Passenger Terminal Area Development

Introduction

It was determined early on in the process of developing this Master Plan for Aspen/Pitkin County Airport, that because of landside access issues, the passenger terminal facilities should remain on the east side of the airport.

The various components of the plan that comprise the terminal area development include the passenger terminal and aircraft apron areas, short- and long-term public parking lots, rental car ready-return lot, rental cars storage areas, and private and commercial vehicle curbfronts.

The existing terminal buildings were originally built in the early 1970's and subsequently renovated into a single terminal building in the mid 1980's. While certain portions of the terminal building are adequate for today's needs, major portions of the building are inadequate for existing and future passenger demands. In addition, the existing terminal infrastructure may not be compatible with the development of future facilities. For example, the existing structural column grid consists of wooden columns placed 17'4" on center, instead of a typical 30' column grid, will potentially limit flexibility in terms of retrofitting the facilities within the shell of the existing terminal building.

Given the age of the existing facility, careful consideration will need to be given in order to identify potential thresholds of modifications, which may trigger significant required improvements due to building code updates. These updates to the building codes may require modifications to mechanical, structural, electrical systems and issues pertaining to the Americans with Disability Act (ADA). For the purposes of the facility requirements presented in previous chapters and the development of the initial concepts developed, we have assumed that a completely new terminal facility will be developed. If at the conclusion of the study a concept which delineates a major expansion and renovation of the existing terminal building is selected for further refinement, it will more than likely result in a facility that is larger in size than a new facility. This is due to the inherent constraints and inefficiencies of the existing terminal building. A second equally important issue to be considered is the operational disruption and impact to the passenger experience during the course of the renovation process. It should be noted that the facility requirements are seen as a starting point and general guideline for the

development of the concepts, and that the ultimate size of the facility will depend upon site related considerations and the physical configuration of the terminal.

Existing Site Issues and Constraints

The passenger terminal development area is defined by the ARFF facility on the north, Colorado Highway 82 on the east, the runway and associated taxiway on the west and approximately the southern edge of the Intercept parking lot. For purposes of the passenger terminal concepts, the recommendations of the ESID plan for the relocation of the parallel taxiway have been incorporated as a given. The diagram on the following page illustrates the opportunities and constraints that are assumed to influence the development of future terminal facilities. The major issues are as follows:

Relocation of the parallel taxiway approximately 99 feet to the east to increase the runway/taxiway separation from 221 feet to 320 feet.

- To the extent possible, the preservation of the 200' view corridor along Colorado State Highway 82 to minimize the negative visual impacts of the new facilities.
- Utilization of the existing access intersections from the airport frontage road to Highway 82 including the potential development of a new access point south of the existing Intercept parking lot.
- The topography of the airport contains a severe downhill slope from south to north and a transverse downhill slope from west to east across the runway and through the aircraft apron, terminal building and landside roadway system. This slope will create significant challenges in the planning and configuration of an expanded terminal facility.
- Continued use of the Intercept lot for airport related functions such as employee parking, long-term parking, rental car overflow areas, etc.

The diagram on the following page illustrates the site constraints and opportunities, as we currently understand them.

Landside Development-Goals, Existing Features Analysis, and Design Objectives

Introduction

Goals were established at the start of the landside (airport land and facilities outside of security fence) planning process. The goals recommend creating a framework for future development, which strives to:

- Retain the small mountain town feeling of the current facility.
- Be compatible with surroundings.
- Reflect the character of the airport environs.
- Respond to stakeholder needs.
- Improve the guest experience.
- Be flexible, cost effective, and financially feasible.
- Allow for phased implementation.
- Have the flexibility to respond to varying security requirements in a reasonable, safe and efficient manner

An analysis of the existing site features will be used to help define objectives to accomplish the goals identified above.

The vegetation and site features of the airport campus are the most important elements generating the "small mountain town feeling" defining the character of the airport and its compatibility with surrounding environs.

These elements include, gently rolling landforms, lush groves of trees, pastoral meadows, and colorful wildflower and shrub gardens. Additional important elements are informal pedestrian areas, the scale and configuration of vehicular spaces, "mountain" vernacular of architectural elements, and low-level lighting. The Master Plan studies these features individually, as well as their relationship to each other and the airport as a whole. The composition of these elements determines how the airport functions, the quality of airport patrons' experience, and how the airport relates to the surrounding community and ecosystem.

The Master Plan provides an opportunity to enhance the airport elements embraced by the community by celebrating important civic features of the campus and screening other support facilities. Potential elements to accentuate are the airport entrances, passenger terminal, and exterior gathering spaces. Increased visual and audible screening

should be considered for aircraft parking aprons, maintenance facilities, parking facilities, and landside lighting.

Existing Features Analysis and Design Objectives

Landforms and Topography. The topography on the down-valley end of the Airport is relatively flat due to runway safety requirements, the Owl Creek riparian area, and space constraints between the airside facilities and Highway 82. The topography in the middle section of the Airport is comprised of low undulating landforms. These landforms create a cohesive feeling along the highway corridor and soften views of the airport facilities. These landforms should be maintained in future development. A portion of this corridor, opposite the control tower, should be re-graded to compliment the surrounding landforms and vegetated with native grasses and wildflowers.

The topography on the up-valley end of the airport opens up to broad rolling meadows with views of the runway set in a backdrop of mountain ridges. This view is quite picturesque and should be considered in future development. A significant landform on the Aspen side of the rental car storage lot visually separates the parking facilities from the highway corridor. This landform is an important element of the Highway 82 scenic foreground and also the "mountain" feeling of the airport.

The topography between this landform and the front of the terminal is marked by a grade change of approximately 15 feet. A relatively steep uphill path connects the terminal with the rental car staging facility and employee parking lot located on this plateau. Future development should consider methods to integrate this grade change into the campus design and create more gently sloped pedestrian connections.

There are a number of berms located in the terminal and landside area of the terminal which attempt to reduce the visual impact of the terminal building and parking lots from the Highway 82 corridor. Future Airport development should strive to replace unnatural berms with gentle rolling landforms. The berms between the public parking lots and the terminal are unnaturally high and are obstacles to pedestrian circulation. Future development should consider reducing the height of the berms to allow for a visual connection between the parking and terminal.

Vegetation. The airport site is composed of many different vegetative zones. The down-valley end of the airport consists of dry upland vegetation including native grasses, sage, serviceberry, chokecherry, pine trees, and scrub oak. Owl Creek runs at an angle through the northern corner of the site creating a riparian corridor of cottonwood trees, hawthorn trees, and wetland vegetation. Areas adjacent to airport facilities contain mature groves of aspen, cottonwood, spruce, and pine trees. The up-valley end of the site consists of sage and native grass meadows. The west side of the airport is composed

of pastureland, sage meadows, mature cottonwood and aspen groves, and the Owl Creek riparian corridor.

The airport grounds are a significant feature in the community. The property is visible from many of the surrounding roadways and neighborhoods. It is an important section of the Highway 82 corridor and entrance to Aspen. The terminal area and surrounding landscape are also the first and last impression many visitors have of the community.

Landscape elements added to the airport site should respect the adjoining ecosystems, compliment the site's character, and provide a natural setting for the airport campus. A diverse pallet of native plants should be established and then used throughout the site to create a cohesive campus image. Tree groves should be clustered to resemble the vegetative patterns found naturally in the valley. Xeriscape planning techniques should be used to create a sustainable, water efficient landscape.

