



## Chapter 6- Capital Improvement Program

The capital Improvement Program involves the compilation of a schedule of recommended capital development projects, as well as their associated probable costs, that are based on the findings of the demand forecast and facility requirements analysis. The implementation plan identifies the improvements necessary to accommodate the projected aviation demand throughout the 20 year planning period.

### Improvement Program Phasing

The capital improvement program for GCN will be based on short (0-5 year), intermediate (6-10 year) and long term (11-20 year) development requirements. The short term development phase, ideally, serves as an immediate action program which recognizes Federal and state funding capabilities. For this reason, the 0-5 year phase of development is paid special attention to in that projects are outlined by year due to the critical nature of the improvements and the necessary financial investments that accompany each improvement item.

The short term improvement plan also plays a key role in formulating the airport capital improvement program (ACIP) submitted to the FAA indicating development priorities and costs for the Airport. Aside from assisting with the development of the ACIP, the short term implementation plan should allow for additional capital improvement items which contribute to the overall operational safety and efficiency of the facility such as pavement maintenance and rehabilitation, ARFF and airport operations improvements, as well as terminal area and passenger accommodations.

The intermediate development plan consists of improvements that will affect the overall geometry and layout of the facility on the airside, as well as the landside or terminal area. Finally, the long-range development phase is developed in an effort to identify the ultimate role of the Airport including a planning concept that will eventually accommodate the ultimate facility requirements.

### Improvement Project Scheduling

Decisions regarding project scheduling will evolve from numerous technical considerations involved with implementation of the capital improvement plan. For instance, care and planning must be given to the amount of time and effort that will be needed to acquire land and develop engineering, architectural and construction design reports and plans in an effort to satisfy aviation demands. For this reason, the timing of particular capital development projects presented in this chapter are merely suggested planning schedules and may require some variance and reprioritizing, particularly during the 11-20 year phase of airport development. Demand for certain landside or airside facilities and the economic feasibility of their development are considered prime factors in determining the timing and construction of individual projects throughout the 20 year planning period.

## Capital Improvement Cost Estimates

The costs estimated for the capital improvement plan for all three phases of development at GCN are based on the current dollar value without consideration being given to inflation. Facility development and construction costs are generated based on unit prices which correspond to the breadth and size of the particular capital improvement item. Likewise, the cost estimates for improvement takes into consideration the unit costs as they relate to the northern Arizona region, airport facility and development site. As with project scheduling, financial considerations such as the availability and timing of capital financing have the ability to impact the scheduling priority of certain revenue critical improvements.

The capital improvement cost estimates for GCN are intended to be utilized for planning purposes only and are recommended not to be considered as construction cost estimate. An engineer's opinion of probable construction costs are compiled following the successful preparation of detailed construction design documentation.

## Capital Development Funding Sources

Cost estimates for the GCN capital improvement plan are categorized for each project item in accordance with the total cost of each improvement eligible for Federal funding through the FAA under the Airport Improvement Program (AIP), as well as the portion of funding that the airport sponsor, ADOT, Aeronautics Division, will be responsible for financing.

Furthermore, this section of the implementation plan will discuss not only the FAA's AIP but also alternative methods of funding future capital development including Passenger Facility Charges (PFC), Arizona Pavement Preservation Program (APPP) and the Arizona Loan Program.

### **Airport Improvement Program (AIP)**

Originally authorized by the *Airport and Airway Improvement Act of 1982*, the AIP program is funded through the Airport and Airway Trust Fund (enacted by legislation in 1970), which received 100 percent of its funding from aviation generated user fees including passenger and facility fees, as well as cargo and fuel taxes. The AIP provides Federal entitlement and discretionary funding grants to be used for AIP eligible projects at public use airports that serve civil aviation.

*Primary Entitlement Funds-* As a small hub primary airport, GCN qualifies for Primary Entitlement funds that are apportioned based on the number of reported passenger enplanements at the Airport two years prior to the current grant/ fiscal year. Furthermore, during any fiscal year in which the total amount of system-wide apportionments from the AIP and Aviation Trust Fund exceeds \$3.2 billion dollars, the current reauthorization act (*Vision 100- The Century of Aviation Reauthorization Act*) allots primary entitlement funds to be allocated to GCN ranging between a minimum of \$1 million to a maximum of \$26 million. Vision 100 also authorizes entitlement funds for primary airports to be available not only during the initial year of allocation but will be carried over for the two



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remaining years immediately following. In essence, GCN's primary entitlement funding availability during fiscal years (FY) 05, 06 and 07 will surpass \$3 million. If entitlement funds are not utilized for AIP eligible improvements the money will be recycled back into the Aviation Trust Fund.

