Chapter Five

# RECOMMENDED MASTER PLAN CONCEPT

The airport master planning process for Treasure Valley Executive Airport at Caldwell (EUL) has evolved through the development of forecasts of future demand, an assessment of future facility needs, and an evaluation of airport development alternatives to meet those future facility needs. The planning process has included three sets of draft working papers, which were presented to the Planning Advisory Committee (PAC) and discussed at several coordination meetings. The draft material has also been presented at two public information workshop and has been available on a dedicated project website throughout the process.

In the previous chapter, several alternatives were analyzed to explore options that can accommodate growth and development of the Airport. The development alternatives have been refined into a single recommended development plan. This chapter describes, in narrative and graphic form, the recommended direction for the future use and development of the Airport. Where appropriate, the alternatives are summarized and a rationale for the selected alternative is presented.

## *AIRPORT REFERENCE CODE (ARC)*

Current activity levels at the Airport indicate an airport reference code (ARC) of B-II. EUL has been experiencing increasing levels of activity by operators of medium and large business jets over the years. The Airport is also designated as a reliever airport, which means it should be planned and designed to accommodate general aviation activity that might otherwise use Boise Airport, including business jets. Therefore, this master plan concept considers the implications of a transition to ARC C-II, which include more stringent design standards for the runway safety area (RSA), runway object free area (ROFA), and potentially the runway protection zones (RPZ).

The ARC of an airport determines the first two of the three elements of the runway design code (RDC) for the runway, the third being the instrument approach visibility minimums. The lowest visibility minimum currently is 1-mile to both ends of the runway; therefore, the current RDC for Runway 12-30 is B-II-5000. Visibility minimums of not lower than ½-mile are considered on the Runway 30 end; therefore, the future RDC is C-II-2400.

## *AIRSIDE CONCEPT*

The airside concept generally relates to planned improvements to the runway and taxiway system. **Exhibit 5A** presents the long-term master plan development concept for the Airport. The following sections will discuss the recommended concept in more detail.

### FUTURE RUNWAY LENGTH

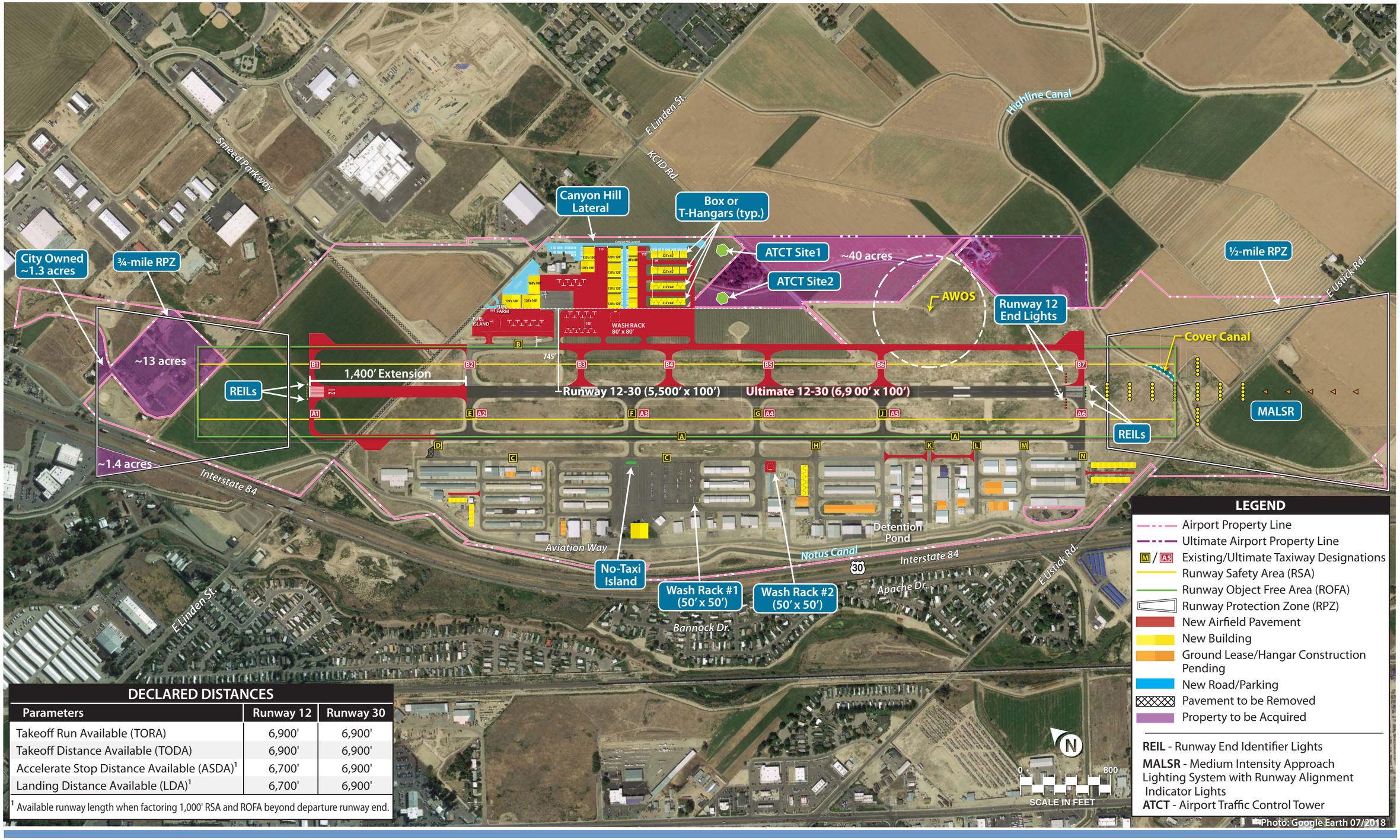
The primary long-term consideration on the airside is the need to plan for a runway that is up to 6,700 feet in length. This length would accommodate all business jets in the existing general aviation fleet, including large aircraft, such as the Gulfstream series of jets. The timing of a runway extension will be dependent on justification by 500 documented annual operations by aircraft that need the additional length. It should be noted that all business jets can currently operate at EUL; however, some are weight limited due to the existing runway length.

An extension of 1,400 feet is shown on the Runway 12 end. Linden Street is closed, consistent with previous Airport and city planning. The ARC C-II design standards for RSA and ROFA are applied. The additional 1,400 feet of runway length will bring the total pavement length up to 6,900 feet, 200 feet more than the recommendation. The reason for the extra 200 feet is the need to keep the RSA and ROFA beyond the Runway 30 end from extending across Ustick Road. This is accomplished with the use of declared distances.

Implementing declared distances is described in FAA AC 150/5300-13A, *Airport Design*. With FAA approval, the runway length can be declared (published) shorter for certain operations to provide the necessary safety areas and/or RPZ land use compatibility. The AC describes declared distances as follows: "Declared distances represent the maximum length available and suitable for meeting takeoff, rejected takeoff, and landing distance performance requirements for turbine-powered aircraft." The declared distances are defined by the FAA as:

- *Takeoff run available (TORA)* - The distance to accelerate from brake release to lift-off, plus safety factors.
- *Takeoff distance available (TODA)* - The distance from brake release past lift-off to start of takeoff climb, plus safety factors.
- *Accelerate-stop distance available (ASDA)* - The distance to accelerate from brake release to takeoff decision speed ($V_1$), and then decelerate to a stop, plus safety factors.
- *Landing distance available (LDA)* - The distance from the threshold to complete the approach, touchdown, and decelerate to a stop, plus safety factors.

