



Chapter 6

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## CAPITAL IMPROVEMENT PROGRAM

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# Capital Improvement Program



The implementation of the Ryan Airfield Master Plan will require sound judgment 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 problems can materialize from the standard time-based format of traditional planning documents. The problems typically center on 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 section 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.



## ***CAPITAL IMPROVEMENTS FUNDING***

Financing capital improvements at the airport will not rely exclusively upon the financial resources of the TAA. 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 2003 and entitled the *Vision 100 – Century of Aviation Reauthorization Act*.

Fiscal year 2007 was the last year of the four-year program. That bill presented similar funding levels to the previous reauthorization – *AIR-21*. Funding was authorized at \$3.7 billion in 2007. Vision 100 expired in September of 2007 and since this time Congress has not passed reauthorization legislation. However, Congress passed the FAA Extension Act of 2008 Part II, which was a continuation of funds through March 6, 2009. Funds

available from October 1, 2008 to March 6, 2009 totaled \$1.5 billion. On March 30<sup>th</sup>, 2009 the President signed another bill extending the AIP program through the end of September, 2009. Funds made available by this bill total \$3.5 billion. The AIP Program was extended an additional three months at the end of September. This extension will fund FAA through the end of 2009.

The source for AIP 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. 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.

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

Passenger terminal building improvements (such as bag claim and public waiting lobbies) may also be eligible for FAA funding. Under the newest version of AIP, *Vision 100*, automobile parking at small hub 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*, Ryan Airfield has been eligible for 95 percent funding assistance from AIP grants, as opposed to the previous *AIR-21* level of 90 percent. 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.

## **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 state transportation board (STB) establishes the policies for distribution of these state funds. To ensure proper project planning and eligibility of state funded projects, the STB requires airports to submit a five-year airport capital improvement program (ACIP).

The ACIP is reviewed and approved annually by the STB so that funds are allocated appropriately to maintain safe and orderly development of the Arizona airport system.

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.

## **State Airport Loan Program**

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 two ways in which the loan funds can be used: Matching Funds or Revenue Generating Projects. The Matching Funds are provided to meet the local matching fund requirement for securing federal airport improve-

ment grants or other federal or state grants. The Revenue Generating Projects' funds are provided for airport-related construction projects that are not eligible for funding under another program.

### **Pavement Maintenance Program**

The airport system in Arizona is a multi-million dollar investment of public and private funds that must be protected and preserved. State aviation fund dollars are limited and the State Transportation Board recognizes the need to protect and extend to the maximum amount the useful life of the airport system's pavement. This program, the Arizona Pavement Preservation Program (APPP), is established to assist in the preservation of the Arizona airport system infrastructure. Ryan Airfield participates in this program.

Public Law 103-305 requires that airports requesting federal AIP funding for pavement rehabilitation or reconstruction have an effective pavement maintenance management system. To this end, ADOT-Aeronautics has completed and is maintaining an Airport Pavement Management System (APMS) which, coupled with monthly pavement evaluations by the airport sponsors, fulfills this requirement.

The Arizona Airport Pavement Management System uses the Army Corps of Engineers' "Micropaver" program as a basis for generating a Five-Year Airport Pavement Preservation Program (APPP). The APMS consists of visual inspections of all airport pave-

ments. Evaluations are made of the types and severities observed and entered into a computer program database. Pavement Condition Index (PCI) values are determined through the visual assessment of pavement condition in accordance with the most recent FAA Advisory Circular 150/5380-6, and range from 0 (failed) to 100 (excellent). Every three years, a complete database update with new visual observations is conducted. Individual airport reports from the update are shared with all participating system airports. The Aeronautics Division ensures that the APMS database is kept current, in compliance with FAA requirements.

Every year, the Aeronautics Division, utilizing the APMS, will identify airport pavement maintenance projects eligible for funding for the upcoming five years. These projects will appear in the State's Five-Year ACIP. Once a project has been identified and approved for funding by the State Transportation Board, the airport sponsor may elect to accept a state grant for the project and not participate in the Airport Pavement Preservation Program (APPP), or the airport sponsor may sign an Inter Government Agreement (IGA) with the Aeronautics Division to participate in the APPP.

