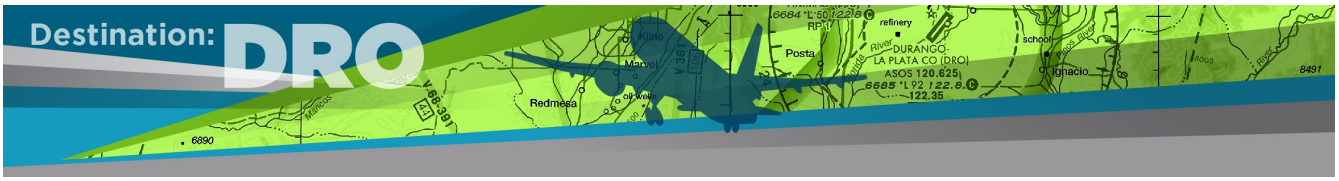


5.0 ALTERNATIVES ANALYSIS

This chapter describes and evaluates DRO's development alternatives to enable selection of a preferred development plan that accommodates the demand and facility requirements for airside facilities, landside facilities, and the terminal building as recommended in **Chapter 4, Facility Requirements.** Multiple options for alternatives were considered by the County, City, airport staff, and members of the Planning Advisory Committee (PAC) in arriving at the "preferred" alternative. The preferred alternative serves as the basis for the Airport Layout Plan (ALP) drawing set.

5.1 OVERVIEW AND PROCESS

The alternatives analysis considers options for meeting facility requirements for the entire airport. The complexity and challenges faced in properly locating passenger terminal facilities weighs heavily on the decisions regarding other facilities. Once decisions about the passenger facilities are made, the other facilities can be developed on the remaining land.

Thus, the master plan process first considered the overall site plan needs for all airport uses simultaneously to see what growth capacity currently exists. The feedback from PAC meetings and a public open house yielded many comments and suggestions, some of which are incorporated into this analysis.

The first key observation is that the airfield is adequately sized and located to meet the foreseeable needs of aircraft operations. Second is that even though DRO owns developable land on both sides of the airfield, development is concentrated on the west side of the runway with sharply sloped terrain constraining the western edge of the development. Land on the east side could be developed, but the lack of access and utilities has thus far been a deterrent to potential development projects. Over the past 20 years the development area on the west side has filled in available land and is beginning to constrain growth and revenue-producing opportunities for the Airport. Some expansion is possible for current uses, but likely comes at the expense of growth options for adjacent uses and is not sustainable beyond 10 to 20 years.

As described in earlier chapters, the terminal is currently operating beyond its capacity limits. Given the complexity of terminal redevelopment, an engineering evaluation was required to gain sufficient understanding of site development to make an informed decision. With the need to significantly increase the passenger facilities, especially auto parking, the decision should consider whether that large investment should be made in the same location and at the expense of potential expansion of adjacent uses. This analysis will assist in evaluating options, weighing the benefits versus the costs, and how this process can assist in making the decision.

The Durango La Plata County Airport Authority also requested the preparation of a Terminal Area Master Plan (TAMP), which would encompass the airfield, surrounding facilities and terminal building. The TAMP referenced information and data from the previously completed TAMP (2012).

The prior TAMP identified the size of the programmatic spaces within the existing terminal building. The TAMP compared the existing spaces to the requirements of the 2010 activity levels (i.e. total passenger

enplanements, peak hour passenger enplanements and number of active gates). These spaces were also compared to forecasted future activity levels for 2015, 2020 & 2030.

Using the information identified in the prior TAMP, the size of the existing terminal building was compared with the space requirements of the current 2013 activity levels. In addition, site visits and interviews with Airport management and staff were conducted to understand the existing facility's ability to accommodate the current activity levels. As a result, the existing terminal building was found to be significantly undersized, operating with half of the total terminal area required for the current activity. Numerous deficiencies were also identified that significantly impacted passenger experience and airline operations.

In addition to resolving the existing deficiencies and accommodating the current activity levels of the airport, the 2015 TAMP was tasked with identifying the amount of additional space required for future growth. Forecasted planning activity levels were developed for years 2014, 2024 and 2034. The spaces required to accommodate these forecasted activity levels were then identified.

With the planning activity level for 2024 serving as a basis for design, three alternative locations were identified that could accommodate the additional space required for the terminal building: the existing site, a site adjacent to the existing terminal (northeast of the existing site), and a site on the east side of the airfield. Nine initial terminal concepts were then developed for these locations. The existing site considered an expansion of the current terminal building in its present location, whereas the adjacent site and the east sites considered a replacement terminal building.

After internal review of the nine initial concepts, several were selected for further development into five refined concepts. These five refined concepts represented two development options for the Existing and Adjacent Sites, and one option for the East Site. The concepts were presented to Airport management in a workshop meeting, resulting in the clarification of several key development goals for the terminal.

At this stage of the project, it was agreed that the remaining portion of the Terminal Area Master Plan (outside of the terminal building itself) would need to be developed before continuing the refinement of the terminal building concepts.

The analysis and results from the TAMP were carried forward into this alternatives chapter.

5.1.1 Decision Process

Through this study's scoping phase, it was determined that the Airport's existing decision-making process will be utilized. The elected officials for the City of Durango and La Plata County jointly decide on airport business matters. The elected officials seek input and delegate many day-to-day operational decisions to the Airport Advisory Commission and DRO's professional staff. For special matters, such as master planning, other groups may be called upon to provide input. In this case, the master planning team has facilitated a PAC that participates in the analysis and offers feedback and input on study materials. The public also plays a key role in advising the elected bodies—their input comes in the typical political manner as well as through master plan outreach events.

5.2 EVALUATION FACTORS

The team developed quantitative and qualitative evaluation criteria to assist in evaluating the alternatives. The criteria were developed based upon results of surveys given to the PAC, passengers, airlines, tenants, and business owners. The planning team provided additional analysis to ensure alternatives meet performance criteria for safety and security compliance.

5.2.1 Qualitative Evaluation Criteria

Qualitative evaluation criteria are subjective. Despite their subjectivity they are valuable to the evaluation process as they measure the long-term effects and benefits of an alternative. Qualitative evaluation criteria were used to analyze the alternatives for the terminal area, and different criteria were developed for the remaining airfield facilities.

- *Promotes safety and efficiency of airport operations:* Does the terminal space allow for efficient and safe operations of the airlines and maintenance staff? Do the roadway and public access system provide clear and efficient routes for the traveling public? Does the commercial aircraft apron layout allow safe and efficient aircraft operations? Are the auto parking and pedestrian access located minimal distances from the terminal?

  Each of the alternatives will be designed to meet the airport's safety and efficiency requirements.

- *Enhances security of airport and airline operations:* Does the alternative provide adequate space for airport and airline operations? Are TSA space requirements met?

  Each alternative meets TSA space requirements, and expansion of the terminal and related facilities would support airport and airline operations over the 20-year planning period. The phasing of the construction would pose challenges and require careful coordination to ensure security is not compromised.

- *Improves customer satisfaction/convenience:* The alternatives weighed the facility's ease of use with a goal to achieve Level of Service "C" (see **Section 4.4.1**).

  Each terminal alternative will meet customer needs and expectations. Customer satisfaction will be greatly improved over existing conditions.

- *Fosters Durango/Four Corners' Image:* DRO is a gateway to the region, and serves an area that has a mix of tourism, business development, and industry (oil and gas). Therefore, the aesthetic and visual impacts of the public facility are critical to express the area's image.

  "DRO is a gateway to the region and serves an area that has a mix of tourism, business development and energy industry (oil and gas). Therefore, all terminal alternatives will consider the aesthetic and visual impacts of the public facility that are critical to express the area's image. The planning team let local commentary determine the outcome of this analysis."

- *Minimizes construction phasing impacts to tenants and users:* This criterion considers the impacts that phasing of facilities will have on airport operations and the traveling public.

The key difference between the alternatives is the length of time that efficiency of airport operations is disrupted while the improvements are constructed. All alternatives will consider phasing to minimize inefficiencies and reduce user confusion.

- *Incorporates sustainable design elements where appropriate:* Sustainability is a broad term that encompasses a wide variety of practices applicable to the management of airports.[1] This criterion's goal is for DRO's development to achieve the "Triple Bottom Line:"
    - Maintain economic stability with room for growth (Economic Growth)
    - Conserve natural resources (Environmental Stewardship)
    - Recognize the needs of the community and region (Social Responsibility)

  Each alternative description details the unique opportunities to incorporate sustainable design elements.

- *Sensitive to environmental resources:* Development provides for minimal environmental disruption (wetlands, endangered species habitat, cultural resources, water quality, air quality, noise impacts, etc.).

  Due to the nature of the local terrain, all alternatives considered impacts to wetlands. Coordination with regulatory agencies would be done and mitigation completed as required. Alternatives may also impact bald eagle winter roosting habitat and other migratory bird species. A nesting raptor survey is recommended to determine active nests (reference Appendix C). Potential endangered species habitat also exists with certain development areas and protocol surveys would be necessary. Should endangered species be present, mitigation would be required.

5.2.2 Quantitative Evaluation Criteria

Quantitative evaluation criteria are objective and verifiable. The following criteria are included in this analysis:

- *Complies with FAA safety and design standards:* This criterion is non-negotiable but is included here to highlight the fact that elements must comply with critical design standards. For example, the distance the buildings, aircraft, and other objects must remain from the runway. However, for various concepts it also stipulates the need for other airfield facilities, the protection of those facilities, and the protection of airspace that surrounds the runway.

  All three alternatives meet current FAA safety and design standards.

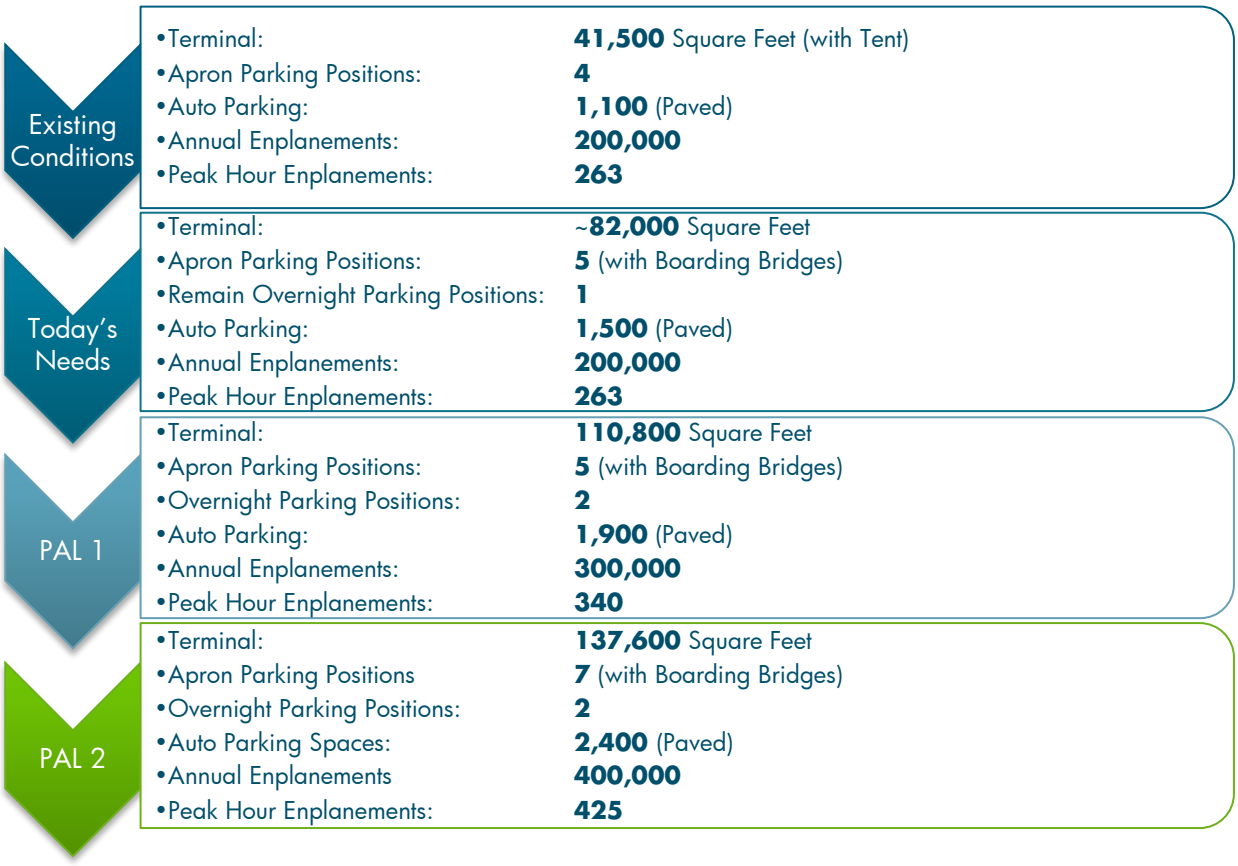
- *Maximizes operational efficiency:* For a system to work well, the elements comprising the system should be located, sized, and situated to enable each element to operate at peak capacity. For example, auto parking should be designed and situated to enable passengers to quickly find parking within a minimum distance to the terminal entrance.

[1] Airport Cooperative Research Program, Synthesis 10, *Airport Sustainability Practices, A Synthesis of Airport Practice*, 2008.

Once constructed, all three alternatives will improve operational efficiency.

- *Meets the 20-year facility requirements with room to grow:* As shown on **Figure 5-1** and described in **Chapter 4, Facility Requirements**, there are quantifiable performance measures that each alternative must meet to conduct an "apples to apples" comparison. For example, if an alternative does not meet the 20-year facility requirements of PAL 2 and it is not reasonably feasible to do so, then the alternative is eliminated.

FIGURE 5-1 – PLANNING ACTIVITY LEVELS



Source: Jviation

- Several elements of alternatives considered would be a sizeable investment for the local community. As such, alternatives considered will need to offer additional expansion opportunities so facilities meet demand levels much longer than 20 years to realize more benefit from the initial large investment. -+*Balances benefits with costs:* The key to balancing benefits and costs is understanding the long- and short-term benefits and potential opportunities along with the associated costs for each alternative. A lower investment for the short-term to temporarily alleviate current issues may ultimately limit future revenue opportunities and growth options, while making a larger investment could maximize growth and revenue opportunities and benefit the community for decades. This criterion is very important considering the relatively high costs associated with each alternative. The

costs are a quantifiable way to compare alternatives and those costs have been estimated and are included in this chapter. The key to using this criterion well is in understanding the costs and then comparing concepts to consider what opportunities might be gained from a concept that has a higher estimated cost. Conversely, concepts can be compared as to whether lower investment in the near term ultimately limits revenue opportunities and removes feasible growth options in both the short and the long range. The balancing of benefits and costs will come in the form of deciding whether there is enough potential benefit derived from the selection of a particular alternative.

