



**FINAL REPORT**  
Airport Master Plan  
Addendum Planning Memo

# Yakima Air Terminal

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» Barnard Dunkelberg & Company

November 2007



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**Yakima  
Air Terminal**

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## Airport Master Plan Addendum Planning Memo

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### Introduction

**The Yakima Airport has initiated the preparation of this planning memo as a supplement to the Yakima Airport Master Plan. The purpose of the planning memo is to re-evaluate the justification for, and benefit of, the extension of Runway 9/27 as proposed in the Airport Master Plan. The memo begins with an analysis of available information regarding the Airport's existing and forecast commercial passenger operational activity, and includes documentation of current commercial passenger airlines and private general aviation aircraft types, and operational data. From this foundation, this document then discusses future runway length needs in support of the extension proposed in the Airport Master Plan.**

Due to the Airport's elevation above mean sea level (AMSL), as well as surrounding mountainous terrain, runway length is a significant issue for many of the commercial service and general aviation aircraft that utilize the facility. Runway length considerations become critical during both the summer and winter seasons, but for different reasons. In the summer, peak temperatures cause density altitude<sup>1</sup> issues for many turbojet aircraft; while in the winter, a thin layer of snow on the runway can contribute to slow acceleration/ deceleration and degrade aircraft performance. For these reasons, the future length of the runway was considered as a component of the 1996 Airport Master Plan. One of the recommendations of the Master Plan was to consider the extension of the Airport's primary runway (i.e., Runway 9/27) 1,279 feet to the west and 1,278 feet to the east, in the long-term planning period (i.e. 11-20 years), for an ultimate planned length 10,160 feet.

The proposed runway extension was identified on the Airport Layout Plan (ALP) and approved by the Federal Aviation Administration (FAA) in 1997. A revised ALP was submitted for FAA approval following the Airport Layout Plan Update in 2003 and approved in 2004.

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<sup>1</sup> Density altitude is defined as the pressure altitude corrected for non-standard temperature variations, and air density plays a critical role in the performance characteristics of aircraft (i.e., affecting the power output of the engine, the efficiency of the propeller, and the lift generated by the wings).

## Inventory of Existing Conditions

### Airside Facilities

Yakima Air Terminal is operated with a two runway system, along with full-length parallel taxiways and connecting taxiways that provide aircraft access to the terminal and other aviation use facilities on the Airport. The following illustration, entitled *AIRPORT LAYOUT PLAN*, provides a graphic presentation of the existing and planned airport facilities. The Airport Reference Point (ARP) for Yakima Air Terminal is located at Latitude 46° 34' 06.18" N and Longitude 120° 32' 30.14" W. The Airport as an elevation of 1,095 feet above mean sea level (AMSL).

**Runway 9/27.** The primary runway at the Airport, which is designated as Runway 9/27, is 7,603 feet in length and 150 feet in width. The runway has a gross weight bearing capacity of 110,000 pounds dual wheel, and 175,000 pounds dual tandem wheel main landing gear configuration. The runway is equipped with High Intensity Runway Lights (HIRL), and Visual Approach Slope Indicator (VASI) lights and a Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR). Runway 27 is also equipped with an Instrument Landing System (ILS).

**Runway 4/22.** The crosswind runway at the Airport, which is designated as Runway 4/22, is 3,835 feet in length and 150 feet in width. The runway has a gross weight bearing capacity of 70,000 pounds single wheel, 80,000 pounds dual wheel, and 120,000 pounds dual tandem wheel main landing gear configuration. The runway is equipped with Medium Intensity Runway Lights (MIRL), and Precision Approach Slope Indicator (PAPI) lights.

**Taxiways.** In addition to the runway, the airside facilities at Yakima Air Terminal consist of a taxiway system that provides access between the runway surfaces and the landside aviation use areas.

A full-length parallel taxiway (Taxiway "A") serves Runway 9/27 while another full-length parallel taxiway (Taxiway "B") serves runway 4/22. Taxiway "C" is a portion of the deactivated Runway 16/34 and serves the southeast aviation development area of the Airport.

**Landside Facilities.** The majority of the Airport's landside facilities are located north of the intersection of the runways and include: aircraft parking aprons for commercial passenger and general aviation aircraft; the passenger terminal building and its support facilities, Fixed Base Operator (FBO) facilities; air cargo facilities; aircraft storage and maintenance facilities; as well as the Air Traffic Control Tower. There are also FBO facilities located west and south of the runway intersection.



