

SECTION TWO

RUNWAY SAFETY AREAS (RSA's)

Initiative

Goal: Complete improvement of nonstandard safety areas.

Progress

We have been focusing our resources on building standard safety areas at all focus airports (plus selected non-RAP locations) since 1998. In 1998, of the 432 runway ends we evaluated, 90 were sub-standard. Of these, we have completed 79. Currently, 99.8 percent of commercial passengers in this region arrive and depart over runway ends that meet safety area standards. One RSA was completed in 2008, at Sea-Tac (16L).

Table 2-1 lists safety-area projects planned for 2009 and beyond, while Table 2-2 shows the required discretionary funding.

**Table 2-1:
RSA
Completion
Schedule**

Location	Runway	FY Planned Completion
ST GEORGE MUNI, ST GEORGE, UT (SGU) (Part 139)	Replacement Airport	2010
ROCKY MOUNTAIN METRO., DENVER, CO (BJC)	11L	(Practicability TBD)
TACOMA NARROWS, TACOMA, WA (TIW)	17	2010
YAKIMA AIR TERMINAL, YAKIMA, WA (YKM) (Part 139)	27	2010
S. BIGHORN COUNTY, GREYBULL, WY (GEY) *	15	2011
S. BIGHORN COUNTY, GREYBULL, WY (GEY) *	33	2011
GARFIELD COUNTY REGIONAL, RIFLE, CO (RIL) *	08	2012
GARFIELD COUNTY REGIONAL, RIFLE, CO (RIL) *	26	2012
TELLURIDE REGIONAL, TELLURIDE, CO (TEX) (Part 139)	09	2012
TELLURIDE REGIONAL, TELLURIDE, CO (TEX) (Part 139)	27	2012
GROVE FIELD, WASHOUGAL, WA (1W1) *	07	2013
GROVE FIELD, WASHOUGAL, WA (1W1) *	25	2013

* Non-RAP location.

**Table 2-2:
RSA Funding**

FY	2009	2010	2011	2012	2013
Total Discretionary Funds (millions):	\$38.5	\$22.3	\$7.0	\$6.5*	\$0*

* St. George costs not included.

**Hailey, ID
Safety Area
Improvement**



FRICTION TREATMENT AT PART 139 CLASS III LOCATIONS

Initiative

Install Friction Treatment on Designated Runways.

Progress

Similar to the statutory emphasis projects at primary commercial-service airports, there has been a long-term regional emphasis on safety projects at newly-certificated Part 139 locations. Initially, the priority was to install runway-end-identification-lights (REIL's) and distance-to-go (DTG) signs first, followed with friction treatment at the time of other runway rehabilitation work. The equipment installations are almost completed. In 2008, with the exception of grooving, we finished rehabilitation of Runway 12-30 at Miles City; the work will be completed in Spring, 2009. The remaining friction treatment work is planned as shown in the following table. The Phase I - design for Wolf Point Runway 11-29 rehabilitation was funded with an FY-2008 grant. An FY-2009 grant will fund the Phase I - design for the Lewistown Runway 7-25 rehabilitation.

**Table 2-3:
Part 139
Class III
Facility
Schedule**

Location	Description of Item	RW	Funding FY	Completion Year
Frank Wiley Field, Miles City, MT (MLS)	Friction Treatment	12/30	2008	2009
LM Clayton, Wolf Point, MT (OLF)	Friction Treatment	11/29	2010	2011
Lewistown Municipal, Lewistown, MT (LWT)	Friction Treatment, taxiway lights	7/25	2010	2011
Wokal Field, Glasgow, MT (GGW)	Friction Treatment	12/30	2011	2012
Havre City-County, Havre, MT (HVR)	Friction Treatment	3/21	2011	2012
Havre City-County, Havre, MT (HVR)	Friction Treatment	7/25	2013	2014

**Table 2-4:
Funding**

FY	2009	2010	2011	2012	2013
Total Discretionary Funds (millions):	\$0	\$5.0	\$4.0	\$0	\$2.5

**Pavement
Grooving**



PREPARE AIRPORTS FOR NEXTGEN-TYPE TECHNOLOGIES AND ENHANCE ACCESS

NextGen

As noted in Our Investment Strategy (page 1-5), we anticipate increased access to airports through advancing navigation technology and greater numbers of more sophisticated aircraft capable of using those assets. Therefore, we are working to enhance access to airports by meeting upgraded airport design standards and by facilitating NextGen-type technologies. This expanded goal combines three initiatives previously tracked separately into two. This includes supporting the development of instrument approach procedures (especially LPV/WAAS), and achieving the lowest possible visibility minima by completing full-length parallel taxiways where needed.

