

This chapter presents a Preferred Alternative for airfield improvements at Pangborn Memorial Airport from the alternatives documented in Chapter 2. Under National Environmental Policy Act (NEPA) criteria, the Preferred Alternative is the alternative that best meets the “Purpose and Need” for improvements. A Purpose and Need statement is expected to be developed during the NEPA environmental review process based on the facility requirements established in Chapter 1. The Preferred Alternative presented in this chapter is expected to be carried forward into the NEPA environmental review process. Although this chapter presents a Preferred Alternative, other alternatives will be carried into the NEPA process for comparison and evaluation.



The chapter is organized into five main sections:

- **FAA Runway Length Concurrence**
- **Community Involvement Summary**
- **Comparison of Alternatives**
- **Preferred Alternative**
- **Future Actions**

3.1 FAA Runway Length Concurrence

Correspondence from the FAA Seattle Airports District Office, dated July 24, 2009, concurs with the near-term runway length requirement of 7,000 feet presented in Chapter 1, notes that the justification for a 7,000-foot runway (as documented in this Study) is adequate, and provides approval of a 7,000-foot runway (see Appendix G).

3.2 Community Involvement Summary

A Planning Advisory Committee (PAC) of local citizens was convened as part of the Study to provide review and assessment of Study documents. The PAC served as a sounding board for proposed improvement alternatives, provided a conduit for information from community interest groups, and helped assess Airport and community issues. The following citizens were on the PAC:

- Greg Brizendine – Manager, Easter Wenatchee Water District, and private pilot
- Daren Fuller – Aviation Mechanic and Pangborn neighbor
- Linda Haglund – Director, Greater Wenatchee Regional Events Center
- Deb Hassler – Vice President of Ancillary and Support Services, Central Washington Hospital

- Sandy Mathews – Owner, Journey Travel & Tours
- Jerry Paine – President, North Central Washington Realtor's Association, and practicing real estate agent
- Peter Ringsrud – Retired Douglas County Engineer and Pangborn neighbor
- Jack Snyder – Owner, C&O Nursery, and Pangborn neighbor
- Tim Thompson – Marketing Director, Executive Flight, Inc.
- Calvin White – President and Owner, Premium Developments

Four Planning Advisory Committee (PAC) meetings were held at milestones in the Study process, with public information workshops held on the same days. PAC meetings were held in the Airport conference room in the afternoons and consisted of informal presentations by the Consultant team, followed by general discussion among PAC members, Airport staff, and Consultant team. The public information workshops covered the information presented at PAC meetings, sought input from local residents, and discussed the upcoming phases of the Study. The workshops provided opportunities for the public to ask questions and voice concerns. The workshops were held in the Airport terminal building in the evenings. The PAC meetings and public information workshops were held on the following dates, and addressed the following items.

- November 14, 2007 – Study Kick-Off
- August 20, 2008 – Facility Requirements
- February 18, 2009 – Airfield Improvement Alternatives
- August 18, 2009 – Preferred Alternative

To further educate and involve the public, a Study website was developed that linked to the Airport website. Announcements and Study documents were posted to the website at milestones in the Study process. A comment form was posted on the website to provide the public another opportunity to communicate with the Study team. Airport staff provided proactive, open-door communication, making available telephone, fax, e-mail, and in-person resources.

Written comments received by the Airport are contained in Appendix H. Notes from the PAC meetings, as well as photographs from the meetings and workshops, are contained in Appendix E. The front page of the Study website is contained in Appendix I.

3.3 Comparison of Alternatives

This section compares the eight airfield improvement alternatives considered in Chapter 2. Several alternatives are removed from consideration prior to detailed comparison.

The following three alternatives are removed from consideration, as they are not expected to be feasible or practical, and have much higher costs than the other alternatives.

- **Alternative 5:** New, Relocated 7,000-foot Primary Runway
- **Alternative 6:** Improvement and Extension (2,540 feet) of Crosswind Runway 7/25
- **Alternative 7:** New Airport Site

Alternative 8: Use of Other Airports, is removed from consideration because it is not expected to meet the Purpose and Need.

The following four alternatives are compared in this section.