## Runway Length Assessment

The purpose of this Runway Length Assessment for Yakima Air Terminal is to determine the future length requirements based on a standardized FAA approach. This assessment will establish the operational benefits of the existing runway length of 7,603 feet to the Airport, and then examine their consistency with long-range planning, recommended runway lengths included in the 1996 Master Plan and 2003 Airport Layout Plan.

A detailed runway length assessment was included in the *2006 Runway Safety Area Assessment* for the Yakima Air Terminal. This assessment followed the FAA Advisory Circular 150/5325-4B entitled *Runway Length for Airport Design*. The FAA has also developed a software program supplied with FAA Advisory Circular 150/5300-13 that provides similar recommended runway lengths based on factors such as airport elevation above mean sea level (AMSL), mean maximum daily temperature of the hottest month, runway gradient, critical aircraft and stage lengths. A determination of standard recommended runway lengths for the Yakima Air Terminal based on an elevation of 1,095 feet AMSL, 87 degrees Fahrenheit, and a maximum difference in runway elevation at the centerline of 50 feet is included in the following table entitled *RUNWAY TAKEOFF LENGTH REQUIREMENTS*.

Table 1  
**RUNWAY TAKEOFF LENGTH REQUIREMENTS**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

Runway Requirement	Runway Takeoff Length (Feet)	
	Dry Runway	Wet Runway
<i>Existing Condition</i>		
Runway 9/27	7,603	7,603
Runway 4/22	3,835	3,835
<i>Small Aircraft with less than 10 seats</i>		
75% of Small Aircraft	2,850	2,850
95% of Small Aircraft	3,390	3,390
100% of Small Aircraft	4,010	4,010
<i>Small Aircraft with more than 10 seats</i>		
	4,420	4,420
<i>Large Aircraft less than 60,000 pounds</i>		
75% of fleet/60% useful load	5,310	5,500
100% of fleet/60% useful load	7,080	7,080
75% of fleet/90% useful load	6,110	6,110
100% of fleet/90% useful load	9,000	9,000
<i>Large Aircraft greater than 60,000 pounds</i>		
500/1,000/1,500 NM stage lengths	5,400/6,410/7,330	5,400/6,410/7,330

Runway Lengths Based on 1,095' AMSL, 87 F Normal Maximum Temperature of Hottest Month and Maximum difference in runway end of 50 feet.

Generally, for design purposes, runway length requirements at commercial service airports are premised on a combination of the specific requirements of the commercial service air carrier fleet, and the large aircraft fleet under 60,000 pounds (i.e., the business jets that operate at the Airport).

There are four (4) different lengths given for large aircraft under 60,000 pounds. The specified large aircraft runway lengths pertain to those general aviation aircraft, generally jet-powered, of 60,000 pounds or less maximum certificated takeoff weight ranging from 5,310 feet to 9,000 feet. Each of these lengths provides a runway sufficient to satisfy the operational requirements of a certain percentage of the fleet at a certain percentage of the useful load, (i.e., 75% of the fleet at 60% useful load). The useful load of an aircraft is defined as the difference between the maximum allowable structural gross weight and the operating weight empty. In other words, it is the load that can be carried by the aircraft composed of passengers, fuel, and cargo. Generally, the following aircraft comprise 75% of the large aircraft fleet weighing less than 60,000 pounds: Learjets, Sabreliners, Citations, Falcons, Hawkers, and Westwinds and under normal conditions many of these aircraft can be accommodated at the Airport at 90% useful load. However, numerous business jet

operators have reported having to operate at reduced payloads or stage lengths during the summer. These operators likely make up the 25% of the fleet that requires between 6,100 feet and 9,000 feet of runway as indicated in the previous table.

Following an examination of the various runway lengths provided in the previous table, it should be noted that Runway 9/27, with an existing length of 7,603 feet, can accommodate the majority of the aircraft fleet needs, with the exception of some of the larger commercial and business jet aircraft flown on long stage lengths. However, according to the FAA Airport Design Program, an extension of Runway 9/27 to 9,000 feet would allow the Airport to accommodate 100% of the business jet fleet at 90% useful load. Runway 4/22, with a length of 3,835 feet, is not adequate to accommodate much of the smaller aircraft fleet and consideration should be given to extending this runway to at least 4,420 feet as recommended in the Airport Master Plan.