Trees. The aspen, spruce, and cottonwood groves near the terminal provide a setting for the structure within the landscape and help create the "intimate" feeling. The trees do such a good job of nestling the building in the landscape that most people do not even notice the existing terminal structure. Future development of the terminal area should strive to protect existing tree groves. Trees impacted by development should be transplanted if ecologically feasible. Additional groves of aspen and spruce should be used to define outdoor spaces, identify movement ways, filter undesirable views, provide shade, and create a beautiful setting for the facility. Cottonwood trees should be utilized in spaces appropriate for large stature canopy trees, such as roadways or to create shade in plaza spaces.

Plantings along the frontage road should reinforce the existing patterns of cottonwood and spruce groves set amongst native grass and sage meadows. Tree densities should be increased in areas where enhanced screening is desired.

Plantings on the down-valley end of the airport should compliment the existing native ecosystem of dry, upland vegetation on the slopes and riparian vegetation in the low-lying wet areas. Care should be taken near the runway to not plant vegetation that will encroach on critical safety zones.

Plantings on the up-valley end of the airport should continue to reflect the vegetative patterns of surrounding land.

Plantings on the west side of the airport should be designed to compliment the rural character of Owl Creek Road.

Meadows. Native grasses and sage drifts compliment the rolling landforms creating a wonderful western mountain feeling. The meadows also offer a contrast to the more densely wooded areas surrounding the airport facilities. Future development should respect this relationship of open meadow contrasted with groves of trees.

Gardens. Wildflowers and shrubs placed in defined garden areas form a welcoming face to the campus. The Airport should continue to enhance these gardens. Future development should consider utilizing gardens to define gathering spaces and create welcoming gateways between campus features. Wildflowers could also be seeded into the meadow areas to expand the colorful blooms to the larger airport site.

Pedestrian Spaces. The pedestrian corridors have a comfortable feeling due to the relatively narrow width of the sidewalks, the meandering alignments, and the surrounding landscape features. Future development should consider these features while still creating safe, efficient, and easily maneuverable pedestrian links between spaces. Future development should also explore design details to better define pedestrian spaces from vehicular areas, such as elevating them to curb height, changing the paving material and color, and necking down the roadway. A design palette of materials and construction details should be developed and used for all pedestrian areas on the campus.

This Master Plan offers the opportunity to improve the overall pedestrian experience of the campus. A plaza space, (or spaces) could be introduced near the terminal. This space could serve as an enjoyable outdoor waiting area, a beautiful connection to public transit, shuttle service, and parking, a venue to greet guests and introduce them to community events, and a space for airport functions. This Master Plan also offers the opportunity to improve pedestrian connections to the parking facilities up-valley of the terminal by addressing the configuration of these facilities, and the slope of the walkways.

Transit. The Airport, AABC, and North Forty are currently served by bus stops on Highway 82 adjacent to the Airport/AABC signal light. Busses traveling up-valley on the highway toward Aspen stop on the Airport side of the corridor. Busses traveling down-valley on the highway stop on the AABC side of the corridor. Pedestrians cross Highway 82 at the signal light. A sidewalk extends from the bus stop, through the rental ready lot, to the terminal. The configuration of the walk creates an unpleasant experience for airport guests and employees using the bus service. Future development should strive to create a more direct, and aesthetically pleasing connection to encourage use of public transportation. Adequate space should be reserved for enhanced transit station facilities and a pedestrian underpass below Highway 82. A light rail corridor between the Airport Road and Highway 82 was defined in ESID and will be reserved in this Master Plan as

well. The community has not, to this date, approved plans to construct light rail transit within the 20-year planning period of this document.

Roadways, Parking, Circulation. The Airport roads reinforce a small town feeling because of their curved alignments, asphalt paving material, grassed shoulders, and narrow drive lanes. Future development should try to respect this small town aesthetic.

The Airport Road runs parallel to Highway 82 connecting the terminal area with the ARFF, ABO, down-valley entrance, the Tower area, and finally terminates in a parking lot adjacent to the patio shelters on the north ramp. A one-way entrance ramp provides access from the terminal area to the up-valley lanes of Highway 82. The frontage road functions well and should be maintained in future development. Future traffic patterns should be monitored to determine if additional intersections on Highway 82 are needed.

Parking for facilities down-valley of the terminal, such as the ARFF building, ABO, and the tower area are accommodated in defined parking lots adjacent to Airport Road. The location and parking needs of these facilities are not identified to change within the planning period of this document.

The main airport entrance intersection has room for improvement. The short connection between Highway 82 and the Airport Road creates a bottleneck in the inbound flow of traffic. It also forces new visitors to make a split second decision about which direction to turn. Future development should consider methods to make this entrance more inviting and create a more direct flow of traffic to the terminal and parking.

The curved approach of the terminal loop road creates a welcoming arrival to the terminal producing the feeling of a small community building rather than a big city institution. Future development should strive to embody the essence of this feeling. Future development should also consider improved curb frontage, especially for curbside ticketing/bag drop.

The commercial vehicle, shuttle staging zone does not function well and is visually unattractive. Future development should address the requirements of shuttle busses, vans, taxis, and other vehicles serving the airport guests. Future plans should also improve the aesthetic appearance of the space as well as the experience of the users.

The parking areas support the small town feeling of the airport because of their relative size and the groves of trees breaking up large expanses of pavement. Their proximity to the terminal and defined pedestrian connections create a positive experience for the airport guests. Future development needs to accomplish these same objectives.

Airside improvements to runway safety zones are eliminating the existing long-term parking lot area down-valley of the terminal. Future development needs to accommodate the parking spaces lost in this area.

Federally mandated safety regulations may impact the utilization of parking lots in close proximity to the terminal. It is unclear at this printing what future restrictions will be enforced. This Master Plan should identify areas for parking and preserve enough space to allow for flexibility to meet changing security restrictions.

The rental car ready lot is well located near the rental car customer counters, and baggage claim section of the terminal. Future development should maintain this relationship. A larger rental car storage lot, fuel station, and car wash facility is located up-valley of the terminal. The storage lot is screened from view by natural topography on 3 sides and a berm on the fourth side. Future development should address the configuration of this lot, the connection to the rental ready lot, as well as improved visual screening. (The berm could use a little help.) Relocating the lot and the fuel/car wash facility would be expensive. Future development should consider this expense when analyzing the location of this element.

Architectural Elements. Stone, wood, and iron are materials used historically throughout the Roaring Fork Valley. The Airport should develop a campus design detail utilizing this material palette in conjunction with a mountain architectural vernacular. The design detail could be applied to all future development, such as signs, fencing, utility enclosures, or terminal enhancements. This design detail will help create a unified campus even if the elements are built in a phased approach.

Signs. Road signage should be improved to provide clear directions and to reflect the campus architectural character. Signs for pedestrian circulation should also be improved and reflect the campus architectural character.

Site Furnishings. Site furnishings, such as benches, trash enclosures, newspaper stands, should be chosen to reflect the campus architectural character.

Fencing. The security fence should maintain its rural quality in the outlaying areas of the site. A fence with architectural details reflecting the campus character should be considered in areas near public movement ways or gathering spaces, such as adjacent to the terminal.

Lighting. The existing lighting in the short-term parking lot consists of 12-14 foot tall pole lights with visible light sources. The terminal area is illuminated with 10-12 foot tall pole lights with shielded light sources. The long term parking lot and adjacent airside apron are illuminated with 20-25 foot tall pole lights with shielded light sources. The

employee parking and rental car storage facility are illuminated with 14-16 foot tall pole lights with shielded light sources. Pedestrian walkways are illuminated with 4-foot tall bollard fixtures with shielded light sources.