A final note on costs: For the first screening analysis the study team prepared estimates that allow for the comparison of alternatives. Further refinement of estimates is provided in the next phase as the preferred concept is broken down into individual projects that comprise a development program. These individual projects have varying eligibility for grant assistance. The financial implementation analysis and narrative text (performed after the preferred alternative is selected) has much to add on this topic. The reason to point this out is that a valid question to pose when considering costs is, "How much does this alternative cost the local community?" Until this analysis is performed and grant applications submitted, this would be pure speculation.

5.3 Alternative Development – Alternatives Considered

5.3.1 Planning Activity Levels (PAL)

Each alternative is evaluated at two planning activity levels (PAL). As shown in Figure 5-1, there will be different needs to accommodate as the activity at the airport grows. Since this evaluation has the long-range view of 20 years, it is useful to plan in smaller periods of time. PAL 1 represents approximately 10 years of growth: it meets the existing needs plus the needs expected by 2025. This represents the ideal amount of capacity to build.

PAL 2 encompasses the additional needs that will be required by the end of the planning period in 2035. The PALs act as a trigger point: once the enplanement level is reached for PAL 1 plans to meet the next activity level should be implemented. Plans can be implemented before or after the forecasted year depending on actual activity and trends. Additionally, PAL 1 can be an identified activity level selected to balance with funding availability, either more or less. For the purposes of this analysis, however, the PALs have been selected at 10-year intervals.

It is important to compare the alternatives with both PALs in mind because this is a 20-year time frame. It also allows the analysis to view the concept's challenges to expansion at the end of the planning period, and whether there is ability to expand beyond that.

5.3.2 Alternative Development

Several elements go into the development of alternatives; this study developed an array of options that could meet all or many of the selection criteria. Some of the alternatives that were considered were identified in past studies, others were identified by the Airport Advisory Commission, the PAC, tenants and other stakeholders, and the public. The PAC considered these alternatives but they did not fit well with the evaluation criteria, and were not supported by the local community.

5.3.3 Eliminated Alternatives

As alternatives were being developed, several were eliminated from further consideration. The reasons they were dismissed are on the following pages.

Shift Runway 3-21 to the east: The objective of this alternative is to provide additional development space on the west side of the airfield where all current facilities exist, allowing existing operations to remain, and creating room for expansion to meet current and future demand.

This alternative could not meet the criterion "Balances benefits with costs." Because of the need to maintain operations on the current runway while a new runway was constructed, the new runway would have to be outside the existing safety areas of the current operational runway. DRO is located on a mesa top and buildable areas are limited without using extensive fill, significantly driving up the cost of the project. In addition, in order to accommodate the required amount of embankment, land acquisition would be necessary. County Road 309A would have to be relocated, along with other site preparation and pavement needs to construct an equivalent runway. Additionally, demolition of the current parallel taxiway and partial demolition of the existing runway width to meet taxiway design standards would be required. Consequently, moving the runway is not considered feasible when other alternatives exist.

Construct remote parking lots on east or west side: The options are to expand parking north of CR 309A on the west side; north of CR 309 and CR 309A intersection on the west side (requires land acquisition); or on the east side while leaving the existing terminal facilities in their current location. All options allow for expansion of the terminal and other facilities into existing parking areas, eliminating the need to move the terminal or facilities to the east, which would require utilities, parallel taxiway, and other site preparations. Although these alternatives initially seem feasible, they would create an on-going operational cost as a shuttle would be necessary to transport passengers.

Relocate the U.S. Forest Service (USFS) base and/or General Aviation (GA) to the east: Relocating these facilities would give the commercial terminal facilities ample space to expand. However, aviation activity on the east side of the airport requires a parallel taxiway between the development and the runway. This is a significant cost, which would require DRO to seek funding from the FAA. Because the U.S. Forest Service and the FBO lease land and buildings from the airport, the cost of replicating those facilities elsewhere on the airport would not be eligible for FAA funding (source: FAA AIP Handbook), assuming that the Forest Service and the FBO would continue their lease arrangements with the Airport. Only public-use facilities not encumbered by a lease would be eligible for FAA funding. Those remaining facilities eligible for FAA funding that serve GA activity would compete for GA discretionary funding allocated for the region. Thus, the cost to implement this alternative would likely be borne locally and would also be additional to Alternatives One or Two as described in **Section 5.3.4** to meet the program requirements.

5.3.4 Terminal Alternatives Carried Forward for Evaluation

The three alternatives carried forward for further evaluation are described in the following sections.

- **Alternative 1:** Renovate and Expand the Existing Terminal, Expand Aircraft Parking Apron, and Automobile Parking
- **Alternative 2:** Construct New Terminal Adjacent to Existing Terminal, Expand Aircraft Parking Apron, and Automobile Parking
- **Alternative 3:** Construct New Terminal, New Aircraft Parking Apron, and New Auto Parking on the East Side of the Runway

Baseline Improvements

Before analyzing the alternatives, it is necessary to identify elements of terminal programs that are common to all concepts. There are two site improvements that are required regardless of the alternative selected. The first is the intersection of the airport access road, Airport Road/County Road 309 (CR 309), with Colorado State Highway 172 (SH 172); the other is the airport-owned water system.

Airport access road: The current primary access to the Airport from the surrounding area is SH 172. County Road 309A (CR 309A) provides secondary access to the Airport from the south. The access road to the Airport from SH 172 is CR 309. The intersection of SH 172 and CR 309 was analyzed in the traffic study completed by Felsburg Holt & Ullevig, Inc. as part of the report, and is included in **Appendix J**. The following was noted in the study:

> The existing SH 172 / CR 309 intersection has been identified as a traffic safety problem by both La Plata County and the Colorado Department of Transportation (CDOT). La Plata County Staff has rated the intersection #1 on a listing of intersections in need of improvement, and CDOT Staff agree that the configuration and location of the intersection causes sight distance limitations and increased crash potential.

Based on this safety concern (i.e. the sight distance limitations), access would likely be relocated and the existing intersection closed or limited. The preferred location for the new access road is to the east of the existing entrance and aligns with existing County Road 338 (CR 338). This location would require intersection improvements to SH 172 to add turn lanes. From the new intersection, the rural access road would continue to the south adjacent to DRO's property line. Where possible, the alignment for the new roadway would follow existing roadways in the area. Should existing roadways be improved, intersections to access roads would be maintained and improved. The new road would tie into the existing CR 309A.

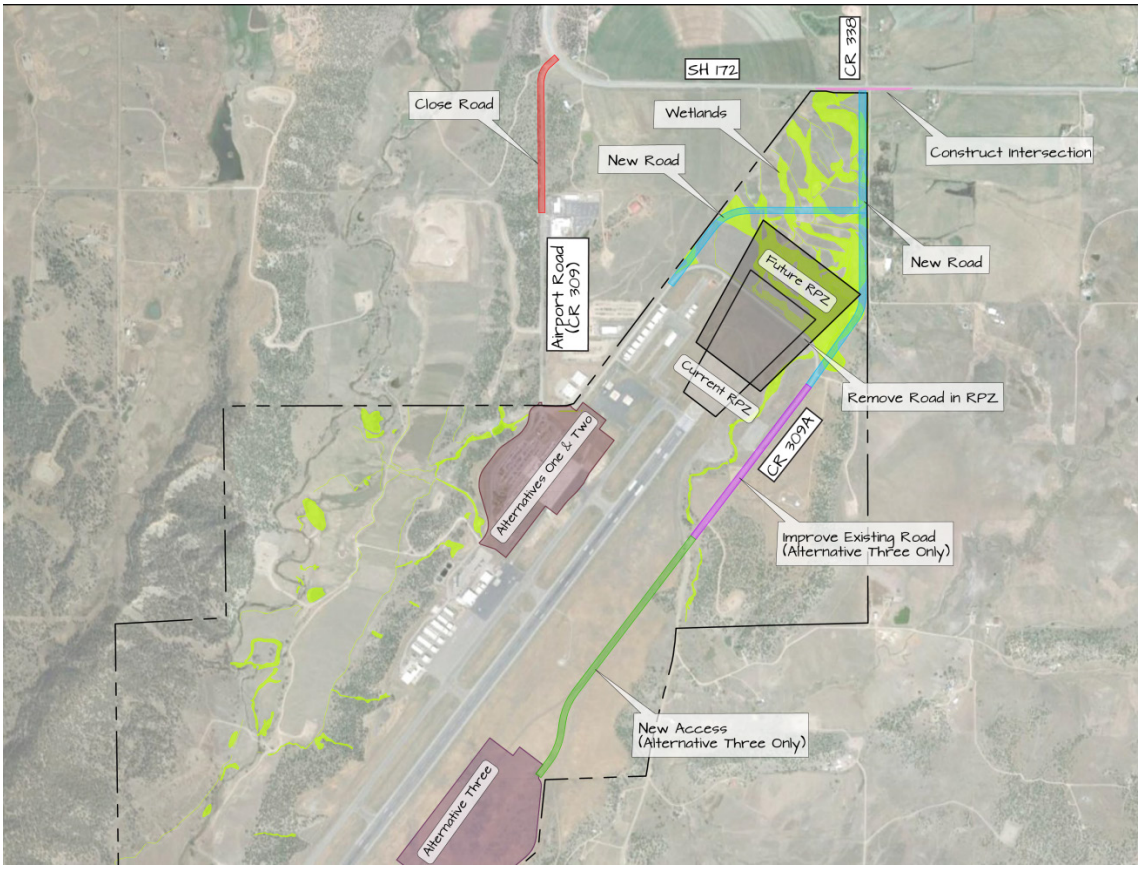
A portion of CR 309A is located within the existing Runway Protection Zone (RPZ). Roadways are to be avoided in RPZs as per FAA guidance. Consequently, the portion of CR 309A located within the RPZ would be relocated to the north, outside the existing and future RPZ limits. The relocated road would tie back into the existing CR 309A.

The roadway improvements required beyond the new access road and relocated CR 309A are dependent on the site alternative selected. Alternatives One and Two would not require the western portion of CR 309A between the new access road and the terminal site to be improved. Alternative Three would require the

eastern portion of CR 309A to be improved to tie in to the new terminal site. The roadway improvements include bringing the existing two-lane paved and gravel roadways up to the new access road typical section standards. The realigned portion of CR 309A and access from SH 172 would impact wetlands in the area. **Figure 5-2** depicts the relocated and new access roads as well as wetland locations. A Section 404 permit[2] would be required.

It was also noted in Ecosphere's report (**Appendix C**) that bald eagle roost sites are located within the proposed connection from SH 172 to CR 309A area. It was suggested that the cottonwood trees be removed outside the roosting period from March 16th to November 14th.

FIGURE 5-2 – AIRPORT ACCESS ROADS



Note: Not to scale
Sources: Jviation, Felsburg Holt & Ullevig, and Ecosphere Environmental Services

Airport-owned water system: The Airport has its own water treatment facility, operated and maintained by airport staff. Coordination with airport staff was critical to understanding the existing system and determining existing infrastructure that required improvement.

[2] Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged or fill material into waters of the Unites States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects, infrastructure development, and mining projects. A permit is required before dredged or fill material may be discharged into waters of the United States.

As a part of the analysis of the existing site conditions, the planning team brought on an engineering firm that prepared a study on the airport's water, sanitary sewer, and irrigation systems. This section provides a summary of the study findings; the complete study findings are in **Appendix K**.

The existing water system was analyzed to understand the capacity and condition of the system for current needs as well as the projected 20-year buildout. The water demands were reviewed for aviation-related development and do not account for future offsite development. The study examined historical water demands and correlated them to historic passenger enplanements to determine a water demand per passenger. This value was extrapolated to approximate the final water demand based off the 20-year enplanement estimates. The analysis included water rights, water source, water treatment, and water distribution.

The study found that there are adequate water rights to provide for the study period. Based on projected water demands, the water treatment system can operate effectively through PAL 1 but should be improved to provide additional capacity for PAL 2. The water metering should be monitored and when the treated water distribution reaches 30,000 gallons per day, planning should begin on the upgrades. This PAL 2 requirement will be reflected as a baseline condition for each alternative studied.

5.4 Analysis of Terminal Alternatives

The following sections identify and discuss shared and unique elements of the alternatives within the context of the evaluation criteria. This chapter concludes with the identification of the preferred terminal alternative based upon a local decision described in **Section 5.1.1**, and recommendations for general aviation development.

5.4.1 Shared Elements

Airside Expansion

Alternatives One and Two: To accommodate the aircraft parking positions and maneuvering area for airline ground service equipment (GSE), the apron must not only be expanded but also reconstructed and strengthened due to the reconfigured aircraft parking layout and new aircraft fleet mix. The existing terminal apron would be expanded to the north and to the west to allow for an increase in parking positions and operational area for air carriers. The expansion is anticipated to encroach on the landside parking lot. This loss of parking spaces will be offset with the proposed parking expansion.

A de-icing fluid containment system would also be considered with the expansion. The containment system would include a trench drain to capture de-icing fluid. This trench drain system would require an isolation valve to divert storm water into the drainage system during typical operations and to divert de-icing fluids to a storage facility during icing conditions. The containment system could be a surface pond or a containment tank.

Landside Expansion

Alternatives One and Two: Landside infrastructure improvements include constructing/improving the access roads, reconfiguring the terminal circulation road and parking areas, and constructing drainage

improvements. The existing landscaping around the parking would be impacted during the parking expansion. Realignment of the circulation road is necessary to maximize parking spaces. The realignment would improve pedestrian access by adding and expanding sidewalks. Lighting is to be installed to increase pedestrian and vehicle visibility.

The expansion of the parking area would have to be completed in phases to reduce the impact to the traveling public. Existing unpaved parking areas would be improved first to offset the loss of parking spaces due to the building and apron expansions. PAL 1 would involve reconfiguring the existing parking lot and circulation road to maximize the developable area on top of the mesa.

