RUNWAY 11-29 150' x 9,501'

PROPOSED ATCT LOCATION

RUNWAY 11R-29L 150' x 9,501'

LEGEND
- FUTURE LANDSIDE ACCESS
- 40' TAIL HEIGHT CLEARANCE
- FUTURE PAVEMENT
- AVIATION DEVELOPMENT

* For development purposes, this concept assumes a runway separation of 2800'

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Missoula International Airport
Master Plan Update

Midfield Site Double Pier

Exhibit 5-5
Based on this preliminary analysis, the double pier concept was considered the preferred option for the midfield site. It provides the most potential capacity which would likely be needed when, and if, the airport requires a parallel runway configuration. The single pier concepts do not take advantage of the potential of the midfield site to the same degree.

However, the Master Plan forecasts do not project a need for a parallel runway during the 20 year planning period. Thus, it is recommended that the Airport expand or replace the terminal within the existing site and adjacent GA areas within the planning period. The midfield site should be preserved for its long-term potential as a terminal if needed. Siting of the relocated ATCT should consider a potential terminal to allow this future development. The midfield site also has potential for FBO development which should be considered in the over-all land use planning for the Airport.

5.2 Terminal Building Expansion Alternatives

As noted in Chapter 3 – Passenger Terminal Demand capacity and Facility Requirements - the more significant deficiencies in the existing terminal are:

- Baggage make-up and airline operations
- Checked baggage screening and ticket lobby
- Baggage claim and baggage off-load
- Secure concessions

While other areas would also require expansion to meet forecast growth, these areas are presently inadequate and result in decreased passenger level of service (LOS) and inefficient airline operations. There is also no unused airline space so that new service must be handled by incumbent carriers.

Within the existing terminal area there are various ways to provide additional capacity for growth:

- The existing terminal building can continue to be expanded and improved.
- A new terminal can be constructed.
- Some combination of these two extremes.

Four expansion/replacement alternatives have been studied which represent this range of possibilities and would meet (to various degrees) the projected terminal facility requirements.

5.2.1 Alternative 1 - Expansion of the Existing Terminal

The objective of Alternative 1 is to address these deficiencies with a minimal expansion of the existing terminal building and provide opportunities for new airlines. As shown in Exhibit 5-8, the primary features of Alternative 1 are:

- A two level expansion (bump-out) of the terminal running the width of the current airline bag make-up area, and extending approximately 80 feet deep into the existing apron. The expansion would connect to the security screening checkpoint (SSCP) addition at the second level with a new escalator.
The ground floor would contain new bag make-up areas, checked bag screening (EDS), and airline operations/offices. This will also allow the EDS equipment to be removed from the ticket lobby. With additional office areas, the full width of the ticket lobby (approximately 160 feet) would be reconfigured for Airline Ticket Operations (ATO) counters.

The upper level would contain expanded holdrooms and secure side concessions. As illustrated in the Exhibit, this configuration would convert the existing Gate #3 to a fixed walkway with two loading bridges, and replace Gates #1 and #2 with four new loading bridge gates. All gates would then have second level boarding potential.

For consistency with the terminal facilities requirements and other alternatives, full ADG III aircraft are shown (Q400 and B737-800) with a 25-foot wing tip clearance. It is possible to have other configurations with smaller regional jets (RJs) and/or turboprops which yield one or more additional gates. The configuration shown matches the forecast gate demand for the 2013 forecast activity level.

The baggage area needs to be expanded so that bag trains can pass in the off-load area to fully utilize the claim units, new space for additional RAC counters need to be added, and circulation clearance needs to be maintained in front of the bag claims. This can be accomplished in three ways:

- Expansion Option 1: Demolish and replace the adjacent ARFF building to provide room for the necessary bump-out so bag trains can pass. This requires replacement of the single-bay ARFF. The terminal also needs to be extended east to accommodate counter space for additional RACs.

- Expansion Option 2: Bump out to the maximum distance possible to the curbfront without impacting the roadway (approximately 35 feet), shift the bag claim units away from the bag off-load area to provide space for bag trains to pass behind the bag claim units. This would also provide enough room to accommodate new RAC counter space and circulation clearance in the new bump-out. The 35-foot extension cuts-off the curbfront and disrupts passengers from walking to the rental car area (designated in the Landside Master Plan as future Premium/VIP spaces).

- Expansion Option 3: Bump out to the curbfront (approximately 15-20 feet) to provide room to shift the bag claim units away from the bag off-load area so that two bag trains can pass each other behind the bag claim units. The terminal also needs to be extended east to accommodate counter space for additional RACs. This option would not cut-off the curbfront and disrupt passengers from walking to the rental car area.

Although not required from a pure capacity perspective, it would be recommended that escalators be added from both the SSCP to the upper level holdroom, and from the holdroom down to the security exit next to the ticket counter. The SSCP configuration would also need to be revised to accommodate a third lane as originally planned.

The remainder of the terminal would be upgraded in terms of mechanical systems and other life-cycle replacements as required, but would not change functionally. Passenger flow would not be changed.
The growth limitations on Alternative 1 are the number and mix of gates; the width/depth of the ticket lobby; and the ability to accommodate new airlines.

As noted in Chapter 3, all of the airlines presently using check-in kiosks have these configured in-line with the ATO counter. Thus, there is a small shortfall (10 feet) of ATO counter length at present which would grow over time even as the number of passengers using kiosks increase. However, if 20-30 percent of the kiosks were located elsewhere in the ticket lobby (primarily used by passengers without checked bags), the ATO counter length would be less.