### **LOCAL FUNDING**

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

of the project costs if all eligible FAA and state funds are available. If only ADOT grants are available, the airport share would be 10 percent of the project.

According to the capital improvement program depicted on **Exhibit 6A**, airport funding in the amount of \$1.4 million will be needed for capital improvement projects through 2014, approximately \$907,400 will be needed in the intermediate term, and almost \$1.1 million will be needed in the long term. Airport funding is usually accomplished through the use of airport earnings and reserves, to the extent possible, with the remaining costs financed through revenue bonding.

Ryan Airfield is one of two airports managed and operated by the TAA. As a reliever airport for Tucson International Airport, Ryan Airfield's operation and development, in part, serves to provide a convenient and attractive alternative for general aviation in the Tucson area. As such, the TAA operates both airports as one fiscal entity. Thus it is difficult to break down the Ryan Airfield revenues and expenditures separately; therefore, a cash flow analysis cannot be done.

The following subsections, however, do provide a review of the sources of operating revenue that are available at Ryan Airfield to assist in meeting operating expenses and capital improvement program costs for the airport. These include land leases and fuel revenues and other income sources.

## Land Leases

The TAA currently leases land to nine entities in the airport terminal area for aviation-related and non-aviation related uses. Ryan Airfield is fortunate compared to many airports in that there is additional land available for development to meet all future general aviation development needs. Sizeable areas will remain on the airport that is suitable for commercial and industrial development. The available land not only offers flexibility in the development of the airport, but also a source for operating revenue.

At Ryan Airfield, land leases are provided for developers to build and lease hangars. The TAA does not lease hangars to individuals, and virtually all existing hangar development has been provided by private sources. This is anticipated to continue in the future at Ryan Airfield, as long as private development demonstrates that it will meet the demand in an orderly and competitive manner.

Current land leases on the airport are in line with comparable lease rates at other general aviation airports. Lease clauses are also included which permit periodic adjustments for inflation.

Tie-downs are another source of revenue to the airport that is similar to a land lease. Local tie-downs are leased to individual aircraft owners on a monthly basis, while fees are charged for transient tie-downs on an overnight basis. Tie-down fees vary with the size and type of aircraft.

## Fuel Revenues

Fuel sales at Ryan Airfield are provided by the TAA. A self-fueling facility is available on the south ramp next to the airport administration building. Aircraft operators fuel their own aircraft without the presence of TAA personnel, with the ability to pay-at-the pump with a credit card. Fuel is sold at going market rates. Jet fuel storage on the airport should be considered as turbine operations increase in the future. Jet fuel sales could generate large revenues due to the higher amounts of fuel used by turbine-powered aircraft.

## Other Income

There are other smaller and less reliable sources of income that can be considered at the airport. Other income typically includes landing fees, automobile parking, concession income, and special events.

Landing fees and automobile parking are not typically charged on general aviation airports due to the low return for the cost of collection. Landing fees on larger aircraft that use the airport may be considered, but could also be a deterrent to the use of the airport.

The trade off could be more significant losses in potential fuel revenues that could be gained from landing fees.

Fees from advertising and concessions in an airport-owned terminal building would be a means of helping to support the operating and construction costs of the facility. General aviation airports are often good locations for hosting special events such as air shows. While part of the interest in hosting special events is to draw attention to the airport's facilities, temporary use of available areas can also provide additional revenue.

## 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 for implementing the plan. This section will present a development schedule.

Recommended improvements have been grouped by planning horizon: short term, intermediate term, and long term. **Table 6A** summarizes the key milestones for each of the three planning horizons.

| <b>TABLE 6A<br/>Planning Horizon Summary<br/>Ryan Airfield</b> |                          |                       |                              |                      |
|----------------------------------------------------------------|--------------------------|-----------------------|------------------------------|----------------------|
|                                                                | <b>2008<br/>Activity</b> | <b>Short<br/>Term</b> | <b>Intermediate<br/>Term</b> | <b>Long<br/>Term</b> |
| <b>Based Aircraft</b>                                          | 242                      | 266                   | 296                          | 369                  |
| <b>General Aviation</b>                                        |                          |                       |                              |                      |
| Itinerant                                                      | 59,930                   | 61,000                | 70,500                       | 100,000              |
| Local                                                          | 104,262                  | 107,000               | 119,500                      | 150,000              |
| <b>Military</b>                                                | 3,760                    | 3,500                 | 3,500                        | 3,500                |
| <b>Total Operations</b>                                        | 167,952                  | 171,500               | 193,500                      | 253,500              |