Initiative 1

Fiscal Year 2009 Goal: By February 27, identify candidate sites for surveys of potential WAAS/LPV approaches. By September 30, issue AIP grants for 6 WAAS/LPV approach surveys for 11 runway ends.

Progress

To facilitate the development of LPV (localizer performance with vertical guidance) procedures, we are funding obstruction surveys for candidate runways through master plans and state system planning grants. Table 2-5 lists the surveys to be conducted in FY-2009.

**Table 2-5:
LPV Surveys
in FY-2009**

Location	Runway(s)
Colorado Plains Regional, Akron, CO (AKO)	11, 29
Holyoke, Holyoke, CO (HEQ)	14, 32
Shelby, Shelby, MT (SBX)	05, 23
Delta Municipal, Delta, UT (DTA)	35
Jefferson Co. Intl., Port Townsend, WA (0S9)	09, 27
Ralph Wenz Field, Pinedale, WY (PNA)	11, 29

Funding for Surveys

For FY-2009, we have planned \$475,900 in discretionary funding for surveys at the above six airports. For the surveys to be performed in 2010 and beyond, we are working with the airport sponsors and state aviation directors to identify good candidate runways.

Parallel Taxiways

To further enhance access, since 2003, we have completed parallel taxiways at Durango, Montrose, Laramie, Twin Falls, Coeur d'Alene, and Provo. We will build additional parallel taxiways as new instrument approaches are planned or developed. The remaining locations requiring parallel taxiways are listed below. Additional locations will be included in the future based on LPV candidates and to enhance access even more. We are also moving toward using system plans to help prepare busy GA airports for enhanced access with NextGen-type technologies.

**Table 2-6:
Locations
Requiring
Parallel
Taxiways For
Lower Minima**

Location	State	RW	Vis Min	Start	FY Completion
Durango	CO	2/20	1/2 mi	2005	2009
Ogden	UT	3/21	3/4 mi	2007	2009
Wendover	UT	8/26	1 mi.	2010	2011

**Table 2-7:
Taxiway
Funding**

FY	2009	2010	2011	2012
Total Discretionary Funds (millions):	\$4.5	\$0.0	\$0.0	\$0.0

PREPARE AIRPORTS FOR NEXTGEN-TYPE TECHNOLOGIES AND ENHANCE ACCESS (cont.)

Initiative 2

Goal: Improve and develop airports to meet anticipated demand such as business jets (BJ) and high-speed turbo aircraft.

Progress

Improved or higher-standard facilities are needed throughout the region to accommodate the growth in business-jet and high-speed turbo-aircraft operations. These projects are typically high-cost, require long-range planning, and include such improvements as increased runway-taxiway separation and expanded RSA's to meet the design standards of an upgraded airport reference code (ARC). Since 2001, we have upgraded seven locations to accommodate the more-demanding aircraft already using them. In 2008, we completed relocation of the parallel taxiway at Aurora to a 300-foot separation. Remaining projects are listed below. In addition to meeting upgraded design standards, as noted previously, we are also moving toward "harmonizing" state system plans to help prepare busy GA airports for enhanced access with NextGen-type technologies.