Implementation of declared distances, in this case, is designed to provide full RSA and ROFA beyond the Runway 30 end. The need to implement declared distances is triggered when the Airport transitions from its current B-II classification to C-II. When this occurs, the RSA and ROFA change from extending 300 feet beyond the runway ends to extending 1,000 feet.




## DECLARED DISTANCES

| Parameters | Runway 12 | Runway 30 |
|---|---|---|
| Takeoff Run Available (TORA) | 6,900' | 6,900' |
| Takeoff Distance Available (TODA) | 6,900' | 6,900' |
| Accelerate Stop Distance Available (ASDA)[1] | 6,700' | 6,900' |
| Landing Distance Available (LDA)[1] | 6,700' | 6,900' |

[1] Available runway length when factoring 1,000' RSA and ROFA beyond departure runway end.

## LEGEND

- Airport Property Line
- Ultimate Airport Property Line
- M / A5 Existing/Ultimate Taxiway Designations
- Runway Safety Area (RSA)
- Runway Object Free Area (ROFA)
- Runway Protection Zone (RPZ)
- New Airfield Pavement
- New Building
- Ground Lease/Hangar Construction Pending
- New Road/Parking
- Pavement to be Removed
- Property to be Acquired

**REIL** - Runway End Identifier Lights
**MALSR** - Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
**ATCT** - Airport Traffic Control Tower

Photo: Google Earth 07/2018

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In relation to declared distances, the ASDA and LDA account for the availability of the RSA and ROFA. Therefore, by declaring the ASDA and LDA for Runway 12 shorter by 200 feet, the full 1,000-foot RSA and ROFA are made available. The declared distances will not impact the ASDA and LDA for Runway 30, which will provide the full 6,900 feet of length. The full 1,000 feet of RSA and ROFA beyond the Runway 12 end would be available (assuming the property in the RSA and ROFA is acquired). The landing threshold to Runway 30 would remain in its current location because landing operations only require 600 feet of RSA and ROFA leading to the runway.

The only physical change to the runway system would be that the red runway end light fixtures that are currently located at the Runway 30 pavement end would have to be relocated 200 feet to the west. Typically, these lights are not embedded in the pavement but are instead positioned to both sides of the runway. **Table 5A** presents the declared distances to be applied to the future runway at EUL.

**TABLE 5A | Declared Distances for Recommended Concept**
**Treasure Valley Executive Airport**

| Parameters | Runway 12 | Runway 30 |
|---|---|---|
| Takeoff Run Available (TORA)[1] | 6,900' | 6,900' |
| Takeoff Distance Available (TODA)[2] | 6,900' | 6,900' |
| Accelerate Stop Distance Available (ASDA)[3] | 6,700' | 6,900' |
| Landing Distance Available (LDA)[3] | 6,700' | 6,900' |

[1] Departure RPZ begins 200 feet from the end of the TORA.
[2] TORA cannot be longer than TODA. Departure surface is set on TODA. TODA can be shortened to mitigate departure surface penetrations; if so, TORA is shortened, too.
[3] Available runway length plus RSA. Approach RPZ begins 200 feet from the landing threshold.

*Source: FAA AC 150/5300-13A, Airport Design*

## SAFETY AREAS

The runway safety area (RSA) is currently 150 feet wide, extending 300 feet beyond the runway ends. In the future, when the Airport transitions to a critical aircraft in C-II, the RSA will measure 500 feet wide and extend 1,000 feet beyond the runway ends. On the Runway 30 end, the future RSA will extend over the Highline Canal. This portion of the canal will need to be covered or rerouted as the entire RSA must be graded to standard and capable of supporting an aircraft run-off and emergency equipment. On the Runway 12 end, the future RSA will extend onto private property. This property and associated RPZ land are recommended for acquisition by the Airport.

The runway object free area (ROFA) is currently 500 feet wide and extends 300 feet beyond the runway ends. In the future, the ROFA will be 800 feet wide and extend 1,000 feet beyond the runway ends. On the Runway 12 end, the ROFA will extend onto private property which is planned for acquisition. On the Runway 30 end, the ROFA would extend slightly across Ustick Road, which is a non-standard condition. Implementation of declared distances, as discussed previously, will remedy this condition.

The current runway protection zones are sized for visibility minimums of 1-mile. They begin 200 feet from the ends of the runway and are 500 feet wide on the inner edge, and extend 1,000 feet to the outer edge, which is 700 feet wide. The RPZs currently meet land use compatibility guidelines except for the

presence of Ustick Road and Linden Street. Both roads predate current FAA guidance which considers public roads to be incompatible with RPZs; therefore, the roads can remain, but the Airport should pursue any opportunity to remove the roads from the RPZ. Ultimately, Linden Street is planned to be closed to accommodate the future runway extension. Ustick Road is planned to remain in its current location as tunnelling or rerouting it does not appear feasible at this time.

The future RPZs become larger when the instrument approach visibility minimums become lower, as is planned. The RPZ on the Runway 12 end is planned for ¾-mile minimums, which has an inner width of 1,000 feet, and outer width of 1,510 feet, and a length of 1,700 feet. This future RPZ will encompass approximately 14.3 acres of private land that is incompatible with RPZ land use standards. Approximately 1.3 acres of this land is owned by the City of Caldwell and will be maintained in a compatible fashion. The remaining 13 acres are identified for acquisition and removal of the existing homes to provide for compatibility.

The future RPZ on the Runway 30 end is sized to allow for visibility minimums of ½-mile, which is the lowest typically available to general aviation airports. This future RPZ is a 1,000-foot inner width, a 1,750-foot outer width, and is 2,500 feet long. All the land in this future RPZ is owned by the Airport currently and is compatible with RPZ land use standards except for Ustick Road, which is a pre-existing condition and can remain in its current location.

## INSTRUMENT APPROACHES

Improvements to the instrument approach visibility minimums are planned as well. The approach to Runway 12 is planned to have visibility minimums of ¾-mile. There are incompatible land uses that would have to be addressed. The most significant are the homes which are planned for acquisition. The interstate highway would also cross the southwest corner of the RPZ, which may require additional analysis. Approximately 1.4 acres of undeveloped land on the south side of the interstate falls under the RPZ and is recommended for acquisition.

On the Runway 30 end, visibility minimums not lower than ½-mile are considered. This instrument approach is planned as a GPS-based approach (when available) and will not require additional ground-based equipment like a glideslope antenna and a localizer antenna. Visibility minimums lower than ¾-mile require a medium intensity approach lighting system with runway alignment indicator lights (MALSR). This RPZ provides compatible land uses except for Ustick Road, which may require additional analysis.

## NAVIGATIONAL AIDS

At busy airports such as EUL, certain navigational aids can enhance safety. Runway end identifier lights (REILs) are planned for the Runway 12 end. These flashing strobe lights are set to the sides of the landing threshold and help pilots to locate the runway from up to 20 miles. As noted previously, a MALSR is planned for the Runway 30 end. Consideration is also given to the installation of REILs on the Runway 30 end in the interim until the MALSR is installed.

## TAXIWAYS

The airside plan also includes completion of the north side parallel taxiway and several connecting taxiways to the runway. Aircraft hold/runup aprons are planned on both ends of the planned parallel taxiway. A new hold/runup apron is planned on the extension of Taxiway A, which is situated approximately 500 feet from the end of extended Taxiway A. This location is necessary because of the desire to preserve the intersection of Linden Street and Aviation Way. The existing hold/runup apron at the west end of Taxiway C would be removed from service since it does not provide the required clearance radius.