- **Alternative 1:** No-Action Alternative
- **Alternative 2:** Runway End 12 Extension (1,300 feet)
- **Alternative 3:** Runway End 30 Extension (1,300 feet)
- **Alternative 4:** Runway End 30 Extension (700 feet) and reclaiming 600 feet of unusable pavement beyond Runway End 12

3.3.1 Purpose and Need

A Purpose and Need statement is expected to be developed during the environmental review process based on the facility requirements established in Chapter 1. Facility requirements were established based on the runway length determination methodology outlined in the FAA Advisory Circular 150/5325-4B, *Runway Length Requirements for Airport Design*. The results of this methodology specify a required primary runway length of 7,000 feet at Pangborn Memorial Airport to accommodate the aircraft family grouping “75 percent of fleet at 90% useful load”. This length is justified by 638 documented landing operations by “Large Airplanes with a MTOW up to and including 60,000 Pounds” at greater than 60% useful load at Pangborn in 2007. Alternatives 2, 3, and 4 are each expected to meet the Purpose and Need. Alternative 1 is not expected to meet the Purpose and Need, but is included for comparison per NEPA.

3.3.2 Airfield Operational Factors

Table 3-1 shows the airfield operational factors associated with the four alternatives.

Table 3-1: Airfield Operational Factors				
Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Meets Runway Safety Area (RSA) Standards	Yes	Yes	Yes	Yes
Meets Object Free Area (OFA) Standards	No	No	No	Yes
Meets Runway Protection Zone (RPZ) Recommendations	No	Yes	Yes	Yes
Aviation-Related Facility Relocation	None	PAPI, Glideslope	Localizer	PAPI, Localizer, Glideslope
Feet of New Runway Pavement	None	700	1,300	700
Feet of New Taxiway Pavement	None	1,804	2,128	1,528

Only Alternative 4 meets OFA criteria. Other alternatives maintain current conditions, which were allowed as part of previous projects, despite not meeting OFA criteria. The Alternative 2 OFA violation is approximately 435 square feet in the southeastern corner of the OFA, where the OFA extends into the Van Well Avenue right-of-way. Although this is not on Airport property, it is fenced to preclude permanent above-ground objects in the right-of-way. The Alternative 3 OFA violation is approximately 2,550 square

feet in the northeastern corner of the OFA, where the OFA extends into the Grant Road right-of-way. This area is not fenced and extends into the roadway.

Excluding Alternative 1, Alternative 3 has the fewest aviation-related facility relocations, while Alternative 4 has the most.

Excluding Alternative 1, Alternative 3 has the most new runway pavement, while Alternatives 2 and 4 have runway pavement lengths equal to each other. Alternative 4 has the least new taxiway pavement, while Alternative 3 has the most.

3.3.3 Road Operational Factors

Table 3-2 shows the road operational factors associated with the four alternatives.

Table 3-2: Road Operational Factors				
Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Number of Road Relocations	None	2	1	3
Feet of New Four-Lane Pavement	None	5,265	0	3,810
Feet of New Two-Lane Pavement	None	1,211	5,240	5,996

Excluding Alternative 1, Alternative 3 has the fewest road relocations, as well as the shortest length of new road pavement. Alternative 4 has the most road relocations, as well as the longest length of new road pavement. Alternative 2 has the most new four-lane road pavement, and Alternative 3 has the least new four-lane road pavement. Alternative 4 has the most new two-lane road pavement, and Alternative 2 has the least new two-lane road pavement.

3.3.4 Land Acquisition and Residential Relocation Factors

Table 3-3 shows the land acquisition and residential relocation factors associated with the four alternatives.

Table 3-3: Land Acquisition and Residential Relocation Factors				
Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Land Acquisition	None	59.0 acres	88.4 acres	75.0 acres
Affected Off-Airport Properties	None	28	23	28
Affected Residential Properties	None	21	21	21

Excluding Alternative 1, Alternative 2 has the smallest land acquisition area and Alternative 3 has the largest. Alternative 3 affects the fewest off-airport properties, and Alternatives 2, 3, and 4 affect the same number of residential properties.

3.3.5 Cost Estimates

Table 3-4 shows the cost estimate associated with each of the four alternatives.

Table 3-4: Cost Estimates				
Parameter	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Land Acquisition Cost	None	\$7.7 million	\$8.2 million	\$7.4 million
Construction Cost	None	\$14.4 million	\$61.0 million	\$33.7 million
Total Cost Estimate	None	\$22.1 million	\$69.2 million	\$41.1 million

Alternative 2 has the lowest total cost estimate, and Alternative 3 has the highest total estimated cost. Alternative 4 has the lowest land acquisition cost estimate, and Alternative 3 has the highest land acquisition cost estimate. Alternative 2 has the lowest construction cost estimate, and Alternative 3 has the highest cost estimate.

3.3.6 Summary of Alternative Rankings

Table 3-5 ranks Alternatives 2, 3, and 4 according to their evaluation against the criteria presented in the previous subsections. Where two or three alternatives have identical rankings, the alternatives are ranked either 'Tie-Best' or 'Tie-Second Best'.