Infrastructure

Utilities are another element which must be considered. The primary utility corridor runs directly to the east of the existing terminal building, underneath the apron. This utility corridor was studied in the conceptual and schematic documents as a part of a former study, which identified utility impacts for a terminal expansion into the existing apron area.

Plans show that the utility corridor contains wet and dry utilities including water, sanitary sewer, natural gas, electric, and communication. The utility services extend from this utility corridor to the terminal building. Depending on the final building footprint that is selected for the terminal expansion, it is very likely that the existing utility corridor and services will be impacted. Constructing building foundations over the top of utilities can create issues with shifting foundations and restricts access to utilities for repair and maintenance. For the purposes of this study it is assumed that the utility mains and services will need to be reconstructed as the building footprint is expanded.

Program Elements for PAL 2

The additional facilities required to meet PAL 2 include an expansion of the terminal by 30,000 square feet and the expansion of the boarding lounge to accommodate two additional gates. The aircraft parking apron is also enlarged to accommodate the additional two gated parking positions. Auto parking needs will require an additional 500 parking stalls.

The terminal building and aircraft parking apron expansion proposed in Alternatives One and Two removes additional auto parking that needs to be replaced. Without sufficient surface parking available on airport-owned property within reasonable walking distance to the terminal entrances, the proposed solution that is most user-friendly is to construct a 1000-space parking structure in the main parking lot.

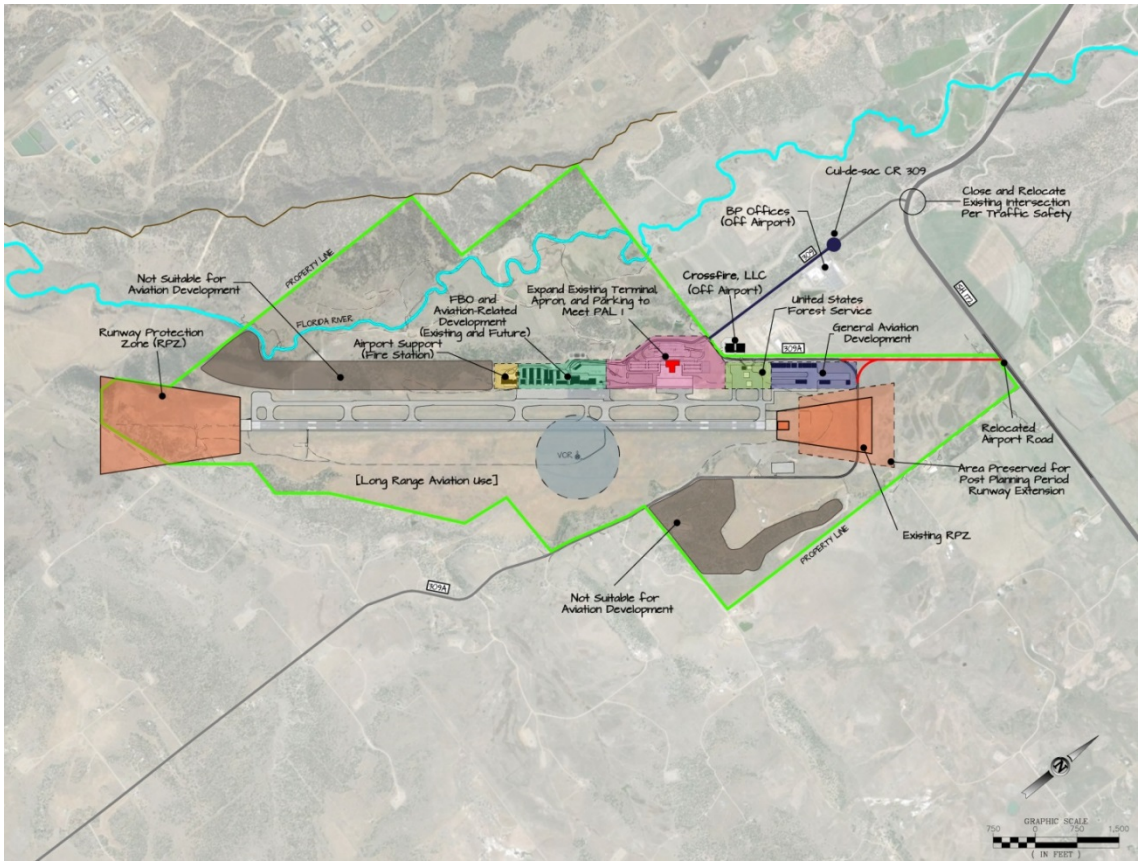
5.4.2 Alternative One: Renovate and Expand Existing Terminal

Overview for PAL 1

Alternative One involves renovating and expanding the existing terminal building to meet the PAL 1 facility requirements. This alternative seeks to use the existing airfield and landside infrastructure to the greatest extent possible. The aircraft parking apron would be reconstructed and expanded to make room for the five aircraft parking positions with boarding bridges and the two parking positions for overnight-only parking. Existing concrete pavement that is not strong enough to support aircraft will be removed and

pavement of required strength will be constructed. Auto parking would be impacted by the terminal expansion. The parking that was eliminated, along with the parking stalls required in PAL 1, would be constructed in expanded surface lots. The entrance road that loops in front of the terminal would be moved as close to the edge of the bench as possible and most landscaping within the loop road would be removed to make room for the required spaces. **Figure 5-3** depicts a general layout for PAL 1.

FIGURE 5-3 – ALTERNATIVE ONE – SITE OVERVIEW: PAL 1



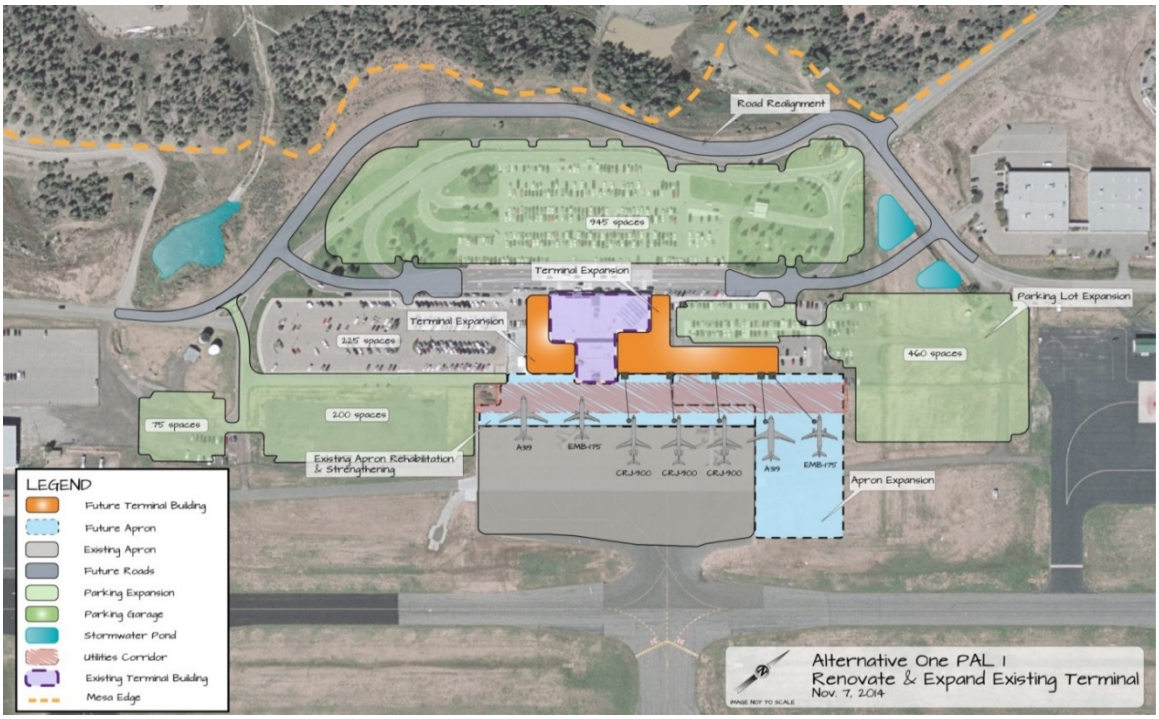
Note: Not to scale
Source: Jviation

Terminal Renovation and Expansion

The existing terminal building would be enlarged to accommodate additional depth and length of all terminal functions and areas. This includes approximately 80,000 square feet of new building area. The existing building will need to be incorporated into the new construction and be completely reconfigured. For this reason, the renovation will require a remodel of existing interior and exterior finishes. Due to the age and capacity of building systems, existing systems would be replaced with current equipment sized to serve the needs of the entire building and meeting latest energy efficiency standards. The existing building codes for fire protection would be implemented and integrated between old and new space. Any design elements to existing space such as changes in ceiling height would be incorporated as able. The project would be phased to minimize impacts to normal operations. New boarding lounges would be constructed on a second level with boarding bridges. Concession areas meeting program requirements would be located

both sides of the security checkpoint and sized to offer passengers options for food, beverage, and sundries. **Figure 5-4** depicts the terminal concept for PAL 1.

FIGURE 5-4 – ALTERNATIVE ONE – TERMINAL CONCEPT: PAL 1

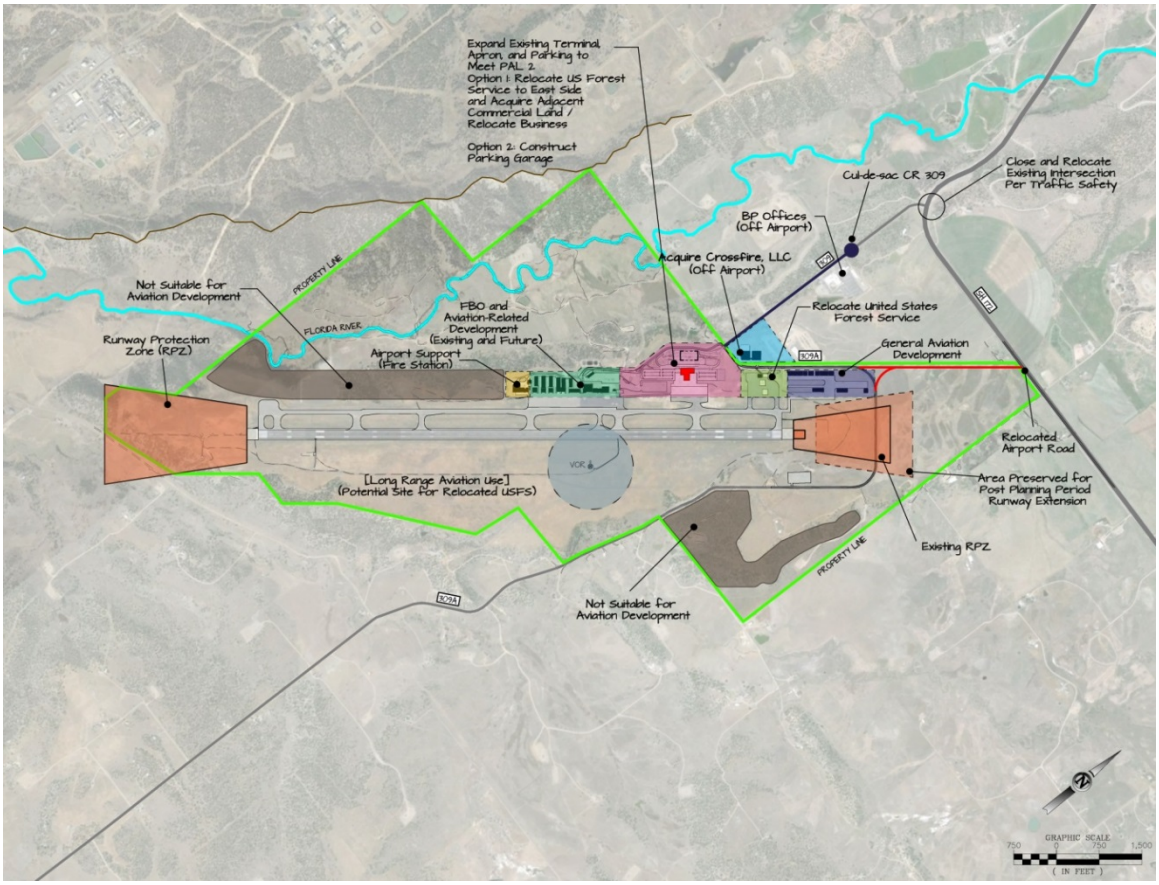


Note: Not to scale
Source: Jviation

Program Elements for PAL 2

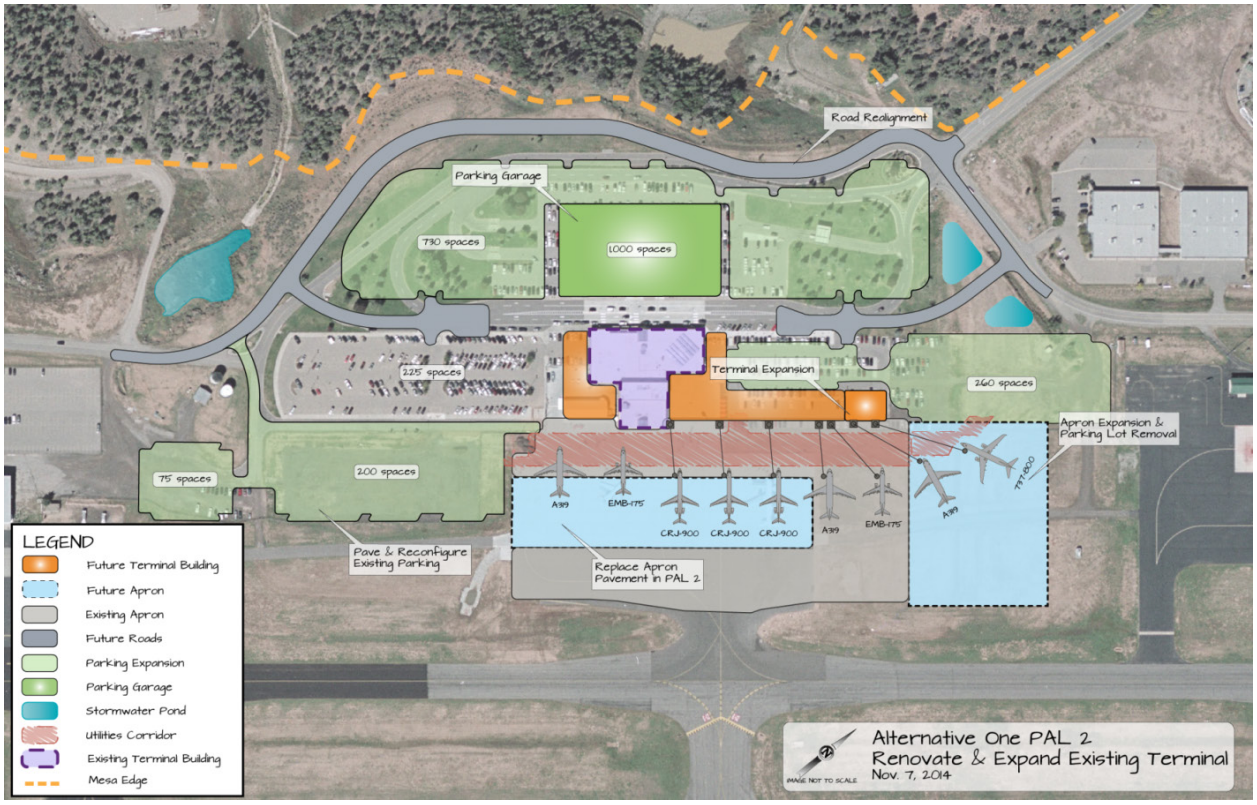
Figure 5-5 depicts the distribution of developed land on the airport as well as the new entrance road location. Two options for the parking garage are depicted should other approaches be preferred when the project is needed. The acquisition and relocation of private buildings (shown in blue) and/or the relocation of US Forest Service facilities to another part of the Airport are assumed to have similar costs without the customer convenience and potential return on investment of a parking garage. **Figure 5-6** depicts the terminal concept for PAL 2.

