



CHAPTER SIX
Capital Improvement Program

CAPITAL IMPROVEMENT PLAN

The implementation of the Cottonwood Municipal Airport Master Plan will require sound judgement on the part of airport management. Among the more important factors influencing decisions to carry out a recommendation is timing and airport activity. Both of these factors should be used as references in plan implementation.

Experience has indicated that major problems can materialize from the standard time-based format of traditional planning documents. The problems typically center around inflexibility and an inability to deal with unforeseen changes that may occur.

While it is necessary for scheduling and budgeting purposes to consider timing

of airport development, the actual need for facilities is established by airport activity. Proper master planning implementation suggests the use of airport activity levels, rather than time as guidance for development.

This chapter of the Master Plan is intended to become one of the primary references for decision-makers responsible for implementing master plan recommendations. Consequently, the narrative and graphic presentations must provide understanding of each recommended development item. This understanding will be critical in maintaining a realistic and cost-effective program that provides maximum benefit to the community.



**AIRPORT DEVELOPMENT
SCHEDULES AND COST
SUMMARIES**

Once the specific needs and improvements for the airport have been established, the next step is to determine a realistic schedule and costs for implementing the plan. This section

examines the overall cost of development and presents a development schedule. The recommended improvements are grouped and divided into three planning horizons of short term, intermediate term, and long range. **Table 6A** summarizes the key activity milestones for each planning horizon.

TABLE 6A Planning Horizon Summary Cottonwood Municipal Airport				
	Current	Short Term	Intermediate Term	Long Range
<i>General Aviation</i>				
Based Aircraft	40	45	56	70
Annual Operations				
Itinerant	8,300	10,000	13,000	16,500
Local	11,100	13,000	16,000	20,000
Total GA Operations	19,400	23,000	29,000	36,500

The short term planning horizon covers items of highest priority, as well as items that should be developed as the airport approaches the short term activity milestones. Priority items include improvements related to safety. Also included are improvements to facilities that will be inadequate with any growth in demand and property acquisitions. Because of their priority, those items will need to be incorporated into the City’s budgeting process, as well as FAA and ADOT programming. To assist in this process, short term projects are scheduled year-by-year over a five-year period.

When short term horizon activity levels are reached, it will be time to program for the intermediate term based upon the next activity milestone. Also, as pavements age, maintenance of these pavements will need to be addressed. Similarly, when the intermediate term milestones are reached, it will be time to program for the long range.

Due to the conceptual nature of a master plan, implementation of capital projects should occur only after further refinement of their design and costs through architectural and engineering analyses. A 15 percent contingency factor was added to the construction

costs. Engineering, architecture, construction administration, and administrative costs were estimated at 24 percent. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design.

Nevertheless, these estimates are considered sufficiently accurate for the planning level analyses in this chapter. Cost estimates for each development project listed in **Table 6B** are presented in current (2007) dollars.

TABLE 6B					
Capital Improvement Program					
Cottonwood Municipal Airport					
No.	Project	Total Costs	FAA Eligible	ADOT Match	City
2008					
1	Upgrade Airfield Lighting, Nav aids, and Signage	\$480,000	\$456,000	\$12,000	\$12,000
2	Environmental Documentation	\$300,000	\$285,000	\$7,500	\$7,500
Subtotal 2008		\$780,000	\$741,000	\$19,500	\$19,500
2009					
1	Acquire Southwest Property (11 acres)	\$959,000	\$911,050	\$23,975	\$23,975
2	T-Hangar Area Site Design	\$39,000	\$37,050	\$975	\$975
Subtotal 2009		\$998,000	\$948,100	\$24,950	\$24,950
2010					
1	Site Preparation and Grade T-Hangar Area	\$500,000	\$475,000	\$12,500	\$12,500
2	Design Apron Taxiway Extension	\$25,000	\$23,750	\$625	\$625
3	Acquire Southwest Property (6.7 acres)	\$590,700	\$561,165	\$14,768	\$14,768
4	Design T-Hangar Access Taxiway	\$25,000	\$23,750	\$625	\$625
Subtotal 2010		\$1,140,700	\$1,083,665	\$28,518	\$28,518
2011					
1	Construct Apron Taxiway Extension	\$230,000	\$218,500	\$5,750	\$5,750
2	Construct 8-unit T-Hangar	\$363,000	\$0	\$0	\$363,000
3	Construct T-Hangar Access Taxiway	\$120,000	\$114,000	\$3,000	\$3,000
Subtotal 2011		\$713,000	\$332,500	\$8,750	\$371,750
2012					
1	Install AWOS	\$250,000	\$237,500	\$6,250	\$6,250
Subtotal 2012		\$250,000	\$237,500	\$6,250	\$6,250
SHORT TERM HORIZON TOTAL		\$3,881,700	\$3,342,765	\$87,968	\$450,968