Table 3-5: Alternative Ranking Summary			
Parameter	Alternative 2	Alternative 3	Alternative 4
Meets OFA Standards	No	No	Yes
Meets RSA Standards	Yes	Yes	Yes
Meets RPZ Recommendations	Yes	Yes	Yes
Aviation-Related Facilities Relocation	Second Best	Best	Third Best
Feet of New Runway Pavement	Tie-Best	Third Best	Tie-Best
Feet of New Taxiway Pavement	Second Best	Third Best	Best
Number of Road Relocations	Second Best	Best	Third Best
Feet of Four-Lane Road Pavement	Third Best	Best	Second Best
Feet of Two-Lane Road Pavement	Best	Second Best	Third Best
Land Acquisition	Best	Third Best	Second Best
Affected Off-Airport Properties	Tie-Second Best	Best	Tie-Second Best
Affected Residential Properties	Tie-Best	Tie-Best	Tie-Best
Cost Estimate	Best	Third Best	Second Best

Alternative 3 has the most 'Best' parameter rankings, but also has the most 'Third Best' parameter rankings. Alternative 4 has the fewest "Best" parameter rankings, and the second most 'Second Best' and 'Third Best' parameter rankings. Alternative 2 ranks 'Best' or 'Second Best' against all but one parameter.

Alternatives 2, 3, and 4 are expected to be feasible, and are expected to involve similar effort on the part of the Airport for implementation and operation. These alternatives are not expected to introduce significant operational changes to existing aircraft ground movement procedures, nor significant

increased maintenance burden to the Airport. The community involvement process conducted as part of this Study did not discover factors affecting the feasibility of the alternatives.

3.4 Preferred Alternative

Based on comparison of the alternatives, it is expected that Alternative 2 will best meet the Purpose and Need. Alternative 2 ranks 'Best' or 'Second Best' against all but one parameter, and ranks 'Best' against criteria regarding implementation feasibility, including land acquisition and cost estimate. Alternative 2 is supported by the 2004 Master Plan, which recommends consideration be given to relocation of Grant Road as a way to achieve safety for the primary runway. Alternative 2 is supported by the May 2007 Airport Layout Plan, which depicts a 600-foot extension of Runway End 12 to the northwest and Grant Road relocation. Alternative 2 is supported by past runway extension and road relocation planning efforts conducted by the Airport and Douglas County. Alternative 2 is supported by the County Airport Compatibility Zones, which include a 1,300-foot extension to Runway End 12.

Alternative 2 is recommended as the Preferred Alternative to be carried forward for NEPA review. A cost breakdown and proposed phasing schedule for proposed implementation of the Preferred Alternative is shown in **Table 3-6**. This breakdown assumes 95% Federal and 5% local government funding shares for implementation costs, as improvements are expected to be eligible for 95% Federal grants-in-aid.

Table 3-6: Preferred Alternative Implementation Phasing Plan 2010-2015 (estimated 2010 dollars)						
Project Phase	2010/2011	2012	2013	2014	2015	Total Cost
Documentation						
Environmental Assessment	\$600,000					\$600,000
Construction Phasing						
Runway 12 Land Acquisition		\$4,500,000				\$4,500,000
Roadway & Utility Relocation			\$6,100,000			\$6,100,000
Runway 30 Land Acquisition				\$3,200,000		\$3,200,000
Airfield Construction					\$8,300,000	\$8,300,000
Construction-Related Total		\$4,500,000	\$6,100,000	\$3,200,000	\$8,300,000	\$22,100,000
Federal and Local Funding Components						
Federal Share @ 95%	\$570,000	\$4,275,000	\$5,795,000	\$3,040,000	\$7,885,000	\$21,565,000
Local Share @ 5%	\$30,000	\$225,000	\$305,000	\$160,000	\$415,000	\$1,135,000

Source: Mead & Hunt, USKH

Note that estimates are based on assumptions regarding existing conditions and required actions. Detailed estimates are expected to be developed during project design, based on field investigation, material and labor prices, and the real estate market.

A January 2009 submittal was made to FAA for evaluation of IAPs and minimums for each alternative. A May 2009 response from FAA was clarified with a July 2009 meeting with FAA. A September 2009 submittal was made to FAA for evaluation of IAPs and minimums for the Preferred Alternative. Results are presented in Appendix J.

3.5 Future Actions

The Airport Layout Plan is expected to be updated to represent the improvements associated with the Preferred Alternative.

Other implementation effects of the Preferred Alternative are expected to be evaluated as part of the NEPA process prior to implementation of airfield improvements.