Most of the airport light fixtures successfully illuminate the desired spaces with minimum off site illumination. The short term parking lot fixtures generate off site illumination due to the design of the fixture to cast light in all directions rather than shielded to cast light down on the desired surface. Future development should strive to eliminate this type of fixture. Future development should also comply with lighting standards outlined in the Pitkin County Land Use Code.

Terminal Planning Envelopes

The following exhibit, entitled *Terminal Planning Envelopes*, illustrates the major areas being considered for future development opportunities by facility need. The exhibit is not meant to imply that all of the areas will be needed for the individual functions but instead depict where the most likely place and the boundaries for which these facilities may occur. With the limited amount of land at the airport, the maximization of the available resources will be critical. The diagram illustrates the generalized areas that may be utilized as part of the terminal development area; however, as the recommended airport development plan is refined, the boundaries of these envelopes may change in terms of use and designation.

The red shaded area conceptually outlines the zones that are currently being considered for the placement of the terminal facilities.

The green shaded zone depicts the area for the development of the short and long term public parking areas, rental car ready lots, rental car storage areas, employee parking and terminal and airport access roads and curbfronts.

The purple shaded zones are areas slated for unspecified potential future airside improvements.

The rust colored area to the west of the terminal area is designated as potential expansion for the General Aviation facilities.

Existing Terminal Constraints

The existing terminal has deficiencies to varying degrees in a number of functional areas. The following exhibit, entitled *Existing Terminal Constraints,* illustrates the amount of space currently available and the amount that is currently projected for normal airport terminal operations. Some of the more significant issues are listed below.

- **Airline offices.** Operations space and baggage make-up. Much of the baggage make-up space is not currently enclosed, which is a concern given Aspen's weather. Inadequate operations space and equipment storage space compete with office and baggage handling functions. This creates a less than ideal situation for the airline employees. In some cases there is no separation between the Airline offices and baggage make up areas. The structural column spacing of the building does not lend itself to flexibility for equipment and baggage belts. The long-term solution for 100% baggage screening of checked bags will place the equipment in the baggage make up area. There is currently not enough space to accommodate this function.

- **Departure Lounge.** Space needs to be provided for multiple departures due to frequent off-schedule operations. Existing space has also been lost to expanded security screening requirements. The existing holdroom does not have any defined circulation space for passenger movements.

- **Passenger security screening checkpoint.** New TSA requirements occupy significantly more space than older configurations. The location of the queuing area for security is problematic because it requires passengers to traverse back and forth across a ramp through the queuing line. It does not leave proper circulation area from the ticket lobby to the baggage claim hall. It is unknown at this point what future administrative space will need to be provided for the TSA personnel.

- **Baggage Claim.** Bag claim units have approximately 70 LF of exposure each to the passengers. With the BAe-146 being the design aircraft at Aspen, claim units of approximately 120 LF would be recommended. Space for skis and other oversized bags is also considered inadequate. The input area for baggage claim also should be brought into a weather protected area.

- **Baggage Storage.** Due to the frequency of weather-related flight cancellations, large numbers of late bags must be received and stored. Although the area for baggage storage is somewhat close to the programmed area, the configuration of the spaces currently available in not very efficient.

- **Ticket Lobby.** At the present time, the ticket lobby and general seating areas appear to be adequate. However, the implementation of checked baggage

screening has occupied a portion of the ticket lobby and displaced both ticket queuing and seating areas. Long-term procedures for checked baggage screening are still to be developed by the TSA and will need to be reviewed/updated in any redevelopment plans.

- **Mechanical Rooms.** At the current time, the mechanical equipment is dispersed throughout the terminal building in rooms, on the exterior of the building, in the ceilings, and on the roof of the building. The area for mechanical equipment is one of the largest changes in space requirements, increasing from the existing 985 sq. ft. to a projected total of 4800 sq. ft. This would allow the majority of the equipment to be consolidated in one location and to reduce the visual impact of the equipment being placed on the exterior of the building.

The existing terminal has a gross area of approximately 44,000 square feet. If a new terminal were to be built to accommodate current levels of activity, the gross area would be approximately 73,000 square feet. Thus, the existing terminal is undersized by approximately 40%. The majority of the additional space is required for three main functions, additional holdroom and secure circulations space within the holdroom, airline administrative offices and airline baggage handling space, and enclosed dedicated rooms for mechanical and buildings systems use.

Preliminary Terminal Building Code Analysis

A preliminary code analysis has been investigated to gain a better understanding of the potential for, and implications of, completing a major expansion to the existing terminal building. Prior to the development and design of terminal facility improvements, an in-depth building code analysis should be conducted.

The last major modification to the terminal building was completed under the 1979 Uniform Building Code. The current adopted building code is the 1997 Uniform Building Code and is used for this analysis, although by the time any significant work occurs at the airport, it is likely that the 2003 International Building Code will be applicable.

Although the airport's terminal aesthetics make it appear to be heavy timber construction, it probably did not meet the requirements for that construction type in 1985 and was likely constructed as a Type V structure. There are two categories of Type V construction, one-hour fire rated and unrated. Although it is possible that the unrated classification was used, it is likely that the building was considered as Type V-one hour fire resistive construction with the one-hour rating being achieved through the installation of a fire sprinkler system. It may be that the existing fire sprinkler system does not currently meet all of the requirements to make this substitution, but it may have at that time. Based on the current and future occupant loads in the building, the non-rated classification would not be allowed under current codes.

The basic allowable area for a one-story Type V-one hour building with A2.1 occupancy per the 1997 Uniform Building Codes is 10,500 square feet. There are provisions in the code that allow for this area to be increased based on a number of factors. One of these factors is the amount of open area around the building. There was an area separation wall installed in the terminal in 1985 that effectively separated the building into two sections, each having an area of approximately 19,000 square feet. These sections were then allowed to be treated as individual buildings and subsequently had enough open space on the three sides that did not connect to allow the basic allowable area of 10,500 square feet to be doubled to 21,000 square feet. Using the above analysis, the building would have substantially been in compliance with the building code since both halves of the building were less than 21,000 square feet.

There have been some modifications to the building since 1985 that have, to differing extents, compromised compliance to the building code. The covered, but unenclosed areas to the west of the airlines areas do not technically increase the enclosed area but could be construed as area by some building departments.

The above information is helpful because it shows that the existing building is close to or exceeds the allowable area based on the building code. This is not necessarily an insurmountable problem but needs to be acknowledged up front and the methods identified that might be able to be used to gain more allowable area from a building code perspective.

It should be noted that the allowable areas noted above are the limits for a single story building. The code would allow a two-story building of twice the area noted above so long as neither story exceeded the single story allowable area. This implies that the building could be doubled in area so long as all of the additional area was added to a second floor.

Development Options Related to Code Analysis

The first option would be to add additional area separation walls, in addition to re-establishing the existing one, which would break the building into smaller components. A possible location for one such wall would be between the central area and the baggage claim area. If this were done, the allowable area for the central portion would be reduced to approximately 15,750 square feet but would still be sufficient for that portion of the building. The allowable area for the baggage claim area would remain at 21,000 square feet, but the existing area of that portion would only be around 11,000 square feet so, there would be 10,000 square feet available for an addition to that end of the building. Please see the figure on the following page for an illustration of the available areas. In a similar fashion, it might be possible to install an area separation wall on the main concourse ramp that would divide the north wing into two sections. In the south wing, the central section allowable area would actually be reduced, perhaps to the base area of 10,500 square feet, but the existing area of that portion would also be reduced to around 6,000 square feet; therefore, approximately 5,500 square feet would be available for an addition to that section. The north section existing area would be around 18,400 square feet, including the exterior covered area. There would be around 2,500 square feet available for adding on to that area in addition to enclosing all of the covered areas. This does not appear to be adequate for future needs.