TABLE 6B (Continued)					
Capital Improvement Program					
Cottonwood Municipal Airport					
No.	Project	Total Costs	FAA Eligible	ADOT Match	City
INTERMEDIATE HORIZON					
1	Acquire Southwest Property (40 acres)	\$3,520,000	\$3,344,000	\$88,000	\$88,000
2	Relocate Southwest Perimeter Fencing	\$108,000	\$102,600	\$2,700	\$2,700
3	Relocate Taxiway A	\$626,000	\$594,700	\$15,650	\$15,650
4	Light Taxiway A and Exits with MITL	\$379,000	\$360,050	\$9,475	\$9,475
5	Overlay South Apron	\$420,000	\$399,000	\$10,500	\$10,500
6	Overlay and Re-Mark North Apron	\$452,000	\$429,400	\$11,300	\$11,300
7	Construct 8-unit T-Hangar	\$363,000	\$0	\$0	\$363,000
8	Construct T-Hangar Access Taxiway	\$120,000	\$114,000	\$3,000	\$3,000
INTERMEDIATE HORIZON TOTAL		\$5,988,000	\$5,343,750	\$140,625	\$503,625
LONG RANGE HORIZON					
1	Extend Airport Access Road South	\$64,000	\$60,800	\$1,600	\$1,600
2	Construct T-Hangar Area Auto Parking	\$96,000	\$91,200	\$2,400	\$2,400
3	Expand Terminal Auto Parking	\$28,000	\$26,600	\$700	\$700
4	Construct Wash Rack	\$225,000	\$213,750	\$5,625	\$5,625
5	Construct Two 8-unit T-Hangars	\$726,000	\$0	\$0	\$726,000
6	Construct Two T-Hangar Access Taxiways	\$240,000	\$228,000	\$6,000	\$6,000
LONG RANGE HORIZON TOTAL		\$1,379,000	\$620,350	\$16,325	\$742,325
TOTAL PROGRAM COSTS		\$11,248,700	\$9,306,865	\$244,918	\$1,696,918

SHORT TERM IMPROVEMENTS

As indicated above, the short term planning horizon is the only development stage that is correlated to time. This is because development within this initial period is concentrated first on the most immediate needs of the airfield and landside areas. Therefore, the program is presented year-by-year for the first five years to assist in capital improvement. **Short term improvements presented in Table 6B are estimated at \$3.88 million.**

The first year is dedicated to upgrading the runway edge lighting, PAPI, and guidance signs. In addition, an allowance is provided for preparing the environmental documentation that will

be necessary before undertaking the proposed property acquisitions on the southwest side of the airport.

The property acquisition is scheduled to begin the following year with 11 acres near the south end of the runway. This property acquisition is necessary to provide space for the parachute drop zone to be relocated, prior to the development of the proposed T-hangar area. The grading and site design for the T-hangar area is included in this year as well. This site design also includes the relocation design for the segmented circle and lighted wind sock.

The third year of the short term planning horizon includes the acquisition of 6.7 acres immediately