Partial parallel Taxiway B is planned to be extended in both directions to serve as a full-length northside parallel taxiway. Taxiway B is planned at a width of 50 feet, which will meet the design requirements for large business jets. When Taxiway B is to be constructed, additional analysis may be necessary to justify the 50-foot width and if that justification does not materialize, then it should be 35 feet wide. Taxiway B is physically separated from the runway by 400 feet, thus allowing for a future precision approach. The planned connecting taxiways from Taxiway B to the runway are staggered to comply with the design requirement that crossing taxiways not be located within the middle third of the runway.

Taxiway C has proved to be useful and efficient for ground movements. Taxiway C is parallel to Taxiway A, except for between Taxiways J and L. This stretch of Taxiway C is planned to be constructed in 2021, immediately prior to the reconstruction of Taxiway A, to preserve connectivity for all hangars to the runway system.

As noted in the Facility Requirements chapter, Taxiway F leads directly from the main south side aircraft apron to the runway. This geometry is to be avoided and corrected when feasible. The recommended solution is to mark the apron pavement with a “no-taxi” island, which will force pilots to make a turn onto Taxiway A, thus eliminating the possibility of inadvertently proceeding directly from the apron to the runway, thus causing a runway incursion.

Taxilane N serves a hangar development area and extends directly to the Runway 30 threshold. While not non-standard in its geometry, it is preferrable to have pilots turn onto the parallel taxiway prior to proceeding to the runway threshold. In this case, the hold apron adjacent to Taxilane N is important to allow aircraft to proceed to the threshold, while others are performing final preflight checks and engine runups on the runup apron. If a jog were placed on Taxilane N, then the runup apron would have to be removed. Since there have been no documented runway incursions in this location, the plan is to maintain the existing geometry to preserve the functionality of the runup apron. If any runway incursion issues were to develop in this area, additional non-geometry solutions are available, including the installation of an enhanced centerline marking leading to the hold line and/or runway guard lights (wig-wags).

## TAXIWAY EDGE SAFETY MARGIN

The Taxiway Edge Safety Margin (TESM) is the distance between the outer edge of the landing gear of an airplane with its nose gear on the taxiway centerline and the edge of the taxiway pavement. The TESM standard is based on the taxiway design group (TDG) of the critical aircraft. The current critical TDG is 1B

and the future TDG is 2. The 1A standard is for there to be at least five feet of taxiway pavement available to each side of the landing gear. The TDG 2 standard is 7.5 feet. In some cases, the width of taxiways, particularly taxiways connecting to runways, may be wider than standard to meet the TESM standard.

### HOLD/RUNUP APRONS

Busy general aviation airports with a high volume of activity by smaller fixed-wing aircraft should make available runup aprons near the ends of the parallel taxiways for pilots to perform pre-flight checks and engine runups. Hold/runup aprons are currently available at both ends of Taxiway C. The one nearest the Runway 12 threshold does not meet separation standards and is planned to be removed from service once a replacement can be installed on the extended Taxiway A. The runup apron nearest the Runway 30 threshold meets the separation standard for smaller aircraft (wingspans up to 49'). It does not meet the separation standard for larger wingspans up to 79 feet. This runup/hold apron is to be maintained for use by smaller aircraft. Both ends of the northside parallel taxiway are planned to have runup/hold aprons in the future.

## *LANDSIDE CONCEPT*

The landside concept includes planning for future hangar needs and various support facilities. As discussed in Chapter Four – Alternatives, planning for additional hangar needs should follow a philosophy of segmenting activity levels. High activity facilities, such as large conventional hangars (typically greater than 10,000 square feet), should be co-located and central to the runway system. Medium activity hangars, such as box or executive hangars, should be located to the sides or behind the high activity conventional hangars. Low activity hangars, such as T-hangars or small individual box hangars, should be located farther to the sides.

It is critical to maximize the developable land at any airport because aviation land is a limited resource. Therefore, the recommended concept provides for reserving all land that is immediately adjacent to the runway and taxiway system for aviation purposes.

### BUILDING RESTRICTION LINE

The Building Restriction Line (BRL) is a line which identifies suitable building areas on airports. The BRL encompasses the runway protection zones, object free areas, navaid critical areas, and areas required for control tower line-of-sight (where applicable).

The FAR Part 77 transitional surface extends from the edge of the primary surface (which follows the centerline elevation of the runway) at a slope of 7:1 to the intersection with the horizontal surface, which is 150 feet above the airport elevation. It is the transitional surface that defines the BRL. The current primary surface is 500 feet wide. Therefore, the current 35-foot BRL is 495 feet from the runway centerline and all existing structures are below or behind the BRL.

When the Airport obtains instrument approaches with ¾-mile or lower visibility minimums, the primary surface transitions to 1,000 feet wide. This, then, places the 35-foot BRL at 745 feet from the runway centerline. All future structures on the north side of the Airport are planned to be below or behind the future 35-foot BRL. The closest buildings on the south side are 670 feet from the runway centerline, which means the transitional surface elevation at the face of the buildings is 24 feet. All these hangars are below this height and meet the future BRL standards also.

It is common for parked or taxiing aircraft to penetrate the transitional surface. According to FAA AC 150/5300-13A, *Airport Design*, for ARC C-II, aircraft parking areas should begin a minimum of 500 feet from the Runway 12-30 centerline. All aircraft parking areas at EUL are at least 500 feet from the runway centerline.

## FUTURE HANGAR DEVELOPMENT

Any plan for future hangar development is conceptual in nature until an actual developer/builder initiates the process of building a hangar. While the plan may show a hangar of a certain size, significant flexibility should be made available to any developer to build to suit their operational needs as long the overall development philosophy (separation of activity levels) is followed.

On the south side of the runway, all undeveloped parcels are under lease with plans for short-term hangar construction. The only exception is the parcel leased (five-year lease) by the skydiving company for use as a drop zone and their lease is a land lease consistent with land lease rates that would be used for hangar construction. This means there is no developable land available on the south side of the runway. **Exhibit 5A** depicts both future hangars to be developed and those parcels under lease with future hangar plans.

The next place for development is on the north side of the runway in proximity to the terminal building. Other than the terminal building, this is essentially a greenfield site that can be planned for development that is in the best interest of the Airport and aeronautical users. The Airport has already taken steps to support development, such as advancing the relocation of the Canyon Hill Lateral to the north of the terminal building and acquisition of approximately 13 acres of land to the east of the terminal.

The northside development plan that has emerged from this master planning process is different than that depicted in the 2010 master plan. Generally, hangar demand has shifted from small T-hangars to larger, clear-span box and conventional hangars. To accommodate demand for all hangar types, the north side development plan includes accommodations for all hangar types. In the end, the hangar development plan, as depicted, is subject to change based on builder needs.

Planning for development of the north side requires a realistic understanding of when the runway extension may be justified and when Linden Street would need to be closed. As discussed in the Facility Requirements chapter, the Airport will need documentation of 500 annual operations by aircraft that need the additional runway length to justify the runway extension. The forecasts presented in Chapter Two estimated this could happen within the 20-year planning horizon of this master plan. However, the

operational numbers by these larger business jets are currently less than 100 annually. It could be many years before 500 annual operations are documented. As a result, the alternatives presented in Chapter Four considered how to develop if Linden Street were to remain open for the next 10-20 years.

The terminal building is the focal point of northside development as it is an important entrance to the City of Caldwell. The preferred development plan provides a large aircraft apron in front of the terminal building, and it allows for the immediate construction of at least one hangar.