The second option would be to make modifications to the construction as to meet the one-hour fire rating requirement without utilizing the fire sprinkler system as a substitution. If that was done, and the sprinkler system was modified to fully meet current codes, the allowable areas noted at the first of this memo could all be doubled in size. This would mean that each half of the building could be up to 42,000 square feet on a single level. It should be noted that option one could be applied to a portion of the building and option two could be applied to the other section.

The most likely and economical scenario would be to use option one for the south wing and option 2 for the north wing. This would allow for an addition of approximately 10,000 square feet to the baggage claim area and up to 18,000 square feet to the ticketing, holdroom and baggage make-up areas. Up to 5,000 square feet could also be added to the general waiting, restaurant and administration areas as well. This scenario assumes that the original area separation wall would be re-established, which technically needs to be done, even if no additional area is added to the facility.

Terminal Configuration Influences

Many different factors influence the design and functional layout of an airport terminal building. These factors include but are not limited to – topography; building size; surrounding context, including FAA aeronautical clearances; aircraft fleet mixes; security requirements; passenger demographics; climate; type of operation; etc. The Apsen/Pitkin County Airport, similar to many other mountain region airports, exhibits a very challenging topographic site condition.

Perhaps the single most influential issue that will determine the layout of future terminal facilities at Aspen will be the issue of passenger boarding bridges, commonly know as "Jetways". The passenger boarding bridges allow a passenger to transition to and from the aircraft in a weather-enclosed walkway and are typically installed from the second level of the passenger concourse. However, these devices can be installed from a single level concourse facility as well. The issue of whether or not to provide loading bridges can be an extremely sensitive issue, particularly at smaller and or resort type of airports. In general the advantages and disadvantages can be described as follows:

Advantages

Passenger Safety and Airport Security. The typical airport aircraft parking apron is filled with ground service equipment including aircraft fueling vehicles, baggage tugs, catering vehicles, snow removal equipment, deicing equipment, etc. The boarding bridges allow passengers to safely and securely transition to and from the terminal building to aircraft without interaction to this equipment, as well as weather elements. The passenger boarding bridges also eliminate any issues regarding jet blast from taxiing aircraft.

Level of Service. Level of service is improved as the boarding bridge acts as a sloping ramp meeting ADA requirements by eliminating the need for passengers to transition up or down a stairway, particularly inclement weather, to board the aircraft. They also provide a significantly better level of service for passengers confined to, or temporarily requiring a wheelchair. While a mechanized lift can be

available for use requiring the airline to switch between a moveable stair and the lift, the most common method is to transfer the passenger to a specialized narrow gauge wheelchair that allows access down the aircraft aisles, and "bump or lift" the passenger up the stairs used to board the plane.

Site Utilization. One of the greatest impacts of boarding bridges is the impact upon site utilization. Typically, aircraft are parked in a power-in/power-out or power-in/push-back type of arrangement. A power-in/push back type of operation (used with passenger loading bridges) typically requires significantly less apron area than a power-in/power-out operation used when apron loading of passengers is required. This is explained in greater detail below.

Disadvantages

Passenger Experience. There is a sentiment of some users of the airport that the part of the passenger experience is getting to the aircraft door and stepping out into the environment of Aspen. This is probably the single most valid argument against the use of boarding bridges.

Costs and Maintenance. Passenger boarding bridges, depending upon size and configuration can cost up to 400,000 dollars per unit. The current trend is for the airport to own and maintain the boarding bridges with the costs passed on to airline tenants.

Operational Considerations. Loading bridges require a ramp equipment tug to push the aircraft back from the gate out onto the taxilane. Subsequently, it can add a couple of minutes to the turnaround time for the aircraft to complete this transition.

The following two exhibits attempt to illustrate some of the issues surrounding the use of passenger boarding bridges. The initial concepts developed and illustrated later in the chapter assume a partial two-story facility with a second level concourse. This partial two-level facility is proposed in order to improve operations, provide better utilization of the available site, and minimize the visual impacts of the new facility.

The first illustration, entitled *CONCEPTUAL TERMINAL SECTION*, illustrates a section cut through a potential terminal building configuration in an east-west direction. The two-story portion of the building accommodates the passenger concourse and holdroom areas on the second level and airline operations and inbound baggage areas on the first level. The building transitions down to a single-level for the baggage claim facility for the building face in closest proximity to Highway 82. By varying the roofline and levels of the facility it will break up the overall building mass of the facility and can provide opportunities to minimize the visual impacts of the new building. In addition, the

illustration shows the inbound baggage handling area located under the passenger concourse adjacent to the backwall of the baggage claim area. For airports of Aspen's size, flat-plate or "racetrack" type claim devices are almost exclusively used. This is for a variety of reasons, including lower initial costs and reduced maintenance costs, reliability, and ease of use. For this type of system, the airline inbound baggage offload area must be immediately adjacent to the flat-plate devices. If the concourse was to be located on the first floor, in the case of a single level facility, the concourse would have to be moved to the west to allow circulation room for baggage tugs to access the claim devices. This would thereby increase the footprint area and the amount of site required for the terminal building.

Other elements illustrated such as potential canopies or porte-cocheres over the terminal curbfronts could be investigated during the design phase, which could help to further reduce the overall appearance and mass of the facility.

The second diagram, entitled *AIRCRAFT PARKING SITE UTILIZATION*, illustrates the impact upon the site and the required area for aircraft parking under two different operational scenarios.

Power-in/power-out operations assume that the aircraft taxi's to and from the gate under its own power. On the inbound side, or coming to the gate, each scenario is the same. In a power-out operation, the aircraft is required to turn or rotate under its own power and taxi away from the gate. There are some aircraft that can power straight back from the gate position, but the BAe-146 does not have that capability. The illustrations depict the proper clearance from aircraft to aircraft, and aircraft to building for a BAe-146 turning at its maximum steering angle. Six aircraft parking positions are shown. This is the projected maximum number of gates needed through the end of the forecast period.

Also shown on the exhibit is a power-in/push-back type of operation. As previously mentioned this requires a ground service tug to push the aircraft straight back from the concourse onto the taxiway and then detached prior to the aircraft taxiing to the runway for takeoff. As the diagram illustrates, the push-back type of operation uses significantly less apron area than the power-out type of configuration. It should be noted that power-out operations for this type of aircraft are not used because the boarding bridges typically cannot be rotated far enough out of the way to provide enough clearance for wingtip rotation. Any evaluation of the loading bridge issue should take into account the reduced cost of apron area required and the potential value and utilization of the airport land for other uses against the cost of purchasing and maintaining the boarding bridges.

Initial Terminal Development Options

The six terminal development options illustrated on the following pages are initial concepts presented to delineate potential expansion concepts for the airport. The existing single level terminal building contains approximately 44,000 square feet, with the current requirement estimated to be approximately 73,000 square feet. Given that any terminal development would not be completed until 2007 at the earliest, the phase of development would likely be for 6 gates and 75,000-80,000 square feet, thus, meeting the projected 2007 facility requirements. The initial concepts assume a split-level/two-story facility with a partial second floor level. This split-level/two-story facility is proposed in order to improve operations, provide better utilization of the available site, and minimize the visual impacts of the new facility.