SHORT TERM IMPROVEMENTS

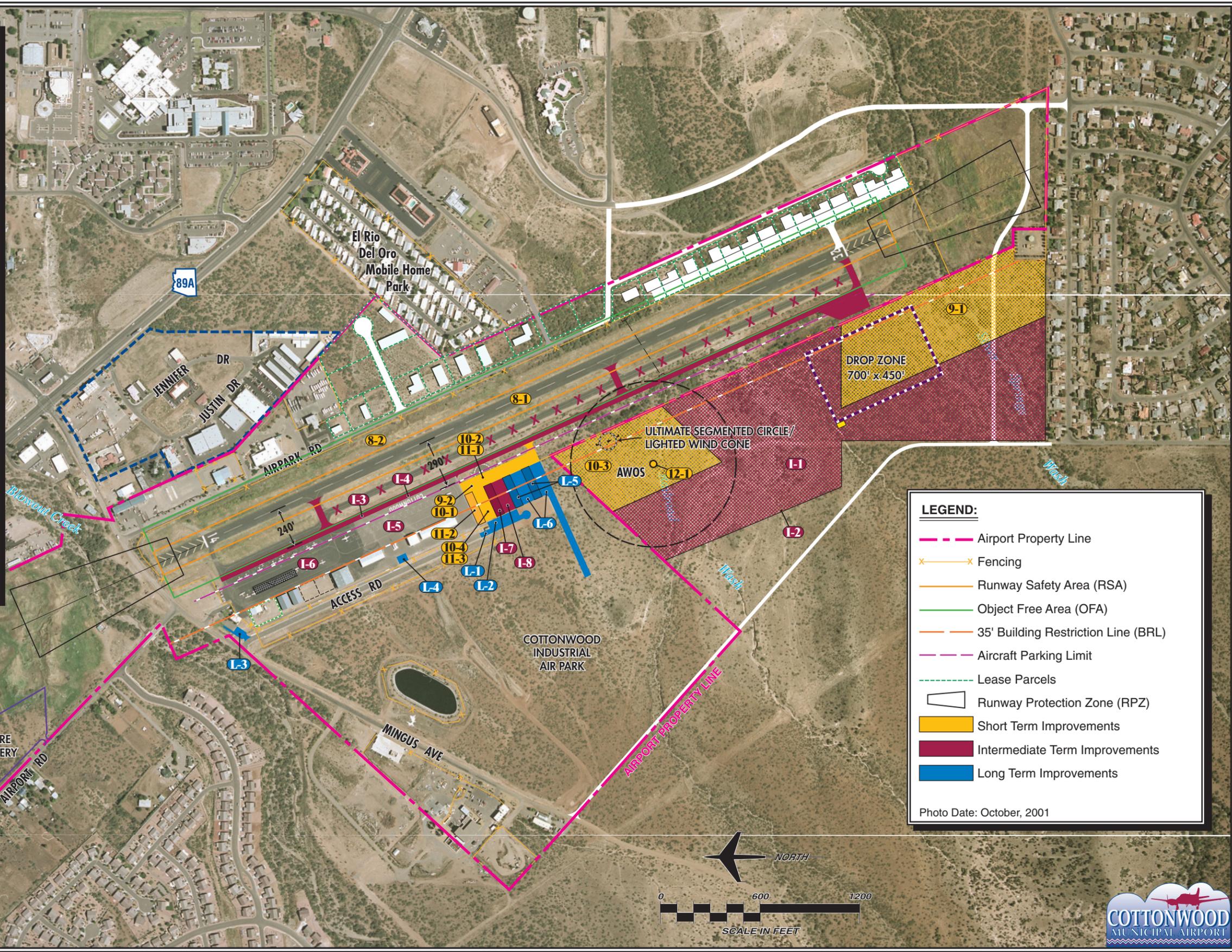
- 2008**
- 8-1** Upgrade Airfield Lighting, Nav aids, and Signage
- 8-2** Environmental Documentation
- 2009**
- 9-1** Acquire Southwest Property (11 acres)
- 9-2** T-Hangar Area Site Design
- 2010**
- 10-1** Site Preparation and Grade T-Hangar Area
- 10-2** Design Apron Taxiway Extension
- 10-3** Acquire Southwest Property (6.7 acres)
- 10-4** Design T-Hangar Access Taxiway
- 2011**
- 11-1** Construct Apron Taxiway Extension
- 11-2** Construct 8-unit T-hangar
- 11-3** Construct T-hangar Access Taxiway
- 2012**
- 12-1** Install AWOS

INTERMEDIATE TERM IMPROVEMENTS

- I-1** Acquire Southwest Property (40 acres)
- I-2** Relocate Southwest Perimeter Fencing
- I-3** Relocate Taxiway A
- I-4** Light Taxiway A and Exits with MITL
- I-5** Overlay South Apron
- I-6** Overlay and Re-mark North Apron
- I-7** Construct 8-unit T-hangar
- I-8** Construct T-hangar Access Taxiway