### **Aircraft Specific Runway Length Assessment**

Following the completion of a standard runway length assessment process, FAA AC 150/5325-4B allows for the option of determining aircraft specific recommended runway length by obtaining data provided in aircraft operations and planning manuals published by aircraft manufacturers. This approach is very similar to that taken in the previous steps, only it is applied to specific aircraft and operating conditions.

For the purposes of this assessment, the approach taken is to review the runway length requirements for aircraft currently operating at or anticipated to operate at Yakima Air Terminal. At that point, it will be determined whether any of the information generated provides a compelling case to continue or modify conclusions reached in Airport Master Plan with respect to recommended runway lengths. This approach is based on runway length analyses for the types of operations that currently occur and are expected to occur at the Airport: corporate general aviation aircraft operations and commercial service aircraft operations (i.e., both passenger and cargo).

**Corporate General Aviation Operations.** Corporate general aviation encompasses the most operationally demanding aircraft currently in use in large numbers at the Airport. Of the various categories defined above, they generally fall into the “over 12,500 pounds but less than 60,000 pounds” family group, and the “100 percent of fleet” category. These types of aircraft, which are presented in the following tables from the 2006 *Yakima Air Terminal Runway Safety Area Assessment*, comprise a large percentage of the overall airport operations, and will continue to play a very important role in the future of the Airport and, by extension, the long-term economic development of the region.

Table 2

**AIRCRAFT OPERATIONS - OVER 12,500 POUNDS BUT LESS THAN 60,000 POUNDS (MTOW)**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

<b>Aircraft</b>	<b>ARC</b>	<b>MTOW Weight (lbs)</b>	<b>Operations</b>
Astra Westwind	C-II	23,500	223
ATR 42	B-III	36,815	521
Bombardier Challenger CL-600	C-II	41,250	15
Cessna Citation II	B-II	14,100	242
Cessna Citation Sovereign	C-II	30,000	2
Cessna Citation V	B-II	15,900	936
Cessna Citation VII	C-II	23,000	20
Cessna Citation X	C-I	36,100	6
Dasault Falcon 2000	B-I	35,800	4
Dassault Falcon 10	B-I	18,740	7
Dassault Falcon 50	B-II	38,800	12
Dassault Falcon 900	B-II	45,500	4
DH-8 (Dash-8)	A-III	41,100	4,250
Dornier Alpha Jet	C-I	34,524	1
Fokker F27	B-III	43,500	106
Gulfstream G-I	B-II	36,000	2
Lear 24	C-I	13,500	17
Lear 25	C-I	15,000	39
Lear 31	C-I	17,200	32
Lear 35	C-I	18,300	354
Lear 36	C-I	18,300	1
Lear 45	C-I	20,500	6
Lear 55	C-I	21,500	5
Lear 60	C-I	23,500	2
Merlin	B-I	14,500	227
Raytheon Beechcraft 1900	B-I	16,600	594
Raytheon Beechcraft King Air 300	B-II	14,000	413
Raytheon BeechJet 400	B-II	15,780	94
Raytheon Hawker 125	B-II	23,300	14
Raytheon Hawker 800	B-II	27,400	14
Rockwell Jet Commander	B-I	20,700	25
<b>Total</b>			<b>8,188</b>
<i>% of Total Operations</i>			<i>58.8%</i>

Source: GCR & Associates, Airport IQ Data Center, FAA ASDI Data Feed, YKM 2005.

Table 3  
**AIRCRAFT OPERATIONS - 60,000 POUNDS OR MORE OR REGIONAL JETS (MTOW)**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

<b>Aircraft</b>	<b>ARC</b>	<b>MTOW Weight (lbs)</b>	<b>Operations</b>
A319	C-III	154,322	6
B737 (variants)	C-III	110,000+	254
B757	C-IV	240,000	2
B777	D-V	506,000	1
Embraer 135	C-II	44,092	2
Gulfstream G-II	D-II	62,000	2
Gulfstream G-IV	C-II	73,200	14
Gulfstream G-V	C-III	90,500	1
MD-80 Series	C-III	140,000+	23
<b>Total</b>			<b>305</b>
<i>% of Total Operations</i>			<i>2.2%</i>

Source: GCR & Associates, Airport IQ Data Center, FAA ASDI Data Feed, YKM 2005.