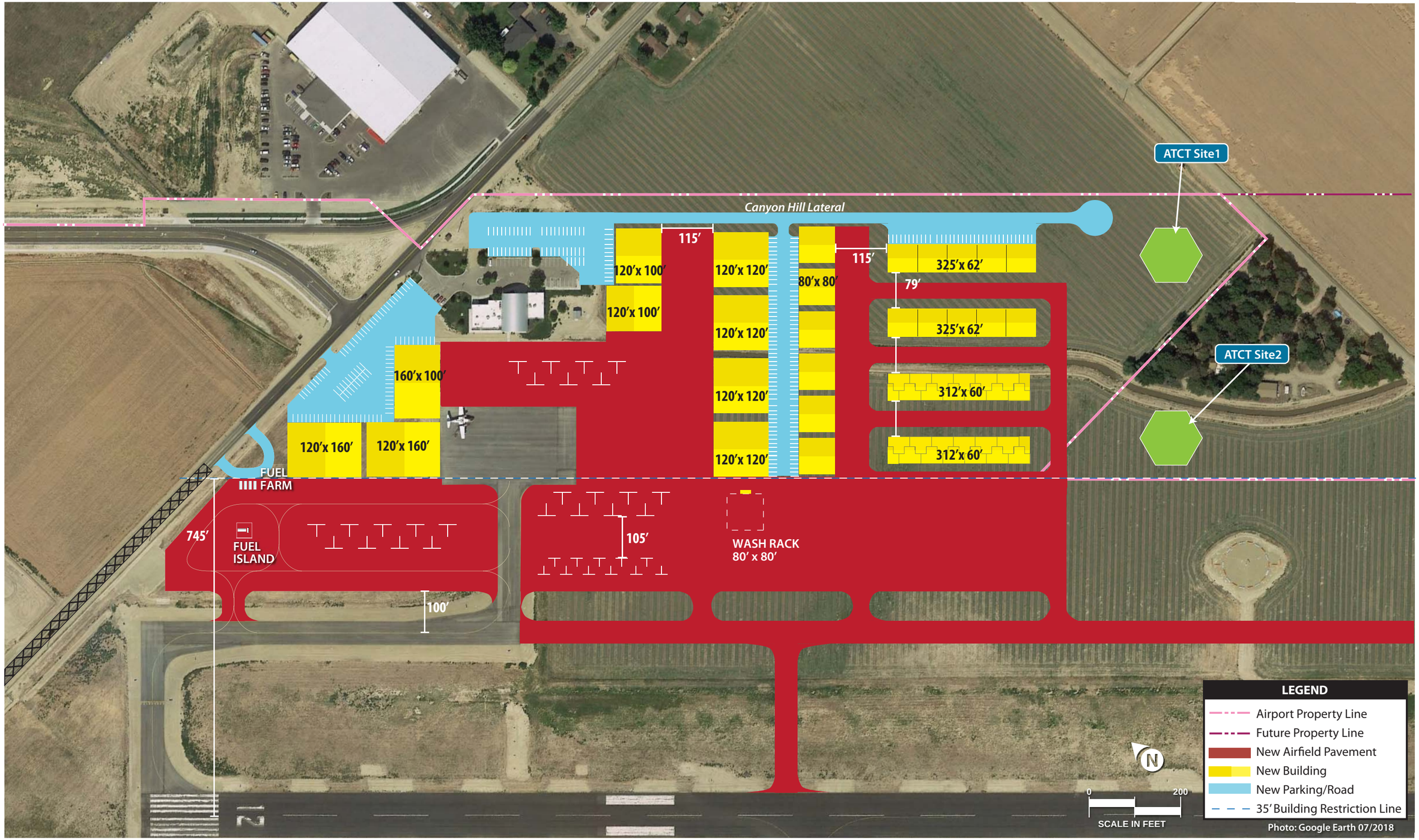
High-activity conventional hangars are planned around the terminal building. These facilities could be utilized by an existing or future FBO operator or other high-activity airport businesses. Because Linden Street will likely remain open for many years to come, only a couple of hangars can be situated to the west of the terminal building. One future hangar is strategically placed facing the existing transient apron, which would allow for immediate construction (other than necessary utility extension). Additional taxilanes or apron area will be necessary to support additional hangar development.

**Exhibit 5B** shows detail of the northside hangar development plan. The existing aircraft apron is planned to be expanded and surrounded by larger conventional hangars. A variety of hangar sizes are depicted; however, airport management should remain flexible to the needs and sizes desired by developers and airport users/aircraft owners. At a minimum, the Airport should maintain the overall concept of locating larger hangars around the terminal and apron with smaller hangars set to the sides.

An aboveground fuel farm is planned at the apron edge, allowing fuel tanker deliveries from outside the fence. A self-serve fuel island is also planned on the apron. A wash rack sized to accommodate large business jets is also located on the apron area.

To the east of the terminal building is planned additional high-activity conventional hangars, facing an expanded aircraft apron area. Farther to the east is planned a row of connected box hangars followed by several rows of T-hangars.

The forecasts indicated that the Airport may need up to 244,000 square feet of additional hangar space. The north side plan shows approximately 251,000 square feet and the south side infill hangar construction may provide up to 140,000 square feet of hangar space. Therefore, the hangar development plan exceeds what is forecast to be needed, which provides for flexibility if demand exceeds what is forecast. If even more hangar development space is needed, then the areas on the north side to the east of the terminal building can be used for additional hangar development (assumes the land is acquired). Ultimately, areas on the north side to the west of the terminal building can also be used for hangar development once Linden Street is closed. **Table 5B** summarizes the hangar area depicted in the recommended concept as well as an estimate of the number of units that may be available.


ATCT Site1
ATCT Site2
Canyon Hill Lateral
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120′x 100′
120′x 100′
120′x 120′
120′x 120′
120′x 120′
160′x 100′
120′x 160′
120′x 160′
80′x 80′
115′
325′x 62′
79′
325′x 62′
312′x 60′
312′x 60′
FUEL FARM
745′
FUEL ISLAND
105′
WASH RACK
80′ x 80′
100′
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200
SCALE IN FEET
LEGEND
Airport Property Line
Future Property Line
New Airfield Pavement
New Building
New Parking/Road
35′ Building Restriction Line
Photo: Google Earth 07/2018

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**TABLE 5B | Proposed Hangar Area**
**Treasure Valley Executive Airport**

| Hangar Type | Estimated Units | Square Feet |
|---|---|---|
| **Southside** | | |
| T-Hangar | 22 | 57,100 |
| Box Hangar | 21 | 41,200 |
| Conventional Hangar | 17 | 41,700 |
| Southside Subtotal | 60 | 140,000 |
| **Northside** | | |
| T-Hangar | 24 | 37,400 |
| Box Hangar | 28 | 77,400 |
| Conventional Hangar | 56 | 136,000 |
| Northside Subtotal | 108 | 250,800 |
| **Totals** | **168** | **390,800** |

## HANGAR DEVELOPMENT ALTERNATIVES WEST OF LINDEN STREET

Several alternatives for development to the west of Linden Street were considered and are presented here. Each of these alternatives will require the closure of Linden Street, which would be triggered by the extension of the runway.

**Exhibit 5C** shows the first of three concepts. In this alternative, a series of connected box hangars are depicted along with taxilane access. The taxilanes are sized to accommodate aircraft wingspans up to 79 feet (ADG II). Farther to the west is depicted some smaller T-hangars.

**Exhibit 5D** shows the second hangar alternative for areas to the west of Linden Street. In this alternative, two larger conventional hangars are depicted facing the main apron. To the north of these two large hangars are a row of individual 10,000-square-foot hangars with taxilane access and additional apron area. Farther to the west are several rows of box hangars and T-hangars.

**Exhibit 5E** shows a slightly different concept that would close Linden Street up to Smeed Parkway, as well as the curved portion of Smeed Parkway that turns toward the Airport. Under this scenario, a large parking lot is available to serve additional large conventional hangars. This alternative would require a different location for the fuel farm and fuel island. As depicted, the fuel farm would be to the east of the terminal building with underground piping to the self-serve fuel island.

