length extension of Taxiway A and the provision of a holding apron at the Runway 24 entrance. No change to the Runway 6 RPZ is required under Alternative A1.

As discussed in the previous chapter, the aviation demand forecasts for the Airport do not support the need for a runway extension in the 20-year planning period. However, serving 75 percent of large airplanes at 90 percent useful load is one of a few scenarios the County is considering for the distant future (beyond 20 years). Additionally, a 6,200 feet runway aligns with the Airport Business Plan developed in 2010. The County recognizes that inclusion of such an extension on the ALP drawing would help the County protect for it through zoning strategies and land acquisition. Additionally, such an extension to the east might prove necessary and needed in light of a possible decision to mitigate the risk of roadways passing through Runway 06 RPZ.

Possible alternatives that address the incompatible land use in Runway 6 RPZ are discussed in Airside Alternative A2 and A3.

## AIRSIDE ALTERNATIVE A2

Airside Alternative A2 directly examines the Runway 6 RPZ avoidance by relocating or displacing Runway 6 threshold to the east to fully remove Jackson Highway and Buckley Road from the RPZ. While this concept eliminates roadways within the RPZ, it creates another concern. As the RPZ shifts to the east, the aircraft parking apron and the airport office fall within the new RPZ, thus making these facilities incompatible within the RPZ and likely creating obstructions to the approach surface. Consequently, this idea was deemed unacceptable and eliminated from further consideration. However, an alternative that considered a reduced shift in the RPZ would strike a balance between the roadways within the RPZ while avoiding any overlay of the airport office and apron, which is highlighted in **Exhibit 4D**.

This concept requires a Runway 6 threshold relocation a distance of 379 feet from the existing threshold for a new runway length of 4,100 feet. Both Jackson Highway and Buckley Road are still inside the RPZ but they only occupy the outer third. This alternative does not provide a complete solution to the incompatible land use within the RPZ, but does reduce the risk to people and property on the ground. Vehicles traveling on either Jackson Highway or Buckley Road would avoid the center portion of the RPZ and thus according to the FAA's Interim Guidance for RPZs would be subjected to less risk.

## AIRSIDE ALTERNATIVE A3

Airside Alternative A3, illustrated in **Exhibit 4E**, reflects the same Runway 6 threshold relocation of 379 feet to the east as Alternative A2. Any greater threshold relocation is unacceptable, as new obstructions would be created (existing airport buildings). Airside Alternative A3 varies, however, by showing Buckley Road ending in a cul-de-sac prior to entering the RPZ. Also, Jackson Highway is realigned to go around the outer boundary of the RPZ, without entering it. Buckley Road is a County road, and Jackson Highway is a State facility. The likelihood of implementing these changes are unlikely, due to the implementation cost and disruptions to surface traffic flows.

Although this alternative shows the Runway 6 threshold relocated to the east, the same alternative could be applied with Runway 6 threshold remaining where it currently is. This would require the realignment of a larger portion of Jackson Highway, thus increasing the cost associated with such diversion.

## AIRSIDE COMPARATIVE EVALUATION

A comparison of the airside alternatives is presented in **Table 4A**. This table highlights the key features of each alternative to include runway length and RPZ land use compatibility. A discussion of the cost associated with the alternatives and the possible required wetland mitigation is addressed separately.

**Table 4A. Airside Alternatives Comparative Evaluation**

| Feature                          | No Build                        | Alternative A1   | Alternative A2                            | Alternative A3                  |
|----------------------------------|---------------------------------|--|---|---------------------------------|
| Runway Length                    | 4,479 feet                      | 4,479 feet with ability to extend to 6,200 feet            | 4,100 feet                                | 4,100 feet                      |
| Aircraft Served by Runway Length | B-II, 100% of small GA aircraft | B-II, large GA aircraft<br>75% of fleet at 90% useful load | B-II, 100% of small GA aircraft           | B-II, 100% of small GA aircraft |
| Incompatible Land Use in RPZ     | Yes                             | Yes, roadways  | Yes, roadways in outer third of Rwy 6 RPZ | No                              |
| Implementation Cost              | \$                              | \$\$\$   | \$\$                                      | \$\$\$\$                        |

Source: WHPacific, Inc.

ASSOCIATED COST – ORDER OF MAGNITUDE

Although detailed cost estimates were not prepared for each alternative, the alternatives’ costs are compared in order of magnitude.

The closure of Buckley Road and the realignment of Jackson Highway, as shown in Alternative A3, are also costly propositions. The realignment of Jackson Highway would require land acquisition associated with the new alignment and right of way. The closure of Buckley Road would require the provision of alternate access to the residential neighborhood served by the road. A runway extension to the east, as shown in Alternative A1 would require land acquisition to accommodate the extension as well as the associated future RPZ. As a result, Alternative A3 is the most expensive airside alternative followed by Alternative A1. Alternative A2 has the least associated cost of all airside alternatives as it does not require the acquisition of land or major road realignments and closure.

As discussed in the Requirements chapter, a runway extension is not justified in the planning period and therefore would not be eligible for FAA funding at this time. The inclusion of the runway extension as an alternative is to allow the County to plan for the distant future, beyond the 20-year period.

LANDSIDE ALTERNATIVES

The landside alternative concepts presented below provide the facilities necessary to not only accommodate the demand forecast for the 20-year planning period, but beyond. Factors that influence and drive the demand may change in the future, leading to a change in the facilities and



improvements needed to accommodate the aeronautical demand. It is a good practice to develop a plan that goes beyond accommodating the forecast demand for the planning period and aims at identifying and protecting for the County's long term vision.

The development of additional facilities must be driven and justified by the aeronautical demand.

#### LANDSIDE ALTERNATIVE L1

As previously identified in this master plan, the current Airport Reference Code is B-I. Activity by aircraft in the B-II family does take place at the Airport and is expected to increase, leading to an ARC upgrade to B-II during the planning period.

Alternative L1 provides B-II corporate and T-hangar development, as well as a parking apron south of the airfield on County-owned property, which exceeds the needs identified in the Facility Requirements. However, development of the entire area is shown to represent how it could be developed, which would likely be phased over time according to demand. This alternative (**Exhibit 4F**) would also require an Airport access road to serve this development area. The land where the access road is identified on the south side is not currently owned by the Airport so an easement would be required. However, to avoid an easement, the road could be placed inside the airport property line with size reduction to the hangars to maintain the proper separation between buildings and the runway. Further, Alternative L1 does not provide for vehicular parking to serve the development to the south of the Airport. Such space could be provided in exchange for reduced aircraft parking and/or hangar space.

Alternative L1 also includes the provision of a future FBO building, realigned auto access, and additional vehicular parking area to serve the current as well as future needs of the airport users to the north of the airfield. Wetlands are known to be present in the southern development area identified in Alternative L1. Initial calculations indicate wetland impact would be approximately 1.88 acres in this area.

The requirements chapter identified the need for an AWOS system. Alternative L1 shows two possible locations for such a system as well as the clearance area that each of these locations would require. As with all other alternatives, Alternative L1 includes the common features identified earlier. It should be noted that all alternatives showing development south of the airfield would require the provision of utilities such as power and water to that part of the airfield. It appears utilities would likely be expanded from existing service approximately one mile south of the development area, which would add to the overall development cost.

## LANDSIDE ALTERNATIVE L2

The main objective of Alternative L2 is to avoid the costly development of the 14 acres south of the airfield that would require off-airport wetland mitigation and the extension of utilities to that side of the airfield. In this alternative, illustrated in **Exhibit 4G**, all development is kept to the north of the airfield. This requires the acquisition of land to the north and northeast of the current hangar development area.

