Chapter Five
Capital Improvement Program And Financial Plan

INTRODUCTION

Future development at the Kayenta Airport, as included in this study, covers a twenty-year period. Development items are grouped into three stages. Phase I is short-term (1-5 years), Phase II is intermediate-term (6-10) years) and Phase III is long-term (11-20 years). Estimated development costs based on the airport layout plan are included for each item in the CIP. These costs are also based on the recommended facility requirements discussed in Chapter 3 and the development projects selected in Chapter 4. The phasing of projects assists the airport sponsor in budgetary planning for construction improvements that are needed to provide safe and functional facilities for aviation demands. Phased development schedules also assist the airport sponsor in contingencies and construction. The recommended airport development items are summarized below.

The ultimate goal of any airport should be the capability to support its own operation and development through revenues generated at the airport. Unfortunately, few general aviation airports the size of Kayenta Airport are able to do this. For example, an airport cannot break even when the fees received from hangar rentals, land leases and other revenues will not adequately amortize the cost of construction, operations and maintenance. This is the case all too frequently and it therefore comes as no surprise when communities complain about the high costs of maintaining their airport's operation. Even by increasing fees, these airports might not reach the break-even point. Yet the effort to become self-sufficient will certainly gain a more positive attitude by the community towards airport development interests.

One point that should be brought up at this time, however, is the fact that while many general aviation airports the size of Kayenta Airport are not self-sustaining, the intrinsic value that a well maintained airport brings to a community or region goes far beyond the day to day operational costs of that airport. In other words, the money spent and benefits received in the community or region by individuals or businesses that use the airport, exceeds the expenses, which are a result of operations at the airport. The Economic Impact of Airports in Arizona report completed by the Arizona Division of Aeronautics in 2002 estimates a total annual economic impact of $1,014,172 and 16 jobs are attributable to the Kayenta Airport. These figures were developed by using the multiplier effect which took into account spending by suppliers and users of aviation which circulates in the community's economy.

In the case of the Kayenta Airport, the additional revenues generated as a result of increased tour company aircraft operations (and increased tourists to the Kayenta area) are anticipated to be substantial.

CAPITAL IMPROVEMENT PROJECTS

Short Term

Construct Access Road
Reconstruct Runway/Airport Pavements
Construct Apron Area (Phase I)
Construct Partial Parallel Taxiway (Phase I)
Install Terminal Area Fencing and Access Gates

Install Utility Lines to Airport

Medium Term

Install AWOS
Install GPS Approach
Construct Vehicle Parking Area
Construct Terminal Building/Snow Removal Equipment Building
Partial Parallel Taxiway (Phase II)
Construct Helipads
Airport Layout Plan Update
Pavement Preservation

Long Term

Partial Parallel Taxiway (Phase III)
Construct Apron Area (Phase III)
Update Airport Master Plan

DEVELOPMENT FUNDING

The estimated development costs for the aforementioned items are located in Table 5-1. The cost shares in Table 5-1 assume that the FAA will continue to provide 95 percent grant funding for eligible projects in the State of Arizona. Grant eligible items typically include airfield and aeronautical related facilities such as runways, taxiways, aprons, lighting and visual aids, as well as land acquisition and environmental tasks needed to accomplish the improvements. Under new legislation, certain items, such as hangars and fuel facilities, are eligible for federal funding. Despite eligibility for funding assistance, these development items represent a low priority in competition for funds and are generally funded by the Sponsor or by third party sources.

TABLE 5-1 CAPITAL IMPROVEMENT PROGRAM (CIP)