**Table 2-8:
Locations
with
Significant
Operations of
Aircraft That
Do Not Meet
Standards**

Location	OPS > 500	OPS >250 <499	Current ARC	Needed ARC	Discretionary	Status	FY Completion
Rifle, CO *	X		B-III	C	Table 2-2	In ACIP	2012
St. George, UT	X		B-III	C	Table 2-20	In ACIP	2011
Telluride, CO	X		B-III	D	Table 2-2	In ACIP	2012
Meeker, CO *		X	B-I	C	Table below	In ACIP	2015
Canon City, CO		X	B-II	C	None identified at this time	TBD	TBD
Pullman, WA	X		B-II	C	Table 2-20	In ACIP	TBD
Driggs, ID	X		B-II	C	Table below	In ACIP	TBD
McCall, ID		X	B-II	C	Table below	In ACIP	TBD
Hailey, ID	X		C-III	C	Table 2-20	EIS for new airport	TBD

*Non-RAP locations.

**Table 2-9:
BJ Funding
(dollars in
millions)**

FY	2009	2010	2011	2012	2013	2014
Total Discretionary Funds (millions):	\$4.0	\$11.8	\$5.0	\$4.5	\$4.0	\$5.8

Greybull, WY



LINE-OF-SIGHT

Initiative

Goal: Complete runway visibility zone (RVZ) correction where needed.

Progress

We have been correcting line-of-sight (LOS) problems on single runways, and removing runway visibility zone (RVZ) obstructions on intersecting runways. We identified 30 runways in 1998 that did not meet RVZ and/or LOS standards. In 2008, we completed LOS projects at Vernal, UT, and Olympia, WA. The remaining runway requiring correction is at Spokane.

Table 2-10:
Runway
Requiring
Correction

Location	Correction	No. of Runways	FY Completion	Comment
Spokane, WA (GEG)	3/21 VERT	1	2014	To meet standards

Table 2-11:
LOS Funding

FY	2009	2010	2011	2012	2013
<i>Total Discretionary Funds (millions):</i>	\$0.0	\$0.0	\$14.0	\$10.0	\$7.0

VEHICULAR RUNWAY CROSSINGS

Progress

This is another initiative in support of the FAA's Flight Plan goal to reduce runway incursions. We are building on-airport service roads around operational surfaces for use by fuel trucks, airport or fixed-base operator (FBO) employees, FAA maintenance technicians, and any others who drive on the airport. Of the 24 originally-identified road projects, we have completed 22 (one at Butte has since been added). In addition, in 2008, to avoid runway crossings, we completed roads around the end of Runway 26 at Boulder and Runways 17R and 17L at Jeffco. The table below shows the three remaining projects.

Table 2-12:
Correcting
Potential
Vehicular
Runway-
Crossing
Problems

Location	State	Resolution	Planned FY Completion
Butte	MT	Road around ends of RW 15/33.	2010
Hayden	CO	Road around end of RW 10.	2010
Yakima	WA	Road around the end of RW 27.	2011
Discretionary funding needs shown in other sections.			

(Photo courtesy of Salt Lake City Intl. Airport)



NOISE IMPACT REDUCTION

Initiative

Fiscal Year 2009 Goal: Issue AIP grants that reduce by 488 the number of residents and school students exposed to greater than 65 day/night noise levels (DNL) at airports with approved Part 150 programs.

Progress

Land purchased for noise mitigation, but no longer needed, must be sold or leased for compatible uses. Proceeds are used for other noise projects or returned to the Aviation Trust Fund. To carry out this AIP requirement, we are inventorying land acquired for noise mitigation at airports around the region, and developing plans for its reuse.

We continue to support approved Part 150 noise-compatibility programs (NCP's) to reduce the number of people exposed to significant aircraft noise. The following table shows status and effects of NCP's in the region.

**Table 2-13:
Status of Part
150 NCP
Programs**

Location	Date of Last Approved NCP	Status of Current Part 150	Next Part 150 Completion Year	No. of Eligible People ¹ to Benefit from AIP Funding (w/in 65 DNL) Based on Published Noise Map	No. of People Remaining (w/in 65 DNL) in NCP
Salt Lake City, UT	1999	Completed			
Colorado Springs, CO	2001	Completed			
Seattle, WA	2002	Completed		31,000	5,500
Boeing Field, WA	2004	Completed		7,092 ²	7,092 ²
Jackson Hole, WY	2004	Completed			
Paine Field, WA	2004	Map completed			
Missoula, MT	2005	Completed		0	0
Boise, ID	2006	Completed		103 ²	103
Portland, OR	2007	Completed		1,280 ²	1,280
Great Falls, MT	2007	Completed		758	758
Centennial, CO	(2004) ³	Completed ³			

¹ Does not include people benefiting from prior NCP's.