As shown in this data, there is a wide variety of corporate general aviation aircraft that operate at the Airport, each of which has very specific operational characteristics, including runway length requirements. Based on the FAA standard to design to the most operationally demanding aircraft that is reasonable for an airport, a runway length analysis was conducted for a Gulfstream 100 (formerly known as the Israel Aircraft Industry Astra). This aircraft accounted for over 220 operations at the Airport in 2005<sup>2</sup>, and is operated by several companies that regularly operate at the Airport.

One important fact worth noting is that runway length requirement determinations for general aviation aircraft are fundamentally different from that of commercial service. While commercial service operators have a structured schedule and routing system, allowing for the determination of specific market requirements and stage lengths, general aviation operations, by their very nature in being limited to no structure or schedule, must be able to remain flexible in order to meet the wide variety of demands placed upon them. For example, while a commercial carrier can designate a particular aircraft whose operational characteristics may maximize the efficiency of service to a particular market, the typical corporate operator has limited, if any, fleet mix options to meet destination demands that can range from interstate to intercontinental. As such, for the purposes of this analysis, and in keeping with overall goal of general aviation in maximizing flexibility, a specific market was not designated. Rather, maximum takeoff weight was assumed to be required in that this would afford the aircraft the greatest range of operational alternatives. The results of this analysis are included in the following table, entitled *RUNWAY LENGTH ANALYSIS –*

<sup>2</sup> According to the Aircraft Situation Display to Industry (ASDI) Data Feed

*GULFSTREAM 100 (ASTRA) – MTOW.* This analysis was conducted using aircraft performance manuals supplied by an operator who frequently uses Yakima Air Terminal. This analysis does not consider any potential operational impacts due to obstructions, or penalties associated with the runway gradient.

Table 4  
**RUNWAY LENGTH ANALYSIS – GULFSTREAM 100 (ASTRA) – MTOW**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

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<b>Analysis Assumptions</b>	
Aircraft:	Gulfstream 100 (Astra)
Engine(s):	(2) TFE 731-3C
Max Structural Takeoff Weight:	24,650 lbs
Operating Empty Weight:	13,700 lbs
Max Structural Payload:	3,300 lbs
Usable Fuel:	9,365 lbs
Service Market:	Variable
Stage Length:	2,868 nm
YKM Elevation:	1,095' MSL
YKM Temperature:	Hot Day (STD+27°F)
YKM Wind:	No Wind
YKM Runway Gradient:	0%
YKM Runway Condition:	Dry

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<b>Analysis Results</b>	
Operational Takeoff Weight:	24,650 lbs
Flap Setting:	0°
<b>Runway Length Required:</b>	<b>9,500'</b>

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Sources: Israel Aircraft Industries, Airplane Characteristics for Airport Planning - Astra, August 1993.  
 BARNARD DUNKELBERG & COMPANY.

Based on the data presented in the previous table, Yakima Air Terminal’s primary runway length of 7,603 feet is approximately 25% deficient in meeting this existing demand. Note that this deficiency is consistently seen when examining the extrapolated runway length requirements for other corporate jet aircraft when considering airport elevation and temperature. Specific to the Gulfstream 100 aircraft performance manual, in order for this aircraft to currently operate at Yakima Air Terminal on a hot day, without considering runway grades, it must take a 2,650 pound or a 24% weigh penalty to the aircraft’s combined payload and fuel capacity. This is a significant reduction in the operational capability of any aircraft, and cannot be underestimated as to the negative impact that it has on the efficiency and flexibility of the aircraft.