LONG TERM IMPROVEMENTS

- L-1** Extend Airport Access Road
- L-2** Construct T-hangar Area Auto Parking
- L-3** Expand Terminal Auto Parking
- L-4** Construct Wash Rack
- L-5** Construct Two 8-unit T-hangars
- L-6** Construct Two T-hangar Access Taxiways



LEGEND:

- Airport Property Line
- Fencing
- Runway Safety Area (RSA)
- Object Free Area (OFA)
- 35' Building Restriction Line (BRL)
- Aircraft Parking Limit
- Lease Parcels
- Runway Protection Zone (RPZ)
- Short Term Improvements
- Intermediate Term Improvements
- Long Term Improvements

Photo Date: October, 2001



south of the planned T-hangar area to accommodate the relocation of the segmented circle. The site will also accommodate the future airport weather observation system (AWOS) as well. The site preparation and grading of the T-hangar area will begin as well. The design of the apron taxiway and T-hangar access taxiways are also included in the third year.

Taxiway paving in the T-hangar area is planned for the fourth year of the short term planning horizon. This will include the apron taxiway and the access taxiways for the first T-hangar. This will permit the development of the first T-hangars.

The final year of the short term planning horizon includes the installation of the AWOS.

INTERMEDIATE PLANNING HORIZON

Projects in the intermediate planning horizon are designed to meet changes in demand. As use of the airport by aircraft in ADG II grows to over 500 annual operations, the safety design standards will need to be upgraded. In particular, parallel Taxiway A will need to be relocated to at least 240 feet from the runway centerline. Medium intensity taxiway lighting is scheduled to be installed as well.

The relocation of the parallel taxiway will also require a reconfiguration of the apron area. After the shade hangar is removed from the north ramp, the ramp can be overlaid and remarked for transient parking positions. Additional tie-downs will remain on the south ramp.

Also included in the intermediate term is the acquisition of an additional 40-acres on the southwest side of the airport. This acquisition is recommended to protect the AWOS clearance area and the long term future viability of the airport. **The cost estimates for intermediate term projects are estimated at \$5.99 million.**

LONG RANGE PLANNING HORIZON

The long range planning horizon includes projects that will likely be needed by the long range activity milestone, but are not necessarily a priority in the near future. As demand for the third and fourth T-hangars evolves, the airport access road should be extended farther south. At the same time, some additional auto parking close to the T-hangars should be considered.

As use of the airport reaches the long term activity milestones, additional auto parking may be needed near the passenger terminal as well. The other project included in the long term is an aircraft wash rack. While not indicated as a priority at this time, demand could move up the priority, especially if it is developed with private funds.

The cost estimates for the long range projects total \$1.38 million.

CAPITAL IMPROVEMENTS FUNDING

Financing capital improvements at the airport will not rely exclusively upon

the financial resources of the City of Cottonwood. Capital improvement funding is available through various grants-in-aid programs at both the federal and state levels. The following discussion outlines the key sources for capital improvement funding.

FEDERAL GRANTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for the purpose of national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The most recent legislation is the *Airport Improvement Program (AIP)* of 1982. The AIP has been reauthorized several times, with the most recent legislation enacted in late 2003 and entitled the *Vision 100 – Century of Aviation Reauthorization Act*.

The remaining FAA fiscal years covered by the four-year program are 2006 and 2007. This bill presented similar funding levels to the previous reauthorization – AIR-21. Funding was authorized at \$3.6 billion in 2006 and \$3.7 billion in 2007.

The source for AIR-21 funds is the Aviation Trust Fund. The Aviation Trust Fund was established in 1970 to provide funding for aviation capital investment programs (aviation development, facilities and equipment, and research and development). The Trust Fund also finances the operation of the FAA. It is funded by user fees, taxes on airline tickets, aviation fuel, and various aircraft parts.

Funds are distributed each year by the FAA from appropriations by Congress. A portion of the annual distribution is to primary commercial service airports based upon enplanement levels. General aviation airports, however, also received entitlements under the last reauthorization. Under the legislation, as long as Congress appropriated the full amounts authorized by AIR-21, eligible general aviation airports received up to \$150,000 of funding each year.