Sequence	Project Description	Dimension/Quantity	Total	Federal	Local*
A1	Construct Access Road	(2,000'x24')	$260,000	$247,000	$13,000
A2	Reconstruct/Shift Runway	(7,100'x75')	$2,700,000	$2,565,000	$135,000
A3	Rehab/Replace MIRL, Signage and Visual Aids		$320,000	$304,000	$16,000
A4	Construct Apron Area (Phase I)	(16,000 s.y.)	$260,000	$247,000	$13,000
A5	Construct Partial Parallel/Bypass (PhaseI)	(10,000 s.y.)	$320,000	$304,000	$16,000
A6	Install Terminal-Area Fencing and Access Gates	(6,000 l.f.)	$100,000	$95,000	$5,000
A7	Utilities		$180,000	$171,000	$9,000
A8	Pavement Preservation		$105,000	$99,750	$5,250
	Total Short-Term (0-5 years)		$4,245,000	$4,032,750	$212,250
B1	Install AWOS-3		$150,000	$142,500	$7,500
B2	405 Obstruction Survey (GPS)		$36,000	$34,200	$1,800
B3	Construct Vehicle Parking Area	(6,000 s.y.)	$240,000	$228,000	$12,000
B4	Construct Terminal Building		$420,000	$399,000	$21,000
B5	Construct Apron (Phase II)	(15,000 s.y.)	$260,000	$247,000	$13,000
B6	Construct Helipads		$210,000	$199,500	$10,500
B7	Partial Parallel Taxiway (Phase II)	(10,000 s.y.)	$240,000	$228,000	$12,000
B8	Airport Layout Plan Update		$100,000	$95,000	$5,000
B9	Pavement Preservation		$105,000	$99,750	$5,250
	Total Medium-Term		$1,761,000	$1,672,950	$88,050
C1	Parallel Taxiway (Phase III)	(10,000 s.y.)	$480,000	$456,00	$24,000
C2	Construct Apron Area (Phase III)	(15,000 s.y.)	$210,000	$199,500	$10,500
C3	Update Airport Master Plan		$130,000	$123,500	$6,500
	Total Long-Term		$820,000	$779,000	$41,000
	TOTAL		$6,826,000	$6,484,700	$341,300

Estimated cost in 2005 dollars (Includes 25% Engineering, Inspection, Administration and Contingencies)
*Local share costs are expected to be offset by 5% local Township Gross Receipts Tax.

The Airport and Airways Act of 1982 created and authorized the Airport Improvement Program (AIP) to assist in the development of a nationwide system of public-use airports adequate to meet the projected growth of civil aviation. The Act provides funding for airport planning and development projects at airports included in the National Plan of Integrated Airport Systems (NPIAS).

As previously discussed, the FAA participates with grants of up to 95 percent of total project costs for eligible projects. Typical eligible projects include planning studies, airside (runways, taxiways and aprons) construction, expansion and rehabilitation, airport lighting, visual aids, construction of access roads and land acquisition. New legislation has authorized the eligibility of revenue producing items such as fuel systems and hangars, provided a plan is established for funding the airside needs of the airport. Local funding must provide the remaining 5 percent of the total cost. The State of Arizona does not currently participate in funding airport development projects on Indian Reservations.

FUNDING THE LOCAL SHARE

The airport sponsor has several methods available for funding the capital required to meet the local share of airport development costs. The most common methods involve general fund

appropriations, debt financing which amortizes the debt over the useful life of the project, force accounts, in-kind service, third-party support and donations.

General Fund Appropriations: Depending on their financial position, the airport sponsor may have the resources to directly allocate the funds needed for the local share of capital projects. These allocations are normally included in the annual budgeting process for the various city or county departments. Early planning and identification of the funds needed helps the sponsor prepare for these allocations. The Kayenta Township imposes a gross receipts tax on all projects; this should offset all local share costs for development at the airport.

Bank Financing: Some airport sponsors use bank financing as a means of funding airport development. Generally, two conditions are required. First, the sponsor must have the ability to repay the loan plus interest and second, the cost of capital improvements must be less than the value of the present facility or some other collateral must be used to secure the loan. These are standard conditions that are applied to almost all bank loan transactions.

General Obligation Bonds: General Obligation Bonds (GO) are a common form of municipal bonds whose payment is secured by the full faith credit and taxing authority of the issuing agency. GO bonds are instruments of credit and because of the community guarantee, reduce the available debt level of the sponsoring community. This type of bond uses tax revenues to retire debt and the key element becomes the approval by the voters of a tax levy to support airport development. If approved, GO bonds are typically issued at a lower interest rate than other types of bonds.

Self-Liquidating General Obligation Bonds: As with GO Bonds, Self-Liquidating General Obligation Bonds are secured by the issuing government agency. They are retired, however, by cash flow from the operation of the facility. Providing the state court determines that the project is self-sustaining, the debt may be legally excluded from the community's debt limit. Since the credit of the local government bears the ultimate risk of default, the bond issue is still considered, for the purpose of financial analysis, as part of the debt burden of the community. Therefore, this method of financing may mean a higher rate of interest on all bonds sold by the community. The amount of increase in the interest rate depends, in part, upon the degree of risk of the bond. Exposure risk occurs when there is insufficient net airport operating income to cover the level of service plus coverage requirements, thus forcing the community to absorb the residual.