² Number of people w/in 65 DNL; eligibility to be determined based on interior noise levels.

³ Publication in Federal Register in 2008.

The following table shows historic and anticipated discretionary funding for noise projects, and the number of people who benefited.

**Table 2-14:
People
Benefited
and
Discretionary
Funding**

People Benefited	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Number of Residents (SEA)	530	960	560	30	374	268	184 ¹				
Number of Students (SEA)	0	539	362	330	954	565	--				
Number of Residents (BFI)							263 ¹				
Number of Residents (GTF)							23 ¹	130	130	130	130
Total	530	1,499	922	360	1328	833	470 ¹	TBD	TBD	TBD	TBD
Discretionary Funding (millions)					\$17.0	\$15.1	\$26.7	\$28.5	\$32.1	\$15.1	\$22.9

¹ Source: SOAR, 2/25/09

NEW AIRPORTS AND RUNWAYS

Progress

Airport and runway openings are the exciting culmination of long, hard work by all of us: airport sponsors, the FAA and others, in partnership. We have listed runways and airports completed since 1999, including the new and long-awaited Runway 16R/34L at Seattle-Tacoma, completed in 2008.

**Table 2-15:
Completed
New
Runways and
Airports**

Location	Runway/ New Airport	Operational CY	Purpose
Wendover, UT	8/26	1999	Instrument runway capability
Greeley, CO	16/34	2000	Accommodate business jets
Holyoke, CO*	14/32	2000	Meet design standards
Choteau, MT*	Pave 14/32	2001	Meet design standards
Laurel, MT	4/22	2001	Meet design standards
Wray, CO*	17/35	2001	Meet design standards
Boise, ID	9/27	2002	Military use
Denver, CO	16R/34L	2003	Delay reduction
Hulett, WY*	New airport	2003	Community airport
Superior, MT*	12/30	2004	Meet design standards
Broadus, MT*	New airport	2005	Meet design standards
Nephi, UT*	16/34	2005	Meet design standards.
Eugene, OR	16L/34R	2005	Construct new runway, operational efficiency
Lincoln, MT*	4/22	2006	Meet design standards
Plains, MT*	12/30	2006	Meet design standards
Seattle-Tacoma, WA	16R/34L	2008	Provide dual-dependent arrivals in poor weather & increase efficiency in all weather

*Non-RAP locations.

The below table shows locations for planned new runways or airports.

**Table 2-16:
Proposed
New
Runways and
Airports**

Location	New Runway or Airport	Operational CY	Purpose
Runways Needed to Meet Airport Design Standards:			
Othello, WA *	7/25	2010	Meet design standards
Kalispell City, MT	14/32	2014	Meet design standards
Hamilton, MT	16/34	2014	Meet design standards
New Runways for Capacity/Upgrades:			
Hillsboro, OR	12L/30R	2011	Capacity – Increasing GA activity
Denver, CO	8L/26R	2015	Capacity and efficiency
Pullman, WA	New RW	TBD	Accommodate business jets
Salt Lake City, UT	Realign RW	TBD	Capacity
New Airports:			
Poplar, MT *	New replacement airport	2009	Meet design standards
St. George, UT	New airport	2011	Meet design standards
Monticello, UT *	New airport	TBD	Meet design standards
Hardin, MT *	New replacement airport	TBD	Meet design standards
Hailey, ID	New airport	TBD	Meet design standards
Burley, ID	New airport	TBD	Meet design standards
Thermopolis, WY *	New airport	TBD	Meet design standards

* Non-RAP locations.

PAVEMENT REHABILITATION PROGRAM

Initiative 1

Goal: *Correct deterioration due to alkali-silica reactivity (ASR).*

Progress

Several years ago, we observed deterioration on Portland cement concrete (PCC) pavements constructed using older standards and exposed to chemical deicers. After considerable research, we are correcting this problem at several locations. Our pavement rehabilitation initiative completed Grand Junction's apron in 2008. Table 2-17 lists airports with potential ASR problems.