These three alternatives for potential development west of Linden Street are included for future reference and represent a hangar need beyond what the forecasts of aviation demand indicate will be needed. The hangar development plan to the east of Linden Street will be depicted on the airport layout plan. The concepts for west of Linden Street are included here for future reference but will not be depicted on the ALP to provide maximum flexibility to the airport sponsor.

## HANGAR DEVELOPMENT IMPLEMENTATION

The Airport is in the enviable position of having a large tract of land that is largely undeveloped. There is an existing terminal building that is positioned to serve as the focal point of this new aeronautical development. This scenario presents great possibilities for the orderly and efficient development of the land. It also provides an opportunity for the Airport to control the development to ensure that the aesthetic appearance of the new development meets minimum standards.

Airport management should consider opportunities to leverage economies of scale by encouraging the development of multiple hangars by a single developer or owner group. By doing so, the Airport can avoid the potential pitfalls of having different contractors building different hangars to varying degrees of quality. For example, there are areas identified for future box or T-hangars. The Airport should encourage the construction of an entire row by one developer, rather than have each individual build their own hangar. This will ensure a uniform and consistent aesthetic appearance for Airport hangars on the north side of the airfield.

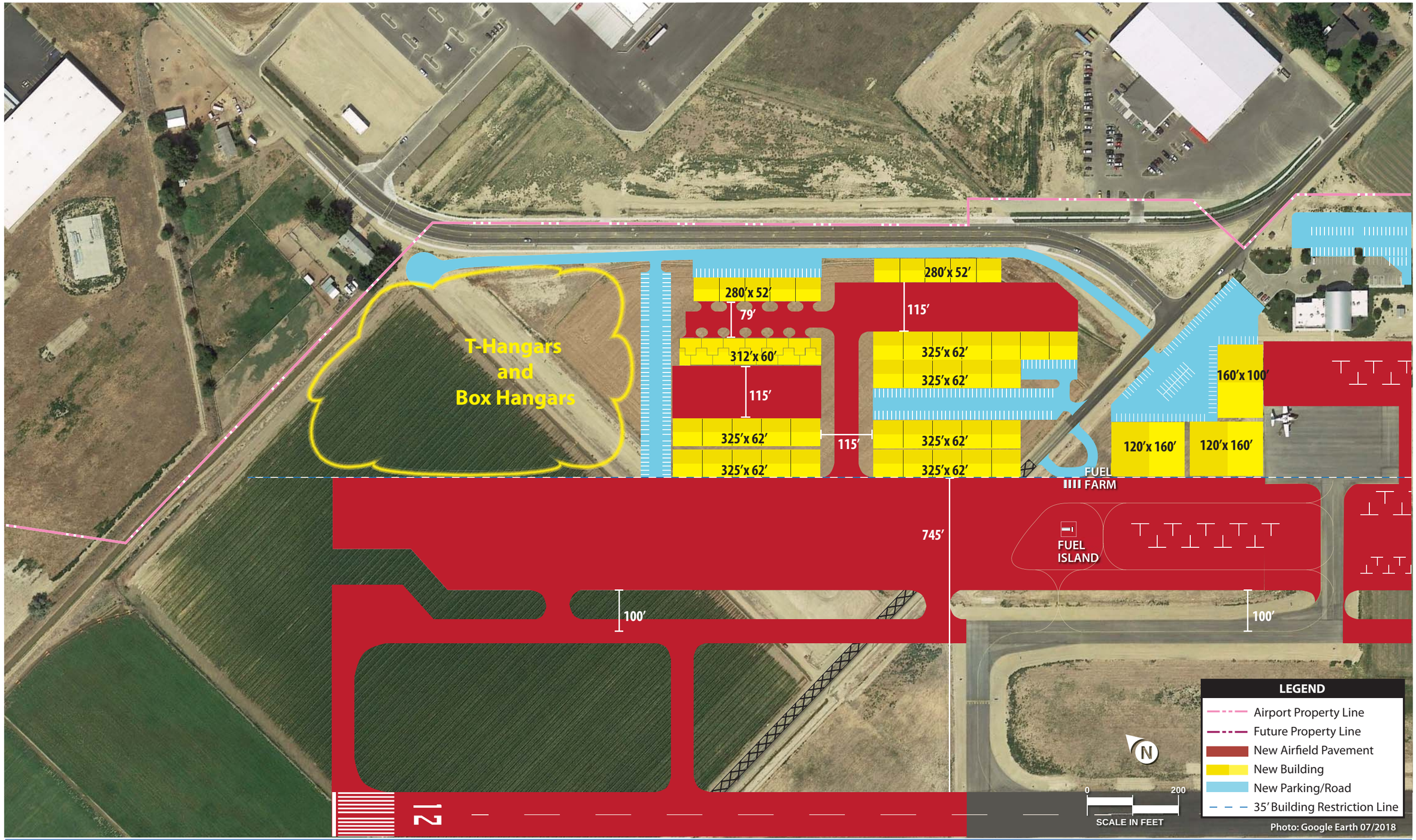
## PROPERTY ACQUISITION

An important consideration when planning the future of an airport is to identify any property adjacent to that airport that may need to be acquired to accommodate potential growth. Several parcels that would fall within the safety areas of the extended runway have already been identified. There is a 13-acre parcel on which several homes are located that would fall within the future RSA, ROFA, and RPZ. There is a 1.3-acre parcel to the immediate west of the 13-acre parcel that will fall in the future RPZ. This parcel was recently acquired by the City of Caldwell. Ultimately, when the runway is extended and the ¾-mile instrument approach (and corresponding RPZ) are implemented, this parcel should be absorbed into Airport property. A third parcel, encompassing approximately 1.4-acres on the south side of the interstate highway, will fall in a future ¾-mile RPZ for the extended runway.

A large 40-acre parcel on the north side is identified for acquisition as well. This parcel is necessary to accommodate long-term future hangar development. With this parcel, north side hangar development would be feasible for the eastern half of the north side of the runway. Without this parcel, no hangars would be permitted on the eastern half because of the building restriction line.

## FUTURE FUEL FARM

Currently, fuel is not available on the north side of the Airport other than by delivery truck. The plan recommends the installation of an aboveground fuel farm and containment system. The fuel farm is located near Linden Street and the terminal apron area. This location will allow fuel delivery trucks to fill the tanks from outside the perimeter fence. This layout will prevent fuel delivery truck drivers, who may not be familiar with aircraft movements, from driving onto the active aircraft apron.


