



Airport Master Plan Update



CHAPTER SIX AIRPORT DEVELOPMENT PLAN

This chapter of the Master Plan details the airport development program for Rapid City Regional Airport and identifies the proposed schedule for implementation of the plan recommendations. The airport development program was designed to provide for a logical and cost-effective plan, one keyed to the development needs as identified in the forecasting and facility requirements section of this report.

The program outlined on the following pages is the result of input from a variety of sources including airport staff, city staff, airport users, the FAA, and the project Technical Advisory Committee (TAC). Cost information was collected from similar recent construction projects in the area. *Estimates for each planning period are based on constant August, 1997 dollars.* A 25% overhead contingency for engineering, legal and administration has been added to each phase of the development program.

Funding for airport improvement projects come from several sources including the Federal Aviation Administration, passenger facility charges (PFC), state airport improvement funds, and local sources. The plan was structured and the cost estimates

were broken down to provide maximum flexibility to meet long-term airport development needs. The improvements outlined on the following pages and recommended by phase (short-range, 1998-2002; intermediate-range, 2003-2007; long-range 2008-2017) represent development which will yield a safe, efficient, unconstrained, and attractive public facility. The improvements outlined in the "short-range" phase have been broken down further to represent a yearly development program for the first five years. A total cost overview for the 20-year planning period is given in Table 6-1. Estimated costs for each phase are identified in Tables 6-2, 6-3, and 6-4.

6.1 Schedules For Proposed Development

An assessment of improvement priorities is an important element of any development plan. Forecasts of future activity and identification of facilities and equipment which affect the safety and reliability of the airport are the factors that determine the timing of needed improvements.

An overview of the major airport improvements priorities recommended by the consultant, as well as the timing of these improvements, is as follows:



Table 6-1 CAPITAL IMPROVEMENT COSTS Rapid City Regional Airport					
	Private * Costs	Local Costs	State Costs	FAA Costs	Total Cost
Phase I	\$ 0	\$537,943	\$410,443	\$7,770,474	\$8,718,860
Phase II	\$180,000	\$785,958	\$312,308	\$5,621,544	\$6,899,810
Phase III	\$1,280,000	\$1,894,430	\$550,430	\$9,907,740	\$13,632,600
Total 20-Year Development Costs	1,460,000	\$3,218,331	\$1,273,181	\$23,299,758	\$29,251,270

* Includes improvement items not eligible for State or Federal Funds; i.e., T-hangar construction, conventional hangar construction, private fuel facility improvements, etc..



Rapid City Regional Airport Development Summary

Phase I - Year One (1998 - 2002)

1. Runways and Taxiways
Overlay Taxiway Alpha
Overlay general aviation access taxiway

2. Operational Needs
Construct New Building for Snow Removal Equipment

Phase I - Year Two

1. Runways & Taxiways
Replace High Intensity Runway Lights (HIRL) - Runway 14-32

2. Operational Needs
Replace Aircraft Rescue and Fire Fighting (ARFF) Vehicle
Improve ARFF Building



Phase I - Year Three

1. Runways & Taxiways
Repair line-of-sight on Runway 05/23 and overlay 3"
Overlay Taxiway B

2. Property & Easements
Relocate County Road
Acquire Property

Phase I - Year Four

1. Airport Access
Northern Access Road I-90 (on airport property)
Map Airport Industrial/Office Park Area

2. Operational Needs
Replace Snow Blower

Phase I - Year Five

1. Runways & Taxiways
Runway, Taxiway and Apron Repairs

2. Commercial Service Terminal
Construct Canopy to Rental Car Ready Lot
Construct Canopy to Main Parking Lot



**Table 6-2
ESTIMATED DEVELOPMENT COSTS
PHASE ONE
Rapid City Regional Airport**

	Private	Local	State	Federal	Total
Taxiway Alpha Overlay	\$ -	\$ 6,004.00	\$ 6,004.00	\$ 108,072.00	\$ 120,080.00
G.A. Taxiway Overlay	\$ -	\$ 7,255.00	\$ 7,255.00	\$ 130,590.00	\$ 145,100.00
New Snow Removal Building	\$ -	\$ 55,000.00	\$ 55,000.00	\$ 990,000.00	\$ 1,100,000.00
Total Year One	\$ -	\$ 68,259.00	\$ 68,259.00	\$ 1,228,662.00	\$ 1,365,180.00
	Private	Local	State	Federal	Total
Replace HIRL's	\$ -	\$ 19,108.00	\$ 19,108.00	\$ 343,944.00	\$ 382,160.00
Improve ARFF Building	\$ -	\$ 2,500.00	\$ 2,500.00	\$ 45,000.00	\$ 50,000.00
Replace ARFF Vehicle	\$ -	\$ 22,500.00	\$ 22,500.00	\$ 405,000.00	\$ 450,000.00
Total Year Two	\$ -	\$ 44,108.00	\$ 44,108.00	\$ 793,944.00	\$ 882,160.00
	Private	Local	State	Federal	Total
Repair Runway 05/23 & 3" Overlay	\$ -	\$ 51,700.00	\$ 51,700.00	\$ 930,600.00	\$ 1,034,000.00
Overlay Taxiway B	\$ -	\$ 16,207.00	\$ 16,207.00	\$ 291,726.00	\$ 324,140.00
County Road Relocation	\$ -	\$ 10,000.00	\$ 10,000.00	\$ 180,000.00	\$ 200,000.00
Land Acquisition	\$ -	\$ 2,500.00	\$ 2,500.00	\$ 45,000.00	\$ 50,000.00
Total Year Three	\$ -	\$ 80,407.00	\$ 80,407.00	\$ 1,447,326.00	\$ 1,608,140.00
	Private	Local	State	Federal	Total
Map Airport Industrial Office Area	\$ -	\$ 1,068.50	\$ 1,068.50	\$ 19,233.00	\$ 21,370.00
Northern Access Road I-90	\$ -	\$ 93,925.50	\$ 93,925.50	\$ 1,690,659.00	\$ 1,878,510.00
Replace Snow Blower	\$ -	\$ 17,500.00	\$ 17,500.00	\$ 315,000.00	\$ 350,000.00
Total Year Four	\$ -	\$ 112,494.00	\$ 112,494.00	\$ 2,024,892.00	\$ 2,249,880.00
	Private	Local	State	Federal	Total
Runway, Taxiway & Apron Repairs	\$ -	\$ 105,175.00	\$ 105,175.00	\$ 1,893,150.00	\$ 2,103,500.00
Canopy to Rental Car Ready Lot *	\$ -	\$ 15,000.00	\$ -	\$ 45,000.00	\$ 60,000.00
Canopy to Main Parking Lot *	\$ -	\$ 112,500.00	\$ -	\$ 337,500.00	\$ 450,000.00
Total Year Five	\$ -	\$ 232,675.00	\$ 105,175.00	\$ 2,275,650.00	\$ 2,613,500.00
Total Phase One	\$ -	\$ 537,943.00	\$ 410,443.00	\$ 7,770,474.00	\$ 8,718,860.00