After all specific-funding mechanisms are distributed, the remaining AIP funds are disbursed by the FAA, based upon the priority of the project for which they have requested federal assistance through discretionary apportionments. A national priority system is used to evaluate and rank each airport project. Those projects with the highest priority are given preference in funding.

To be eligible for funding, an airport must be included in the *National Plan of Integrated Airport Systems (NPIAS)*. Since Cottonwood Municipal Airport is included in the NPIAS, it is eligible for funding. The \$150,000 annual entitlement level will not take care of all the airport's funding needs, so eligible Cottonwood Municipal Airport projects will compete with other airport projects in the state for AIP state apportionment dollars and across the country for other federal AIP funds. An important point to consider is that, unlike the entitlement funds, most funding for Cottonwood Municipal Airport is not guaranteed.

Under the AIP program, examples of eligible development projects include the airfield, aprons, and access roads.

Non-revenue producing automobile parking at general aviation airports can also be eligible. Improvements such as fueling facilities, utilities (with the exception of water supply for fire prevention), hangar buildings, airline ticketing, and airline operations areas are not typically eligible for AIP funds.

Under Vision 100, Cottonwood Municipal Airport is eligible for 95 percent funding assistance from AIP grants, as opposed to the previous AIR-21 level of 90 percent. The current AIP is set to expire in September 2007. While similar programs have been in place for over 50 years, it will be up to Congress to either extend or draft new legislation authorizing and appropriating future federal funding.

As evident from the airport development schedule and cost summaries, the City could benefit significantly from federal discretionary funding. Federal funding extends the amount of state dollars available for airport funding and guarantees a limited amount of entitlement dollars each year (assuming the current program remains intact through the planning period). The City will need to continue to pursue federal funding.

FAA FACILITIES AND EQUIPMENT PROGRAM

The Airway Facilities Division of the FAA administers the national Facilities and Equipment (F&E) Program. This annual program provides funding for the installation and maintenance of various navigational aids and equipment for the national airspace system and airports. Under the F&E

program, funding is provided for FAA airport traffic control towers, en route navigational aids, and on-airport navigational aids such as approach lighting systems. Assuming inclusion in the NPIAS, as activity levels and other development warrant, the airport may be considered by the FAA Airways Facilities Division for the installation and maintenance of navigational aids through the F&E program. With PAPIs and REILs in place at Cottonwood Municipal Airport, this could include future equipment replacements or upgrades.

STATE AID TO AIRPORTS

In support of the state airport system, the State of Arizona also participates in airport improvement projects. The source for state airport improvement funds is the Arizona Aviation Fund. Taxes levied by the state on aviation fuel, flight property, aircraft registration tax, and registration fees, (as well as interest on these funds) are deposited in the Arizona Aviation Fund. The transportation board establishes policies for distribution of these state funds.

Under the State of Arizona grant program, an airport can receive funding for one-half (2.5 percent) of the local share of projects receiving federal AIP funding. The state also provides 90 percent funding for projects which are typically not eligible for federal AIP funding or have not received federal funding.

The Arizona Department of Transportation-Aeronautics Division (ADOT) Airport Loan Program was

established to enhance the utilization of state funds and provide a flexible funding mechanism to assist airports in funding improvement projects. Eligible projects include runway, taxiway, and apron improvements; land acquisition; planning studies; and the preparation of plans and specifications for airport construction projects; as well as revenue-generating improvements such as hangars and fuel storage facilities. Projects which are not currently eligible for the State Airport Loan Program are considered if the project would enhance the airport's ability to be financially self-sufficient.

There are three ways in which the loan funds can be used: Grant Advance, Matching Funds, or Revenue Generating Projects. The Grant Advance loan funds are provided when the airport can demonstrate the ability to accelerate the development and construction of a multi-phase project. The project(s) must be compatible with the Airport Master Plan and be included in the ADOT five-year Airport Development Program. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improvement grants or other federal or state grants. The Revenue Generating Project funds are provided for airport-related construction projects that are not eligible for funding under another program.

LOCAL FUNDING

The balance of project costs, after consideration has been given to grants, must be funded through local resources. Assuming federal funding, this essentially equates to 2.5 percent of the

project costs if all eligible FAA and state funds are available.