If a single level facility were desired, the footprint size of the terminal building would be required to grow accordingly.

Terminal Option One

Terminal Option One (graphic presented at the end of this section) provides for a new two level terminal building located south of the existing terminal building with ticketing and baggage claim facilities oriented perpendicular to the runway. The existing landside access point at Highway 82 would continue to be the main access point for the airport. The entire public area of the terminal would be located on a single level with airline operational spaces located on the lower level. With the existing topographic conditions on the south side of the existing terminal building, the ticketing and baggage claim facility would be at the existing grade of the rental car storage area.

Advantages

- Provides simple operation consistent with the existing facility
- Could be constructed as a single level facility
- Minimal disruption to existing facilities during construction
- Greater curbfront utilization
- Orientation of facility to available land

Disadvantages

- Cannot be implemented in partial phases, requires entire facility to be constructed in one phase with the exception of a portion of the concourse
- Difficult configuration for handling of oversize baggage

- Proximity of west edge of facility to Highway 82

Terminal Option Two

Terminal Option Two develops a new terminal building with split ticketing and baggage claim facilities south of the existing terminal building. The terminal curbfront would be relocated and lengthened to provide additional capacity. The existing rental car ready return lot would be relocated to the area immediately south of the existing maintenance facility and adjacent to the new baggage claim hall. The majority of the new building could be constructed and occupied with minimal disruption to the existing operation. Due to its proximity to the existing terminal building, this option could be developed in multiple phases as financial limitations dictate. The new ticketing hall and a portion of the new holdrooms and passenger concourse could be built and occupied in a single phase.

Advantages

- Allows for incremental expansion of building components
- Minimal disruption to existing facilities during construction
- Ability to minimize building footprint area
- Orientation of building to available developable land
- Potential to maximize views and experience for arriving and departing passengers

Disadvantages

- Difficult configuration for handling oversize baggage
- Reduces curbfront utilization
- Potentially requires new airport access point to the south

Terminal Option Three

Terminal Option Three utilizes the existing apron area immediately south of the existing terminal building. This option is conceptually similar to the existing terminal building and could be developed with minimal disruption to the existing operation. In one phasing scenario the new baggage claim facility and a portion of the holdrooms and new passenger concourse could be developed and occupied prior to the demolition and redevelopment of the existing baggage claim area into a new ticketing facility.

Conversely, a variation of this option would provide a new ticketing hall south of the existing terminal building in the first phase. This option could be developed as a single or split-level/two-story facility.

Advantages

- Provides simple operation consistent with the existing facility
- Could be constructed as a single level facility
- Minimal disruption to existing facilities during construction
- Minimal site work for development
- Simplified roadway system

Disadvantages

- Impact to commercial curbfront during construction

Terminal Option Four

Terminal Option Four investigates placing the new terminal building to the north of the existing terminal building, currently occupied by the long-term parking lot. The new terminal building was located that far north in order to not impact the existing roadway configuration and terminal operation during construction. Due to the narrow site configuration and converging angle of Highway 82 at that portion of the site, adequate room for developing terminal roadways and parking facilities is not available. It is recommended that a north terminal location be eliminated for consideration. However, this should not eliminate the north portion of the site for airline gates and holdrooms as depicted in Option Three.

Advantages

- Provides simple operation consistent with the existing facility
- Could be constructed as a single level facility
- Minimal disruption to existing facilities during construction

Disadvantages

- Not enough area available to develop adequate curbfront and parking areas
- Close Proximity to highway 82 view corridor
- Eliminates recently completed GA Apron facility

Terminal Option Five

Terminal Option Five is conceptually similar to Option Two; however, it places the new baggage claim facility adjacent to the existing terminal building and relocates the new ticketing hall to the area currently occupied by the rental car storages area. If a phased terminal development approach is implemented, the prioritization of existing needs will probably dictate which terminal option is preferred for this type of conceptual arrangement.

Advantages

- Expanded curbfront capacity
- Ability to minimize visual impacts
- Could be constructed as a single level facility
- Minimal disruption to existing terminal facilities during construction
- Simplified operation for oversized baggage handling

Disadvantages

- Disruption to commercial vehicle curbfront during construction
- Reduces curbfront utilization

Terminal Option Six

Terminal Option Six expands and reconfigures the existing terminal building in a manner with its consistent use and operation. The ticketing hall is expanded to the north to provide additional ticket counters ATO area, airline offices and airline operations areas and the outbound baggage area is expanded to the west to provide additional area. In addition, the holdroom area is expanded to the west out into the existing apron area and the baggage claim area is expanded to the south to provide additional claim area.

Advantages

- Consistent with existing operation
- Lowest cost alternative
- Could be implemented in phases

Disadvantages

- Disruption to ongoing operation during construction
- Requires reconstruction of buildings mechanical and fire sprinkler systems
- Potentially cannot meet project facility requirements
- Cannot provide loading bridges for majority of gates
- Existing infrastructure limits flexibility of facility layout.

Option Recommendations

Based upon input and discussion of the Airport Staff, Study Advisory Committee Board of County Commissioners and the project team of consultants Options 2, 3 and 6 will be retained for further evaluation and refinement.

For purposes of clarifications in moving forward the options will be renamed as alternatives to distinguish between the Initial Terminal Development Options and the Refined Development Alternatives as follows:

Option 2 will become Alternative 1
Option 3 will become Alternative 2
Option 6 will become Alternative 3

Options 1, 4, and 5 were eliminated from further consideration.

Terminal Landside Refinement

Based upon the above recommendation, the three selected alternatives were investigated to a greater level of detail, with particular emphasis on the landside facilities because of the enormous influence they have on the character of the airport and its visual/aesthetic impression within the surrounding environs.

The landside development recommendations of this Master Plan are focused on expressing the goals identified by the community and preserving space for the site elements projected in the 20-year planning window. This document does not present a final design of the site but rather constructs a framework to guide future, more detailed design projects. These projects would only be designed and constructed when and if the actual demands occur.

The preceding analysis identified objectives through which successful site elements could be enhanced and other elements improved. This section will focus on identifying the space required for each element, and suggest a possible form and layout of these elements based on the analysis and objectives recommendations.

Site Elements Year 2000

The size and location of existing site elements in the base year, 2000, are detailed in the Facility Requirements Chapter 4, and summarized below.

Table F1
EXISTING SITE ELEMENTS
Aspen/Pitkin County Airport Master Plan

Existing Conditions		Existing Demand	
Public Parking	239 Spaces	260 Spaces	Table D10
Employee Parking	81 Spaces	Actual Demand	Table D12
Rental Ready Parking	59 Spaces	80 Spaces	Table D13
Rental Storage Facility	2.6 Acres	2.5 Acres	Table D14
Terminal Road Curb Front	20 Spaces	24 Spaces	Table D15
Commercial Vehicle Loop	225 Lineal Feet	550 Lineal Feet	Table D17
Non-airport Parking (Former Intercept Lot)	280 Spaces		

Forecasted Site Element Needs Year 2022

The size of forecasted site elements for the twenty-year planning window, 2022, are detailed in Working Paper Four, and summarized below.

