Facility Requirements Addendum (Demand-Driven Facilities)

Hangars

In late 2008 there were a total of 4 hangars located on the airport and 6 hangars located off the airport. Most of the hangars are used primarily for aircraft storage. The larger hangars can accommodate multiple aircraft. It is estimated that the hangars can accommodate approximately 13 to 15 aircraft.

Currently, 100 percent of the airport's estimated 9 based aircraft are stored in hangars. For planning purposes, it is assumed that 90 percent of forecast based aircraft will be stored in hangars, with the remaining 10 percent parked on aircraft apron.

Although a portion of future demand may be accommodated within the existing hangar capacity, it is assumed that the majority of increased hangar demand will be met through new construction. It is also assumed that the four hangars located on the east side of the runway will be relocated during the current planning period, requiring replacement sites on the airport. A planning standard of 1,500 square feet per based aircraft stored in hangars is used to project gross space requirements.

As indicated in the updated forecasts, the number of based aircraft at Methow Valley State Airport is projected to increase from 9 to 22 aircraft during the twenty-year planning period. Based on projected hangar utilization levels, long-term demand for new hangar space is estimated to be 12 spaces, or approximately 18,000 square feet. Hangar construction trends vary by tenant needs. Future hangar developments should be capable of accommodate a variety of hangar types (conventional, T-hangar, etc.) and sizes. The projected hangar needs for the updated forecasts are presented in **Table 3-X**.

As indicated in the updated aviation activity forecast, it is estimated that 15 of the 22 based aircraft (68 percent) projected for 2030 will be located in adjacent off-airport hangar developments and 32 percent (7 aircraft) will be located on airport property. For the current 20-year planning period, the projected on-airport hangar demand is 6 spaces (9,000 square feet), including the relocation of the four east hangars.

Individual aircraft owners' needs vary and demand can be influenced by a wide range of factors, often beyond the control of an airport. In addition, the potential exists for significant changes in demand to occur as the result of specific airport actions. For these reasons, it is recommended that hangar development reserve areas be identified to accommodate potential demand beyond long-term forecast levels. A reasonable planning standard for defining landside development

reserves at small airports is to double the land area needed to accommodate twenty-year forecast demand.

Aircraft Parking and Tiedown Apron

Aircraft parking apron should be provided for locally based aircraft that are not stored in hangars and for transient aircraft visiting the airport. The public aircraft apron at Methow Valley State Airport is currently configured with 13 tiedown positions. The parking requirements for the USFS apron and other apron areas located off airport property are not included in this analysis.

However, as noted earlier, the possible reconfiguration of the apron to meet FAA taxilane object free area standards, providing designated parking for business class aircraft, and the potential development of a west parallel taxiway could reduce current tiedown capacity. The aircraft parking area requirements for the updated forecasts are described below and summarized in **Table 3-X.**

As noted earlier, for planning purposes it is assumed that 10 percent of the on-airport based aircraft fleet will be accommodated on an aircraft apron. The long term (2030) forecast increase from 9 to 22 based aircraft will require 1 parking position for locally based aircraft. Per FAA design standards, locally based aircraft tiedowns are planned at 300 square yards per position.

FAA **Advisory Circular 150/5300-13** suggests a methodology by which itinerant parking requirements can be determined from knowledge of busy-day operations. At Methow Valley State Airport, the demand for itinerant parking spaces was estimated based on 30 percent of busy day itinerant operations (30% of busy day itinerant operations divided by two, to identify peak parking demand). For planning purposes, busy day activity is estimated to account for 25 percent of the operations that occur in an average week of the peak month. Peak month is estimated to account for 18 percent of annual operations. Based on these planning assumptions and the updated forecasts, typical peak demand for itinerant parking spaces is estimated to range from 5 to 10 aircraft during the twenty-year planning period. The FAA planning criterion of 360 square yards per itinerant aircraft was applied to the number of itinerant spaces to determine future itinerant ramp requirements.

In addition to accommodating the parking needs of small aircraft in tiedown positions, there is a need to provide parking space designed for multi-engine aircraft, including business jets or turboprop aircraft. It is recommended that drive-through parking positions be created where aircraft can taxi in and out under their own power. Initially, it appears that 2 parking positions will be adequate to accommodate typical peak demand, with demand for additional positions

expected to increase during the twenty-year planning period. These positions would also accommodate medevac aircraft ground operations.

The Forest Service has indicated a need to develop hard surfaced helicopter parking pads on the west side of the airport. It appears that providing two or three parking pads that are physically separated from fixed wing aircraft parking could be accomplished within the confines of existing airport property. Additional expansion of helicopter parking would be determined by demand.

As with aircraft hangars, reserve areas should be identified to accommodate demand for aircraft parking which may exceed current projections. A development reserve area equal to 100 percent of the 20-year parking demand will provide a conservative planning guideline to accommodate unanticipated demand, changes in existing apron configurations, and demand beyond the current planning period. The location and configuration of the development reserves will be addressed in the alternatives analysis.

TABLE 3-X:
APRON AND HANGAR FACILITY REQUIREMENTS SUMMARY

Item	Base Year (2008)	2010	2015	2020	2025	2030
Total Based Aircraft	**9**	**12**	**15**	**17**	**19**	**22**
Aircraft Parking Apron						
Light Aircraft Tiedowns	11					
Large Aircraft Tiedowns	2					
Total Apron Area	9,444 sy					
Projected Needs *(Demand)* [2]						
Itinerant Aircraft Parking (@ 360 SY each)	5 spaces / 1,800 sy	6 spaces / 2,160 sy	7 spaces / 2,520 sy	8 spaces / 2,880 sy	9 spaces / 3,240 sy	10 spaces / 3,600 sy
Locally-Based Tiedowns (@ 300 SY each)	0 spaces / 0 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy	1 space / 300 sy
Business Aircraft Parking Positions (@ 600 SY each)	2 spaces / 1,200 sy	2 spaces / 1,200 sy	2 spaces / 1,200 sy	3 spaces / 1,800 sy	3 spaces / 1,800 sy	4 spaces / 2,400 sy
Helicopter Parking (@ 400 SY each)	3 spaces / 1,200 sy	3 spaces / 1,200 sy	3 spaces / 1,200 sy	3 spaces / 1,200 sy	3 spaces / 1,200 sy	3 spaces / 1,200 sy
Total Apron Needs	**10 spaces 4,200 SY**	**12 spaces 4,860 SY**	**13 spaces 5,220 SY**	**15 spaces 6,180 SY**	**16 spaces 6,540 SY**	**18 spaces 7,500 SY**
Aircraft Hangars *(Existing Facilities)*						
Existing Hangar Spaces (estimated)	15 spaces					
Projected Needs *(Demand)* [3]						
(New) Hangar Space Demand (@ 1,500 SF per space) *(Cumulative 20-year projected new demand: 6 spaces / 9,000 SF)*		**+4 spaces 6,000 sf** *(replacement sites for east hangars)*	**+1 space 1,500 sf**	**+0 spaces 0 sf**	**+1 space 1,500 sf**	**+0 spaces 0 sf**

1. Total number of aircraft tiedowns(existing configuration)
2. Aircraft parking demand levels identified for each forecast year represent forecast gross demand.
3. Hangar demand levels identified for each forecast year represent the net increase above current hangar capacity.