Revenue Bonds: Revenue Bonds are payable solely from the revenues of a particular project or from operating income of the borrowing agency, such as an airport commission which lacks taxing power. These types of bonds are common with passenger terminal developments in which there is a contracted stream of revenue from airlines, rental car agencies and other tenants. Generally, they fall outside of constitutional and statutory limitations and in many cases do not require voter approval. Because of the limitations on the other public bonds, airport sponsors are increasingly turning to revenue bonds whenever possible. However, revenue bonds normally carry a higher rate of interest because they lack the guarantees of municipal bonds.

Combined Revenue/General Obligation Bonds: These bonds, also known as "Double-Barrel Bonds", are secured by a pledge of back-up tax revenues to cover principal and interest payments in cases where airport revenues are insufficient. The combined Revenue/General Obligation Bond interest rates are usually lower than Revenue Bonds, due to their back-up tax provisions.

Force Accounts, In-Kind Service, Donations: Depending on the capabilities of the Sponsor, the use of force accounts, in-kind service or donations may be approved by the FAA and the State for the Sponsor to provide their share of the eligible project costs. An example of force accounts would be the use of heavy machinery and operators for earthmoving and site preparation of runways taxiways; the installation of fencing; or the construction of improvements to access roads. In-kind service may include surveying, engineering or other services. Donations may include land or materials, such as gravel or water, needed for the project. The value of these items must be verified and approved by the FAA prior to initiation of the project.

Third-Party Support: Several types of funding fall into this category. For example, individuals or interested organizations may contribute portions of the required development funds (Pilot Associations, Economic Development Associations, Chambers of Commerce, etc.). Although not a common means of airport financing, the role of private financial contributions not only increases the financial support of the project, but also stimulates moral support to airport development from local communities. Because of the existing and projected demand for aircraft hangars, private developers may be persuaded to invest in hangar development.

PAVEMENT MAINTENANCE PLAN

Periodic maintenance is necessary to prolong the useful life of the airport pavements. The affects of weather damage, oxidation and aircraft usage cause the pavement to deteriorate. The accumulation of moisture in the pavement causes heaving and cracking and is one of the greatest causes of pavement distress. The sun's ultraviolet rays oxidize and break down the asphalt binder in the pavement mix. This accelerates raveling and erosion and can reduce asphalt thickness.

The appropriate pavement maintenance will minimize the affects of weather damage and oxidation. Crack sealing is accomplished to keep moisture from accumulating inside and underneath the pavement and should be accomplished at least every five years and prior to fog sealing or overlaying the pavements. Fog seals, slurry seals and coal tar emulsion (fuel resistant) seals are spread over the entire paved area to replenish the binder lost through oxidation and to seal, rejuvenate and waterproof the pavement. Slurry seals also include an aggregate to increase the friction coefficient of the pavement. Asphalt overlays are accomplished near the end of the useful life of the pavement. A layer of new asphalt is placed over the existing pavement to renew the life of the pavement and to recover lost strength due to deterioration. Unless specially designed, the overlay is not intended to increase the weight bearing capacity of the pavement. Overlays may be supplemented with a porous friction course or grooving to increase friction and minimize hydroplaning. Remarking of pavement is required following a fog seal or overlay.

The theoretical pavement maintenance cycle time frames are listed below in Table 5-2. Actual pavement deterioration will be affected by use of the airport and weather exposure. Maintenance actions should be programmed as necessary through close monitoring and inspection of the pavements.

TABLE 5-2 PAVEMENT MAINTENANCE SCHEDULE

Pavement Maintenance Cycle	Approximate Time Frames
Crack Seal Pavement	0 – 2 years
Crack Seal, Seal Coat and Remark Pavements	3 – 8 years
Overlay Pavement	15 – 18 years

FINANCIAL PLAN

The ultimate goal of any airport should be the provision of aeronautical services at a self-sustaining level. Facilities that are self-sustaining can provide services with minimal outside funding and reciprocal influence. Unfortunately, few airports are able to accomplish this objective. For example, it is difficult to break even when the fees received from hangar rentals and fuel flowage will not adequately amortize the cost of construction. This occurs with great frequency in communities that are attempting to balance increased traffic levels with the financial requirements needed to fund these levels. The cost of airport maintenance can, if left unchecked, reach levels where airport needs begin to compete with other local or regional programs. Airport sponsors should, consequently, strive to become a vehicle for economic development and self-sufficiency.