In an attempt to provide incentives for airport sponsors to continue investing in airport improvement projects, Vision 100 increased the Federal portion of AIP grants eligible to fund project costs to 95 percent while the remaining five (5) percent of improvement costs to be funded through non-Federal and local/state sources. It is assumed that given the success in recent years of the AIP funding process as it relates to system-wide improvements, that a program similar to that of the AIP will be in place throughout the planning period allowing funding opportunities to remain at full formula values.

*Discretionary Funds-* Discretionary funds are of two types. The first, Set-Aside Funds, are reserved for noise compatibility planning and implementing noise compatibility programs. The second type of discretionary funds includes those that are remaining after the apportionments are made and set-asides are accommodated. Of these remaining funds, 75 percent, are reserved for preserving and enhancing capacity, safety, security and carrying out noise compatibility planning and programs at primary and reliever airports. The remaining 25 percent of the funds are known as remaining or pure discretionary, may be used at any airport for any AIP eligible improvement.

## **Passenger Facility Charge (PFC)**

The *Aviation Safety and Capacity Act of 1990* authorized commercial service airport enplaning 2,500 passengers annually to impose a PFC of up to \$3.00 per each paying passenger enplaned at an airport. The *Wendall H. Ford Aviation Investment and Reform Act for the 21<sup>st</sup> Century (AIR-21)*, enacted in 2000, modified the PFC program allowing an increase in the fee to \$4.50 per enplaned passenger.

The current FAA PFC program allows a commercial service airport the authority to collect a "passenger fee" from enplaned passengers provided that the amount and duration of the fee does not result in excess revenue; the proceeds of the PFC are utilized for AIP eligible improvements; preserves or enhances capacity, safety or security, reduces noise or encourages enhanced airline competition; and is adequately justified. PFCs may be used to offset debt service incurred during the completion of an eligible improvement. Additionally, the costs of administering a PFC program are eligible for inclusion in the allowable PFC costs of implementing the program.

## **Arizona Pavement Preservation Program (APPP)**

The main purpose of the APPP is to protect, extend and maximize the useful life of the state's airport system's pavement. In accordance with Public Law 103-305 airport sponsors are required to have a pavement maintenance and management system in place in order to request AIP funds for rehabilitation or reconstruction projects. The ADOT, Aeronautics Division (ADOT) has successfully created the Arizona Airport Pavement



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Management System (APMS), based on five year increments, to preserve the airport system's pavement infrastructure.

In order to be eligible for APPP state funds, an airport must have a paved runway and be a public use facility. Additionally, the airport sponsor must certify and annual maintenance program with ADOT. Once a project has successfully been approved by the State Transportation Board and the sponsor has signed an Inter-Government agreement with ADOT to participate in the APPP, the project will appear within the State's Five-Year Airport Development Program.

Eligible project types that are included within the APPP include crack sealing, slurry sealing and thin overlays and only one maintenance project per airport will identified on an annual basis. Structural overlays and complete reconstruction projects are not eligible for APPP funds due to the limited funding resources within the program. Funding for eligible projects must also be completed within 12 months or be forfeited back to the program to be redispersed at a later date.

The Grand Canyon National Park Airport is a member facility of the APPP and has identified an eligible pavement rehabilitation project to be completed in 2007.

## Arizona Loan Program

Enacted in 1990 by the State Transportation Board, the Arizona Loan Program is designed to utilizes cash balances within the State Aviation Fund by providing means for airports to borrow matching funds for AIP grants; provide loans for revenue generating projects that are eligible under both the AIP and state programs; and provide the opportunity for airports to borrow funds for economic development projects that assist the airport in becoming financially self-sufficient.

The five basic eligibility requirements of the Loan Program include an eligible sponsor such as a city, town, county, authority or political subdivision; the improvement must be an eligible project; offering statewide system enhancement such as increasing safety, improving air service and preserving the state aviation system; demonstration of the need and ability to successfully finance the loan; and the project must demonstrate engineering and financial feasibility and economic justification.