According to **Table 6B**, local funding will be needed in each planning horizon. This includes \$451,000 in the short term, \$504,000 in the intermediate term, and \$742,000 in the long range.

There are several alternatives for local finance options for future development at the airport, including airport revenues, direct funding from the City, issuing bonds, and leasehold financing. These strategies could be used to fund the local matching share, or complete the project if grant funding cannot be arranged.

The capital improvement program has assumed that some landside facility development (conventional hangars) would be completed privately, while other developments (namely T-hangars) would be completed by the City.

There are several municipal bonding options available to the City of Cottonwood including general obligation bonds, limited obligation bonds, and revenue bonds. General obligation bonds are a common form of municipal bond which is issued by voter approval and is secured by the full faith and credit of the City. City tax revenues are pledged to retire the debt. As instruments of credit, and because the community secures the bonds, general obligation bonds reduce the available debt level of the community. Due to the community pledge to secure and pay general obligation bonds, they are the most secure type of municipal bond and are generally issued at lower interest rates and carry lower costs of issuance. The primary disadvantage of

general obligation bonds is that they require voter approval and are subject to statutory debt limits. This requires that they be used for projects that have broad support among the voters, and that they be reserved for projects that have highest public priorities.

In contrast to general obligation bonds, limited obligation bonds (sometimes referred to as a Self-Liquidating Bonds) are secured by revenues from a local source. While neither general fund revenues nor the taxing power of the local community is pledged to pay the debt service, these sources may be required to retire the debt if pledged revenues are insufficient to make interest and principal payments on the bonds. These bonds still carry the full faith and credit pledge of the local community and, therefore, are considered, for the purpose of financial analysis, as part of the debt burden of the local community. The overall debt burden of the local community is a factor in determining interest rates on municipal bonds.

There are several types of revenue bonds, but in general they are a form of municipal bond which is payable solely from the revenue derived from the operation of a facility that was constructed or acquired with the proceeds of the bonds. For example, a Lease Revenue Bond is secured with the income from a lease assigned to the repayment of the bonds. Revenue bonds have become a common form of financing airport improvements. Revenue bonds present the opportunity to provide those improvements without direct burden to the taxpayer. Revenue bonds normally carry a higher interest

rate because they lack the guarantees of general and limited obligation bonds.

Leasehold financing refers to a developer or tenant financing improvements under a long term ground lease. The obvious advantage of such an arrangement is that it relieves the community of all responsibility for raising the capital funds for improvements. However, the private development of facilities on a ground lease, particularly on property owned by a municipal agency, produces a unique set of problems. In particular, it is more difficult to obtain private financing as only the improvements and the right to continue the lease can be claimed in the event of a default. Ground leases normally provide for the reversion of improvements to the lessor at the end of the lease term, which reduces their potential value to a lender taking possession. Also, companies that want to own their property as a matter of financial policy may not locate where land is only available for lease. The City is using long term lease arrangements for private development of the Industrial Airpark at the airport. Several hangar facilities have been developed with private funds under a long term ground lease with the City.

To ensure that the airport maximizes revenue potential in the future, the City of Cottonwood should also periodically review aviation services rates and charges (i.e., fuel flowage fees, hangar and tiedown rental) at other regional airports to ensure that rates and charges at the airport are competitive and similar to aviation services at other airports. Additionally, all new leases at the airport should have inflation

clauses allowing for periodic rate increases in-line with inflationary factors.

While it is desirable for the airport to directly pay for itself, the indirect and intangible benefits of the airport to the community's economy and growth must be considered in implementing future capital improvements.

PLAN IMPLEMENTATION

The successful implementation of the Cottonwood Municipal Airport Master Plan will require sound judgment on the part of the City of Cottonwood with regard to the implementation of projects to meet future activity demands, while maintaining the existing infrastructure and improving this infrastructure in

support of economic development. While the projects included in the capital improvement program have been broken into short, intermediate, and long term planning periods, the City will need to consider the scheduling of projects in a flexible manner and add new projects from time-to-time to satisfy safety or design standards, or newly created demands.

In summary, the planning process requires that the City continually monitor the need for new or rehabilitated facilities, since applications (for eligible projects) must be submitted to the FAA and state each year. The City should continually monitor and communicate with the FAA and state, the projects which are of highest priority.