Table F2
FUTURE SITE ELEMENTS
Aspen/Pitkin County Airport Master Plan

Existing Conditions		Existing Demand	
Public Parking	383 Spaces	Additional 144	Table D10
Employee Parking	124 Spaces	Additional 43	Table D12
Rental Ready Parking	110 Spaces	Additional 51	Table D13
Rental Storage Facility	3.7 Acres	Additional 1.1	Table D14
Terminal Road Curb Front	22 Spaces	Additional 11	Table D15
Commercial Vehicle Loop	775 Linear Feet	Additional 225	Table D17
Non-airport Parking (Former Intercept Lot)	280 Spaces	Less 280 (No longer in Service)	

Examination from a Spatial Point of View

The additional parking spaces forecasted for the public, employee, and rental ready lots equals 238. The area allotted for the former intercept parking lot, 280 spaces, can now be utilized for airport facilities. This means that all the additional forecasted parking spaces can be accommodated near the terminal without having to sacrifice green open space.

The rental storage facility requires a significant amount of land. Increasing the size of the storage facility by 1.1 acres will greatly reduce the amount of green open space near the terminal. The future layout diagrams depict the rental storage facility remaining the same general size, 2.6 acres, as it was in base year 2000. Additional rental storage area should be located in an area not needed to serve the public.

Terminal road curb front parking additions can be accommodated by creating vehicle pull-out spaces for a longer distance along the loop road. This change does not significantly reduce the amount of open space near the terminal.

Commercial vehicle loop increases can be accomplished by allocating space for a more efficiently designed circulation area. The existing commercial loop has approximately 225 lineal feet of frontage with and additional 350 lineal feet of queuing length. The future layout diagrams allocate the maximum commercial curb frontage feasible for each plan. Additional linear footage required to meet forecast needs could be accommodated in the queuing lanes.

In summary, this analysis indicates that the proposed area allocation required for the forecasted facilities will resemble the existing areas currently built at the airport. Some of the areas may need to be moved or reconfigured to function more efficiently and be more aesthetically integrated in the campus design. The relationship of open space to circulation and parking areas should remain relatively the same. The site lighting required to safely illuminate the forecasted areas should also remain relatively similar to the existing light levels.

Physical Expression of Objectives

The Master Plan is studying three terminal development options. Each terminal option has a unique site relationship and requires a unique site design to compliment the structure. That said, however, the three site diagrams actually have many common elements. These common elements, outlined below, respond to the objectives identified earlier.

- Maintain and enhance rolling landforms between Airport Road and Highway 82.
- Preserve landform and open meadow up-valley of rental car storage facility.
- Decrease height of berms between parking lots and terminal to create a better connection between spaces.
- Utilize Xeriscape planning techniques to create a water efficient, sustainable landscape.
- Retain and increase tree groves adjacent to terminal to enhance mountain feel of airport campus.
- Preserve existing tree groves along Airport Road; increase density of plantings in areas needing additional screening.
- Enhance colorful gardens adjacent to terminal to define gathering spaces and create welcoming gateways between campus features. Seed wildflowers in outlying meadows.
- Well defined pedestrian spaces, material change from vehicular zones, elevated crosswalks, narrow roads at crosswalks.
- Introduce a plaza space for outdoor gathering, community events, and connections to transit, shuttles, and parking.
- Improved connection between terminal and area formerly used by Intercept Parking Lot.
- Roadway and parking designed to respect existing small town aesthetic.
- Retain main airport entrance at existing traffic signal; create more welcoming entry with enhanced landscape plantings.
- Maintain curved terminal loop road to reinforce small town feeling versus big city institutional feeling.
- Increase curb front pull-out spaces.
- Preserve feeling of small parking lots bordered by tree groves. Introduce planted islands to divide large parking lots into smaller parking bays.
- Locate commercial vehicle staging, public parking, and rental ready lots in convenient proximity to terminal. Allow space for flexibility to respond to changing safety restrictions.
- Develop a campus design detail representative of the community character. Apply this design detail to architectural elements, such as signs, and furnishings to create a cohesive campus image.

- Utilize lighting techniques generating low level lighting of desired surface areas to avoid off site light pollution. Phase out fixtures with visible light sources and replace with downcast fixtures with shielded light sources.

The following narrative illustrates these refined recommend development alternatives in greater detail. Each alternative contains a detailed site plan illustrating the landside improvements followed by functional layouts of the terminal concepts showing the internal functions of the proposed improvements.

Alternative 1

The Alternative 1 terminal design constructs an entirely new structure up-valley of the existing terminal. The structure is "L" shaped with baggage claim on the upper floor and up-valley side of the building, and ticketing on the lower floor and down-valley side of the structure. A sloping loop road connects the two levels.

The schematic site layout proposes a reconfiguration of all of the existing campus elements.

Following is a list of layout features:

- Create new alignment of loop road to extend directly from the Highway 82 intersection toward the terminal.
- Locate employee parking down-valley of the loop road with access from Airport Road.
- Locate one public parking lot on main level to service ticketing functions.
- Loop road will slope up to second level baggage claim area.
- Create a commercial curb front parallel to the public loop road at second level baggage claim.
- Locate one public parking lot on second level to service arriving passengers and baggage claim functions.
- Locate rental ready parking lot near baggage claim services, and storage facilities.
- The rental car storage facility to remain in its existing location and slightly reconfigured to accommodate public parking and rental ready lot alignment.

Advantages

- Greatly improved airport entrance and terminal circulation.
- Public parking lots will have one pay structure to allow guests the choice of parking near baggage claim or ticketing.
- Integrates the existing grade change on site. Upper plateau can be utilized for parking at the same grade as the baggage claim facilities.
- Frames spectacular view of mountains for arriving passengers.
- Improved curb front for public access to ticketing and baggage claim.
- Improved frontage for commercial vehicles. Location with plaza creates a more welcoming atmosphere.
- Parking and commercial vehicle zones are very conveniently located to the terminal.
- Great new pedestrian plaza.
- Improved link to existing and future transit.
- Simplifies rental car functions.
- Phased approach to construction can be implemented.

Disadvantages

- Pedestrians have to cross terminal loop road to access commercial vehicle plaza.
- Pedestrians have to cross terminal loop road and commercial vehicle plaza to access upper public parking lot.
- Pedestrians have to cross terminal loop road, and Airport Road to access transit stop.
- Returning rental cars and public parking patrons must pass terminal on loop drive, thus increasing traffic through terminal area.

Alternative 2

The Alternative 2 terminal design constructs an entirely new structure in the general location of the existing terminal. The new terminal functions resemble the previous design with ticketing down-valley and baggage claim up-valley.

The schematic site layout proposes a reconfiguration of most of the existing campus elements.

Following is a list of layout features:

- Retain first 400 feet of existing terminal loop road. Extend loop road to service entire front facade of terminal and encircle all public parking.
- Combine short and long term parking in a series of smaller bays along front axis of terminal. Grade to increase slightly as parking progresses up-valley. The proposed parking area construction will require a substantial amount of excavation.
- Create a commercial curb front parallel to the public loop road.
- Relocate rental ready parking lot to provide convenient access between lot and storage facilities. Construction of parking lot will require a substantial amount of excavation to place it on a grade similar to the terminal exit doors.
- The rental car storage facility to remain in its existing location and slightly reconfigured to accommodate rental ready lot alignment.
- Potentially add a round-about on Airport Road at transition from two-way traffic to one-way up-valley traffic

Advantages

- Circulation to the terminal remains similar to existing pattern, community is familiar with this alignment.
- Public parking simplified into one lot with one pay structure. Guests can choose to park near baggage claim or ticketing.
- Improved curb front for public access to ticketing and baggage claim.
- Improved frontage for commercial vehicles. Location with plaza creates a more welcoming atmosphere.
- Parking and commercial vehicle zones are very conveniently located to the terminal.