Servicing an airport loan includes repaying the loan, including interest, to a Loan Program Revolving Account with the Arizona State Aviation Fund. The loan is also repayable over a period not to exceed 25 years. Additionally, the maximum loan amount for Federal, state and local projects will be based on and not exceed the amount of the sponsor's share of an AIP funding grant. Loans amounts for economic development and revenue generating projects, on the other hand, are at the discretion of the State Transportation Board.

## Local Funding

Local funding sources are those comprised of revenues that the airport sponsor is able to expend for various capital improvements, as well as monies that are contributed by private individuals or companies commonly known as private/ third parties.



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*Airport Revenue-* Local funding mechanisms utilized for financing capital improvements at GCN will be comprised of airport operating revenue once operational expenditures have been accounted for. Even when the Airport shows a revenue surplus for any given year, the remaining funds are generally not significant enough to fully fund a particular improvement. With the *Vision 100* reauthorization of the 95 percent Federal versus the five (5) percent local share, it is anticipated that this incentive will provide more favorable opportunities to utilize larger pools of local funding sources from airport revenues to finance capital improvements at the facility.

*Private/ Third Party Financing-* This method of local funding is utilized primarily by private individuals or companies for improvements that will be used by a private business or company for either public or private use, in some instances. Privately financed airport improvements are ineligible for AIP funding grants. Improvement projects typically funded through third party funds includes hangars, exclusive aircraft parking aprons and helipads, industrial or commercial development areas, non-aviation related commercial development, as well as various other airport improvements.

## Capital Improvement Development Costs

The capital improvement cost estimates for the Grand Canyon National Park Airport are presented within by development phase within **Table 6.1** (0-5 year short term phase), **Table 6.2** (6-10 year intermediate phase) and **Table 6.3** (11-20 year long term phase). The 0-5 year planning period is categorized by year showing capital improvement for each respective year from 2005 to 2009. Each year of Phase I of capital development includes engineering, inspection, legal and administrative costs which total 25 percent of the total cost for each year of the development period. Phases II and III of the airport development plan includes these contingent costs added to the sum of the costs for the entire development phase. Additionally, Phase II and III development costs are categorized by airport component (i.e. Airfield/ Airside, Terminal Area/ Apron Area, etc.).

## FAA Capital Improvement Program (ACIP)

The overall purpose of the implementation plan's project descriptions, phasing and associated development costs is to provide a reasonable expectation of projected capital improvements that will be utilized by the FAA and ADOT for purposes of project prioritization and financial programming. Upon publication, the implementation plan presented in this chapter, due to variances in past capital development priorities, will differ to some degree from the 5 year ACIP worksheets currently maintained by the FAA and ADOT.



## Capital Improvement Program Expenditure Summary

The capital improvement program formulated for the Grand Canyon National Park Airport, based on current and historic aviation trends at the facility, projected aviation demand and state priorities, provides pertinent information regarding necessary capital improvements to accommodate airport demand; the estimated time frame for construction of such improvements; and methods by which to fund capital improvements. As ADOT priorities evolve and available funding levels fluctuate throughout the planning period, the GCN implantation plan is anticipated to vary somewhat from the recommended projects, costs and timing schedules presented in this chapter.

The financial implications of FAA, state and local investments in capital improvements at GCN are summarized within **Table 6.4**. **Table 6.4** presents the total expected capital expenditures during the short, intermediate and long term planning periods which include the recommended financing method (i.e. Federal AIP, state and /or local funding).



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**Table 6.1**  
**Phase I (0-5 Year) Capital Improvement Program Cost Estimates**  
**Grand Canyon National Park Airport**