**Table 2-17:
ASR
Locations**

Location	Areas affected by ASR	Comments
Casper, WY	Apron	Rehab complete by 2011
Cheyenne, WY	Apron	Rehab complete by 2011
Colorado Springs, CO	Parallel taxiway 'E' and connecting taxiways	Complete in 2010
Denver, CO	All runways, high-speed exits and aprons	Under study
Laramie, WY	Apron	Rehab complete by 2009
Riverton, WY	Terminal apron	WYDOT testing chemicals
Salt Lake City, UT	Runway and taxiways	Under study

Initiative 2

Goal: *Promote recycling of materials and support economical specifications.*

As part of our "green" emphasis, we are now allowing the recycling of all pavement layers, and the use of millings in base courses. We are also moving toward "harmonizing" state system plans to help identify and prioritize pavement preservation needs on a region-wide basis, which will aid our capital investment decision-making.

Funding

Table 2-18 shows the total discretionary funding required between 2009 and 2013 for all needed pavement rehabilitation projects at focus airports. We estimate \$130 million of the total funding required is due to ASR deterioration.

**Table 2-18:
Total Federal
Funds (FY
2008-2012)**

Facility Type	Sponsor Entitlement Funds (millions) ¹	Discretionary Funds (millions) ²	Total Cost (millions)
Apron	\$47.8	\$55.4	\$103.2
Runway	\$116.9	\$280.5	\$397.4
Taxiway	\$72.6	\$66.4	\$139.0
Grand Totals:	\$237.3	\$402.3	\$639.6

¹ Includes passenger, cargo and nonprimary entitlements.

² Includes state apportionment and discretionary.

Cheyenne Runway Reconstruction Project



SPECIAL-EMPHASIS NEEDS

Progress

The projects listed here require a significant commitment of FAA staff and funding resources, whether due to cost, environmental sensitivity, or community controversy. The following table lists project status and the RAP initiatives they address.

**Table 2-19:
Special-
Emphasis
Projects**

Location	Reference Initiative	Project	Discretionary Request	Project Years (CY)	Status
Jefferson County, CO	Runway safety	Taxiway reconfiguration to meet standards and reduce potential for runway incursions	See Table 2-20	2001-2009	Ph-II completed. PH-III underway
Portland, OR	RW extension	Extend RW 10L/28R 1,827'	See Table 2-20	2006-2010	EA to be complete in 2009
Telluride, CO	RSA and BJ standards	Improve airport to standards to meet current demand (Part 77, OFA's, RW gradients)	See Table 2-2	2003-2011	Environmental complete; land acquisition underway; designing phase I of construction
Hillsboro, OR	New RW for capacity	Construct 12L/30R	See Table 2-20	2007-TBD	Environmental to be done in FY-2010
St George, UT	New RW and RSA	Construct replacement airport for southern Utah	See Table 2-20	2004-2011	Construction and added design underway
Kalispell City, MT	Upgrade airport to standards	Remove broadcast tower, acquire land, and construct new RW.	TBD	2010-2015	Environmental completed. Funding will begin after determination is made for tower removal
Hamilton, MT	New RW to meet standards	Construct new RW	TBD	2010-2015	Environmental underway, expected completion in 2009
Aspen, WA	RW extension	To meet current use needs	See Table 2-9	2012	Environmental underway, expected completion in 2009
Hailey, ID	New airport to meet standards	Construct new airport	See Table 2-20	TBD	EIS underway, expected completion in 2010
Pullman, WA	Realign RW and upgrade to C-III standards	Upgrade from B-II to C-III	See Table 2-9	TBD	In the planning stage; expect to initiate environmental in FY-2010

Table 2-20 shows the discretionary funding required for these projects.

**Table 2-20:
Funding
(dollars in
millions, not
shown in
previous
sections)**

FY	2009	2010	2011	2012	2013	2014
Total Discretionary Funds (millions):	\$39.1	\$60.7	\$47.2	\$35.0	\$30.0	TBD