As noted previously, it is likely more wetlands exist in this area that have not been delineated<sup>2</sup>. This makes estimating the potential wetland impact from Alternative L2, although the extent cannot be known until further delineation on the non-County owned adjacent properties have been performed.

Alternative L2 provides the additional B-I and B-II hangar space needed to accommodate the forecast demand for the planning period and beyond, to demonstrate how the areas could be fully built-out if demand dictates. The alternative also provides an aircraft parking apron to both accommodate the future demand and remedy the loss of tiedown space resulting from the removal of the current tiedown spaces that are within the runway OFA.

Further, an additional access road to serve the new development on the north side is included. A new vehicular parking area to the north of the existing hangar development is provided to accommodate the existing, as well as future demand. Additionally, all the previously mentioned common features are shown in this alternative.

## LANDSIDE ALTERNATIVE L3

Alternative L3 provides B-I hangars and parking apron development to the east of the existing hangar development and north of the runway (**Exhibit 4H**), while B-II hangar development is proposed on the south side. Features of previous alternatives such as the vehicular parking area to the north of the existing hangar development are also included in this alternative. Wetland impacts for development in this area are likely, but unknown at this time.

South of the runway, the B-II hangar development would accommodate a combination of hangars and apron area. Impacts to approximately 1.88 acres of wetland are estimated for development in this area, which would likely include off-site mitigation and permitting. While acquisition of additional land is not specifically identified on the south side, the County could acquire land in the

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<sup>2</sup> In the spring of 2016, additional field work was done to verify the presence of wetlands in the area on the north side of the runway. County staff have asserted that the land north of the runway also had wetlands that would be impacted by future development. The 2016 survey work confirmed the presence of wetlands.

future if land becomes available. Additional land on the south side that is contiguous to the airport property could be acquired and reserved for long-term aviation development of aircraft storage hangars, support facilities, and potentially some aviation business tenants.

As with all other alternatives, common features are included.

## LANDSIDE COMPARATIVE EVALUATION

**Table 4B** provides a comparative evaluation summary of the various landside alternatives described earlier. This table highlights key features associated with each alternative such as the scenario or main theme of each as well as land acquisition, known and possible wetland presence, expansion potential, and phasing and flexibility considerations. The order-of-magnitude cost associated with the various alternatives is discussed separately.

All build alternatives propose safe and efficient facilities in compliance with FAA design standards. However, various components of each alternative may offer incremental to substantial enhancement in factors such as capacity, functionality, flexibility, expandability, timely phasing, cost savings, and environmental impact deterrence. While some of these factors can be quantitatively measured (e.g. number of future hangars), others may be more subjective and require discussion among the PAC members, County staff, and public as part of the comparative evaluation process.

**Table 4B. Landside Alternatives Comparative Evaluation**

| Feature                              | No Build   | Alternative L1   | Alternative L2   | Alternative L3  |
|--------------------------------------|--|--|--|---|
| Overview                             | Maintain existing facilities. No investment in airport development (included for comparison) | B-I aircraft accommodated on north side and B-II on south side. All development within Airport property. Development is sufficient for 20-year planning period but within the airport's current boundaries will restrict future expansion. | All development on the north side of the airfield.   | Expands B-I areas to the east of the existing development. South side is developed to serve B-II development.                       |
| Airport Reference Code               | B-II, however hangars and access taxilanes B-I   | B-II   | B-II   | B-II  |
| Land Acquisition                     | No   | Not for development, but likely for off-site wetland mitigation  | Yes (north, northeast) for development and off-site wetland mitigation   | Yes (northeast) for development and off-site wetland mitigation   |
| Wetland Mitigation                   | No   | Yes, approx. 1.88 ac   | Yes, acreage unknown   | Yes, 1.88 ac min.   |
| Expansion beyond the 20-year period  | No   | Yes – Limited  | Yes  | Yes   |
| Phasing & Flexibility Considerations | N/A  | Near-term south side development on airport property, but fuel, utility, and vehicle accessibility also required; B-II facilities could serve both B-I and B-II.   | Near-term north side land acquisition needed for B-I and B-II (fuel available, existing utilities); secondary access for B-II. | Near-term development on north side serves B-I (limited); future development on south side serves B-II, but can serve B-I and B-II. |

Source: WHPacific, Inc.

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## ASSOCIATED COST – ORDER OF MAGNITUDE

Although detailed cost estimates were not prepared for each alternative, the alternatives are compared in order of magnitude. The No Build Alternative has the least associated cost as it represents a scenario where no new development takes place and existing facilities are maintained. Therefore, the comparison will focus on the build alternatives L1, L2 and L3.

It was previously noted that the Build Alternatives are depicting the full build-out conditions in order to see the full potential of the facilities. Within the concepts, however, the required facilities identified in Chapter 3 are depicted in a different color from the other facilities.

Alternatives L1 and L3 provide for the development of the 14 acres to the southwest of the runway, requiring the extension of utility lines to serve the new development in the area. Additionally, the 14 acres of property to the southwest of the runway, shown as developed in Alternatives L1 and L3, is known to have wetlands that will likely require mitigation if they are impacted. Development to the northeast of the runway may or may not require wetland mitigation<sup>3</sup>. Even if wetland mitigation is required to the northeast, its extent is expected to be below that of the 14-acre property on the southwest side. Regarding the possible costs with wetland and waterway mitigation, to include off-site mitigation and permitting, Alternatives L1 and L3 would have the highest associated cost while L2 would have a significantly lower associated cost.

As for the land acquisition associated costs, Alternative L2 has the highest associated cost as it includes the cost of land acquisition of parcels to the north and northeast of the runway. Alternative L3 has the second highest cost as it also includes land acquisition, of a smaller parcel, to the northeast of the runway. Alternative L1 does not include any land acquisition and therefore has the lowest cost.

## PREFERRED ALTERNATIVE

The Preferred Alternative was selected by the County after the alternatives discussed above were presented to the PAC and the public in April 2014. At that time, the preferred option was to first develop the County's property south of the runway, then look to property acquisition to further development to the north.

After lengthy deliberation and discussions with the FAA, the County made slight revisions to the Preferred Alternative. The main result of these discussions was to prioritize build-out of northern

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<sup>3</sup> Field survey of wetlands near this potential development area in 2016 indicates that it likely does have wetlands that would likely be impacted with development.