T-Hangars
and
Box Hangars
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115'
325'x 62'
325'x 62'
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280'x 52'
115'
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325'x 62'
160'x 100'
120'x 160'
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FUEL FARM
FUEL ISLAND
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SCALE IN FEET
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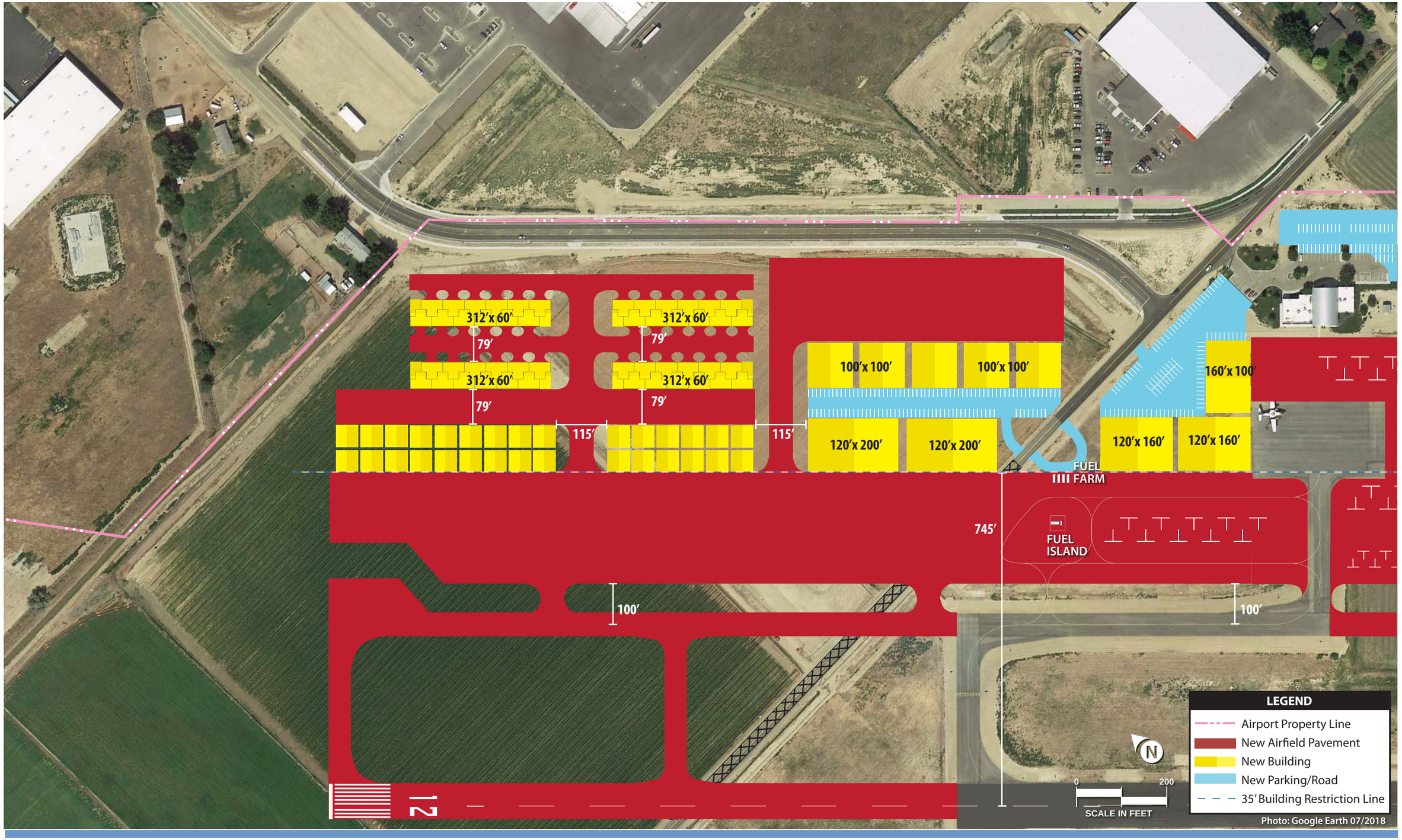
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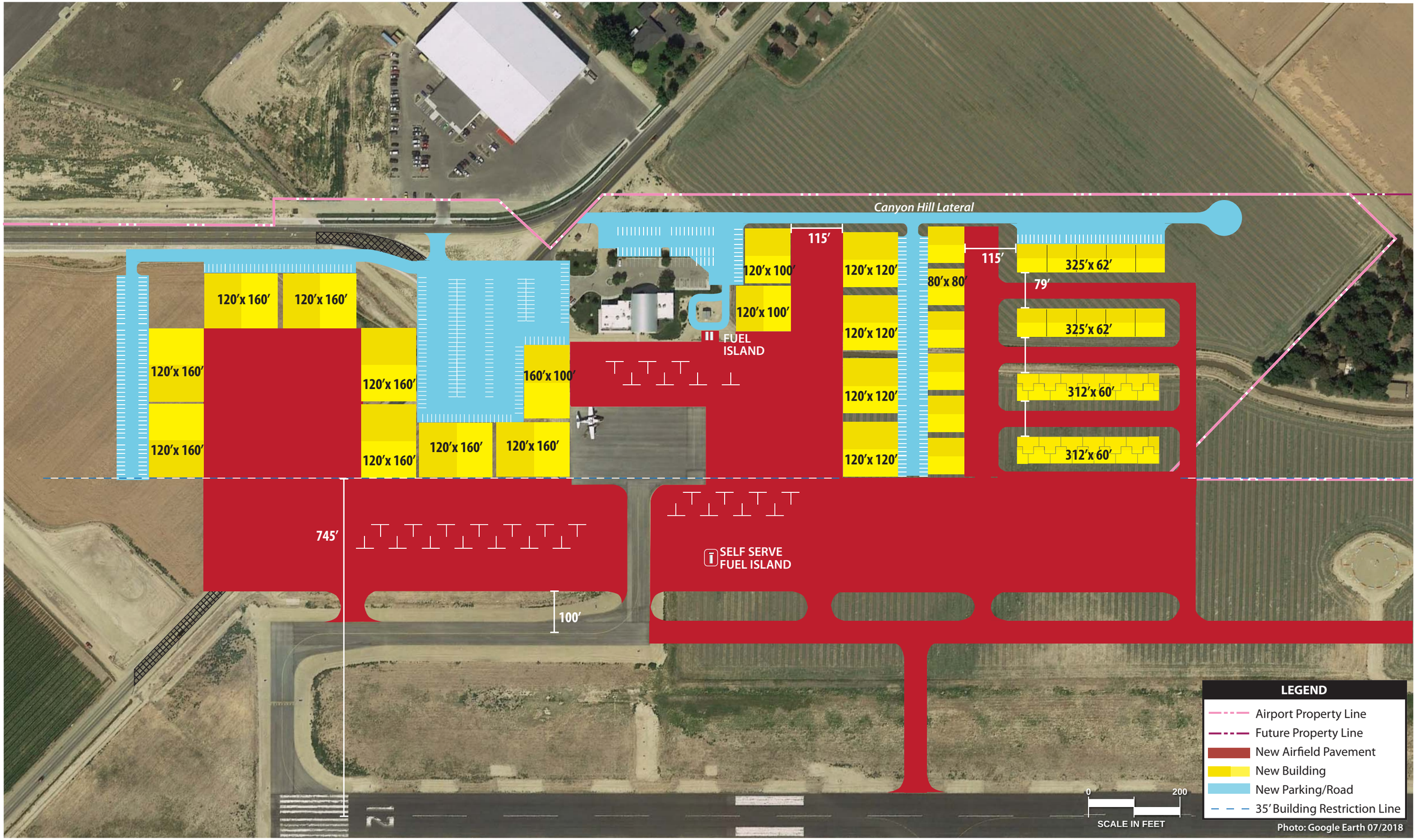
Canyon Hill Lateral
115′
120′x 100′
120′x 120′
120′x 100′
120′x 120′
120′x 120′
120′x 120′
FUEL ISLAND
160′x 100′
120′x 160′
120′x 160′
120′x 160′
120′x 160′
120′x 160′
120′x 160′
120′x 160′
120′x 160′
745′
100′
SELF SERVE FUEL ISLAND
80′x 80′
115′
325′x 62′
79′
325′x 62′
312′x 60′
312′x 60′
LEGEND
Airport Property Line
Future Property Line
New Airfield Pavement
New Building
New Parking/Road
35′ Building Restriction Line
0
200
SCALE IN FEET
Photo: Google Earth 07/2018

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The fuel farm is planned with two initial tanks: one for Jet A and one for AvGas. The fuel site has the capability to add at least two additional static tanks. Each tank is 12,000 gallons, allowing a delivery by a full tanker delivery truck. The future tanks may be additional Jet A or AvGas, or they could be for alternative aviation fuels, which are becoming more common. The site also includes two parking spots for mobile fueling trucks that deliver fuel to aircraft.