There are intrinsic values that an airport offers to a community that must also be considered in the financial planning. In other words, funds spent in the community or in the region by airport users contribute to the local economy and tax base. Furthermore, Kayenta Airport provides access for valuable services to Kayenta and surrounding communities that would not otherwise be available.

EXPENDITURES

Airport operating expenditures typically include insurance, utilities, maintenance and management costs. Insurance costs include liability insurance for the airport and property insurance for any real property on the airport owned by the Kayenta Township. Utility expenses primarily consist of power costs to operate airfield lighting and visual aids and water for public use areas or irrigation. Pavement maintenance consists of crack sealing on an annual basis and seal coating and remarking the pavements every three to eight years. Facility maintenance consists of mowing, snow removal, repair and replacement of parts and equipment such as light bulbs, light fixtures, fences, et cetera. The amount of expenditures was found from information from the Township and estimations from current and future projected activity levels.

REVENUES

Airport revenues generally consist of land leases; tie down fees, fuel flowage fees and taxes. There are no airport revenues currently being generated at the Kayenta Airport.

Building and Aeronautical Land Leases: Property on the airport that is not devoted to airfield use, vehicle parking or contained within areas required to be cleared of structures may be leased to individual airport users or aviation related businesses. Typically, the individual is provided a long-term lease on which to construct a hangar, business or other facility. Recommended land lease rates at Kayenta are $0.10 per square foot per year based on the footprint of the building and any dedicated apron space. This rate is comparable to other airports in the local region. For larger sized parcels a reduced rate for open space/undeveloped area should be considered (ie $.10/sf/year for hangar/office, apron and parking areas; $.05/sf/year for remaining area) with a minimum specified required developed area (such as 60% or more).

Non-Aeronautical Land Leases: Airport land can be leased for non-aeronautical purposes (Revenue Generation) to generate revenue for the airport. To comply with FAA regulations, the land must not be needed for aeronautical use and fair market value must be charged for the land.

Fuel Flowage Fee: This fee is typically imposed on all aircraft fuels delivered to the airport and would include all fuels used by aircraft including AvGas, Jet-A and MoGas at approximately five cents per gallon. The fee would apply to fixed base operators, self-fueling users (if authorized) and through-the-fence operators who conduct self-fueling. An average of 3 gallons of fuel per operation for Avgas and 15 gallons of fuel per operations for Jet-A were used to estimate fuel flowage. These averages were found from general aviation airports of similar size.

Tiedown Fee: A fee is typically established for the use of fixed ramp tiedowns on paved apron areas. The fees are usually established on a monthly or annual basis for based aircraft and on an overnight basis for transient aircraft

Construction Tax: The Kayenta Township collects a gross receipts tax. The amount of tax collected is based on 5% of the total amount spent on public and private on projects in the Township. This is the primary means of revenue for the Township.

TABLE 5-3 RATES AND CHARGES

Activities	Typical Rates for Small General Aviation Airports
Aeronautical Land Leases	$0.08-$0.15/sq.ft./year
Hangar Leases	$1.00-$5.00/sq.ft./year
Tie-Down Fees	$10.00-$30.00/month/aircraft
Through-the-Fence Fees	$150.00-$450.00/aircraft/year
Fuel Flowage Fees	$0.02-$0.12/gallon
Commercial Activity Fees	$0.00-$500/activity/year
Non-Aeronautical Land Leases	$1.00-$4.00/sq.ft/year