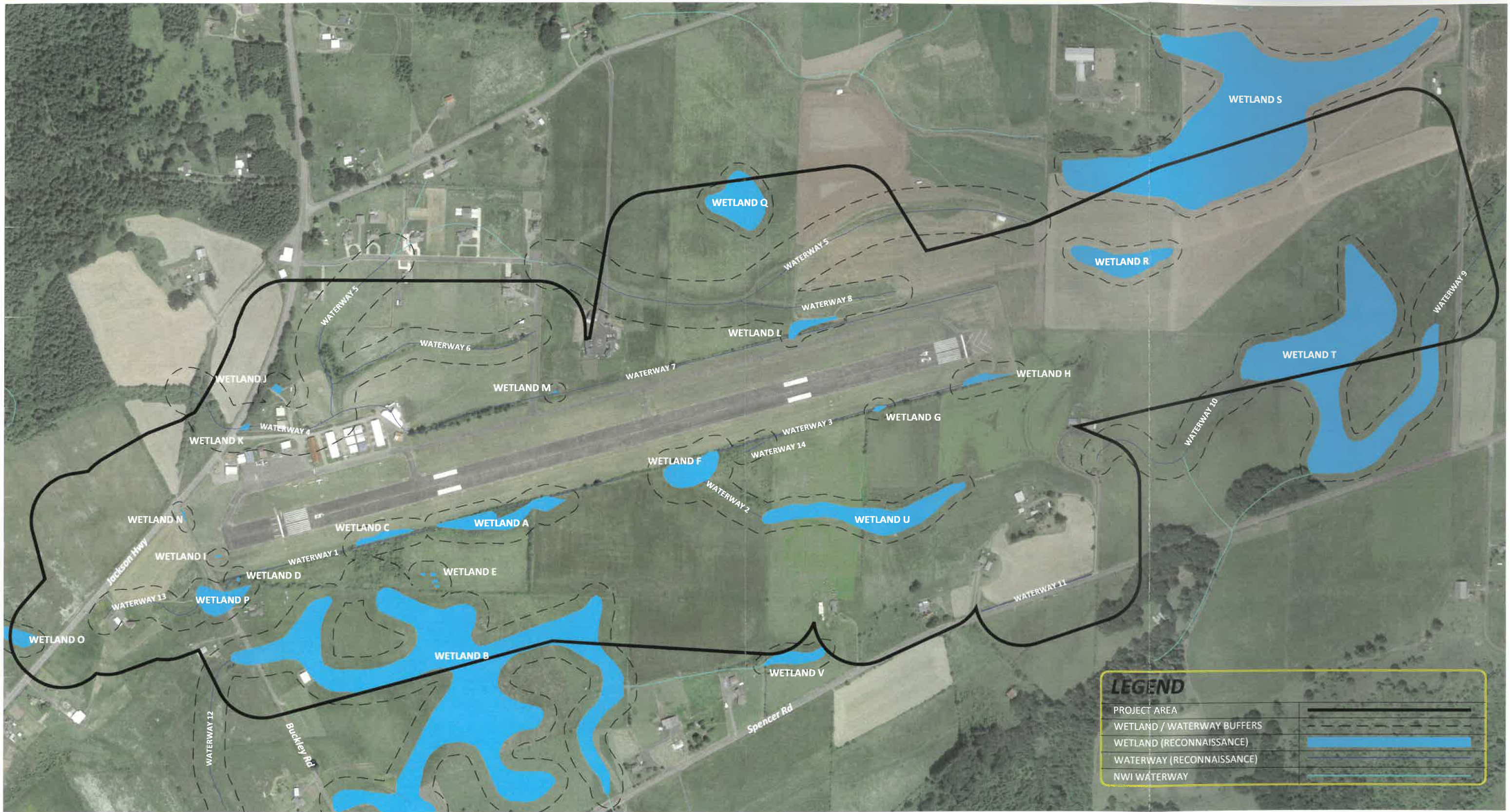
development areas to meet the forecast Facility Requirements, prior to developing land south of the runway. As discussed above, there are constraints to developing the southern parcel including: utility upgrades, wetland impacts, and duplication of facilities (additional taxiway to access development and safety concerns for mid-field crossings).

The final Preferred Alternative is depicted in **Exhibit 4I** and is a composite of Airside Alternatives A1 and A2, and Landside Alternative L3. Briefly, the Preferred Alternative includes an ultimate runway extension; relocation of the Runway 6 threshold, without roadway alterations; and initial landside development for B-I and B-II aircraft north of the runway, with the potential to develop south of the runway once the northern development areas are built-out.

The County's decision to adopt the Preferred Alternative, as amended, was based on the following criteria:

- The County values private land owner rights, however, they will pursue acquisition of the 4-acre site adjacent to existing development to expand aircraft parking. This will be shown in the development phasing plan as a high priority project, so that tiedowns currently within the runway object free area can be removed to increase safety.
- Since 2014, the likelihood of a fire station being developed on Airport has declined. As such, the County prefers to develop that northern portion of Airport property for aircraft storage. The Preferred Alternative shows development of hangars in that area to meet the forecasted demand. Development costs will be reduced, due to the immediate availability of utilities.
- Future development of the southern parcel will be pursued once the northern parcels have been built-out.
- The Preferred Alternative addresses the Issues and Goals stated in Chapter 1.

The Preferred Alternative will be reflected in the Airport Layout Plan (ALP) presented in Chapter 5.



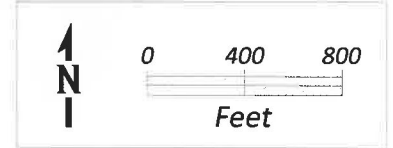
**LEGEND**

|                            |  |
|----------------------------|--|
| PROJECT AREA               |  |
| WETLAND / WATERWAY BUFFERS |  |
| WETLAND (RECONNAISSANCE)   |  |
| WATERWAY (RECONNAISSANCE)  |  |
| NWI WATERWAY               |  |