|                                        |                                                                                                   | Est. Project Cost | Federal Eligible | ADOT Eligible | Local Share |
|----------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|------------------|---------------|-------------|
| Near Term Projects (2009-2014)         |                                                                                                   |                   |                  |               |             |
| 1                                      | Conduct Wildlife Study                                                                            | \$57,900          | \$55,005         | \$1,448       | \$1,448     |
| 2                                      | Airfield Drainage Study                                                                           | \$105,300         | \$100,035        | \$2,633       | \$2,633     |
| 3                                      | Rehabilitate Runway 6L-24R                                                                        | \$1,557,710       | \$1,479,824      | \$38,943      | \$38,943    |
| 4                                      | Rehabilitate Taxiway A and Connecting Taxiways                                                    | \$2,208,750       | \$0              | \$1,987,875   | \$220,875   |
| 5                                      | FEMA Letter of Map Revision - Phase II                                                            | \$65,000          | \$0              | \$0           | \$65,000    |
| 6                                      | Runway Safety Area Drainage Improvements                                                          | \$1,000,000       | \$910,600        | \$44,700      | \$44,700    |
| 7                                      | Security Fencing and Perimeter Roadway                                                            | \$2,681,700       | \$2,441,956      | \$119,872     | \$119,872   |
| 8                                      | Reconstruction of Maintenance Yard Apron                                                          | \$210,365         | \$0              | \$0           | \$210,365   |
| 9                                      | Runway Sweeper                                                                                    | \$181,912         | \$172,816        | \$4,548       | \$4,548     |
| 10                                     | Fuel Farm / Apron Generator                                                                       | \$309,666         | \$0              | \$154,833     | \$154,833   |
| 11                                     | Airfield Lighting Generator                                                                       | \$208,360         | \$0              | \$187,524     | \$20,836    |
| 12                                     | Airport Lighting Control and Monitoring System                                                    | \$625,450         | \$569,535        | \$27,958      | \$27,958    |
| 13                                     | Pavement Preservation                                                                             | \$400,000         | \$0              | \$360,000     | \$40,000    |
| 14                                     | Maintenance Generator                                                                             | \$144,550         | \$0              | \$0           | \$144,550   |
| 15                                     | Replace 15-33 Signage and NAVAIDs (PAPI-4, MIRLS)                                                 | \$582,000         | \$529,970        | \$26,015      | \$26,015    |
| 16                                     | Upgrade Airfield Drainage System - Phase 1                                                        | \$2,066,000       | \$0              | \$1,860,000   | \$206,000   |
| 17                                     | Install MITL and replace signage on Taxiway D, E and Exits                                        | \$968,000         | \$919,600        | \$24,200      | \$24,200    |
| 18                                     | Pavement Preservation                                                                             | \$400,000         | \$0              | \$360,000     | \$40,000    |
| 19                                     | Expand Admin Building parking lot (1,000 yd <sup>2</sup> ) and self-serve fuel access road        | \$100,500         | \$0              | \$90,450.0    | \$10,050    |
| 20                                     | Construct Airside Automobile Service Road                                                         | \$199,000         | \$189,050        | \$4,975       | \$4,975     |
|                                        | Subtotal Near Term                                                                                | \$14,072,163      | \$7,368,391      | \$5,295,974   | \$1,407,801 |
| Intermediate Term Projects (2015-2020) |                                                                                                   |                   |                  |               |             |
| 1                                      | Runway 24R and Taxiway A Extension 105'                                                           | \$915,568         | \$0              | \$824,011     | \$91,557    |
| 2                                      | Pavement Preservation                                                                             | \$400,000         | \$0              | \$360,000     | \$40,000    |
| 3                                      | Construct Taxiway 7 from Taxiway A to Taxiway B                                                   | \$398,556         | \$378,628        | \$9,964       | \$9,964     |
| 4                                      | Construct Apron North of Airfield Drive (39,700 yd <sup>2</sup> )                                 | \$3,060,114       | \$2,907,108      | \$76,503      | \$76,503    |
| 5                                      | Waterline North of Airfield Drive                                                                 | \$297,505         | \$282,630        | \$7,438       | \$7,438     |
| 6                                      | Construct West Auto Parking Lot Adjacent to Apron (4,444 yd <sup>2</sup> )                        | \$194,425         | \$0              | \$0           | \$194,425   |
| 7                                      | Add Floor to ATCT, Fire System Revamp                                                             | \$500,000         | \$475,000        | \$12,500      | \$12,500    |
| 8                                      | Master Plan Update                                                                                | \$400,000         | \$380,000        | \$10,000      | \$10,000    |
| 9                                      | Pavement Preservation                                                                             | \$500,000         | \$475,000        | \$12,500      | \$12,500    |
| 10                                     | Construct Access Road and Expand Utilities to Hangar Expansion Area                               | \$2,915,000       | \$2,654,400      | \$130,300     | \$130,300   |
| 11                                     | Construct East Apron (17,500 yd <sup>2</sup> )                                                    | \$1,312,500       | \$1,246,875      | \$32,813      | \$32,813    |
| 12                                     | Construct Heliport                                                                                | \$843,000         | \$800,850        | \$21,075      | \$21,075    |
| 13                                     | Acquire 39.5 acres                                                                                | \$470,000         | \$446,500        | \$11,750      | \$11,750    |
| 14                                     | Construct Taxiway 7 to Hangar Development Area from Taxiway B South                               | \$515,000         | \$489,250        | \$12,875      | \$12,875    |
| 15                                     | Construct Hangar Development Area (HDA) Apron east of H.D.A access road (31,000 yd <sup>2</sup> ) | \$2,325,000       | \$2,208,750      | \$58,125      | \$58,125    |
| 16                                     | Acquire 79.8 Acres                                                                                | \$948,000         | \$900,600        | \$23,700      | \$23,700    |
| 17                                     | Extend Runway 15 and Taxiway D - 800'                                                             | \$2,558,000       | \$2,430,100      | \$63,950      | \$63,950    |
| 18                                     | Pavement Preservation                                                                             | \$400,000         | \$380,000        | \$10,000      | \$10,000    |
| 19                                     | Realign Perimeter Road and Fencing                                                                | \$3,518,000       | \$3,342,100      | \$87,950      | \$87,950    |
|                                        | Subtotal Intermediate Term                                                                        | \$22,470,668      | \$19,797,791     | \$1,765,453   | \$907,424   |