**Commercial Service Aircraft Operations.** Commercial service aircraft operations encompass the largest airplanes currently in use at the Airport. Of the various categories defined above, they generally fall into the “over 60,000 pounds” family group. These types of aircraft are presently related to an air charter service (Xtra Airlines) which operates Boeing 737-400 and -800 series aircraft to various Nevada destinations, including McCarran International Airport (Las Vegas). Additionally, a varying percentage of the Airport’s commercial service operation counts result from Yakima Air Terminal being designated as a diversion airport during poor weather conditions for flights scheduled to land at Seattle-Tacoma International Airport, or Portland International Airport. Commercial service aircraft that have diverted to Yakima Air Terminal include the Boeing B737, B757 and B767 series aircraft, the Airbus A319 and A320 series aircraft, McDonnell-Douglas MD80 aircraft and various other turbo-prop aircraft. The runway length analysis for the Airport’s existing charter aircraft was conducted through use of the manufacturer’s aircraft performance manual. It does not consider any potential operational impacts due to obstructions, or penalties associated with the runway gradient. The assumptions and results of this analysis are included in the following table, entitled *RUNWAY LENGTH ANALYSIS – BOEING 737-400*.

Table 5  
**RUNWAY LENGTH ANALYSIS – BOEING 737-400 – YKM TO LAS**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

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<b>Analysis Assumptions</b>	
Aircraft:	Boeing 737-400
Engine(s):	(2) CFM56-3C
Max Structural Takeoff Weight:	150,500 lbs
YKM Elevation:	1,095’ MSL
YKM Temperature:	Hot Day (STD+27°F)
YKM Wind:	No Wind
YKM Runway Gradient:	0%
YKM Runway Condition:	Dry

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<b>Analysis Results</b>	
Runway Length Required:	9,500’

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**Sources:** Boeing Commercial Airplanes, Airplane Characteristics for Airport Planning - Boeing 737, October 2005.  
 BARNARD DUNKELBERG & COMPANY.

As evidenced by the data presented previously, which is based on existing conditions, Yakima Air Terminal’s existing runway length of 7,603 feet is adequate to accommodate the operation of narrow-body commercial service aircraft (i.e., the B737-400) given the current markets. However, it is important to note that this analysis is based solely on the existing markets currently served by the Airport. Four previous planning studies, including the

Airport Master Plan and Airport Layout Plan Update, have all identified additional markets that are considered viable for future service within the planning period, and that could fundamentally change the aircraft types, operational counts, and stage lengths of the commercial aircraft that use the Airport. For example, the Airport Master Plan identified the possible introduction of large scale, air cargo operations to service the local agricultural industry. In this case, a fully loaded, Boeing 757-200 cargo aircraft flying to distribution hubs in Anchorage, Alaska or Miami, Florida, would require a runway length that would exceed the current runway length available, and far exceed that required of the existing air charter service provider detailed above. Therefore, it must be understood that the previous analysis only provides a very narrow view of the commercial aircraft implications as they relate to Yakima Air Terminal's primary runway length.

In addition to the existing commercial service aircraft operating at the Airport, an analysis of some additional commercial service aircraft that could potentially provide service in the 20-year planning period is included in the following table entitled *APM RUNWAY LENGTH REQUIREMENTS FOR TAKEOFF AND LANDING, BY VARIOUS COMMERCIAL SERVICE AIRCRAFT*. As can be noted from the table, the commercial service operators of the CRJ200ER and the B737-400 do experience passenger/payload penalties on hot summer days at the existing runway length. In addition, the two potential cargo aircraft that were evaluated (i.e., the B757-200PF and B767-300ER) would also be severely weight restricted at the existing 7,603-foot runway length.

Table 6

**APM RUNWAY LENGTH REQUIREMENTS FOR TAKEOFF AND LANDING, BY AIRCRAFT**  
*Yakima Air Terminal Runway Extension Supplemental Planning Memo*