FIGURE 5-5 – ALTERNATIVE ONE – SITE OVERVIEW: PAL 2



Note: Not to scale
Source: Jviation

FIGURE 5-6 – ALTERNATIVE ONE – TERMINAL CONCEPT: PAL 2



Note: Not to scale
Source: Jviation

Selection Criteria Analysis

The following text details the evaluation factors in relation to Alternative One.

Qualitative:

- *Minimizes construction phasing impacts to tenants and users:* Alternative One requires significant phasing and use of temporary facilities, and would have the greatest impact on airport efficiency and customer satisfaction/convenience during construction. The phasing would also extend the construction period and total cost.
- *Incorporates sustainable design elements where appropriate:* While the alternative allows for growth of DRO to meet demand which increases economic growth, the growth is limited due to the previously mentioned site constraints. This alternative has minimal impact to existing environmental resources, however, re-use of existing facilities is limited to those that are cost-effective, and thus, new materials would be required. While the alternative meets the 20-year demand, expansion beyond PAL 2 would be extremely restricted without land acquisition or relocation of facilities to east side. Consequently, it may not meet the community's and region's need beyond 20 years.

Quantitative:

- *Meets the 20-year facility requirements, plus room to grow:* Alternative One meets the planning period needs; however, expansion to meet PAL 2 requires significant investment in parking facilities to reach the end of the planning period. In order to grow beyond PAL 2, airport plans need to consider relocating facilities to the east side of the airfield (such as Alternative Three).
- *Balances benefits and costs:* The key benefit for choosing Alternative One is the limited re-use of existing infrastructure, which may decrease costs overall. It can be implemented in phases to meet funding requirements or meet a lower level of service if desired. However, because the terrain drops off to the west, expansion to meet PAL 2 comes at a significant cost due to parking requirements. A parking structure would temporarily displace hundreds of spaces and cost an estimated $25 million dollars, which must be funded locally because the facility is ineligible for grant funding assistance. Also, the phasing would extend the construction period and increase unit costs. A parking garage could be a source of revenue for the airport, and may be managed and maintained by a private company under a lease arrangement with the airport. To amortize the cost of a new parking garage structure, the cost of parking at DRO could potentially be higher than what has been charged historically.

Another factor is that the available land on the other side of the airfield remains difficult to put into productive use. Also, there is very little land that can be offered to potential aviation-related businesses that may look to locate in Durango. The ability to feasibly develop airport land offers the opportunity to diversify the airport revenues and increase the economic activity in the region.

Table 5-1 provides the Rough Order Magnitude cost estimate for Alternative One. The PAL 1 costs are shown separately from the PAL 2 costs, but the total amount is considered necessary to fully meet the requirements for the 20-year planning period.

TABLE 5-1 – ALTERNATIVE ONE COSTS

Terminal Building Costs	PAL 1	PAL 2
Renovate/Expand Terminal Building	$44,898,888	$12,141,000
Passenger Boarding Bridges	$2,625,000	$1,050,000
Site Costs		
Earthwork	$1,500,500	$826,500
Utilities	$1,752,500	$517,500
Apron Construction	$4,099,900	$2,403,800
Apron Replacement		$3,263,900
Parking Lots	$5,442,100	$298,500
Structured Parking		$25,000,000
Roadways/Access	$4,740,900	-
Total Construction Cost	**$65,059,788**	**$45,501,200**
Design and Program Management		
Program Management	$3,252,989	$2,275,060
Design	$3,903,587	$2,730,072
Construction Management	$4,554,185	$3,185,084
Contingencies	$6,505,979	$4,550,120
Total ROM Cost	**$83,276,529**	**$58,241,536**
Total ROM Cost Combined: PAL 1 & 2		**$141,518,065**

Note: Costs are shown in today's dollars
Source: Jviation

5.4.3 Alternative Two: Construct New Terminal Adjacent to Existing

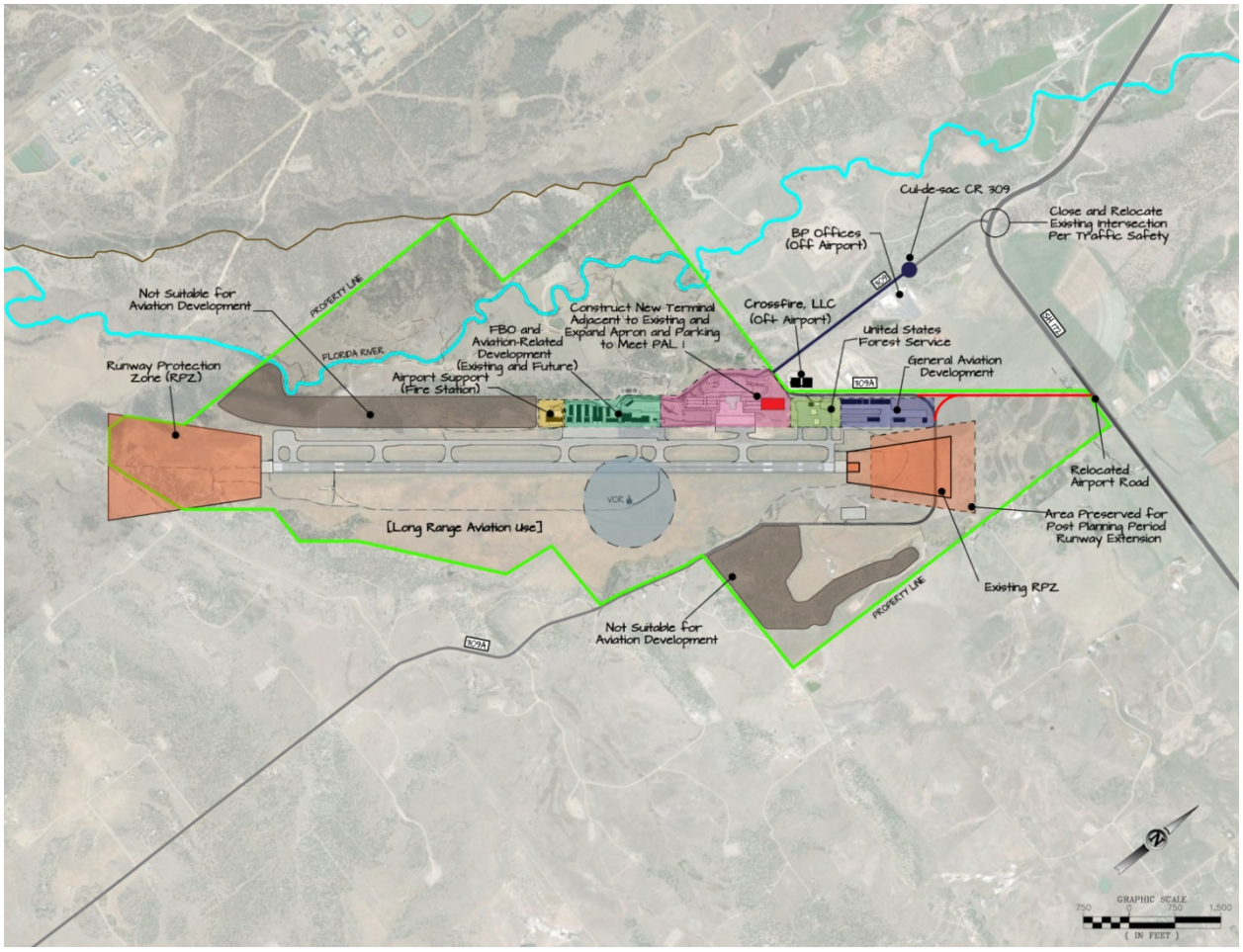
Overview for PAL 1

Alternative Two proposes to construct a new terminal building next to the existing terminal building to meet the PAL 1 facility requirements. Similarly to Alternative One, this alternative seeks to use the existing airfield and landside infrastructure to the greatest extent possible with a new building.

The aircraft parking apron would be reconstructed and expanded to connect to the new terminal's five aircraft parking positions with boarding bridges and two parking positions for overnight only parking. Existing concrete pavement that is not strong enough to support aircraft would be removed and new pavement constructed of required strength.

Auto parking would be impacted by the terminal expansion. The parking that was eliminated, along with the parking stalls required in PAL 1, would be constructed in expanded surface lots. The entrance road that loops in front of the terminal would be moved as close to the edge of the mesa top as possible, and the majority of landscaping within the loop road would be removed to make room for the required spaces. This alternative would also use the airfield and landside infrastructure to the greatest extent possible. The new terminal building would be constructed to the north of the existing terminal with jet bridges extending from the proposed building towards the apron. Figure 5-7 depicts a general layout for PAL 1.

FIGURE 5-7 – ALTERNATIVE TWO – SITE OVERVIEW: PAL 1

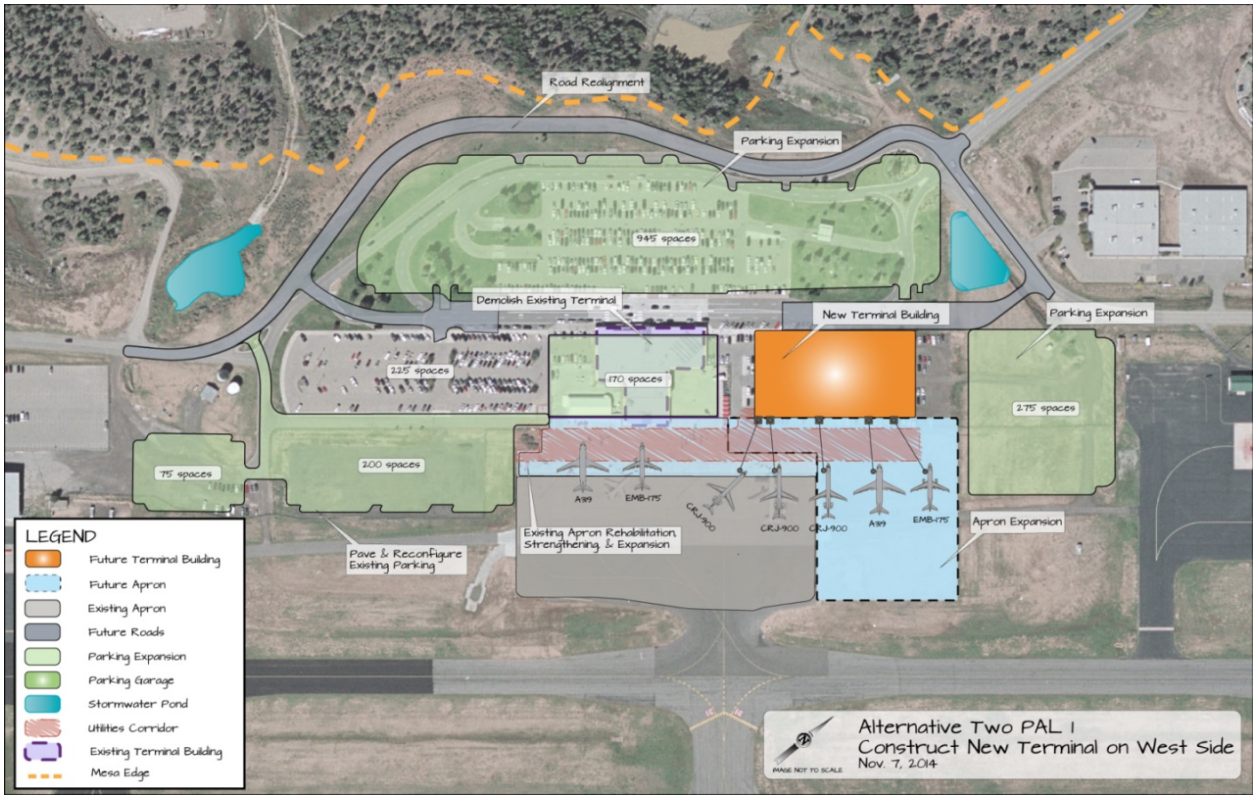


Note: Not to scale
Source: Jviation

Terminal Construction

An all-new terminal building would be constructed to meet the PAL 1 requirements. The existing building would need to be demolished after the new building was completed and the site reused for auto parking. High-performance modern systems would be used to capture the benefits of sustainable design principles and reduce operating costs of the new building. Design elements that reflect Durango's image would be incorporated into the project. Some phasing would be needed to minimize impacts to the normal airport operations, primarily because there is very little area for contractors to stage equipment and materials outside of areas needed for normal airport operations. New boarding lounges would be constructed on a second level with boarding bridges. Concession areas meeting program requirements would be located both sides of the security checkpoint and sized to offer passengers options for food, beverage, and sundries. **Figure 5-8** depicts a terminal concept for PAL 1.