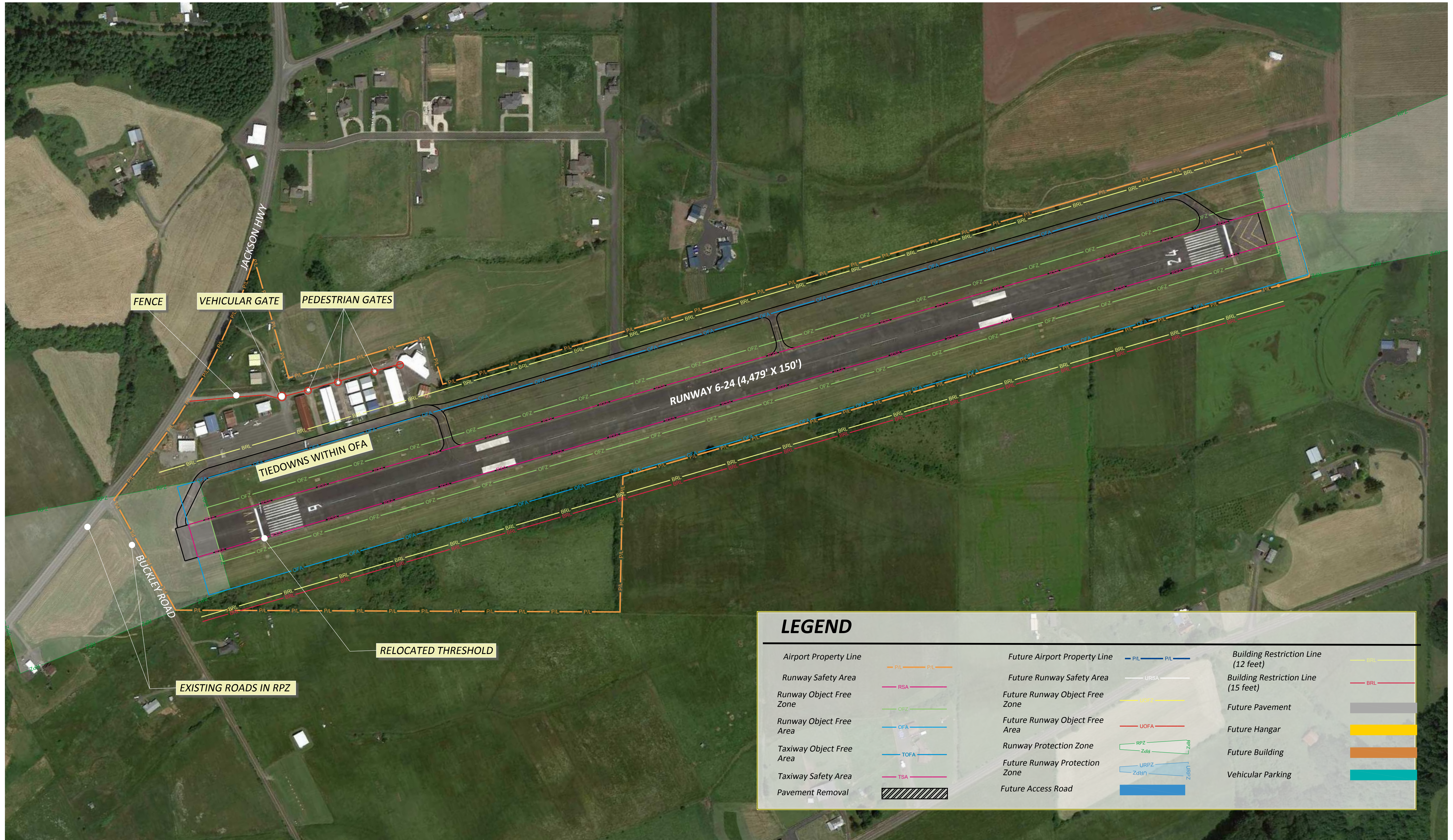


**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
**AIRPORT MASTER PLAN UPDATE**

**Exhibit 4A - Wetland and Waterway Map**



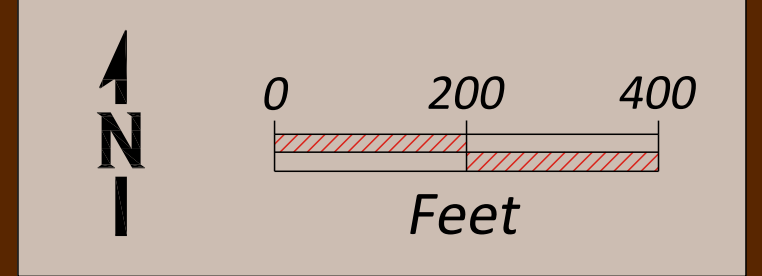
Source: Landau Associates



# ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT

## AIRPORT MASTER PLAN UPDATE

### Exhibit 4B - No Build/No Action Alternative





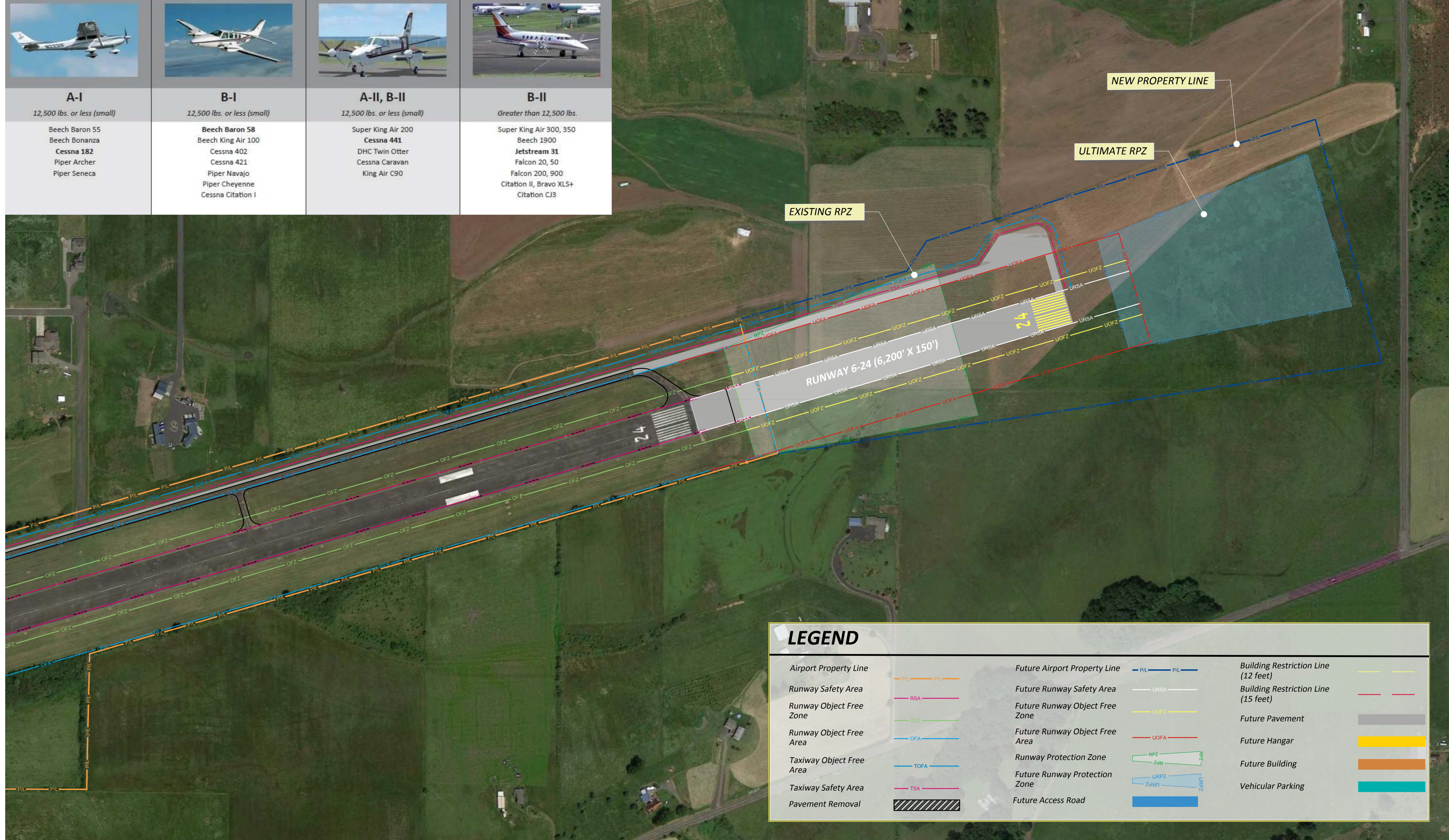


**A-I**  
12,500 lbs. or less (small)  
Beech Baron 55  
Beech Bonanza  
Cessna 182  
Piper Archer  
Piper Seneca

**B-I**  
12,500 lbs. or less (small)  
Beech Baron 58  
Beech King Air 100  
Cessna 402  
Cessna 421  
Piper Navajo  
Piper Cheyenne  
Cessna Citation I

**A-II, B-II**  
12,500 lbs. or less (small)  
Super King Air 200  
Cessna 441  
DHC Twin Otter  
Cessna Caravan  
King Air C90

**B-II**  
Greater than 12,500 lbs.  
Super King Air 300, 350  
Beech 1900  
Jetstream 31  
Falcon 20, 50  
Falcon 200, 900  
Citation II, Bravo XLS+  
Citation CJ3