TABLE 5-4 ANNUAL AIRPORT REVENUES AND EXPENSES

	Historical	Projected[1]		
Annual Airport Revenues and Expenses	2004	Stage I (0-5 yrs)	Stage II (6-10 yrs)	Stage III (11-20 yrs)
		REVENUES		
Building & Land Leases	-	$4,000	$5,000	$6,000
Fuel Flowage Fee	-	$4,000	$5,000	$5,000
Tiedown Fee	-	$240	$360	$480
Non Operating Revenues				
Construction Tax	-	$3,438	$6,738	$6,600
Total Revenues	-	$11,678	$17,098	$18,080
		EXPENSES		
Utilities	$800	$800	$880	$968
Pavement Maintenance	$700	$700	$770	$847
Facility Maintenance	$1,500	$1,500	$1,650	$1,815
Insurance	$3,000	$3,000	$3,300	$3,630
Total Expenses	$6,000	$6,000	$6,600	$7,260
Balance (+)=surplus (-)=Subsidy	-$6,000	+$5,678	+$10,498	+$10,820

Projections based on the last year of each time period (in 2005 dollars).

RECOMMENDATIONS

A review of airport revenues indicates that the level of rates and charges at Kayenta Airport are non-existent. Implementing rates and charges will create revenue and are required in order for the airport to receive funds from the FAA. The FAA requires the airport to take all reasonable steps necessary to try to become self-sustaining. The most effective means of increasing revenue at Kayenta is to accommodate existing unmet demand, to implement reasonable rates and charges and to continue to attract new and additional users.

Building aircraft storage hangars at the airport would result in increased direct revenues generated through property leases and indirect revenue through increased use of airport services and facilities, such as fuel flowage fees. Locations for additional nested T-hangars and individual box hangars have been identified on the terminal area drawing (TAD), included in Chapter 7.

Business/corporate tenants are typically flight departments for local businesses and provide employment in the local community. They generally operate multi-engine turboprop or business jet aircraft. Their land lease parcels are usually large, the aircraft are typically operated two to three times per week and fuel purchases are typically larger than other general aviation users (several hundred gallons per fueling). The facilities are also more extensive and generate higher property tax revenues. A dedicated corporate/executive aviation area that includes large lease parcels, hangars with office space and automobile parking with controlled access to the flightline have been included on the TAD.

COMMUNITY SUPPORT

While it would certainly be advantageous for an airport to support itself, the indirect and intangible benefits of the airport to the community's economy and growth must be considered. People are directly or indirectly employed on the airport by the Township and individual businesses. As airport activity increases, it is expected that employment on the airport will also grow throughout the planning period. The local construction industry will also benefit directly from implementation of the development programs. Other community benefits involve business growth and development that is enhanced by the availability of air transportation including commercial service, corporate and private aviation. Clients and suppliers of area businesses will also benefit from the future improvement to the airfield.

The use of corporate and business aircraft is an increasing trend across the United States. The movement of American industry from large metropolitan areas to smaller communities offering lower taxes and labor costs has influenced this trend. Corporate aircraft are also answering the need for quick and convenient access to and from these new locations for executives and management personnel. The ability of a community to provide convenient access to corporate aircraft will be reflected not only in benefits to existing businesses and industries but will be a strong factor in attracting new industry.

These factors place the Kayenta Airport in a prime position to capitalize on the trends in the general aviation industry and to maximize the benefits the airport provides to the community. As previously stated the Economic Impact of Airports in Arizona report completed by the Arizona Division of Aeronautics in 2002 estimates a total annual economic impact of $1,014,172 and 16 jobs attributable to the Kayenta Airport. These figures were estimated by using the multiplier effect which took into account spending by suppliers and users of aviation circulates in the community's economy.

CONTINUOUS PLANNING PROCESS

Airport planning is a continuous process that does not end with the completion of a major project. The fundamental issues upon which this master plan are based are expected to remain valid for several years; however, several variables, such as based aircraft, annual aircraft operations and socioeconomic conditions are likely to change over time. The continuous planning process necessitates that Kayenta consistently monitor the progress of the airport in terms of growth in based aircraft and annual operations, as this growth is critical to the exact timing and need for new airport facilities. The information obtained from this monitoring process will provide the data necessary to determine if the development schedule should be accelerated, decelerated or maintained as scheduled.

Periodic updates of the Airport Layout Plan, Capital Improvement Plan and Airport Master Plan are recommended to document physical changes to the airport, review changes in aviation activity and to update improvement plans for the airport. The primary goal of this Airport Master Planning effort is to develop a safe and efficient airport that will meet the demands of its aviation users and stimulate economic development for Kayenta and the Navajo Nation. The continuous airport planning process is a valuable tool for planning.