FIGURE 5-8 – ALTERNATIVE TWO – TERMINAL CONCEPT: PAL 1



Note: Not to scale
Source: Jviation

Airside Expansion

The apron must be extended to the new terminal site.

Landside Expansion

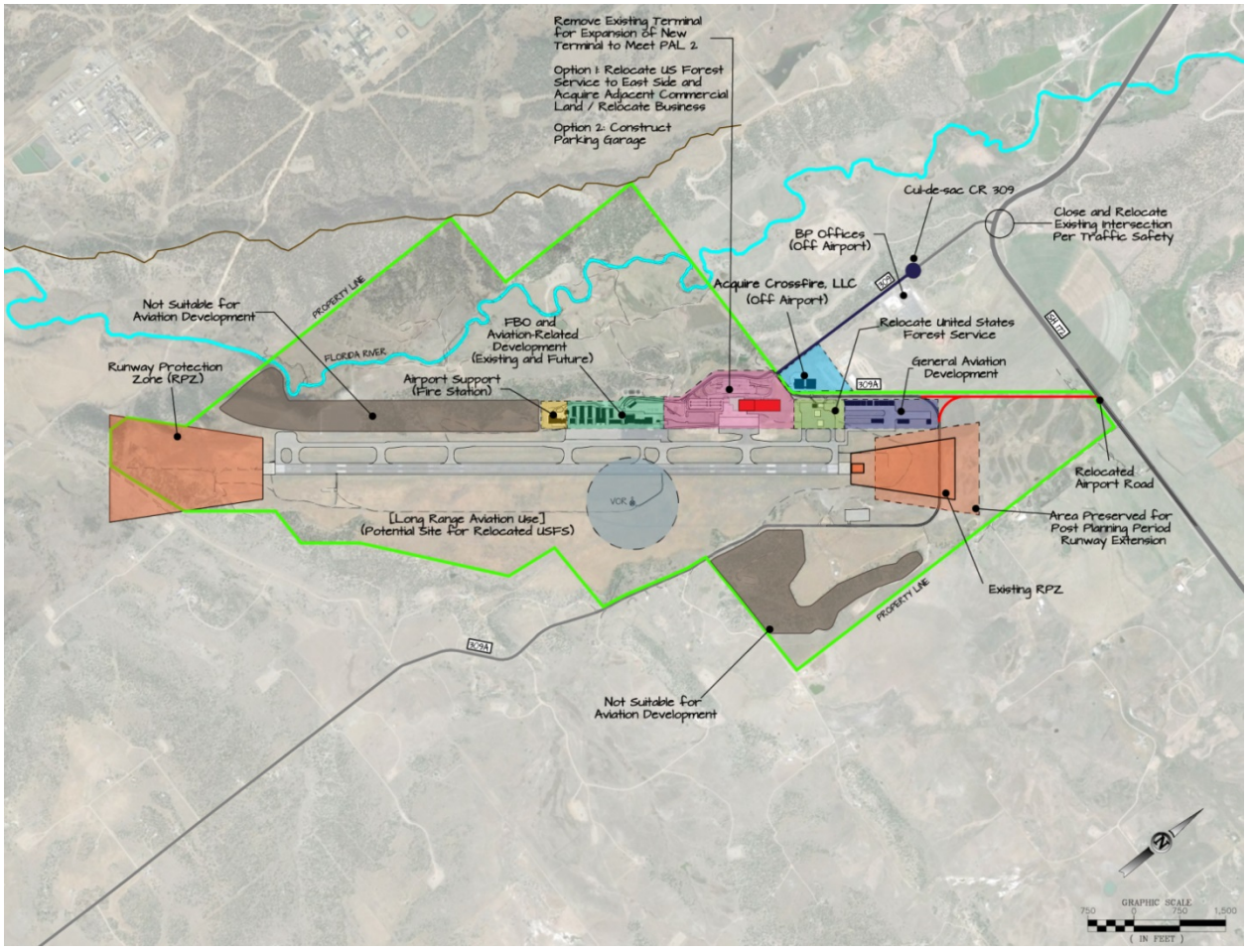
Additional landside infrastructure improvements include reconfiguring the terminal circulation road particularly in front of the new terminal building and parking areas, and constructing drainage improvements.

After the existing terminal building is demolished, the area would need to be paved, following the opening of the new terminal.

Program Elements for PAL 2

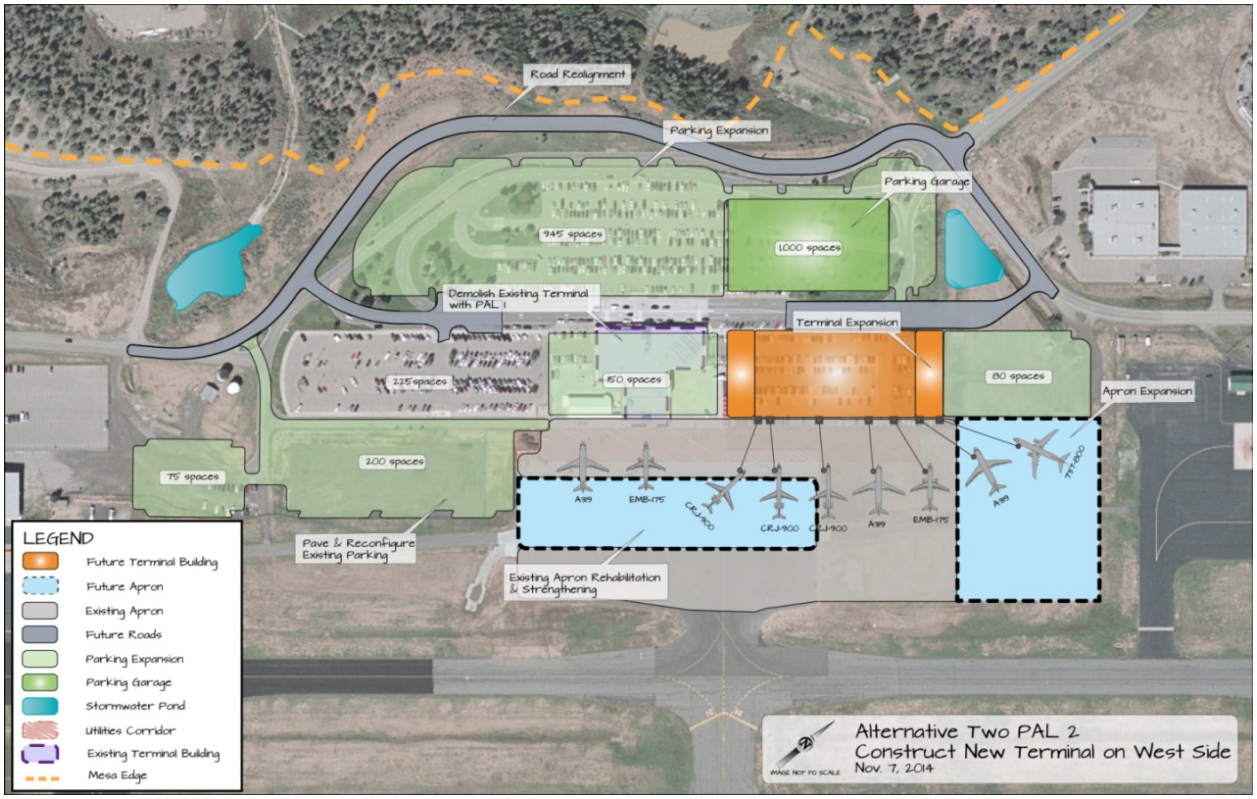
Figure 5-9 depicts the distribution of developed land on the airport as well as the new airport entrance road location. Two options to having to build the parking garage are depicted should other approaches be preferred at the time when the project is needed. The acquisition and relocation of private buildings and/or the relocation of US Forest Service facilities to another part of the airport are assumed to have similar costs, without the customer convenience and potential return on investment of a parking garage. **Figure 5-10** depicts the terminal concept for PAL 2.

FIGURE 5-9 – ALTERNATIVE TWO – SITE OVERVIEW: PAL 2



Note: Not to scale
Source: Jviation

FIGURE 5-10 ALTERNATIVE TWO – TERMINAL CONCEPT: PAL 2



Note: Not to scale
Source: Jviation

Selection Criteria Analysis

The following text details the evaluation factors in relation to Alternative Two.

Qualitative:

- *Minimizes construction phasing impacts to tenants and users:* This alternative would require significant landside phasing for existing operations to continue as the new terminal displaces parking and roadway infrastructure. Phasing is also critical in relation to utility services to maintain service without interruption. Disruptions to normal operations are to be anticipated which would cause passenger and tenant inconveniences. The phasing would also extend the construction period, thereby extending passenger and tenant inconvenience and increasing costs. However, new construction requires less phasing during building construction and changeover.
- *Incorporates sustainable design elements where appropriate:* Economic growth would result from this alternative due to the expanded terminal space and associated infrastructure (apron, parking, etc.) as it would allow for additional airline operations and tenants. However, growth is limited due to site constraints previously discussed. Alternative Two has minimal impact on existing environmental resources but would require use of new materials. Construction of a new terminal provides ample opportunities to incorporate sustainable features. However, this alternative does require the demolition of the existing terminal in order to provide required parking. Lastly, the alternative is limited to meeting demand through PAL 2. Expansion beyond PAL 2 would require land acquisition, relocation of facilities to east side, or airport relocation, all which comes with significant costs. Consequently, it may not meet the community's and region's need beyond 20 years.

Quantitative:

- *Meets the 20-year facility requirements, plus room to grow:* Alternative Two meets the planning period needs; however, expansion beyond PAL 2 would require development of the east side or airport relocation.
- *Balances benefits and costs:* The key benefit for choosing Alternative Two is the limited re-use of existing infrastructure, which may decrease costs compared to new infrastructure. The existing terminal building, for example, has reached the end of its useful life. Alternative Two can be implemented in phases to meet funding requirements or meet a lower level of service if desired. However, because the terrain drops off to the west, expansion to meet PAL 2 comes at a significant cost due to parking need requirements. A parking structure would temporarily displace hundreds of spaces and cost an estimated $25 million dollars which must be funded locally because the facility is ineligible for grant funding assistance. However, a new parking garage could generate more parking revenue, depending on the fees charged, than has been generated previously. Also, the phasing would extend the construction period and increase unit costs.

Another factor is the fact that the available land on the other side of the airfield would be costly for either the fixed base operator (FBO), the U.S. Forest Service, or a new tenant to put into productive use, particularly if those parties were responsible for any of the construction costs associated with a new access road, utility hook-ups, etc. Also there is very little land that can be offered to potential aviation-related businesses that may look to locate in Durango. The ability to feasibly develop airport land offers the opportunity to diversify the airport's revenues and increase the economic activity in the region.

Table 5-2 provides the Rough Order Magnitude cost estimate for Alternative Two. The PAL 1 costs are shown separately from the PAL 2 costs, but the total amount is considered necessary to fully meet the requirements for the 20-year planning period.

TABLE 5-2 – ALTERNATIVE TWO COSTS

Terminal Building Costs	PAL 1	PAL 2
Construct New Terminal	$39,235,665	$9,490,215
Passenger Boarding Bridges	$2,625,000	$1,050,000
Demolish Existing Terminal	$231,000	
Site Costs		
Earthwork	$1,704,000	$888,800
Utilities	$1,977,700	$385,000
Apron Construction	$4,881,200	$2,466,400
Apron Replacement		$3,263,900
Parking Lots	$5,519,100	$274,300
Structured Parking		$25,000,000
Roadways/Access	$5,398,400	
Total Construction Cost	**$61,572,065**	**$42,818,615**
Design and Program Management		
Program Management	$3,078,603	$2,140,931
Design	$3,694,324	$2,569,117
Construction Management	$4,310,045	$2,997,303
Contingencies	$6,157,207	$4,281,862
Total ROM Cost	**$78,812,243**	**$54,807,827**
Total ROM Cost Combined: PAL 1 & 2		**$133,620,070**

Note: Costs are shown in today's dollars
Source: Jviation

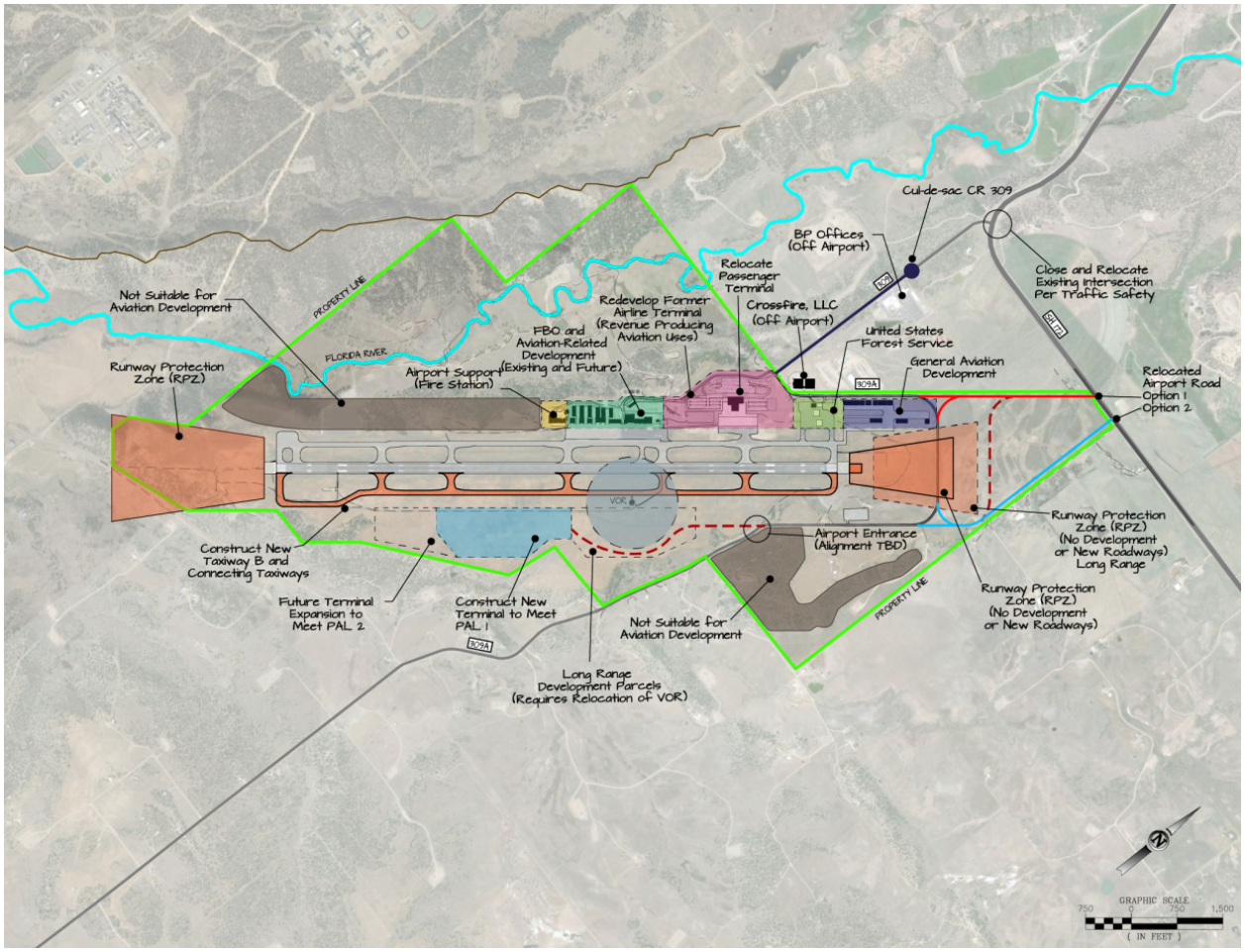
5.4.4 Alternative Three: Construct New Terminal Complex on East Side of Airfield

Overview for PAL 1

Alternative Three involves construction of all-new terminal facilities on the east side of the airfield on undeveloped land. This alternative seeks to utilize airport-owned land that is available for development but has not been considered accessible due to the barriers such as utility extension and access. Construction of a new terminal, aircraft parking apron, parallel taxiway, auto parking, and access roadways to SH 172 would be required. The former terminal location would then be made available for lease or redevelopment; this concept does not include any costs.