Project Description	Projected Local Share (5%)	Projected Federal Share (95%)	Projected Total Cost (100%)
<b>Year 1</b>			
Mark Runway 3-21	\$ 6,000	\$ 114,000	\$ 120,000
Mark Taxiway System (A, B, C, D, E, F, G and P)	\$ 1,000	\$ 26,000	\$ 28,000
Overlay (1.5") Apron A01GC-10	\$ 5,000	\$ 88,000	\$ 92,000
Replace Idaho Norland 'Blower-2' Rotary Snow Plow	\$ 13,000	\$ 238,000	\$ 250,000
Replace Motor Grader 'Grader-1'	\$ 200,000	\$ 0.00	\$ 200,000
Replace 'Ops-2' Truck	\$ 5,000	\$ 0.00	\$ 5,000
Replace 'Ops-4' Truck	\$ 5,000	\$ 0.00	\$ 5,000
Conduct Terminal Area Plan	\$ 10,000	\$ 190,000	\$ 200,000
<b>Year 1 Cost</b>	<b>\$ 245,000</b>	<b>\$ 656,000</b>	<b>\$ 901,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 61,000</b>	<b>\$ 164,000</b>	<b>\$ 225,000</b>
<b>Year 1 Total Cost</b>	<b>\$ 306,000</b>	<b>\$ 820,000</b>	<b>\$ 1,126,000</b>
<b>Year 2</b>			
Dismantle Abandoned ATCT	\$ 3,000	\$ 48,000	\$ 50,000
Rehabilitate Terminal Area Access Road	\$ 6,000	\$ 105,000	\$ 110,000
Replace 'Mower-1' Tractor	\$ 75,000	\$ 0.00	\$ 75,000
Replace 'Ops-9' Truck	\$ 5,000	\$ 0.00	\$ 5,000
Conduct Wildlife Attractant/ Ecological Study	\$ 5,000	\$ 95,000	\$ 100,000
<b>Year 2 Cost</b>	<b>\$ 94,000</b>	<b>\$ 248,000</b>	<b>\$ 342,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 24,000</b>	<b>\$ 62,000</b>	<b>\$ 86,000</b>
<b>Year 2 Total Cost</b>	<b>\$ 118,000</b>	<b>\$ 310,000</b>	<b>\$ 428,000</b>
<b>Year 3</b>			
Rehabilitate (Mill/ Overlay) Runway 3-21	\$ 59,000	\$ 1,118,000	\$ 1,177,000
Construct ARFF/ SRE/ Maintenance/ Operations Facility	\$ 175,000	\$ 3,325,000	\$ 3,500,000
Rehabilitate (Crack/ Slurry Seal) Terminal Area Parking Facilities	\$ 1,000	\$ 22,000	\$ 24,000
Replace 'Charlie-2' ARFF Vehicle (1,500 gallon Capacity)	\$ 30,000	\$ 570,000	\$ 600,000
<b>Year 3 Cost</b>	<b>\$ 265,000</b>	<b>\$ 5,035,000</b>	<b>\$ 5,300,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 66,000</b>	<b>\$ 1,259,000</b>	<b>\$ 1,325,000</b>
<b>Year 3 Total Cost</b>	<b>\$ 331,000</b>	<b>\$ 6,294,000</b>	<b>\$ 6,625,000</b>
<b>Year 4</b>			
Mark Taxiway System (A, B, C, D, E, F, G and P)	\$ 1,000	\$ 26,000	\$ 28,000
Mark Apron A01GC-10	\$ 1,000	\$ 4,000	\$ 5,000
Acquire Class-II Rotary Snow Plow & Material Spreader	\$ 13,000	\$ 238,000	\$ 250,000
Acquire one (1) Medium-Sized Displacement Plow	\$ 1,000	\$ 19,000	\$ 20,000
Replace 'Ops-6' Truck	\$ 5,000	\$ 0.00	\$ 5,000
Environmental Study of Proposed Runway Extension	\$ 8,000	\$ 143,000	\$ 150,000
<b>Year 4 Cost</b>	<b>\$ 29,000</b>	<b>\$ 430,000</b>	<b>\$ 459,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 7,000</b>	<b>\$ 108,000</b>	<b>\$ 115,000</b>
<b>Year 4 Total Cost</b>	<b>\$ 36,000</b>	<b>\$ 538,000</b>	<b>\$ 574,000</b>
<b>Year 5</b>			
Rehabilitate (Clean/ Seal Joints) Apron A01GC-15	\$ 1,000	\$ 7,000	\$ 8,000
Mark Apron Areas A01GC-10 and A01GC-20	\$ 2,000	\$ 41,000	\$ 43,000
Construct Phase I Terminal Building Improvements *	\$ 4,561,000	\$ 3,732,000	\$ 8,293,000
Construct Phase I Terminal Area Parking Improvements **	\$ 22,000	\$ 418,000	\$ 440,000
Acquire Two (2) Self Propelled Power Sweepers	\$ 300,000	\$ 0.00	\$ 300,000
Replace 'Ops-7' Truck	\$ 5,000	\$ 0.00	\$ 5,000
<b>Year 5 Cost</b>	<b>\$ 4,891,000</b>	<b>\$ 4,198,000</b>	<b>\$ 9,089,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 1,223,000</b>	<b>\$ 1,050,000</b>	<b>\$ 2,273,000</b>
<b>Year 5 Total Cost</b>	<b>\$ 6,114,000</b>	<b>\$ 5,248,000</b>	<b>\$ 11,362,000</b>
<b>Total Phase I Capital Development Cost</b>	<b>\$ 6,905,000</b>	<b>\$ 13,210,000</b>	<b>\$ 20,115,000</b>