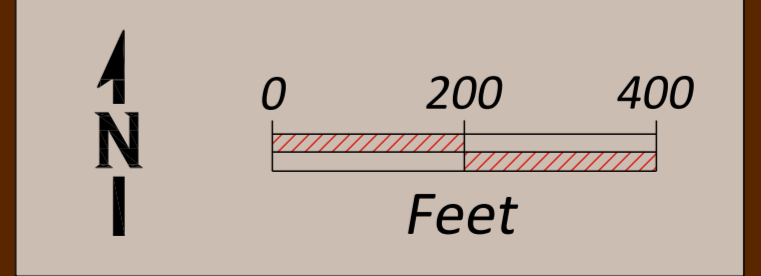
| LEGEND                              |                 |                                |        |
|-------------------------------------|-----------------|--------------------------------|--------|
| Airport Property Line               | PIL             | Future Airport Property Line   | FAPL   |
| Runway Safety Area                  | RSA             | Future Runway Safety Area      | URSA   |
| Runway Object Free Zone             | OFZ             | Future Runway Object Free Zone | UOFZ   |
| Runway Object Free Area             | OFA             | Future Runway Object Free Area | UOFA   |
| Taxiway Object Free Area            | TOFA            | Runway Protection Zone         | RPZ    |
| Taxiway Safety Area                 | TSA             | Future Runway Protection Zone  | URPZ   |
| Pavement Removal                    | (Hatched)       | Future Access Road             | (Blue) |
| Building Restriction Line (12 feet) | (Yellow dashed) |                                |        |
| Building Restriction Line (15 feet) | (Red dashed)    |                                |        |
| Future Pavement                     | (Grey)          |                                |        |
| Future Hangar                       | (Yellow)        |                                |        |
| Future Building                     | (Orange)        |                                |        |
| Vehicular Parking                   | (Cyan)          |                                |        |



# ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT

## AIRPORT MASTER PLAN UPDATE

### Exhibit 4C - Alternative A1





**A-I**  
12,500 lbs. or less (small)  
Beech Baron 55  
Beech Bonanza  
Cessna 182  
Piper Archer  
Piper Seneca



**B-I**  
12,500 lbs. or less (small)  
Beech Baron 58  
Beech King Air 100  
Cessna 402  
Cessna 421  
Piper Navajo  
Piper Cheyenne  
Cessna Citation I



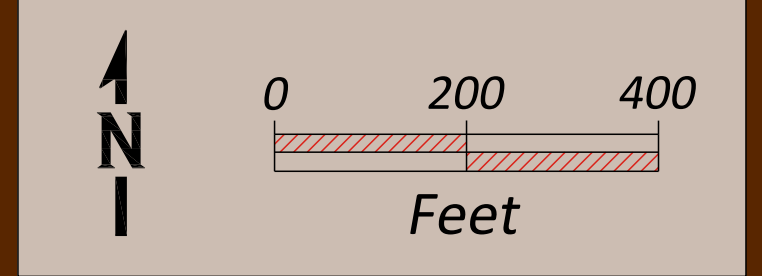
**A-II, B-II**  
12,500 lbs. or less (small)  
Super King Air 200  
Cessna 441  
DHC Twin Otter  
Cessna Caravan  
King Air C90



| LEGEND                   |  |                                |  |                                     |  |
|--------------------------|--|--------------------------------|--|-------------------------------------|--|
| Airport Property Line    |  | Future Airport Property Line   |  | Building Restriction Line (12 feet) |  |
| Runway Safety Area       |  | Future Runway Safety Area      |  | Building Restriction Line (15 feet) |  |
| Runway Object Free Zone  |  | Future Runway Object Free Zone |  | Future Pavement                     |  |
| Runway Object Free Area  |  | Future Runway Object Free Area |  | Future Hangar                       |  |
| Taxiway Object Free Area |  | Runway Protection Zone         |  | Future Building                     |  |
| Taxiway Safety Area      |  | Future Runway Protection Zone  |  | Vehicular Parking                   |  |
| Pavement Removal         |  | Future Access Road             |  |                                     |  |



**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
AIRPORT MASTER PLAN UPDATE  
**Exhibit 4D - Alternative A2**





**A-I**  
12,500 lbs. or less (small)  
Beech Baron 55  
Beech Bonanza  
Cessna 182  
Piper Archer  
Piper Seneca



**B-I**  
12,500 lbs. or less (small)  
Beech Baron 58  
Beech King Air 100  
Cessna 402  
Cessna 421  
Piper Navajo  
Piper Cheyenne  
Cessna Citation I



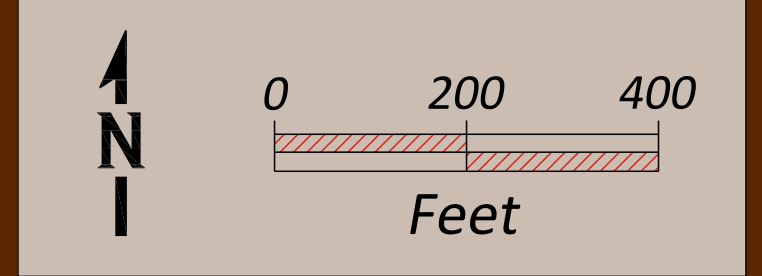
**A-II, B-II**  
12,500 lbs. or less (small)  
Super King Air 200  
Cessna 441  
DHC Twin Otter  
Cessna Caravan  
King Air C90