Figure 5-11 provides a site overview for PAL 1 development.

FIGURE 5-11 – ALTERNATIVE THREE – SITE OVERVIEW: PAL 1

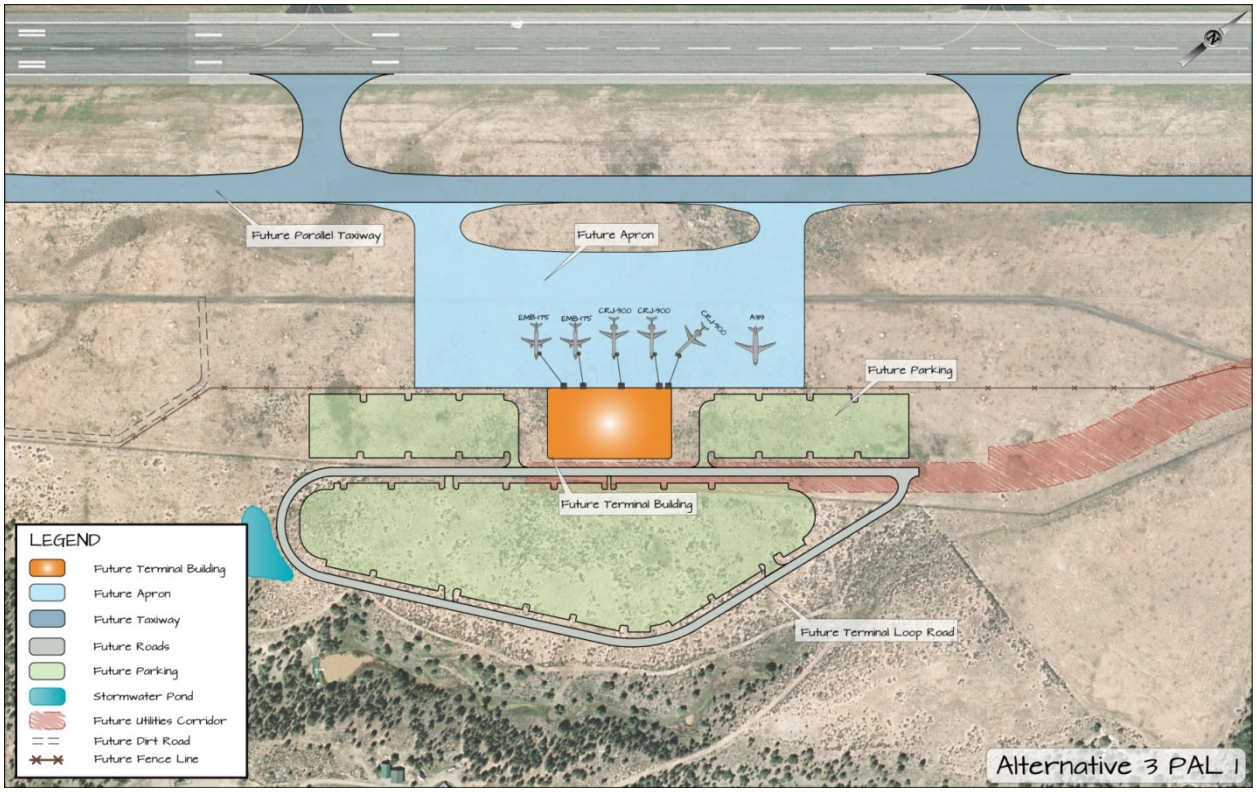


Note: Not to scale
Source: Jviation

Terminal Construction

An all-new terminal building would be constructed to meet the PAL 1 requirements. High-performance modern systems would be used to capture the benefits of sustainable design principles and reduce operating costs of the new building. No phasing would be needed, as airport operations will not be affected by construction. New boarding lounges would be constructed on a second level with boarding bridges. Design elements that reflect the Durango image would be incorporated into the project, especially considering the unobstructed views to the west overlooking the airfield from the boarding lounge. Concession areas meeting program requirements would be located both sides of the security checkpoint and sized to offer passengers options for food, beverage, and sundries. Sustainable design elements would be featured throughout the site development. **Figure 5-12** illustrates the terminal concept for PAL 1.

FIGURE 5-12 – ALTERNATIVE THREE - TERMINAL CONCEPT: PAL 1



Note: Not to scale
Source: Jviation

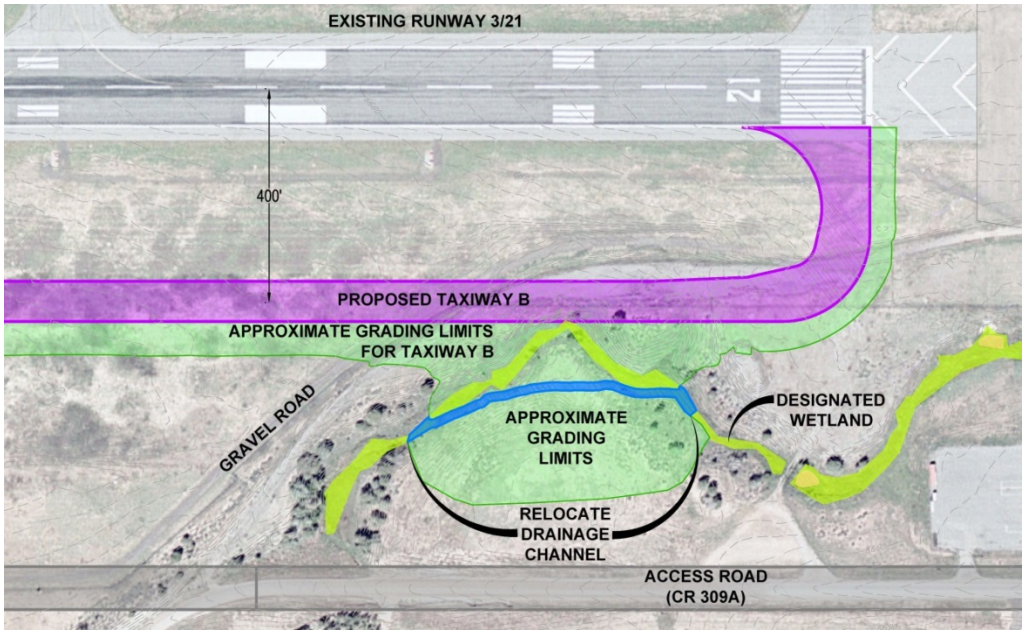
Airside Construction

To provide terminal service on the east side of the runway, a new parallel taxiway, Taxiway B, would be required to allow for safe and efficient aircraft movement. Six connector taxiways would be constructed and edge lighting and airfield signage installed, with the required 400-foot taxiway-to-runway separation and various electronic navigational aids relocated outside of the safety areas. The final location would be outside of the safety areas for the runway and taxiway. An FAA flight check would be required with any modification to the critical area or the equipment. One notable design note is that the south end of Taxiway B would remain within a critical area for the Glideslope antenna, thus hold lines are proposed on either side of the critical area, a commonly used mitigation strategy. This approach allows for considerable savings because the area features sloping terrain that would otherwise require additional earthwork to relocate the taxiway outside the glideslope antenna critical area.

At the north end of Taxiway B, the vertical and horizontal alignment would impact an existing drainage channel (see **Figure 5-13**). In this location the drainage channel would need to be filled in and embankment depths are expected to range from 20 to 30 feet deep. The drainage channel contains waters of the U.S. (wetland/stream) that would be impacted by this fill condition. A Section 404 permit would be required. The new parallel taxiway would also encroach upon potential endangered species habitat (see **Section 2.14.4** for detail). USFWS protocol surveys would be required prior to development and mitigation may be necessary.

The proposed Taxiway B and access road would also pass through the critical area for navigational equipment called a VOR. Stopped vehicles and aircraft in the critical area can interfere with the VOR operation. It's not clear whether FAA would approve leaving the VOR in place given the proximity to taxiing aircraft and occasional vehicles on the adjacent Taxiway B. Options to mitigate this possible disruption include: relocate the VOR, eliminate the VOR, relocate the access road, or upgrade the VOR.

FIGURE 5-13 – TAXIWAY B GRADING IMPACT



Note: Not to scale
Source: Jviation

The current ALP depicts the VOR's relocation, although a final location was not determined. The current ROM cost estimate does not include costs to relocate the VOR. Discussions on the VOR have included decommissioning it, but this would require a significant amount of coordination with the FAA and is not the ideal mitigation option. If the impacts to the critical area due to aircraft on Taxiway B can be accommodated, the access road could be realigned to avoid the critical area. Another option that has been discussed is upgrading the VOR to include newer technologies that may have a reduced critical area. The final solution will be determined with coordination through the FAA and the airport.

The storm water drainage for Taxiway B would be directed to the south through infield drainage ditches and culverts, intercepted south of the new terminal complex, and diverted under Taxiway B to a new detention pond. The remaining storm water from the terminal complex to the south would drain to a new detention pond located just east of the Runway 3/21 blast pad. Use of the existing detention ponds on the west side of the runway would require a large amount of piping and would be cost prohibitive.

The new terminal building would be centered on the terminal apron and would have the ability to expand to the north and south to meet PAL 2 and beyond.

To accommodate the new development area, a new electric vault would be installed on the east side of the airfield near the terminal development. This new electric vault would replace the existing and provide power to the entire airfield lighting system.

Landside Construction

A new road would also be constructed from the improved section of CR 309A up to a new terminal loop road. As CR 309A is currently located below the mesa, the new access road would need to climb up the slope to reach the Alternative Three site. This will require large cuts and fills to meet grade requirements. Landscaping berms may be considered to lessen the visual impact of the new roadway as it climbs the mesa. A new circulation road would be required to support the terminal development on the east side. The circulation road would include two 12-foot lanes with curb and gutter and two five-foot sidewalks. Additional lanes may be needed at intersections and in front of the terminal to increase safety and improve traffic flow.

Parking has been defined in three areas which have the potential to be expanded to the north and south to accommodate future growth. The storm water in these lots would be collected by a system of inlets and underground storm sewer pipes and conveyed to a new detention pond. Allowable ponding depths at inlets in parking areas would be carefully considered to balance inlet efficiency and passenger comfort. Utility infrastructure for the parking lots would include lighting and revenue control. Electrical and communications ducts and wiring would be required.