(\*) Assumes Federal AIP/ ADOT share of terminal building development costs are 45 percent and 55 percent, respectively.

(\*\*) Assumes parking facilities are not revenue generating thereby making improvements eligible for AIP funding grants.

Note: All figures/costs are rounded to the nearest thousand for planning purposes and are based on 2004 dollar value.

Source: BWR Phase I Capital Improvement Costs, September 2004.



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**Table 6.2**  
**Phase II (6-10 Year) Capital Improvement Program Cost Estimates**  
**Grand Canyon National Park Airport**

Project Description	Projected Local Share (5%)	Projected Federal Share (95%)	Projected Total Cost (100%)
<b>Airside/ Airfield</b>			
Rehabilitate (Crack/ Slurry Seal) Runway 3-21	\$ 24,000	\$ 447,000	\$ 471,000
Construct Runway 3-21 Preferred Alternative Improvements	\$ 190,000	\$ 3,601,000	\$ 3,791,000
Acquire Approximately 3 Acres to South of Runway 3 Threshold*	--	--	--
Construct Runway 3 and 21 Bypass/ Holding Bays	\$ 3,000	\$ 48,000	\$ 51,000
Mitigate Water Rights Legal Action- Irrigation Pond (Rwy 3 End)**	\$ 1,000,000	\$ 0.00	\$ 1,000,000
Rehabilitate (Crack/ Slurry Seal) Taxiway P	\$ 13,000	\$ 239,000	\$ 252,000
Rehabilitate (Crack/ Slurry Seal) Taxiway System (A, B, C, D, E, F and G)	\$ 4,000	\$ 72,000	\$ 76,000
<b>Airfield Improvement Development Cost</b>	<b>\$ 1,234,000</b>	<b>\$ 4,407,000</b>	<b>\$ 5,641,000</b>
<b>Terminal Area/ Apron</b>			
Rehabilitate (Clean/ Seal Joints) Apron A01GC-15	\$ 1,000	\$ 7,000	\$ 8,000
Rehabilitate (Crack/ Slurry Seal) Apron A01GC-20	\$ 17,000	\$ 330,000	\$ 347,000
Rehabilitate (Crack/ Slurry Seal) Apron A01GC-10	\$ 2,000	\$ 36,000	\$ 38,000
<b>Terminal Area/ Apron Development Cost</b>	<b>\$ 20,000</b>	<b>\$ 373,000</b>	<b>\$ 393,000</b>
<b>Landside/ Terminal Building</b>			
Construct Phase II Terminal Building Improvements***	\$ 202,000	\$ 165,000	\$ 367,000
Construct Phase II Terminal Area Parking Improvements****	\$ 6,000	\$ 107,000	\$ 113,000
Overlay (2") Terminal Area Access Road	\$ 18,000	\$ 340,000	\$ 358,000
Overlay (2") Terminal Area Parking Area ('98 Improvements)	\$ 4,000	\$ 73,000	\$ 77,000
Remove/ Relocate Papillion Structure from Runway 21 RPZ*****	--	--	--
Realign North Access Road Outside of Runway 21 OFA*****	--	--	--
<b>Landside/ Terminal Building Development Cost</b>	<b>\$ 230,000</b>	<b>\$ 685,000</b>	<b>\$ 915,000</b>
<b>Support Facilities</b>			
Replace 'Rescue-1' ARFF Quick Response Vehicle	\$ 5,000	\$ 95,000	\$ 100,000
Replace Plow Trucks 'Plow-1' and 'Plow-2'	\$ 5,000	\$ 95,000	\$ 100,000
Replace Operations Vehicles '3', '11', '10', '5' and '8'	\$ 25,000	\$ 0.00	\$ 25,000
Acquire One (1) Medium-Sized Displacement Plow	\$ 1,000	\$ 19,000	\$ 20,000
Acquire One (1) Self Propelled Power Sweeper	\$ 150,000	\$ 0.00	\$ 150,000
<b>Support Facility Development Cost</b>	<b>\$ 186,000</b>	<b>\$ 209,000</b>	<b>\$ 395,000</b>
<b>Non-Operational Capital Development</b>			
Update Airport Master Plan	\$ 25,000	\$ 475,000	\$ 500,000
<b>Non-Operational Development Cost</b>	<b>\$ 25,000</b>	<b>\$ 475,000</b>	<b>\$ 500,000</b>
<b>Phase II Development Cost</b>	<b>\$ 1,695,000</b>	<b>\$ 6,149,000</b>	<b>\$ 7,844,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 424,000</b>	<b>\$ 1,537,000</b>	<b>\$ 1,961,000</b>
<b>Phase II Capital Development Total Cost</b>	<b>\$ 2,119,000</b>	<b>\$ 7,686,000</b>	<b>\$ 9,805,000</b>