In addition, a self-serve fueling system (fuel island) with credit card readers is planned on the apron. The fuel island will provide access on four sides. Under apron fuel piping will connect with the static fuel farm.

## HELIPORT CONSIDERATION

It has been noted that the Airport experiences a high level of helicopter operations primarily associated with the helicopter flight school. In Chapter Four, details regarding a formal heliport were presented. Heliports are intended to provide a dedicated arrival and departure location on an airport, thereby providing an additional measure of safety for all operations. Depending on the location of a heliport, they can also be somewhat restrictive of the apron areas around them.

At this time a formal heliport is not planned at Caldwell. The southside of the Airport is fully built-out and a helipad would result in the loss of much needed tie-down positions. As the north side of the Airport begins to be constructed, a heliport could be situated on the apron area planned to the east of the terminal complex.

## FUTURE AIRPORT TRAFFIC CONTROL TOWER (ATCT)

As discussed in Chapter Three, the Airport may be eligible for an ATCT. The FAA would have to conduct a formal benefit-cost analysis (BCA), the result of which must meet a certain threshold. Essentially, the safety and efficiency benefits must exceed the costs. If the BCA meets the threshold, and numerous other eligibility requirements are met, then the Airport may be admitted to the Federal Contract Tower (FCT) program. Under the FCT, the FAA provides the cost to provide air traffic services (i.e., staffing). The cost of construction and maintenance of an ATCT has typically been the responsibility of the local airport sponsor; however, changes to Title 49 U.S.C. Section 47124 and Section 47116 (*FAA Reauthorization Act of 2018*) permits FAA to fund a portion of tower construction if the future tower is approved to enter the FCT program.

Actual siting of a control tower is the responsibility of the FAA's Airport Facilities Terminal Integration Laboratory (AFTIL) and is based on the current version of FAA Order 6480.4, *Air Traffic Control Tower Siting Process.* The airport sponsor must provide the land necessary for construction of an ATCT. Two potential sites are identified for a control tower. The primary siting criteria are:

- Provide maximum visibility of the airport traffic pattern;
- Meet line-of-site criteria, including visibility to both runway ends and all movement surfaces;
- Performance of existing and planned electronic facilities must not be derogated;
- Comply with Part 77 surfaces to the maximum extent possible;
- Provide sufficient area for current and future building needs, including parking.

## COMMON TRAFFIC ADVISORY FREQUENCY (CTAF)

CTAF is the frequency that pilots use to communicate their intensions to other pilots when in proximity of an airport. CTAF is typically only designated for airports without a 24-hour control tower. The Airport CTAF frequency is 122.7 MHz. The CTAF frequency for Nampa Municipal Airport (MAN) is also 122.7 MHz. These airports are only six miles from each other, which means that pilots hear announcements related to both airports. This can be confusing because pilots then must filter out information that is unrelated to their actions around a different airport.

The FCC has reserved seven (122.8, 122.7, 122.725, 122.975, 123.00, 123.050, 123.075) frequencies for CTAF use across the country. It is preferable that no two airports within 100 miles of each other share the same frequency for the above stated reason.

The Airport administration should consider changing their CTAF frequency so that the potential confusion between Caldwell and Nampa can be avoided. This is not required but it would enhance the airspace safety around both airports by eliminating non-essential and potentially confusing information getting to pilots.

To accomplish implementing a CTAF frequency change, the airport sponsor must petition the FCC. Once granted permission, the FCC certificate is provided to FAA by the airport sponsor and FAA then proceeds to update various airport publications. Typically, a NOTAM is also issued, alerting pilots to the change. Airport administration submitted the appropriate request to the FCC to formally change the CTAF frequency for EUL to 123.0 MHz in September 2021. In January, 2022, the FCC granted the petition to change the CTAF frequency to 123.0 MHz.

## AIRCRAFT WASH RACKS

EUL is a busy general aviation reliever airport with more than 400 based aircraft. An airport of this type and size should provide a location where owners can clean their aircraft and the cleaning fluids are contained. The plan recommends the installation of two aircraft wash racks on the airfield. One is planned on the north side of the airfield and is planned to accommodate large business jets. This wash rack is envisioned with a separator system where aircraft could also be deiced when weather conditions warrant.

A second wash rack is planned on the south side and two potential locations have been identified. One potential location is adjacent to the midfield business that sells AvGas fuel, next to Taxilane G. A second potential location is on the east end of the main aircraft tie-down apron. At least two existing aircraft tie-down positions would have to be removed to install a wash rack in this location. The south side wash rack is envisioned as a more basic installation, which is sized for small piston aircraft.

## AIRPORT NAME CHANGE?

The Caldwell Industrial Airport is a significant and important airport in the National Airspace System. Out of 3,310 airports included in the NPIAS, EUL is one of only 250 reliever airports and one of only 482 categorized as a regional airport. Some airports that used the “Industrial” moniker in their name have

chosen to change the airport name to something that is more reflective of the type of airport that they have evolved to and the primary types of activity occurring at the Airport. An example is the New Century Air Center (IXT), which was previously called the Johnson County Industrial Airport. This name change was made, in part, because that airport sponsor felt the word "Industrial" indicated a limited special use airport that was not reflective of the busy corporate airport it had become.

The following are some potential name changes that may be more reflective of the current and future type of airport that Caldwell is becoming:

- Caldwell Executive Airport
- Boise Executive West Airport
- Caldwell Executive West Valley Airport
- Treasure Valley Executive Airport
- Caldwell Regional Airport

Any name change is a matter of preference for the airport operator and can be an important marketing tool. A name that projects both the location of the airport and the type of activity common to the airport is informative to airport users. On December 20, 2021, the Caldwell City Council voted unanimously to approve the name change to the Treasure Valley Executive Airport at Caldwell.

## *LAND USE – ON-AIRPORT*

The recommended concept largely reflects the initial land use designations shown previously on Exhibit 4B. The refined airport land use map is presented on **Exhibit 5F**. The following summarizes the on-airport land use designations.

### AIRFIELD OPERATIONS

Airfield operations consist of that portion of airport property encompassing the major airside elements, such as the runways, taxiways, runway safety area, runway object free area, runway obstacle free zone, runway protection zone (on airport property), taxiway safety area, taxiway object free area, and any navigational aid critical areas. Airfield operations are intended for the safe and efficient movement of aircraft to and from the airfield. This land use designation includes the various object clearing areas and only elements necessary for aircraft navigation can be located here.

### AVIATION DEVELOPMENT

The Aviation Development land use category includes those areas that should be reserved for development that requires access to the airfield operations area. Any aviation business needing access to the runway and taxiway system should locate in these areas. Generally, any land adjacent to the runway/taxiway system should be reserved for current and future aviation purposes. One common exception to this land use type is observation areas and/or restaurants. These land uses are frequently on the flight-line because the business model requires it.

### NON-AVIATION REVENUE SUPPORT

This land use classification includes development that is compatible with aviation activities but is unlikely to require access to the runway and taxiway system. Typically, it is preferable that activities in these areas complement airport activities to some degree, but that is not required. Examples of potential uses include research facilities, laboratories, manufacturing and processing facilities, warehouses, restaurants, and other facilities compatible with an airport environment.

Development of airport property with non-aviation uses is only permitted by the FAA if it can be shown that the land will not be needed for aviation uses in the future. When non-aviation uses are introduced, the airport must receive a fair-market lease from the tenant, either through a land lease or facility lease.