RUNWAY LENGTH REQUIREMENTS @ 1,099' ELEVATION			
Aircraft	Operator	Takeoff Distance @ MTOW <sup>(1) (2)</sup>	Landing Distance @ MLW <sup>(1) (3)</sup>
<b>CRJ200ER</b> <sup>(4)</sup>	SkyWest Airlines	6,900' @ 86°F./7,200' @ 95° F. @ 51,000 lbs.	5,000' @ 47,000 lbs.
(2) General Electric GE CF34-3B1 Engines			
<b>Bombardier Q200</b> <sup>(4)</sup>	Horizon Air	3,800' @ 86°F./4,100' @ 104° F. @ 36,300 lbs.	2,750' @ 34,500 lbs.
(2) PWC PW123D Engines			
<b>Boeing 737-400</b> <sup>(4)</sup>	Xtra Airways (Charter)	9,500' @ 86°F. @ 150,500 lbs.	5,200' @ 124,000 lbs.
(2) CFM56-3C Engines			
<b>Bombardier Q400</b>	Horizon Air	5,600' @ 86°F./5,850' @ 104° F. @ 64,500 lbs.	4,500' @ 61,750 lbs.
(2) PWC PW150A Engines			
<b>CRJ700ER</b> <sup>(6)</sup>	Horizon Air	5,800' @ 86°F./7,300' @ 104° F. @ 72,500 lbs.	4,950' @ 67,000 lbs.
(2) General Electric GE CF34-3C1 Engines			
<b>Boeing 757-200PF</b>	Unspecified Cargo Operator	8,200' @ 84°F. @ 255,000 lbs.	5,200' @ 210,000 lbs.
(2) PW 2040 Engines			
<b>Boeing 767-300ER</b>	Unspecified Cargo Operator	10,200' @ 86°F. @ 407,000 lbs.	5,400' @ 320,000 lbs.
(2) PW 4060 Engines			
<sup>(1)</sup> Dry Runway conditions were used for takeoff while wet runway conditions were used for landing.			
<sup>(2)</sup> The specified temperature available for analysis was dictated by the Aircraft Planning Manual (APM).			
<sup>(3)</sup> Maximum available flap settings were utilized for each aircraft.			
<sup>(4)</sup> Aircraft is currently operating @ YKM.			
<sup>(5)</sup> Aircraft is currently programmed to begin operations @ YKM in 2008.			
<sup>(6)</sup> Potential aircraft to operate @ YKM.			
<b>Takeoff Conditions</b>	<b>Landing Conditions</b>	<b>Airfield Conditions</b>	
Zero runway gradient	Ambient temperatures	Existing airport elevation @ 1,099'	
Zero wind	Zero runway gradient	Mean maximum temperature @ 87.0° F	
Air conditioning bleed valve closed	Zero wind	Runway 09/27 Existing length @ 7,603'	
	Manual spoilers & Auto brakes on		

the Yakima Air Terminal. While future runway length calculations are based on estimations and projections of aircraft types and stage lengths, the importance of both these projections and the continued efforts to plan for a runway extension, primarily involve the reservation of space potentially needed facilities.

Specifically, this planning memo attempted to answer two questions: Should the Airport Board continue to reserve room for a future runway length of 10,160 feet and if not, what is a more appropriate long range planning runway length? Prior to answering those questions, the following factors should be reviewed for consideration.

- Based on existing general aviation aircraft operations at Yakima Air Terminal, the FAA runway length determination process, as detailed in FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, resulted in a future runway length requirement of 9,000 feet to accommodate 100% of the business jet fleet at 90% useful load.
- Regarding the existing commercial service operators, both the CRJ200ER and the B737-400 do experience passenger/payload penalties on hot summer days at the existing runway length.
- The two potential cargo aircraft that were evaluated (i.e., the B757-200PF and B767-300ER) reflect runway length requirements ranging from 8,200 feet to 10,200 feet.
- As the regional center for corporate general aviation activity and shown to be a primary factor in local economic growth, Yakima Air Terminal must maintain its operational flexibility, including runway length, to the greatest degree possible. As noted previously some existing aircraft are already suffering from weight penalties on longer flights departing from the Airport on a hot summer days.
- Yakima Air Terminal's existing Airport Layout Plan of record, a legal document requiring public participation, shows runway extensions to both ends of Runway 9/27 for an ultimate length of up to 10,160 feet. There has been no indication that this planned extension is inconsistent with the long-term goals of the Airport, the City of Yakima, the City of Union Gap, the State of Washington, and the FAA.
- Yakima Air Terminal plays a variety of roles within the region in terms emergency response and emergency evacuation for the State of Washington, the U.S. Forest Service, and the U.S. military. These roles should also be considered when considering any facility modifications to the Airport.

Based on the factors described above, it could be reasonably inferred that Yakima Air Terminal does, in fact, need to continue to preserve the capability for an extension of Runway 9/27, ranging from a minimum of 9,000 feet, and including up to the currently proposed 10,160 feet. Finally, the continued reservation of property for an extension of Runway 9/27 on both runway ends will ensure the Airport flexibility in response to changing demands throughout the planning period and beyond.