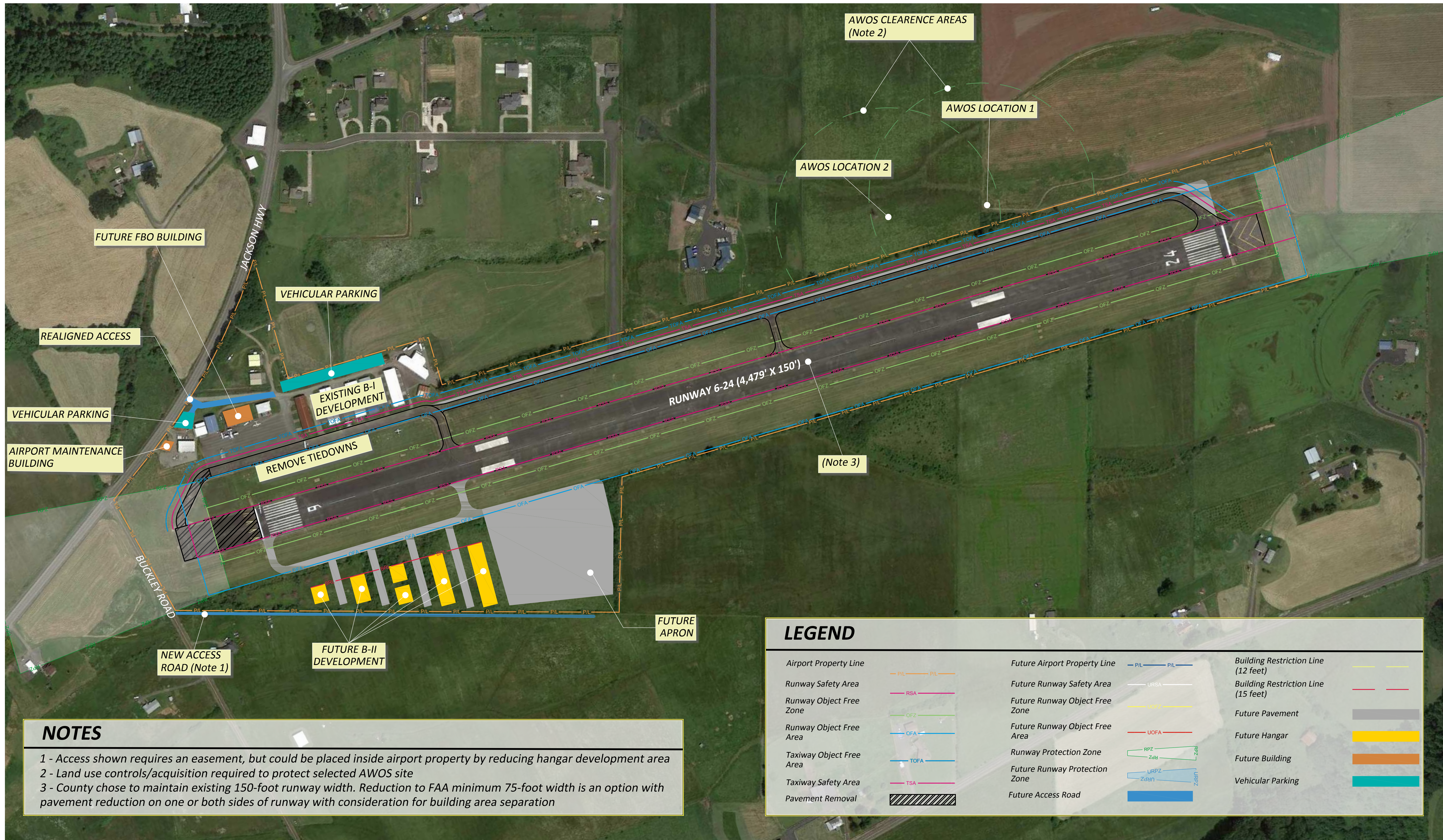


| LEGEND                   |  |                                     |  |
|--------------------------|--|-------------------------------------|--|
| Airport Property Line    |  | Future Airport Property Line        |  |
| Runway Safety Area       |  | Future Runway Safety Area           |  |
| Runway Object Free Zone  |  | Future Runway Object Free Zone      |  |
| Runway Object Free Area  |  | Future Runway Object Free Area      |  |
| Taxiway Object Free Area |  | Runway Protection Zone              |  |
| Taxiway Safety Area      |  | Future Runway Protection Zone       |  |
| Pavement Removal         |  | Future Access Road                  |  |
|                          |  | Building Restriction Line (12 feet) |  |
|                          |  | Building Restriction Line (15 feet) |  |
|                          |  | Future Pavement                     |  |
|                          |  | Future Hangar                       |  |
|                          |  | Future Building                     |  |
|                          |  | Vehicular Parking                   |  |



**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
AIRPORT MASTER PLAN UPDATE  
**Exhibit 4E - Alternative A3**





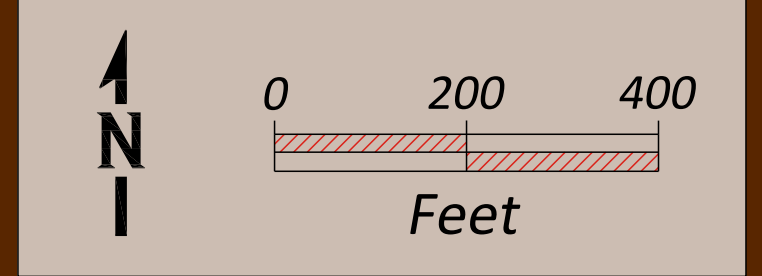
**NOTES**

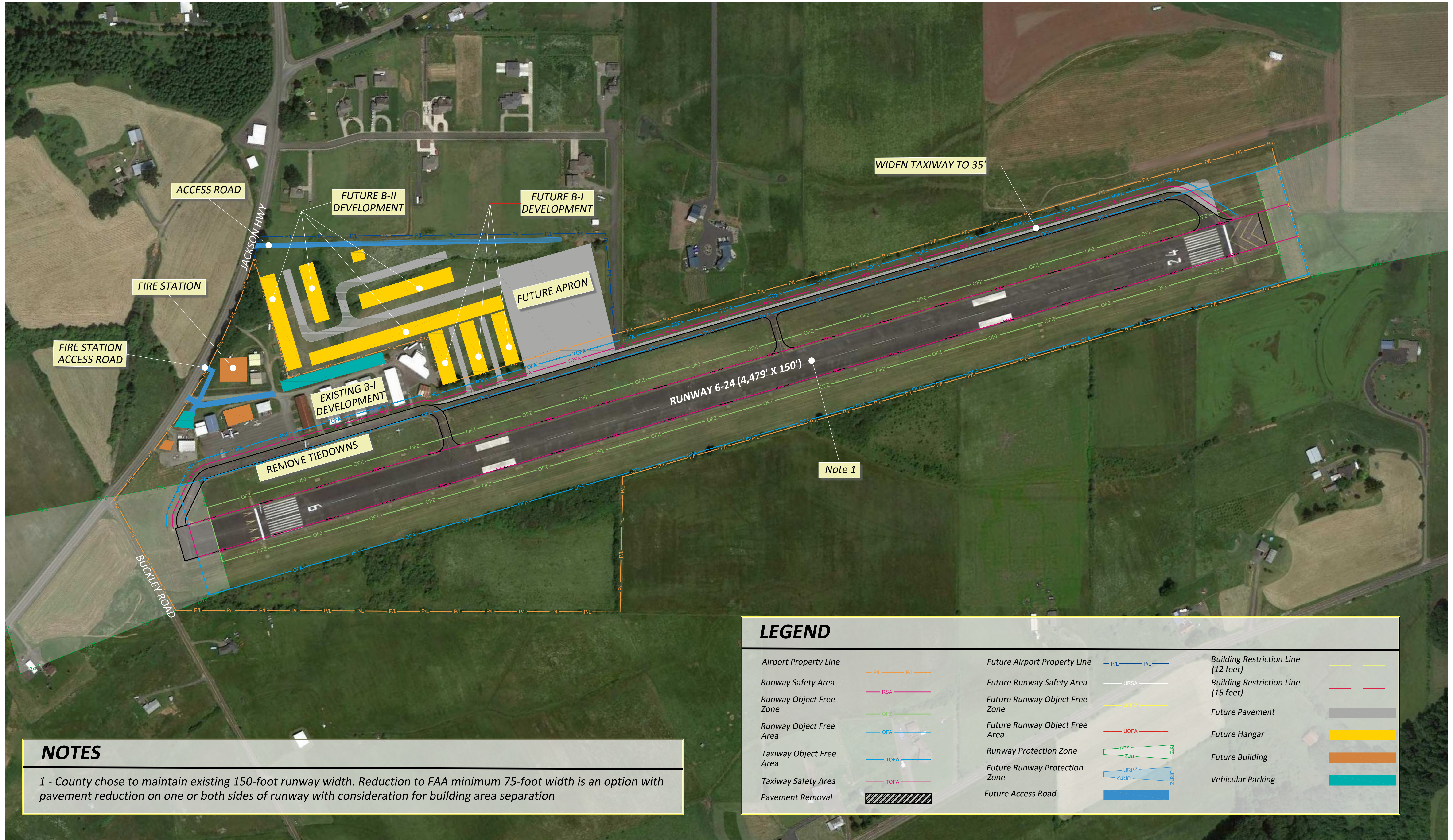
1 - Access shown requires an easement, but could be placed inside airport property by reducing hangar development area  
 2 - Land use controls/acquisition required to protect selected AWOS site  
 3 - County chose to maintain existing 150-foot runway width. Reduction to FAA minimum 75-foot width is an option with pavement reduction on one or both sides of runway with consideration for building area separation

| LEGEND                   |  |                                     |  |
|--------------------------|--|-------------------------------------|--|
| Airport Property Line    |  | Future Airport Property Line        |  |
| Runway Safety Area       |  | Future Runway Safety Area           |  |
| Runway Object Free Zone  |  | Future Runway Object Free Zone      |  |
| Runway Object Free Area  |  | Future Runway Object Free Area      |  |
| Taxiway Object Free Area |  | Runway Protection Zone              |  |
| Taxiway Safety Area      |  | Future Runway Protection Zone       |  |
| Pavement Removal         |  | Future Access Road                  |  |
|                          |  | Building Restriction Line (12 feet) |  |
|                          |  | Building Restriction Line (15 feet) |  |
|                          |  | Future Pavement                     |  |
|                          |  | Future Hangar                       |  |
|                          |  | Future Building                     |  |
|                          |  | Vehicular Parking                   |  |