- Great new pedestrian plaza.
- Improved link to existing and future transit.
- Simplifies rental car functions.
- Phased approach to construction can be implemented.

Disadvantages

- Entry from Highway 82 remains tight.
- Pedestrians have to cross terminal loop road to access commercial vehicle plaza.
- Pedestrians have to cross terminal loop road and commercial vehicle plaza to access public parking lot.
- Pedestrians have to cross terminal loop road, commercial vehicle plaza, public parking lot drive lanes, and Airport Road to access transit stop.
- Returning rental cars must pass terminal on loop drive, thus increasing traffic through terminal area.

Alternative 3

The Alternative 3 terminal design expands the existing structure by retaining the general configuration and enlarging the spaces on both the up-valley and down-valley ends of the terminal. The schematic site layout also retains the general location of existing site elements and enhances them to meet the defined objectives.

Following is list of layout features:

- Extend terminal loop road along entire face of structure.
- Reconfigure short term parking lot for more efficient use of space and better visual connection to terminal.
- Reconfigure commercial loop to provide higher level of service for guests and accommodate large turning radius of vehicles.
- Relocate rental ready parking lot to provide convenient access between lot and storage facilities. Construction of parking lot will require a substantial amount of excavation to place it on a grade similar to the terminal exit doors.
- The rental car storage facility to remain in its existing location.
- Extend up-valley parking area closer to terminal to create long term parking lot. Step grade down between new parking bays to create a more gradual slope for pedestrians.

Advantages

- Circulation and parking remains similar to existing patterns, community is familiar with layout.
- Improved curb front for public access to ticketing and baggage claim.
- Improved frontage for commercial vehicles. Location with plaza creates a more welcoming atmosphere.
- Great new pedestrian plaza.
- Improved link to existing and future transit.
- Simplifies rental car functions.
- Phased approach to construction can be implemented.

Disadvantages

- Entry from Highway 82 remains tight.

- Pedestrians have to cross terminal loop road to access commercial vehicle plaza. Commercial curb front approximately 60 feet further from terminal.
- Guests using public transit need to cross Airport Road and terminal loop drive.
- Returning rental cars must pass terminal on loop drive, thus increasing traffic through terminal area.
- Employee parking lot and portions of long term parking lot are relatively far from terminal. Pedestrians must walk up hill to get to their cars.

Long-Term Terminal Development Implementation Phasing

Based upon the initial terminal development options previously developed and a concept of expanding the existing terminal, a phasing and implementation plan was developed and described below that illustrates how the incremental development of the options may be achieved. Alternative One is the redevelopment and expansion of the existing terminal building. Alternative 2 is based upon the previously developed Initial Terminal Option 3, and Alternative 3 is based upon the previously developed Initial Terminal Option 5.

Alternative 1

Alternative 1 is based off of the site plan previously shown in the report as Initial Terminal Development Option 2. This phasing plan could be done with a single or dual level passenger concourse and holdroom. It is intended that the terminal could function as a stand-alone facility after the completion of each phase that is shown. The first two phases of this option are identical to option two to allow the flexibility of deciding what the ultimate direction of the airport terminal should be until a latter date. The major phases are as follows:

- Phase 1 builds a new concourse and holdroom area, relocates and expands security into the existing holdroom area, and provides some short-term improvements for the airline operations and outbound baggage areas of the terminal.
- Phase 2 constructs the new ticketing and concessions areas to the south of the existing baggage claim hall. It also makes the required roadway modifications to the south and relocates the link between the holdroom area and the baggage claim hall to allow for tug access. This is only necessary in the single level holdroom configuration. Also in this phase, the new security screening checkpoint area is developed.
- Phase 3a constructs a temporary baggage claim area in the old ticket lobby allowing for the demolition of the existing baggage claim facility.
- Phase 3b constructs the new baggage claim facility in the location previously occupied by the old facility.
- Phase 4 extends the passenger holdroom and concourse to meet the demand as needed, and demolishes the rest of the existing terminal building.

Alternative 2

Alternative 2 is a plan that is configured as a second level passenger concourse and holdroom, with the baggage claim facilties at the level of the concourse. The ticketing

level is one level below the new concourse at the level of the existing baggage claim facility. It is intended that the terminal could function as a stand-alone facility after the completion of each phase that is shown. Albeit, it may be a little awkward until all of the phases are completed. The major phases are as follows:

- Phase 1 builds a new concourse and holdroom area, relocates and expands security into the existing holdroom area, and provides some short-term improvements for the airline operations and outbound baggage areas of the terminal.
- Phase 2a constructs the new ticketing, airline office and baggage handling areas including the mezzanine area on the second floor for the new security screening area. After check-in, passengers would go up one level to the new security screening area prior to going out to their gate at the same level. A new temporary link to the existing baggage claim area is established. In addition, it makes the necessary roadway improvements. After the completion of this phase, the new ticketing and security screening area can be utilized.
- Phase 3 completes construction of the new baggage claim facility to the south. In addition, the new landside improvement in the area currently occupied by the rental storage facilities are constructed.
- Phase 3b demolishes the existing terminal building and extends the aircraft parking apron to the east.
- Phase 4 extends the passenger holdroom and concourse to meet the demand as needed.

Alternative 3

This alternative is based upon the expansion of the existing facility and prioritizes the order of the improvements. This type of solution solves the majority of the existing terminal deficiencies. It should be noted however, that by further concentrating the terminal development in its current location, it does not allow for the landside facilities to be developed without significant modification to the site. The major improvements are as follows:

- Expand the holdroom onto the apron area requiring the relocation of the trench drain.
- Moving and expanding the security-screening checkpoint consistent with one of the options illustrated in the short-term improvements in the following section.
- The airline outbound baggage and operations space is expanded to the west and north.

- Additional airline office space is provided to the north or above the existing offices.
- This option assumes in-line baggage screening in a location other than in the ticket lobby in the long-term, thereby, eliminating the need for additional ticketing lobby space.
- Enlarging and expanding the existing baggage claim area.

Long-Term Recommendations

The recommendation of this report is that Alternative One and Alternative Two provide a significantly better terminal configuration than Alternative Three for the long-term operation of the Airport. These two options should be developed to a higher level of detail to fully delineate the impacts of the topographic conditions and the effects for the final configuration of the terminal alternatives prior to engaging in a significant short-term improvement program.

Alternatives One and Two develop a new terminal building to ultimately replace the existing terminal building. Alternative Three makes major renovations and expands the existing terminal building. All three development alternatives have their own merits as defined below.

Alternative One provides for a new two level terminal building, which can be implemented in a phased approach to respond to potential financial constraints of funding the entire project. The configuration of the facility provides the opportunity to reduce the overall mass of the terminal and reduce the visual impacts of the new terminal. The siting of the terminal and the functions within provide an opportunity to develop a spectacular arrival sequence for passengers coming to Aspen. The split curbfront and roadway facility provides and abundance of terminal roadway capacity. The configuration of the roads and terminal building allow the available site area, that includes the current rental car storage facility, to be better incorporated into the terminal area.

Alternative Two also can be implemented in a phased approach over time to accommodate potential financial constraints. The terminal is a very simple structure and is similar in its operational characteristics to the existing terminal building. The terminal will integrate well with the existing site conditions and given its location to the south of the existing terminal and proximity to the available land will provide great opportunities for landside development options. Given the extreme topographic conditions of the site this alternative may be easier to implement a solution that works better with the grade conditions than Alternative One.