* Note: Terminal projects funded 75% FAA - 25% Local Split



**Rapid City Regional Airport
Development Summary**

**Phase II
(2003 - 2007)**

1. Runways and Taxiways
Reconstruct Taxiway Alpha and add run-up area
Slurry seal Runway 05-23 and Taxiway B
Runway, Taxiway and Apron joint and crack fill
Install Differential GPS

2. Terminal Area Development
Expand Auto Parking 160 spaces
Overlay Existing Parking Lot

3. General Aviation Area
Construct 10 unit T-hangar
Overlay FBO auto parking near former terminal



**Table 6-3
ESTIMATED DEVELOPMENT COSTS
PHASE TWO
Rapid City Regional Airport**

	<u>Private</u>	<u>Local</u>	<u>State</u>	<u>Federal</u>	<u>Total</u>
Reconstruct Taxiway Alpha and Run-up Area	\$ -	\$ 261,067.50	\$ 261,067.50	\$ 4,699,215.00	\$ 5,221,350.00
Slurry Seal Runway 05/23 and Taxiway B	\$ -	\$ 6,409.50	\$ 6,409.50	\$ 115,371.00	\$ 128,190.00
Runway, Taxiway & Apron Maintenance	\$ -	\$ 38,264.50	\$ 38,264.50	\$ 688,761.00	\$ 765,290.00
Comm. Service Auto Parking Expansion and Overlay	\$ -	\$ 423,650.00	\$ -	\$ -	\$ 423,650.00
Install Differential GPS	\$ -	\$ 50,000.00	\$ -	\$ -	\$ 50,000.00
Construct Ten Unit T-Hangar	\$ 180,000.00	\$ -	\$ -	\$ -	\$ 180,000.00
Overlay FBO Parking Near Old Terminal	\$ -	\$ 6,566.50	\$ 6,566.50	\$ 118,197.00	\$ 131,330.00
Total Phase Two	\$ 180,000.00	\$ 785,958.00	\$ 312,308.00	\$ 5,621,544.00	\$ 6,899,810.00



**Rapid City Regional Airport
Development Summary**

**Phase III
(2008-2017)**

1. Terminal Development
Install additional jetway
Install additional baggage carousel

2. Runways and Taxiways
Construct unbonded overlay on Runway 14-32

3. Airport Commercial Area
Connect Airport to sewer treatment plant
Remove former terminal building
Construct new ARFF building
Construct railroad spur to terminal building and construct loading canopy

4. General Aviation Area
Expand General Aviation aircraft parking apron
Construct 10 unit T-hangar



**TABLE 6-4
ESTIMATED DEVELOPMENT COSTS
PHASE THREE
Rapid City Regional Airport**

	Private	Local	State	Federal	Total
Install Additional Boarding Bridge	\$ -	\$ 339,000.00	\$ -	\$ -	\$ 339,000.00
Install Additional Baggage Carousel	\$ -	\$ 200,000.00	\$ -	\$ -	\$ 200,000.00
Unbonded 6" Overlay Runway 14-32	\$ -	\$ 392,262.50	\$ 7,060,725.00	\$ 7,845,250.00	\$ 7,845,250.00
Connect to Sewer Treatment Plant	\$ -	\$ 805,000.00	\$ -	\$ -	\$ 805,000.00
Construct New ARFF Building	\$ -	\$ 80,000.00	\$ 80,000.00	\$ 1,440,000.00	\$ 1,600,000.00
Expand G.A. Ramp	\$ -	\$ 49,449.50	\$ 49,449.50	\$ 890,091.00	\$ 988,990.00
Remove Former Terminal Building	\$ -	\$ 28,718.00	\$ 28,718.00	\$ 516,924.00	\$ 574,360.00
Railroad Spur to Terminal Building and Canopy	\$ 1,100,000.00	\$ -	\$ -	\$ -	\$ 1,100,000.00
Construct Ten Unit T-Hangar	\$ 180,000.00	\$ -	\$ -	\$ -	\$ 180,000.00
Total Phase Three	\$ 1,280,000.00	\$ 1,894,430.00	\$ 550,430.00	\$ 9,907,740.00	\$13,632,600.00