**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
 AIRPORT MASTER PLAN UPDATE  
**Exhibit 4F - Alternative L1**





**NOTES**

1 - County chose to maintain existing 150-foot runway width. Reduction to FAA minimum 75-foot width is an option with pavement reduction on one or both sides of runway with consideration for building area separation

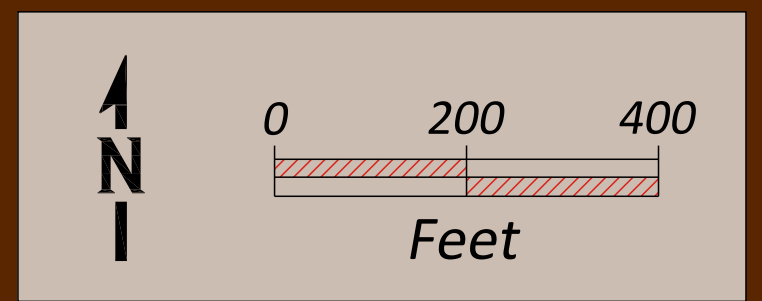
| LEGEND                   |          |                                     |          |
|--------------------------|----------|-------------------------------------|----------|
| Airport Property Line    | — P/L —  | Future Airport Property Line        | — P/L —  |
| Runway Safety Area       | — RSA —  | Future Runway Safety Area           | — URSA — |
| Runway Object Free Zone  | — OFZ —  | Future Runway Object Free Zone      | — UOFZ — |
| Runway Object Free Area  | — OFA —  | Future Runway Object Free Area      | — UOFA — |
| Taxiway Object Free Area | — TOFA — | Runway Protection Zone              | — RPZ —  |
| Taxiway Safety Area      | — TSA —  | Future Runway Protection Zone       | — URPZ — |
| Pavement Removal         | ▨        | Future Access Road                  | — AR —   |
|                          |          | Building Restriction Line (12 feet) | — BR12 — |
|                          |          | Building Restriction Line (15 feet) | — BR15 — |
|                          |          | Future Pavement                     | — FP —   |
|                          |          | Future Hangar                       | — FH —   |
|                          |          | Future Building                     | — FB —   |
|                          |          | Vehicular Parking                   | — VP —   |

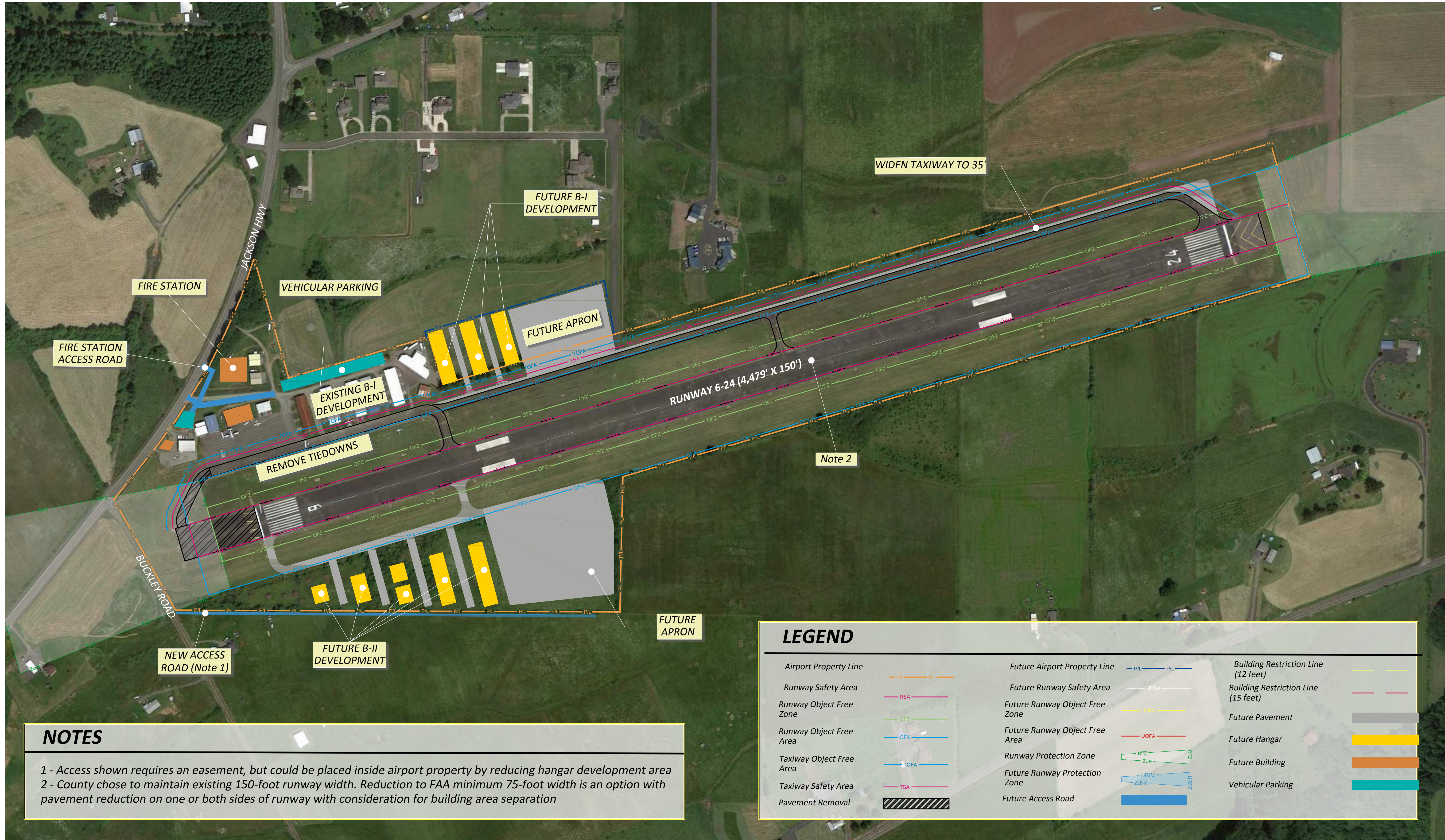


# ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT

## AIRPORT MASTER PLAN UPDATE

### Exhibit 4G - Alternative L2





**NOTES**

1 - Access shown requires an easement, but could be placed inside airport property by reducing hangar development area  
 2 - County chose to maintain existing 150-foot runway width. Reduction to FAA minimum 75-foot width is an option with pavement reduction on one or both sides of runway with consideration for building area separation