Alternative Three is the least expensive of the long-term terminal develop alternatives. Given the constraints of the existing infrastructure and the type of construction dating from the original terminal buildings, significant modifications to the existing terminal building will be very difficult. Alternative Three should only be pursued if Alternatives One and Two are deemed financially infeasible, even in a phased approach.

The order of magnitude project costs for the development of the long term alternatives is approximately 33-35 million dollars for Alternatives One and Two and approximately

20 million dollars for Alternative Three. The breakdown of costs by component is as follows.

- The terminal building portion for Alternatives One and Two is approximately 25 million dollars.
- The loading bridges for six gates and the associated vertical circulation elements (elevators/escalators) are approximately 3 million dollars.
- The site development costs including the associated roadway and parking improvements is approximately 5-7 million dollars.

Alternative three would require approximately 15 million dollars for the terminal development component, and 5 million dollars for site development costs. Alternative Three would not have any costs associated with passenger loading bridges.

Short-Term Improvements

The next series of exhibits address potential options for making short-term improvements to the existing terminal building to address immediate needs of the facility. Based upon our previous analysis, the priority for the major improvements are as follows.

1. Expand the passenger holdroom.
2. Improve/expand the security screening checkpoint.
3. Expand/improve airline ticket office/outbound baggage areas.

Option One. Option One recommends the construction of a new passenger connector between the ticketing and baggage claim areas on the exterior of the building on the east side. Two new ramps would be built in the triangle area that is currently outside the existing building that would transition passengers to the level of the holdroom. This would allow the existing ramp and security screening area to be leveled out and reconfigured in an improved geometric layout. The concessions area could be relocated to the secure side of the terminal or remain on the non-secure side of the terminal. From a revenue perspective it probably would be better on the non-secure side, but if placed on the secure side, would enlarge the area for use for passengers.

Option Two. Is similar to Option One, however, it relocates the airport administration offices offsite in order to provide an additional 1,250 square feet of holdroom area over option one.

Option Three. Is similar to Option One, however, it constructs a second level over the existing airline office space to provide new office space for the airlines. The existing office space is then converted to outbound baggage handling areas.

Option Four. This Option constructs a new passenger connector between the ticketing and baggage claim areas on the exterior of the building on the east side. In addition, the existing holdroom is expanded to the west, as well as the security screening area, which is now relocated west of the holdroom area for improved queuing areas. The existing concessions areas could be either on the secure or non-secure side of the terminal. In this option, the airport administration office remains in place.

Option Five. Option Five Constructs a new passenger connector between the ticketing and baggage claim areas on the exterior of the building on the east side. The airport administration space is relocated off-site and the existing concessions area is reconfigured either on the secure or non-secure side of the building. In addition, the security screening area is relocated west into the holdroom area providing improved queuing areas.

Option Six. This option could be the first phase of constructing a new terminal building to the south. It constructs a new concourse building on the apron area with new holdrooms, concessions and restrooms. The airport administration remains in its current location and the security screening area is relocated west, into a portion of the existing holdroom, and the remaining portion of the holdroom could be converted for airline office space. This would allow some reconfiguration of the existing airline office space into improved airline baggage handling areas.

Costs

Order of magnitude project development costs were developed for the six short-term options and the costs varied from approximately 1.5 million to 6.1 million dollars. These cost were for the modifications and expansions to the existing terminal building and aircraft apron. These costs include construction costs and soft costs for design fees contingency and furnishings. For the options that require a relocation of the existing 1250 sq. ft of administration offices an allowance of 400,000 dollars has been added to total. Each of the first five options requires the relocation of an existing gas meter and electrical transformer in the triangular area between the ticket lobby and the concessions area.

Option 1. 1.5 million dollars, provides an additional 2000 sq. ft. of holdroom area by including the public seating/meter greeter area adjacent to the concessions as part of the holdroom area.

Option 2. 1.9 million dollars, provides an additional 3250 sq. ft. of holdroom area

Option 3. 3.8 million dollars, provides an additional 2000 sq. ft. of holdroom area, 1370 square feet of operations areas and 5500 sq. ft. of office area for airline ticket offices and potential airport administration space.

Option 4. 2.3 million dollars, provides an additional 4000 sq. ft. of holdroom area

Option 5. 1.5 million dollars, provides an additional 3250 sq. ft. of holdroom area. The cost for reconfiguration of the concessions areas is not included in the total.

Option 6 (single level). 4.9 million dollars, in a single level configuration it provides an additional 7000 sq. ft. of holdroom area, 6000 sq. ft of secure circulation space and 1000 sq. ft. of each of restrooms and concessions areas.

Option 6 (two level). 7.3 million dollars, in a two level configuration it provides an additional 7000 sq. ft. of holdroom area, 6000 sq. ft of secure circulations 1000 sq. ft. of each restrooms and concessions areas on a second level arrangement and an additional 12000 square feet available for the development of airline operations areas. The cost estimate also includes the purchase and installation of 4 loading bridges to meet the current aircraft fleet mix, which can utilize the loading bridges. The Dash 8 aircraft currently flown by America west airlines cannot utilize a passenger boarding bridge.

Given the significant topographical conditions of the site it would be imperative to select a long term direction for the development of the terminal building and complete as a minimum the schematic design for the entire terminal building prior to the construction of the concourse. The costs for the design portion of the entire terminal are not reflected in the costs estimate listed above.

Short Term Recommendations

The short-term options were developed in response to the two most immediate concerns regarding the existing terminal building, the size of the holdroom and the configuration and placement of the security screening checkpoint, along with consideration of what could be implemented in a relatively short time frame.

The recommendation of this report is to select Option 6 as the preferred short-term improvement for the terminal building. Option 6 is the only option, which is consistent with the recommended long term development direction for the terminal building. Option 3, 4 and 5 provide some temporary relief, but do not provide improvements which move in the recommended long-term direction for the airport. Options 1 and 2 are the least expensive overall and could be considered as very short-term modifications, which could provide immediate benefits while allowing time to develop Option 6.

The following is a brief synopsis of the short-term options and their benefits/impacts:

Option 1 relies on reconfiguring the public seating area and meeter/greeter area adjacent to the concessions area to provide additional holdroom space. By displacing the meter/greeter areas the meter greeters would most likely congregate the entrance to the baggage claim area from the secure holdroom area. This activity would have a negative impact to the passenger circulation and crowding in the baggage claim area.

Options 2 and 3 are similar to Option 1 and have the same associated impacts to the meter greeter and baggage claim areas. Option 3 does provide some much needed airline office space and provides area for the potential relocation of the airport administration space, but provides minimal improvements for the airline operations areas.

Option 4 provides the greatest amount of new holdroom area by pushing out into the apron area. It would require some modifications to the existing apron drainage system for which an allowance is included in the cost estimate. Similar to Option 3, Option 4 would require additional time to implement and would create a greater level of disruption/inconvenience to ongoing operations than options 1 or 2.

Option 5 is similar to options 1 and 2 in its impact to the meter/greeter and holdroom areas. It does not provide an area for the relocation of the Airport Administration space, as in Option 3.

Option 6 is the only option, which meets the holdroom requirements without a major impact to the other facilities within the existing terminal building. Both the single level and dual level options are significantly more expensive than the other options however they are considered the first phase of the long-term development options previously illustrated in the chapter. As stated above, this option will certainly require that some advanced planning/schematic design be completed on the long-term option for the complete building to insure consistency of the first phase with the ultimate configuration of the terminal. In addition to being a larger project, the additional study work would further lengthen the time for implementation of the option.