(\*) Land acquisition costs are not calculated. This is based on the lack of information regarding the appraised values of prime U.S. forest land.

(\*\*) Estimated contingency allowed for mitigation of filling the irrigation pond to accommodate the extension of the Runway 3 threshold, as well as ensuing engineering/ environmental projects to restore water supply to surrounding farmlands.

(\*\*\*) Assumes Federal AIP/ ADOT share of terminal building development costs are 45 percent and 55 percent, respectively.

(\*\*\*\*) Assumes parking facilities are not revenue generating thereby making improvements eligible for AIP funding grants.

(\*\*\*\*\*) Future costs will be determined as part of the Terminal Area Plan project completed during Phase I (Year 1).

(\*\*\*\*\*) Costs associated with realignment of north terminal access road will be determined as part of the Terminal Area Plan project completed during Phase I (Year 1).

Note: All figures/costs are rounded to the nearest thousand for planning purposes and are based on 2004 dollar value.

Source: BWR Phase II Capital Improvement Costs, September 2004.



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**Table 6.3**  
**Phase III (11-20 Year) Capital Improvement Program Cost Estimates**  
**Grand Canyon National Park Airport**

Project Description	Projected Local Share (5%)	Projected Federal Share (95%)	Projected Total Cost (100%)
<b>Airside/ Airfield</b>			
Overlay (1.5") Runway 3-21	\$ 57,000	\$ 1,088,000	\$ 1,145,000
Overlay (1.5") Taxiway System (B, C, D, F, G and P)	\$ 37,000	\$ 710,000	\$ 747,000
Reconstruct/ Reconfigure Taxiway E	\$ 6,000	\$ 106,000	\$ 111,000
<b>Airfield Improvement Development Cost</b>	<b>\$ 100,000</b>	<b>\$ 1,904,000</b>	<b>\$ 2,004,000</b>
<b>Terminal Area/ Apron</b>			
Rehabilitate (Slurry/ Crack Seal) Apron A01GC-10	\$ 2,000	\$ 36,000	\$ 39,000
Overlay (1.5") Apron A01GC-20	\$ 32,000	\$ 601,000	\$ 633,000
Rehabilitate (Clean/ Seal Joints) Apron A01GC-15	\$ 1,000	\$ 7,000	\$ 8,000
<b>Terminal Area/ Apron Development Cost</b>	<b>\$ 35,000</b>	<b>\$ 644,000</b>	<b>\$ 679,000</b>
<b>Landside/ Terminal Building</b>			
Construct Phase III Terminal Building Improvements *	\$ 964,000	\$ 789,000	\$ 1,754,000
Construct Phase III Terminal Area Parking Improvements **	\$ 10,000	\$ 188,000	\$ 198,000
Construct Terminal Building Access Road from AZ Hwy 64	\$ 6,400	\$ 120,600	\$ 127,000
Rehabilitate Terminal Area Access Road	\$ 6,000	\$ 106,000	\$ 110,000
Overlay (2") Terminal Area Auto Parking- Phase I Improvements	\$ 4,000	\$ 76,000	\$ 80,000
Rehabilitate (Crack/ Slurry Seal) Terminal Area Auto Parking- 1998 Improvements	\$ 2,000	\$ 30,000	\$ 32,000
Rehabilitate (Crack/ Slurry Seal) Terminal Area Auto Parking- Phase II Improvements	\$ 1,000	\$ 8,000	\$ 8,000
<b>Landside/ Terminal Building Development Cost</b>	<b>\$ 993,400</b>	<b>\$ 1,317,600</b>	<b>\$ 2,311,000</b>
<b>Support Facilities</b>			
Fuel Storage Facility Improvements	\$ 500,000	\$ 0.00	\$ 500,000
Replace 'Blower-1' Rotary Snowplow	\$ 13,000	\$ 238,000	\$ 250,000
Replace 'Ops-1' Truck	\$ 5,000	\$ 0.00	\$ 5,000
Acquire One (1) Medium-Sized Displacement Plow	\$ 1,000	\$ 19,000	\$ 20,000
Acquire One (1) Self Propelled Power Sweeper	\$ 150,000	\$ 0.00	\$ 150,000
<b>Support Facility Development Cost</b>	<b>\$ 669,000</b>	<b>\$ 257,000</b>	<b>\$ 926,000</b>
<b>Non-Operational Capital Development</b>			
Water System Utility Improvements	\$ 500,000	\$ 0.00	\$ 500,000
Electrical System Utility Improvements	\$ 500,000	\$ 0.00	\$ 500,000
<b>Non-Operational Development Cost</b>	<b>\$ 1,000,000</b>	<b>\$ 0.00</b>	<b>\$ 1,000,000</b>
<b>Phase III Development Cost</b>	<b>\$ 2,796,400</b>	<b>\$ 4,122,600</b>	<b>\$ 6,919,000</b>
<b>Engineering, Legal and Administrative Fees (25% of Cost)</b>	<b>\$ 699,100</b>	<b>\$ 1,030,700</b>	<b>\$ 1,729,800</b>
<b>Phase III Capital Development Total Cost</b>	<b>\$ 3,495,500</b>	<b>\$ 5,153,300</b>	<b>\$ 8,648,800</b>
<b>Total GCN Capital Improvement Plan Development Costs</b>	<b>\$ 12,519,500</b>	<b>\$ 26,049,300</b>	<b>\$ 38,568,800</b>