|                                                                                                              | Est. Project Cost | Federal Eligible | ADOT Eligible | Local Share |
|--------------------------------------------------------------------------------------------------------------|-------------------|------------------|---------------|-------------|
| Long Term Projects                                                                                           |                   |                  |               |             |
| EA for Upgrade Airfield Drainage System - Phase 2/Phase 3                                                    | \$300,000         | \$285,000        | \$7,500       | \$7,500     |
| Construct High-speed Exit Taxiways 6L-24R                                                                    | \$1,354,000       | \$1,286,300      | \$33,850      | \$33,850    |
| Construct High-Speed Exit Taxiway 6R Between Taxiway B2 and B5                                               | \$677,000         | \$643,150        | \$16,925      | \$16,925    |
| EA for Runway 6R-24L Extension and Raising                                                                   | \$200,000         | \$190,000        | \$5,000       | \$5,000     |
| Upgrade Airfield Drainage System - Phase 2/ Phase 3                                                          | \$3,900,000       | \$3,705,000      | \$97,500      | \$97,500    |
| Construct Dual Parallel Taxiway C                                                                            | \$2,400,000       | \$2,280,000      | \$60,000      | \$60,000    |
| Install MITL on Taxiway C and Exits                                                                          | \$653,666         | \$620,983        | \$16,342      | \$16,342    |
| Construct Helicopter Training Helipad North of 24R                                                           | \$565,000         | \$536,750        | \$14,125      | \$14,125    |
| Pavement Preservation                                                                                        | \$3,000,000       | \$2,850,000      | \$75,000      | \$75,000    |
| Construct New ATCT                                                                                           | \$4,500,000       | \$4,275,000      | \$112,500     | \$112,500   |
| Relocate Segmented Circle and Lighted Wind Indicator                                                         | \$13,750          | \$13,063         | \$344         | \$344       |
| Raise 6R-24L and Taxiways and Strengthen to 75,000 lbs. DWL; Extend 6R and Taxiway B by 800'; Install PAPI-4 | \$22,617,000      | \$21,486,150     | \$565,425     | \$565,425   |
| Construct Right-Angled Exit Taxiway (approach end of 6R)                                                     | \$244,000         | \$231,800        | \$6,100       | \$6,100     |
| Install MALSR 6R                                                                                             | \$844,000         | \$801,800        | \$21,100      | \$21,100    |
| Install MALSR 24L                                                                                            | \$844,000         | \$801,800        | \$21,100      | \$21,100    |
| Widen 6R-24L to 100'                                                                                         | \$1,728,000       | \$1,641,600      | \$43,200      | \$43,200    |
| Subtotal Long Term                                                                                           | \$43,840,416      | \$41,648,395     | \$1,096,010   | \$1,096,010 |
| Total Program Cost                                                                                           | \$80,383,247      | \$68,814,577     | \$8,157,437   | \$3,411,235 |