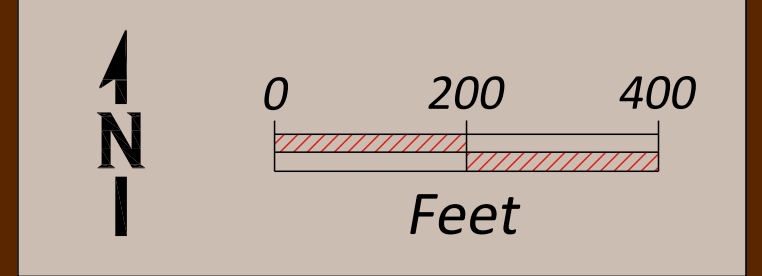
**LEGEND**

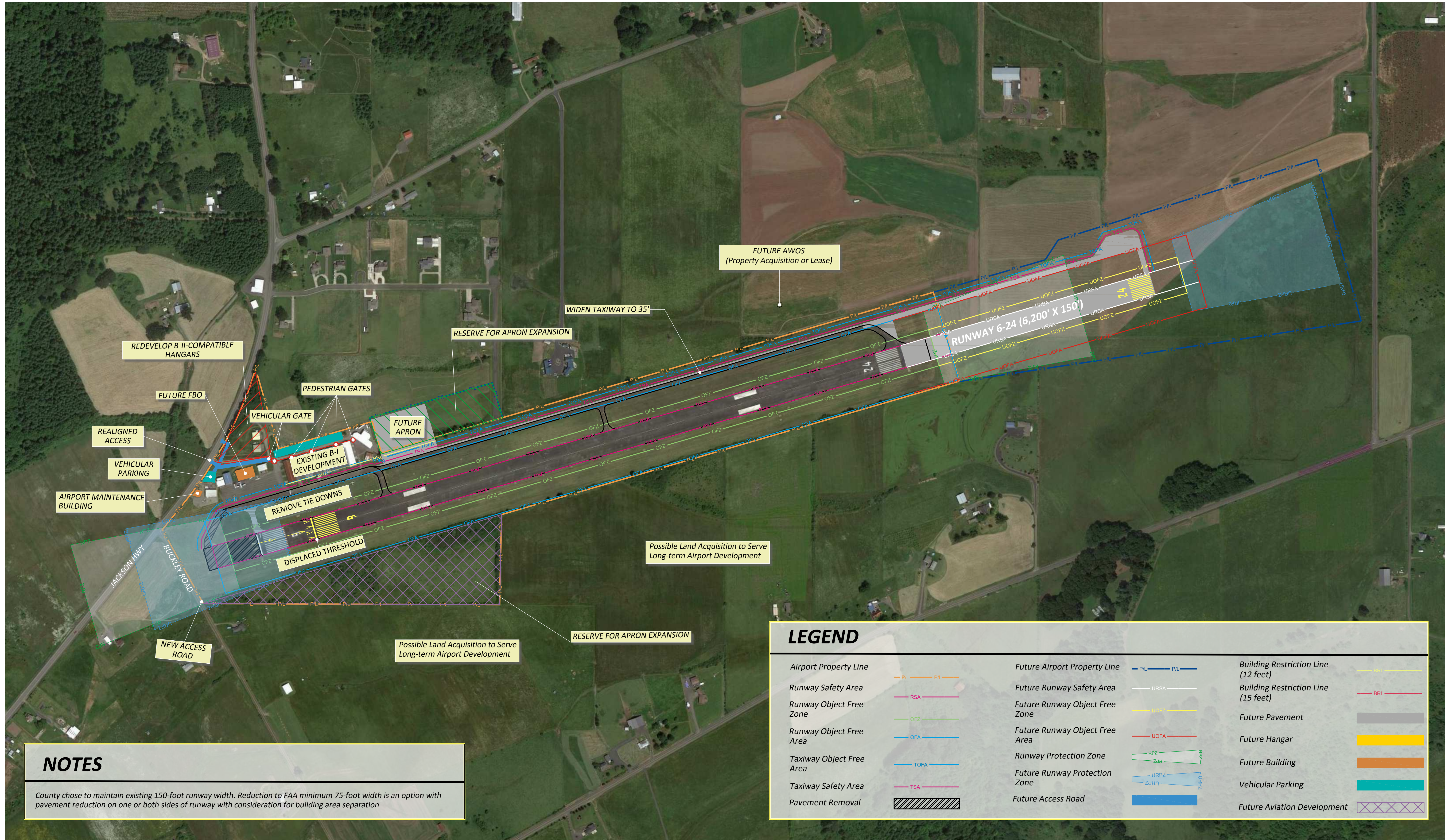
|                          |               |                                |                   |                                     |                   |
|--------------------------|---------------|--------------------------------|-------------------|-------------------------------------|-------------------|
| Airport Property Line    | — PIL — PIL — | Future Airport Property Line   | — P/L — P/L —     | Building Restriction Line (12 feet) | — B/L — B/L —     |
| Runway Safety Area       | — RSA —       | Future Runway Safety Area      | — U/RSA —         | Building Restriction Line (15 feet) | — B/L — B/L —     |
| Runway Object Free Zone  | — OFZ —       | Future Runway Object Free Zone | — U/OFZ —         | Future Pavement                     | — PAV — PAV —     |
| Runway Object Free Area  | — OFA —       | Future Runway Object Free Area | — U/OFA —         | Future Hangar                       | — HANG — HANG —   |
| Taxiway Object Free Area | — TOFA —      | Runway Protection Zone         | — R/PZ — R/PZ —   | Future Building                     | — BLDG — BLDG —   |
| Taxiway Safety Area      | — TSA —       | Future Runway Protection Zone  | — U/RPZ — U/RPZ — | Vehicular Parking                   | — VPARK — VPARK — |
| Pavement Removal         | ▨             | Future Access Road             | — F/ACC — F/ACC — |                                     |                   |



**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
 AIRPORT MASTER PLAN UPDATE

**Exhibit 4H - Alternative L3**





REDEVELOP B-II-COMPATIBLE HANGARS

FUTURE FBO

REALIGNED ACCESS

VEHICULAR PARKING

AIRPORT MAINTENANCE BUILDING

JACKSON HWY

BUCKLEY ROAD

NEW ACCESS ROAD

PEDESTRIAN GATES

VEHICULAR GATE

EXISTING B-I DEVELOPMENT

REMOVE TIE DOWNS

DISPLACED THRESHOLD

RESERVE FOR APRON EXPANSION

WIDEN TAXIWAY TO 35'

FUTURE AWOS  
(Property Acquisition or Lease)

RUNWAY 6-24 (6,200' X 150')

Possible Land Acquisition to Serve Long-term Airport Development

Possible Land Acquisition to Serve Long-term Airport Development

RESERVE FOR APRON EXPANSION

**NOTES**

County chose to maintain existing 150-foot runway width. Reduction to FAA minimum 75-foot width is an option with pavement reduction on one or both sides of runway with consideration for building area separation

| LEGEND                              |  |      |
|-------------------------------------|--|------|
| Airport Property Line               |  | PIL  |
| Runway Safety Area                  |  | RSA  |
| Runway Object Free Zone             |  | OFZ  |
| Runway Object Free Area             |  | OFA  |
| Taxiway Object Free Area            |  | TOFA |
| Taxiway Safety Area                 |  | TSA  |
| Pavement Removal                    |  |      |
| Future Airport Property Line        |  | PIL  |
| Future Runway Safety Area           |  | URSA |
| Future Runway Object Free Zone      |  | UOFZ |
| Future Runway Object Free Area      |  | UOFA |
| Runway Protection Zone              |  | RPZ  |
| Future Runway Protection Zone       |  | URPZ |
| Future Access Road                  |  |      |
| Building Restriction Line (12 feet) |  | BRL  |
| Building Restriction Line (15 feet) |  | BRL  |
| Future Pavement                     |  |      |
| Future Hangar                       |  |      |
| Future Building                     |  |      |
| Vehicular Parking                   |  |      |
| Future Aviation Development         |  |      |



**ED CARLSON MEMORIAL FIELD - SOUTH LEWIS COUNTY AIRPORT**  
AIRPORT MASTER PLAN UPDATE

**Exhibit 4I - Preferred Alternative**