(\*) Assumes Federal AIP/ ADOT share of terminal building development costs are 45 percent and 55 percent, respectively.

(\*\*) Assumes parking facilities are not revenue generating thereby making improvements eligible for AIP funding grants.

Note: All figures/costs are rounded to the nearest thousand for planning purposes and are based on 2004 dollar value.

Source: BWR Phase III Capital Improvement Costs, September 2004.



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**Table 6.4**  
*Capital Improvement Program Expenditure Summary*  
*Grand Canyon National Park Airport*

Planning Phase	Funding Source(s)		Total Development Cost
	Federal/ AIP Share	State/ Local Share	
Phase I (0-5 Years)- Short Term	\$ 13,210,000	\$ 6,905,000	\$ 20,115,000
Phase II (6-10 Years)- Intermediate Term	\$ 7,686,000	\$ 2,119,000	\$ 9,805,000
Phase III (11-20 Years)- Long Term	\$ 5,153,300	\$ 3,495,500	\$ 8,648,800
<b>TOTAL</b>	<b>\$ 26,049,300</b>	<b>\$ 12,519,500</b>	<b>\$ 38,568,800</b>

**Source:** BWR Capital Improvement Program Expenditure Summary, September 2004.

## Long-Term Capital Improvement Cost Estimates

**Table 6.5** highlights the long-range capital improvement development options discussed within the *Alternatives Analysis*. Included is an ultimate 1,750 automobile and 90 RV parking facility proposed by the NPS and GCRR as part of the *Report to Congress on Transportation Alternatives for the Grand Canyon National Park*. This option was offered as an alternative to the location of the Phase II Regional Rail Plan Tusayan staging area/ depot location. Additionally, as first introduced within the 1991 master plan update, these long-range cost estimates include projections associated with the establishment of a railroad spurline and associated staging area/ depot and parking facilities. Lastly, in recognition of potential capacity-related development issues at GCN, costs associated with a long-range parallel runway development option are also included.