By expanding the airline offices and operations spaces, there is also the opportunity to reconfigure the ATO counters to fully utilize the approximate 160-foot-long frontage for check-in functions and possibly increase the depth of the ticket lobby. This would relocate some airline offices that are along the ATO counter to locations behind the counter. The existing depth of the lobby at the east end, however, does limit the ability to accommodate kiosks and passenger queues if the current ATO counter location is maintained.
5.2.2 Alternative 1A - Expansion of the Existing Terminal

The major capacity limitation of Alternative 1 is the number of gates: the 2013 forecast horizon is for 6 gates. Because the other functional elements could be expanded to beyond 2018 requirements, a second gate configuration was studied.

As shown in Exhibit 5-9, by adding a 100-foot-long pier, 8 gates can be accommodated. The 25-foot wide pier would be only for circulation to the gates. All of the holdroom space, concessions and restrooms would be within the bump-out.

The other difference from Alternative 1 is that the bump-out would be 110 feet deep, to accommodate the additional baggage make-up and operations spaces associated with the additional gates. This, plus a full reconfiguration of the approximate 160-foot wide ticket lobby should provide sufficient space to meet the 2028 forecast requirements. In other aspects, the alternative is the same as Alternative 1.

5.2.3 Alternative 2 - New Ticketing Wing and Concourse

Prior to initiating the Master Plan Study, the Airport built an addition to the terminal to accommodate a new SSCP. The location and orientation of this addition was to serve as the first phase of a terminal redevelopment. Alternative 2 (Exhibit 5-10) takes this previous approach (as described by Airport Management) and sizes it consistently with the Master Plan forecasts and terminal facilities requirements for the long range High forecast (9 gates). The primary features of this alternative are:

- Check-in, ATO, baggage make-up, and baggage screening would be relocated to a new single level building directly west of, and connected to, the SSCP addition.

- A new 90-foot wide double-loaded, two-level concourse would extend south from the SSCP. As part of the concourse addition, escalators for departing passengers would be added. All of the gates and secure concessions would be relocated to the new concourse. Airline operations and terminal support would be on the apron level.

- Non-secure concessions would be relocated from the existing terminal to the ground level between the SSCP and ticketing building and/or along the north (curb) side of the SSCP connector. It is not considered economically viable to operate these concessions in their existing locations since they would be so far removed from the passenger flows.

- Baggage claim, rental car counters, and restrooms would be relocated to the western portion of the existing terminal building to be in better proximity to the gates. An arriving passenger corridor with escalator and elevator would connect the new concourse to the existing terminal to bypass the SSCP addition. Claim units need to be located to minimize restrictions to passenger flow. Due to the way the terminal has been expanded over the years, the multiple column grids make this bag claim area difficult to build and operate efficiently. See Exhibits 5-11 a, b, and c.

  - Claim concept A has 2, 130 LF flat plate claim units oriented along the east/west axis of the original terminal structural grid. In order for the bag off-load area to clear the stairs and mechanical spaces, and provide a clear passenger exiting flow, the rental car counters and offices would be built out into the service yard between the terminal and the SSCP addition.
– Claim concept B has 2,130 LF flat plate claim units oriented along the north/south axis of the original terminal structural grid. In this configuration, the rental car counters are located in a ‘ground transportation lobby’ with its own exit from the terminal.
– Claim concept C is similar to concept B, but uses remote-feed, sloped bed claim units.

• Airport offices and other functions would remain in current locations. Vacated terminal spaces would either be converted to other uses or demolished.
• As with Alternatives 1 and 1A, the existing terminal systems would need to be upgraded and replaced as necessary to provide a similar life cycle as the new construction for those portions which remain in use.

Alternative 2 is a hybrid of mostly new construction and reuse of a portion of the existing building. As such, it can meet the High forecast of the Master Plan and have some room for further expansion of gates and ticketing. Baggage claim expansion is limited by the structural restrictions of re-using the existing terminal.

5.2.4 Alternative 3 - New Replacement Terminal

Alternative 3 further refines the single pier concept for a new terminal as generally described in Section 5.1.2. As with Alternative 2, it is sized consistently with the Master Plan forecasts and terminal facilities requirements for the long-range High forecast (9 gates). The site plan and relationship to the existing terminal is shown in Exhibit 5-12. The general interior concept is illustrated in Exhibit 5-13. The primary features of this alternative are:

• Check-in, ATO, baggage make-up, and baggage screening would be located on the ground level of the western portion of the terminal. Airport and TSA offices would be located on the second level over the airline offices and bag make-up area.

• Baggage claim, rental car counters, and airline baggage service offices would be located in the eastern portion of the terminal. The Exhibit shows three claim units, although two are projected to be needed for the High forecast. However, it may be cost effective to build the space for a third claim unit initially rather than expand later.

• Connecting the two halves of the landside would be a lobby area containing non-secure restrooms and terminal support functions on the ground level. A vertical circulation core (escalators, stairs, and elevators) would provide access to the upper level.

• The upper level of the connector would contain the non-secure retail and food/beverage concessions as well as a meeter/greeter area. Public access would also be provided to the airport offices. The SSCP and its queuing area would define the beginning of the concourse and the secure area of the terminal.

• A 90-foot wide double-loaded, two-level concourse would contain all of the gates and secure concessions. Airline operations and terminal support would be on the apron level. The aircraft parking configuration shown leaves the end of the concourse open for future expansion.

There are no programmed uses for the existing terminal in Alternative 3. The building can be modified for other uses if needed and economically feasible without affecting the operation of the new terminal. Otherwise, the building can be demolished and the area converted to parking or landside functions.