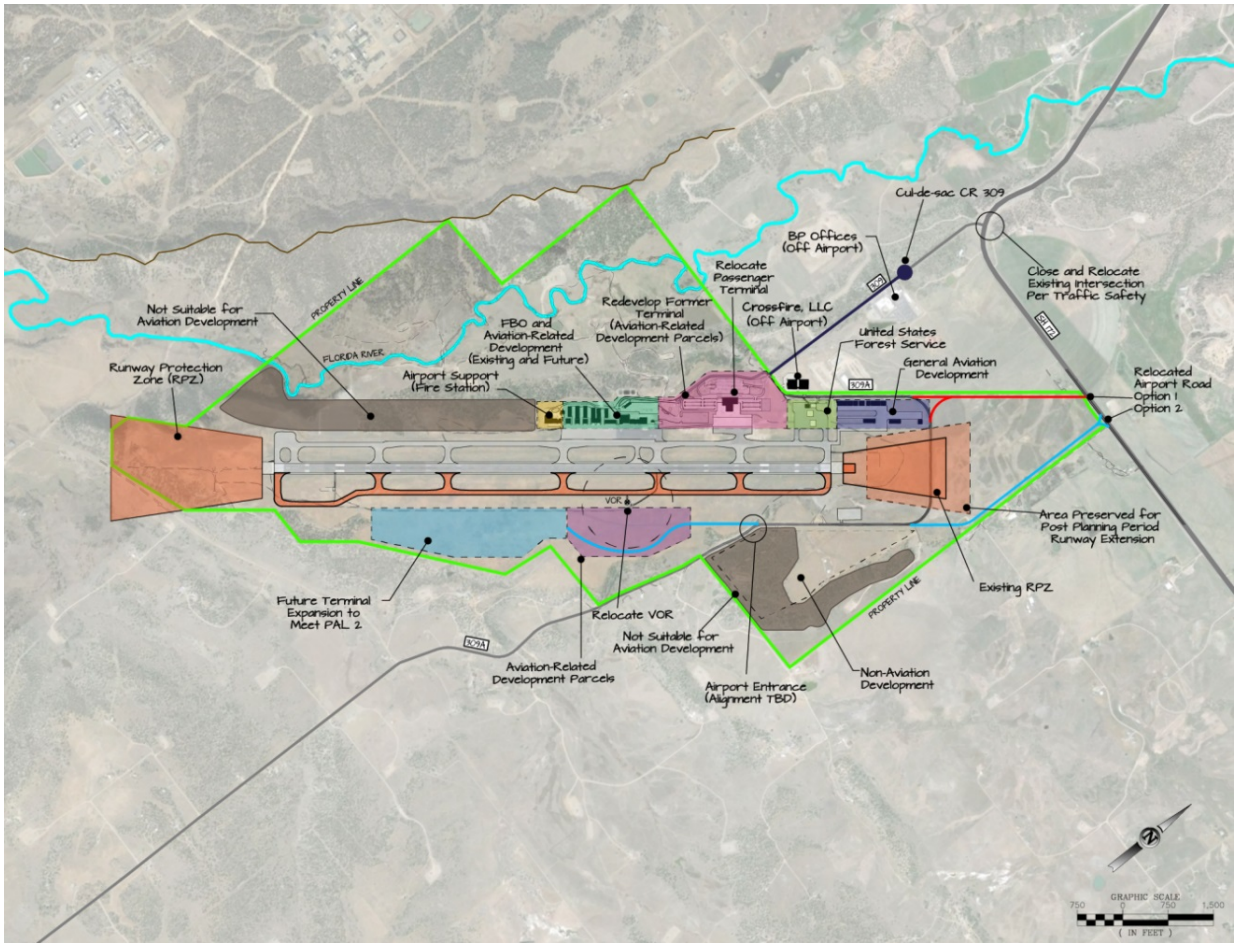
Infrastructure

To support a new terminal building on the east side of the runway, new utility infrastructure would be required. The utility infrastructure required for the new terminal building includes water, sanitary sewer, storm sewer, natural gas, electric, communications, and irrigation. The majority of utilities would be installed using open trench construction with granular bedding. Most of these utility systems would be extended from the existing infrastructure on the west side of the runway. The proposed utility corridor on the north end would be adjacent to a potentially eligible historic site as defined in the Phase I Cultural Resources Report. Coordination with the State Historic Preservation Office (SHPO), as well as tribal coordination, and the cost to mitigate any potential impacts, as well as an additional survey, may be required due to the proximity.

Program Elements for PAL 2

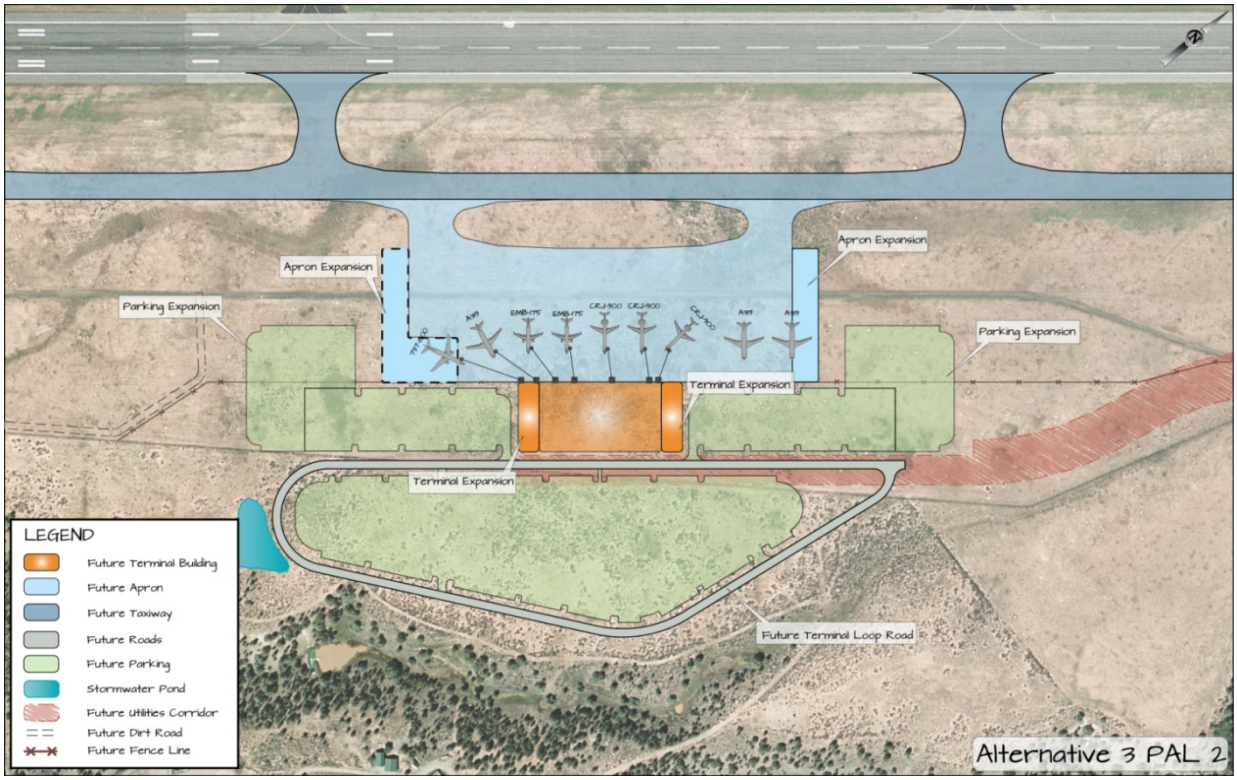
The terminal building and aircraft parking apron expansion will not affect the ability to provide the additional auto parking required for PAL 2. The ability to provide this parking in surface lots significantly reduces the costs to meet PAL 2 for Alternative Three. **Figure 5-14** and **Figure 5-15** illustrate the overall and terminal concept development for PAL 2, respectively.

FIGURE 5-14 – ALTERNATIVE THREE – SITE OVERVIEW: PAL 2



Note: Not to scale
Source: Jviation

FIGURE 5-15 – ALTERNATIVE THREE – TERMINAL CONCEPT: PAL 2



Note: Not to scale
Source: Jviation

Selection Criteria Analysis

The following text details the evaluation factors in relation to Alternative Three.

Qualitative:

- *Minimizes construction phasing impacts to tenants and users:* The new terminal site would be constructed on the east side of the airfield, allowing operations to continue at the existing facility on the west side without interruption. This alternative would not require phasing as construction would take place on a new site. Therefore, passenger/tenant inconvenience would not occur as immediate changeover to the new terminal would occur upon completion.
- *Incorporates sustainable design elements where appropriate:* This alternative provides significant opportunities for economic growth as it opens the east side of the airfield to development for the new terminal site and allows the existing west side terminal area to be repurposed for other aviation related revenue producing development. Although this alternative would impact wetlands and have the potential to impact endangered species habitat, as well as incur the cost to mitigate potential impacts on wetland and endangered species habitat, all mitigation measures would be met to meet regulatory agency requirements. Construction of a new terminal provides ample opportunities to incorporate sustainable features and limit energy and water use. This alternative would also provide the community and region an option that extends well beyond the needs of PAL 2, thereby reducing impacts to resources in the future.

Quantitative:

- *Meets the 20-year facility requirements, plus room to grow:* Alternative Three meets the planning period needs with the ability to feasibly expand beyond the planning horizon.
- *Balances benefits and costs:* Development costs are high in PAL 1 to develop the east side; however, it opens up the airport-owned land on the east side which could accommodate terminal facilities that would adequately serve air service needs beyond the 20-year forecast period. Also, the former terminal and apron would allow for the recruitment of aviation-related uses, which promotes additional revenue diversification and economic development. Costs to meet PAL 2 are significantly reduced.

Table 5-3 provides the Rough Order Magnitude cost estimate for Alternative Three. The PAL 1 costs are shown separately from the PAL 2 costs, but the total amount is considered necessary to fully meet the requirements for the 20-year planning period.

TABLE 5-3 – ALTERNATIVE THREE COSTS

Terminal Building Costs	PAL 1	PAL 2
Construct New Terminal	$37,367,300	$9,490,215
Passenger Boarding Bridges	$2,625,000	$1,050,000
Site Costs		
Earthwork	$6,164,500	$838,500
Utilities	$4,616,000	$385,000
Apron Construction	$9,773,100	$2,231,200

Terminal Building Costs	PAL 1	PAL 2
Taxiway Construction	$15,873,800	-
Parking Lots	$5,247,200	$1,380,900
Structured Parking		-
Roadways/Access	$7,957,000	-
Total Construction Cost	**$89,623,900**	**$15,375,815**
Design and Program Management		
Program Management	$4,481,195	$768,791
Design	$5,377,434	$922,549
Construction Management	$6,273,673	$1,076,307
Contingencies	$8,962,390	$1,537,582
Total ROM Cost	**$114,718,592**	**$19,681,043**
Total ROM Cost Combined: PAL 1 & 2		**$134,399,635**

Note: Costs are shown in today's dollars
Source: Jviation

Table 5-4 compares the costs of the three alternatives.

TABLE 5-4 – ALTERNATIVE COST SUMMARY

	PAL 1	PAL 2	TOTAL
Alternative One: Renovate and Expand	$83,276,528	$58,241,536	$141,518,064
Alternative Two: Construct New - West	$78,812,243	$54,807,827	$133,650,070
Alternative Three: Construct New - East	$114,718,592	$19,681,043	$134,399,635

Note: Costs are shown in today's dollars
Source: Jviation

5.4.5 Comparison of Cost Estimates

The analysis of the alternatives based solely on cost shows that the lowest cost alternative to meet the existing need and the projected need through PAL 1 is Alternative Two. This is due mostly to the ability to take advantage of the proximity of utilities and reutilize some aircraft parking apron. The alternative also does not require the construction of a taxiway and avoids most of the phasing issues associated with extensive renovation of a terminal while it is in operation. However, the auto parking becomes the big challenge and is the key weakness of the concepts on the existing west side of the airfield unless parking can become a significantly greater source of revenue for the airport. Surface parking cannot be feasibly created or conveniently located without the construction of a parking structure. Thus, with the 20-year needs in mind, the costs equalize in PAL 2.

The key drivers of cost for Alternative Three are the preparation of the site with earthwork, drainage, and utilities. An added expense is the construction of a new taxiway. These one-time costs are required in PAL 1 but don't carry forward to future PALs. The PAL 1 cost is considerably higher than Alternatives One and

Two, however the return is that the airport gains half of an airport that can be put into productive use and re-use.

The benefits to taking on a larger PAL 1 project is that the future expansions for PAL 2 and beyond are much less costly.

5.4.6 Technical Observations

Numerous technical observations per industry standards have been made based upon the alternative discussion and analysis as described in the following text.

DRO is projected to add 1.9 to 3.5 percent additional passengers each year. The facilities should expect to handle between 300,000 and 400,000 annual passengers (enplanements) by the end of the 20-year planning period (2035).

There are no "low cost" approaches that will satisfy the needs for today. None of the alternatives that satisfy today's needs has a comparatively low cost. Expansions to meet future needs (PAL 2) do have wide differences in cost to consider.

The terminal building is undersized for the current demand.

- Required today: 82,000 square feet and existing building is 37,000 square feet.
- Plan to accommodate 140,000 square feet at end of planning period.
- Corroborated by airlines (surveys and focus group).

The parking system capacity is at failure today.

- Main and Credit Card lots are full most days.
- Unpaved Overflow lots are often filled even on off-peak days
- Required spaces: 1,500 needed today (existing is 1,100 paved/unpaved combined)
- Plan to Accommodate: 2,400 spaces

Additional aircraft apron is required with all obstruction clearances met.

- Per airline and aircraft manufacturer forecasts and orders, airlines are going to be flying larger regional aircraft placing a higher peak demand on the processing systems.
- The size of the aircraft parking apron limits the number of aircraft to four simultaneously
- DRO is hampered in its ability to recruit new airline service with overnight capability
- Required today: 5 parking positions plus room to feasibly expand
- Plan to accommodate: 7 parking positions plus two RON

5.4.7 Selection of the Preferred Terminal Alternative

Alternatives were presented to the PAC, Airport Commission, public and elected officials to obtain their preferred alternative. The PAC and Airport Commission were asked to fill out an evaluation matrix to rank

the alternatives based upon the evaluation criteria as presented in this chapter. The evaluation matrix and results are presented in **Appendix M**. Both the PAC and Airport Commission determined that Alternative Three had the greatest ability to meet the evaluation criteria; however, both groups expressed concern about how PAL 1 would be funded. This concern needed to be addressed prior to presenting the recommendation to the public and elected officials.

In order to measure the financial impact to the local community, the Consultant and Sponsor coordinated with the FAA to obtain an estimate of what could be anticipated from federal funding. The FAA's indicated that funding requests up to $35 to $40 million would be considered and noted that a matching amount from local and other funding would increase likelihood of FAA funding. Consequently, a project budget of $80 to $90 million was set as a goal. Because PAL 1's costs exceeded the new budget, the analysis was re-tooled and a new PAL was created, PAL 0. PAL 0 is based upon meeting today's needs as listed below:

- Terminal – 82,000 square feet
- Parking – 1,500 spaces
- Gates – 4
- Remain Overnight Parking Positions (RON) – 1

Terminal items were then placed in two categories, scalable and non-scalable, to determine the best way to meet the budget as shown in **Table 5-5**. Items not considered were the fuel farm and wash rack as they are owned the FBO and rental car concessions, respectively. These items may be relocated to the east side should the owners decide maintaining the facilities on the west side of the airfield is not conducive to efficient operations.

TABLE 5-5 – TERMINAL PROGRAM ELEMENTS: SCALABLE VERSUS NON-SCALABLE

Scalable	Non-Scalable
Parallel Taxiway: construct partial parallel taxiway to minimize construction costs and wetland mitigation	Grading
Entrance Roadway: maintain current intersection	Permitting
Apron: construct space to meet today's needs of four gates and one RON	Utilities
Gates: four gates to meet today's needs	Basic Access
Jet Bridges: defer bridges at initial PAL	Terminal Core
Terminal Size: construct terminal to meet today's needs	

Source: Jviation

Further coordination with the PAC and Colorado Department of Transportation resulted in the need to include the new entrance roadway due to existing safety concerns with the intersection and forecasted increase in demand. The development cost for the new PAL 0 fell at $75.3 million (today's dollars), within the acceptable range of $80 to $90 million (construction year costs).[3] This new analysis was presented to the PAC and Airport Commission on January 15, 2015. The PAC and Airport Commission recommended Alternative Three, PAL 0 as the preferred alternative.