**Table 6.5**  
*Long-Range Capital Improvement Expenditures*  
*Grand Canyon National Park Airport*

Planning Phase Improvement Item	Funding Source(s)		Total Development Cost
	NPS/ GCRR/ State/ Local Share	Federal/ AIP Share	
<b>Long-Range Development Phase (+20 Years)</b>			
Construct Parking Facility at GCN*	\$7,630,000	\$0.00	\$7,630,000
Construct Spurline- Staging Area/ Depot & Parking**	\$15,660,000	\$0.00	\$15,660,000
Construct Parallel Runway 4-22 (5,600' x 60')***	\$6,800,000	\$0.00	\$6,800,000
<b>TOTAL</b>	<b>\$30,090,000</b>	<b>\$0.00</b>	<b>\$30,090,000</b>

Note: NPS/ GCRR- National Park Service/ Grand Canyon Railway.

(\*) Necessary funding would be provided by the NPS and GCRR.

(\*\*) Necessary funding would be provided by the GCRR.

(\*\*\*) Necessary funding would be provided by the ADOT, Aeronautics Division.

**Source:** BWR Capital Improvement Program Expenditure Summary, December 2004.



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Long-range development cost estimates associated with the construction of a GCRR staging area and parking facilities were derived from capital costs estimates contained within the Grand Canyon Railway Regional Rail Plan, October 2003. Development costs for a parallel runway at GCN were derived from engineer's opinion of probable construction costs generated during the *Alternatives Analysis*.

Development of a parking facility or a railroad spurline and staging area/ depot would be financed by the NPS, as well as the GCRR. Capital funding sources have been noted within **Table 6.5**. Although it is realized that potential funding sources at the local, state and Federal levels would most likely be available for development of parking and railroad improvements, it is unknown what the potential funding amounts might be and from what entity or level of government the funds will come. Therefore, for purposes of this analysis, the Federal/ FAA share of improvement funds will be assumed to be zero dollars. Local dollars are those funds that would be contributed by the entity desiring the improvement such as the NPS and GCRR. Funds associated with railroad and parking facility improvements include actual construction costs which include guideway and trackwork, signals and power, contingency costs, as well as operation and maintenance (O&M) costs. According to GCRR annual O&M costs incurred on railroad spurline, staging area and parking facility improvements include an estimated \$1.7 million. This O&M cost projection includes \$592,000 annually for railspur expenses and an additional \$1.3 million to maintain the staging area/ depot and auto parking facilities.

## Long-Term Capital Improvement Funding Sources

Construction of a parallel runway at GCN would be funded through local funding sources including airport revenue, as well as private/ third party financing. Funding needed to invest in railroad and parking facility improvements would likely be eligible for Federal and state capital sources in addition to funds contributed by GCRR. The following discussion briefly highlights Federal and state funding options available to GCRR and the NPS in an effort to support financing of capital outlays for the Regional Rail project.

Federal capital resources include the *Federal Highway Demonstration Project* which earmarks approximately \$5.0 to \$50.0 million per year toward demonstrations such as the Interstate Construction, National Highway System and Surface Transportation Programs (STP); *Transportation Enhancement Activities* (TEA)-21 programs are those in which 10 percent of STP funds are set-aside for TEA activity- the State of Arizona received \$95 million in STP funds in 2002; *Flexible Funding* provisions of TEA-21 provides use of Federal Highway Administration (FHWA) for transit investments and improvements; *Transit in Parks Act* authorizes approximately \$90 million to federal land management agencies and their state and local counterparts which allow both capital and operating funds to be expended on rail projects; and the *Transportation Infrastructure Finance and Innovation Act* (TIFIA) is a federal credit program administered by the U.S. Department of Transportation (DOT) providing secured loans, loan guarantees and standby lines of credit for surface transportation projects of national or regional significance- the program provided upwards of \$2.6 billion in federal credit assistance in 2003.



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State capital resources may include the *Highway User Revenue Fund* (HURF) in which funds are available from ADOT for highway construction, improvement and related expenses that are derived from motor vehicle taxes and fees relating to the registration of motor vehicles- eligibility of HURF funds for transit projects such as railway improvements is questionable; *Local Transportation Assistance Fund I* (LTAF- I) includes those funds that are available for public transportation projects that are derived from the state lottery and distributed to cities and towns based on population- the program provided nearly \$23.0 million in grants during 2003; and *Local Transportation Assistance Fund II* (LTAF- II) combines provisions of the HURF and LTAF-I and is allocated by the State Treasurer's Office to Regional Transportation Authority's (RTO), Metropolitan Planning Organizations (MPS), as well as cities and counties not represented by an RTO or MPO- provided \$6.1 million in funding relief during 2003.