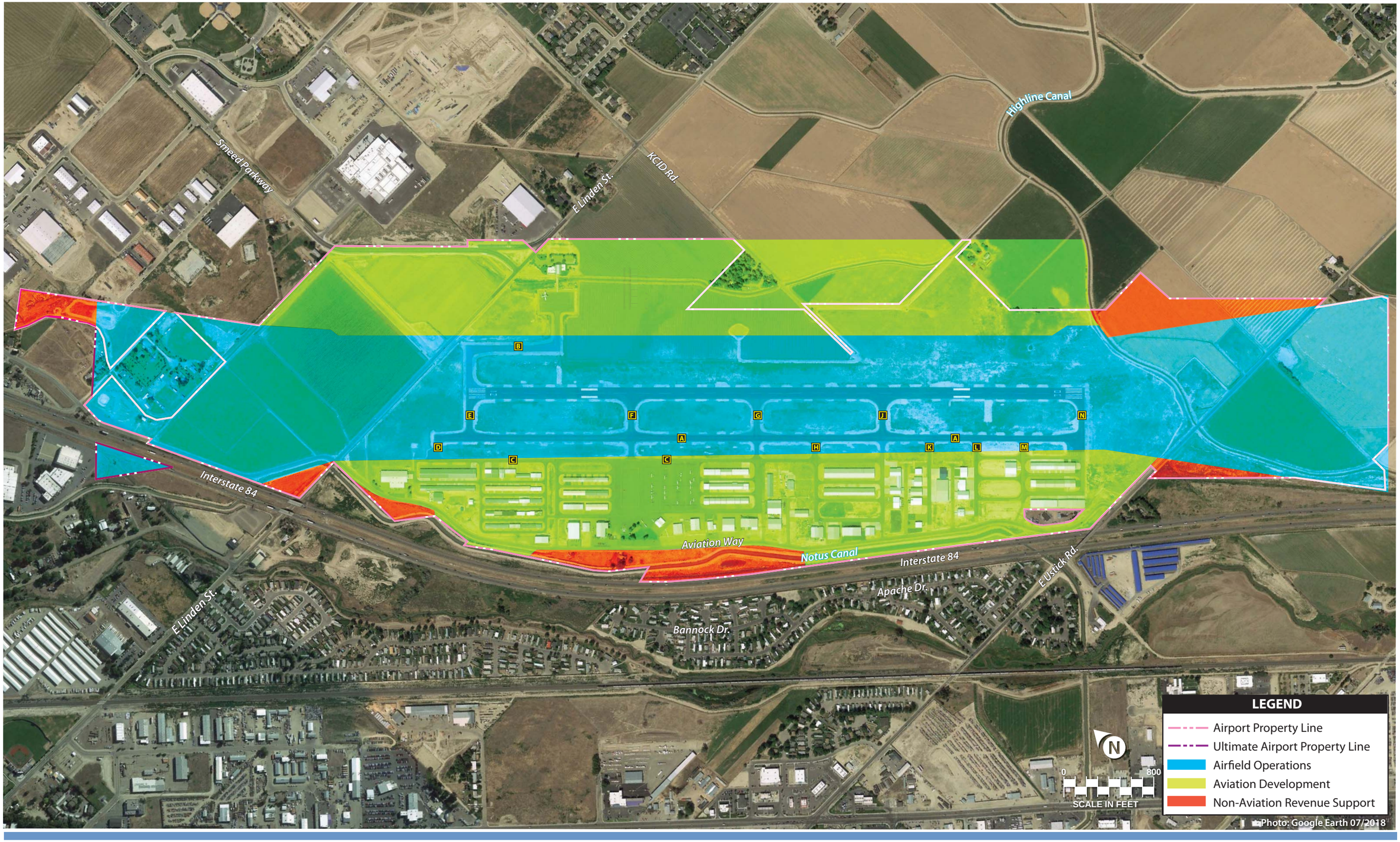
When reviewing the airport layout plan (ALP), the FAA will examine if the non-aviation land uses are reasonable and do not negatively impact future aviation development. It is typical for the FAA to immediately request documentation of the proposed non-aviation land and to begin the process of releasing that land from the existing aviation use obligation. The land would remain on airport property, but it would be an easier process to permit non-aviation development.

The airport land use map is a concept drawing that will be included as one of the official drawings in the airport layout plan set. Identifying potential non-aviation land in the ALP set is only the first step toward allowing non-aviation uses. The airport must follow a prescribed FAA process to release the land from airport obligations. The airport must also receive fair-market value from any developer or tenant for a ground lease. All revenue generated from the lease must remain with the airport and cannot be diverted for other needs that are unrelated to the airport.

## *SUMMARY*

The recommended master plan concept has been developed with significant input from the planning advisory committee (PAC) and the public. The PAC was comprised of a wide range of Airport stakeholders, including Airport management, FAA, Idaho Transportation Department staff, Airport tenants, Airport businesses, the Chamber of Commerce, City planning staff, the Airport Commission, and City Council representatives. Several public information workshops were advertised and held to solicit input from the public as well. The recommended master plan concept provides the necessary development to accommodate and satisfy anticipated growth over the next 20 years and beyond.

As the Airport experiences ever-increasing activity by larger turboprops and business jets, the infrastructure needs will increase. The long-term plan calls for a total usable runway length of 6,700 feet in both directions; therefore, the plan includes an extension of Runway 12. The timing of the extension is dependent on activity justification of 500 documented annual operations by aircraft that would benefit from the additional length. This operational justification is anticipated in the later years of the 20-year planning horizon for this master plan.


Smeed Parkway
E Linden St.
KCID Rd.
Highline Canal
B
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M
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Interstate 84
Aviation Way
Notus Canal
Interstate 84
E Ustick Rd.
Apache Dr.
Bannock Dr.
E Linden St.
LEGEND
Airport Property Line
Ultimate Airport Property Line
Airfield Operations
Aviation Development
Non-Aviation Revenue Support
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0
800
SCALE IN FEET
Photo: Google Earth 07/2018

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The plan also recommends instrument approaches with the lowest feasible visibility minimums, which are ¾-mile on the Runway 12 end and ½-mile on the Runway 30 end. Improved visibility minimums make airports more attractive to business leaders because they are assured that they can arrive and depart on schedule, even in poor weather conditions. Low visibility minimums have a direct impact on economic development opportunities in the region as businesses often consider the capability of the local airport when making investment decisions.

Future landside development was a significant consideration for this master plan. The south side of the runway is completely built-out and there are no development parcels available. Therefore, it is time to plan the north side of the Airport in more detail to accommodate immediate development.

The approach to planning development of the north side takes into consideration that Linden Street is likely to remain open for the next 10-20 years until the runway extension is justified and constructed. The hangar development planned follows the design philosophy of locating higher-activity large hangars (for airport FBOs or other businesses) around a large central apron. Lower-activity box and T-hangars are then set to the sides to be accessed by individual pilots. The recommended plan considers several large conventional hangars positioned around the terminal building, making the terminal building the focal point of the Airport and an impressive front door to the community.

The land farther to the east of the terminal building has been identified for future acquisition by the Airport. If the Airport is to maximize its ability to meet aviation demand, this land (approximately 40 acres total) should be acquired as it becomes available. Based on the demand forecasts, this land will not be needed immediately for additional hangar construction but will be in the future.

To the west of the Runway 12 end is an area of approximately 14.3 acres of private land that would need to be acquired to fully accommodate the planned runway extension. Again, this is not an immediate need; therefore, the Airport and the City should consider acquiring properties when they become available.

The next chapter of this master plan will consider strategies for funding the recommended development and will provide a schedule for undertaking the projects.