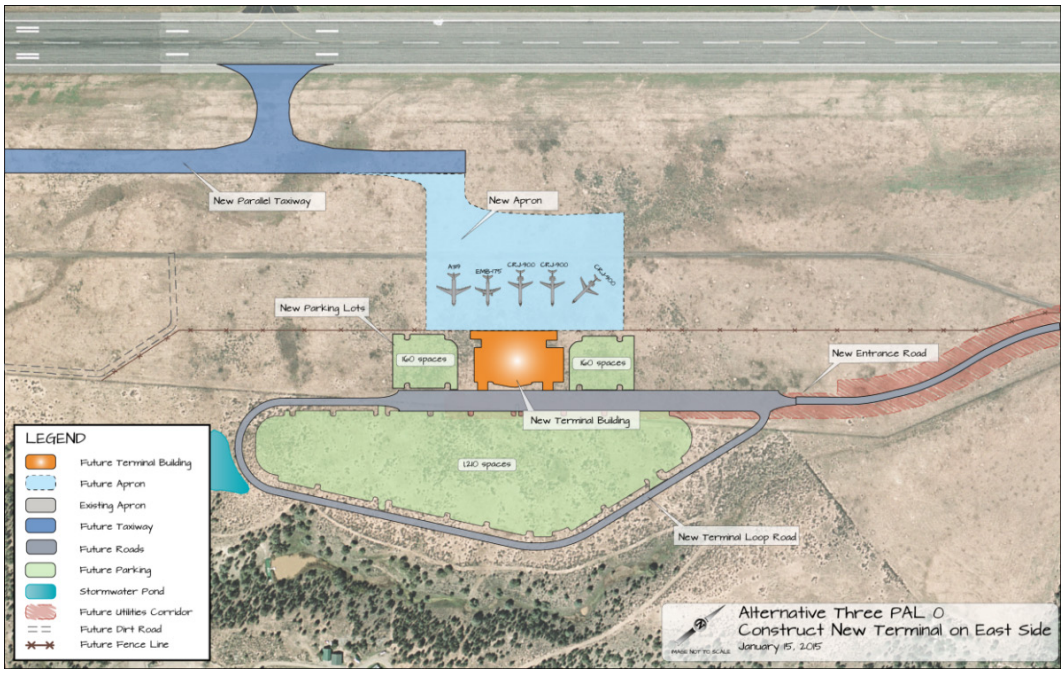
[3] PAL 0 is projected to cost $85.4 million at time of construction, which falls within the acceptable range of $80 to $90 million; see **Chapter 7, Financial Analysis** for further explanation and additional details.

A second public open house displaying each alternative, including PAL 0, was held on January 21, 2015 and the majority of comments received were in favor of Alternative Three, PAL 0. Comments and responses received at both open houses are in **Appendix N**.

The County and City were presented with the new analysis and recommendations from the PAC, Commission, and public on February 10, 2015 at the joint study session. It was concluded that the Alternative Three was the preferred alternative and would meet the long-term demand for the region.

Alternative Three, PAL 0 development is shown in **Figure 5-16.**

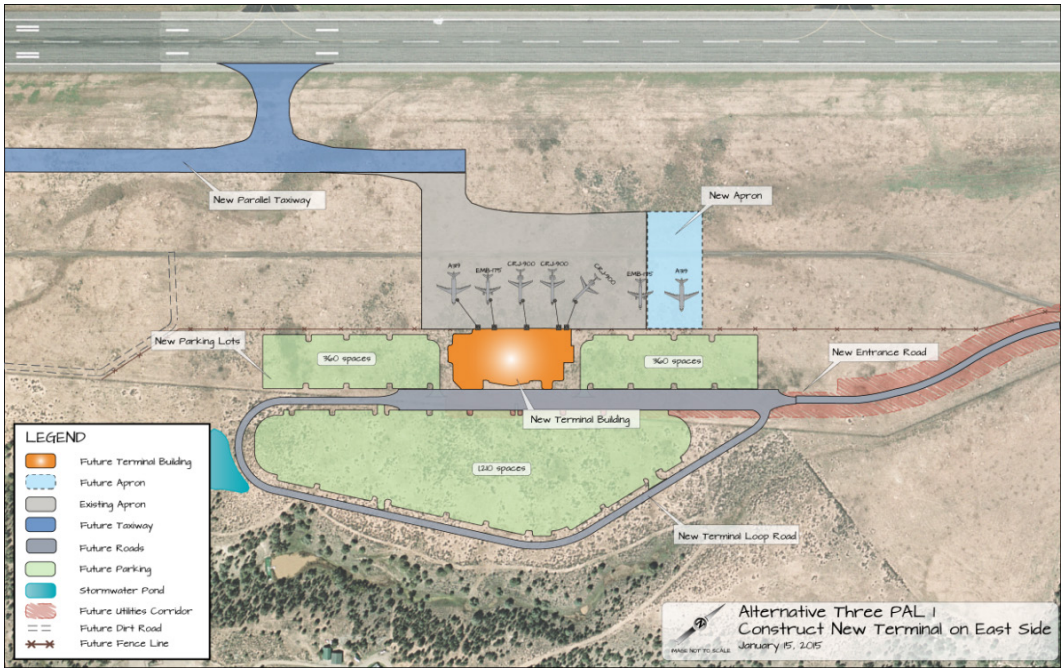
FIGURE 5-16 – ALTERNATIVE THREE – PAL 0



Note: Not to scale
Source: Jviation

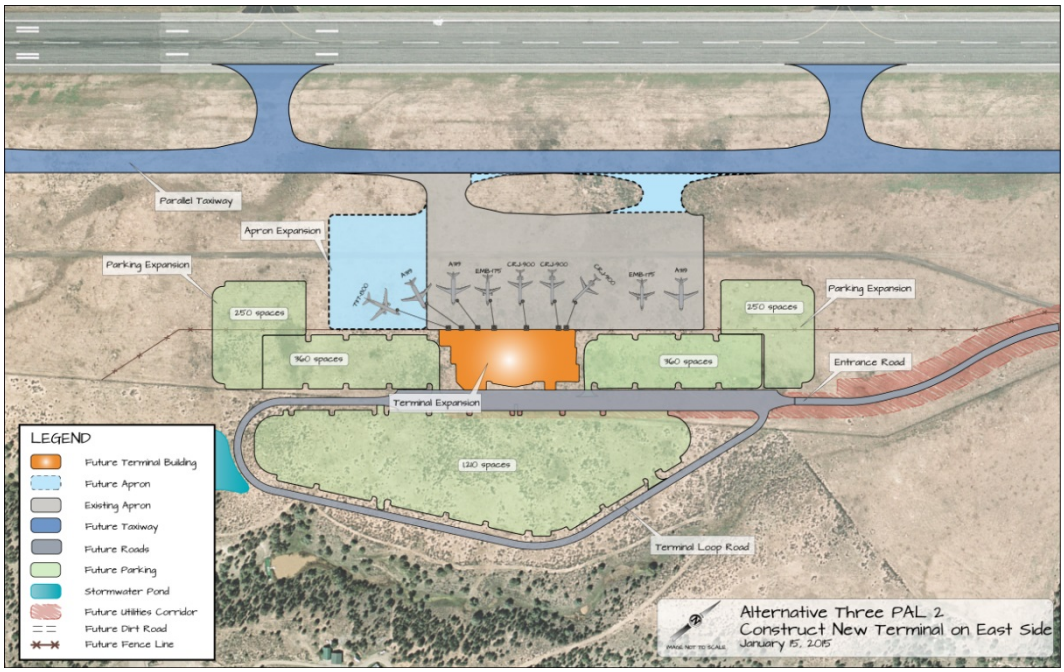
Figure 5-17 and **Figure 5-18** depict growth into PAL 1 and PAL 2, respectively. **Table 5-6** details the costs for PAL 0, PAL 1, and PAL 2.

FIGURE 5-17 – ALTERNATIVE THREE – PAL 1



Note: Not to scale
Source: Jviation

FIGURE 5-18 – ALTERNATIVE THREE – PAL 2



Note: Not to scale
Source: Jviation

TABLE 5-6 – ALTERNATIVE THREE (PREFERRED) COSTS

Terminal Building Costs	PAL 0	PAL 1	PAL 2
Construct new terminal	$26,200,000	$9,750,000	$9,300,000
Passenger boarding bridges	-	$3,750,000	$1,500,000
Site Costs			
Earthwork	$2,548,100	$495,196	$1,994,900
Utilities	$4,616,000	-	$385,000
Apron Construction	$7,089,000	$2,690,500	$2,231,200
Taxiway Construction	$8,343,600	-	$10,734,863
Parking Lots	$4,142,526	$1,104,674	$1,380,900
Roadways/Access	$6,398,200	-	-
Total Construction Cost	**$59,337,426**	**$17,790,370**	**$27,526,863**
Design and Program Management	**$15,975,356**	**$3,968,803**	**$6,897,521**
Total ROM Cost	**$75,312,782**	**$21,759,173**	**$34,424,384**
Total ROM Cost Combined: PAL 0, 1, & 2			**$131,496,339**

Note: Costs are shown in today's dollars
Source: Jviation

5.5 LANDSIDE GENERAL AVIATION DEVELOPMENT

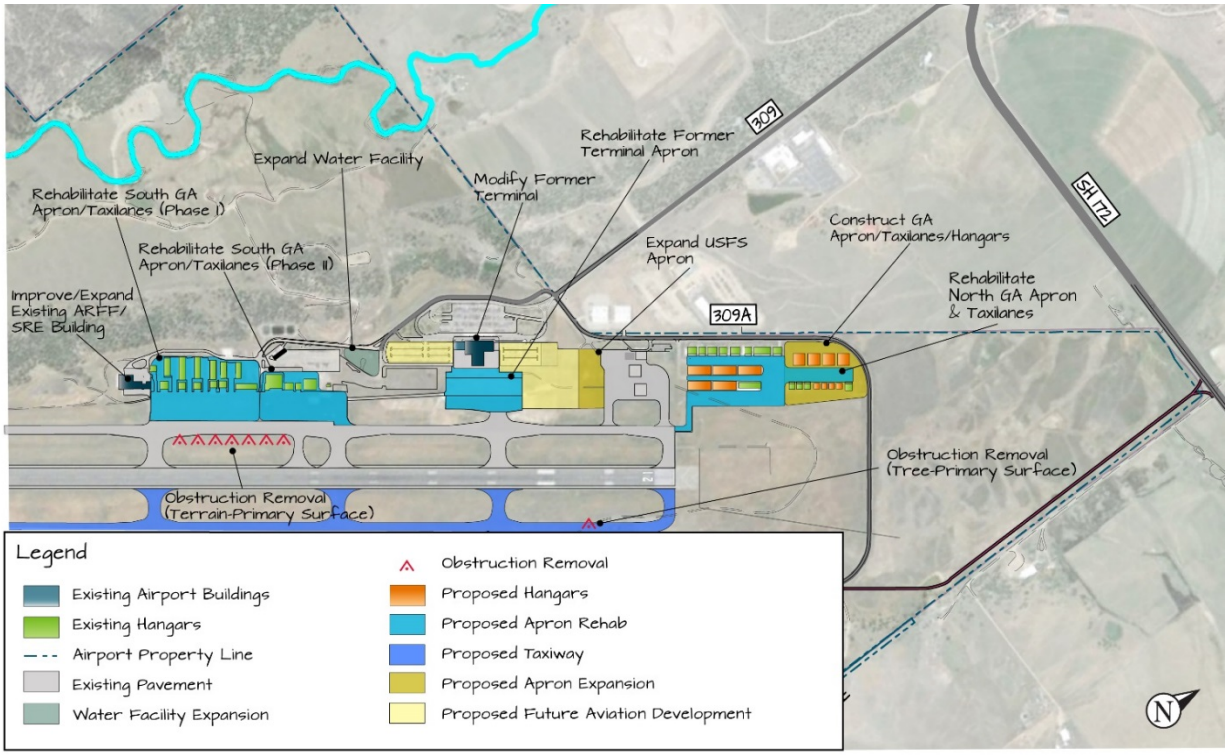
Landside GA development includes airport facilities that accommodate general aviation aircraft and the U.S. Forest Service (hangars, apron, etc.). These facilities also depend, in part, on the selection of the preferred location of the terminal. As the preferred alternative for terminal development relocates the facilities to the undeveloped east side of the airfield, the west side will be available for additional aviation activities and expansion of existing facilities. Redevelopment of the old terminal building and parking areas will be a priority for DRO due to their revenue producing potential by leasing to aviation related businesses.

Recommended development includes the following items which are also depicted on **Figure 5-19.**. These projects did not undergo an alternative analysis as they are either maintenance projects or projects fixed by location and/or function.

- Improve/Expand ARFF/SRE building and purchase equipment
- Expand water facility and lavatory dump station
- Modify former terminal building for aviation-related revenue producing purposes
- Construct GA hangars
- Expand fuel storage

Assuming the adoption of the preferred alternative for the terminal facilities to be moved to the east side of the airport, the facilities shown above can remain in their current location. It is recommended that the improvements to those facilities be completed as shown in their current location.

FIGURE 5-19 – GENERAL AVIATION DEVELOPMENT



Note: Not to scale
Source: Jviation

5.6 AIRSIDE GENERAL AVIATION DEVELOPMENT

Recommended airside development includes the following items which are also depicted on **Figure 5-19**. These projects did not undergo an alternative analysis as they are either maintenance projects or projects fixed by location and/or function.

- Rehabilitate and maintain South GA Apron/Taxilanes (Phase I)
- Rehabilitate and maintain South GA Apron/Taxilanes (Phase II)
- Rehabilitate former terminal apron
- Expand and maintain the US Forest Service aircraft apron
- Construct and maintain GA apron/taxilanes
- Rehabilitate and maintain North GA apron and taxilanes
- Install MALSR on Runway 21

5.7 SUMMARY

The selected terminal alternative, Alternative three, PAL 0, best serves the future of DRO. Relocating the terminal facilities to the east side provides the community with an airport that will meet current and future demands. General aviation development on the west side will have the opportunity to expand, providing DRO with additional revenue producing growth. **Chapter 7, Capital Improvement Program and Financial Implementation**, details the phasing and funding of the proposed development within the planning period.