A key aspect of this planning document is the use of demand-based planning milestones. The short term planning horizon contains items of highest priority. These items have been carefully selected with consideration of current activity levels and funding conditions. As short term horizon activity levels are reached, it will then be time to program for the intermediate term based upon the next activity milestones. Similarly, when the intermediate term milestones are reached, it will be time to program for the long term activity milestones.

Many development items included in the recommended concept will need to follow demand indicators. For example, the plan includes construction of hangar facilities. Based aircraft will be the indicator for additional hangar needs. If based aircraft growth occurs as projected, additional hangars will need to be constructed to meet the demand.

If growth slows or does not occur as projected, hangar development projects can be delayed. As a result, capital expenditures will be undertaken as needed, which leads to a responsible use of capital assets. Some development items do not depend on demand, such as pavement maintenance. These types of projects typically are associated with day-to-day operations and should be monitored and identified by airport management.

As a master plan is a conceptual document, implementation of these capital projects should only be undertaken after further refinement of their design through architectural and engi-

neering analyses. Moreover, some projects, such as the runway extensions, will require further study at the time of implementation.

The cost estimates presented in this chapter have been increased to allow for contingencies that may arise on the project. Capital costs presented here should be viewed only as estimates subject to further refinement during design. Nevertheless, these estimates are considered sufficiently accurate for planning purposes. Cost estimates for each of the development projects listed in the capital improvement plan are listed in current (2009) dollars. **Exhibit 6A** presents the proposed needs based capital improvement program (CIP) for Ryan Airfield.

## SHORT TERM IMPROVEMENTS

The short term improvement projects are depicted on **Exhibit 6B** with red shading. With recent decreased operational demand at the airport and the loss of the flight school, the primary focus of the short term CIP is on maintaining and securing existing facilities. This includes pavement rehabilitation and preservation projects, which account for approximately 34 percent of short term project costs.

Drainage, utility, and security improvements are also needed in the short term. This includes the construction of security fencing and perimeter roadway, conducting an airfield drainage study, upgrades to airfield drainage systems, and the acquisition of lighting generators. Projects in these categories account for approx-

imately 42 percent of short term CIP funding needs.

Additional short term projects are included to improve airfield lighting systems and signage for safety and maintenance purposes, expand automobile parking capacity near the administration building, and to improve the safety of vehicle traffic on the north general aviation apron.

Hangar development is expected during each of the planning periods. Since hangars are expected to be developed either privately or by other self-funding means; their costs are not included in the capital improvement program. Hangar and other private development areas are depicted on **Exhibit 6B** with green shading.

**The total investment necessary for the short term CIP is approximately \$14.1 million. Of this total, \$7.3 million is eligible for FAA grant funding, \$5.3 million is eligible for state funds, with the airport sponsor responsible for \$1.4 million.**

## **INTERMEDIATE PLANNING HORIZON**

Upon experiencing operational levels identified in the intermediate term planning horizon in **Table 6A**, the next phase of the CIP should be considered. Intermediate projects are depicted on **Exhibit 6B** with yellow shading. The implementation of many of the items in the intermediate term should be based upon actual demand. Those projects, such as the construc-

tion of additional apron should not be undertaken unless there is an existing demand for such facilities.

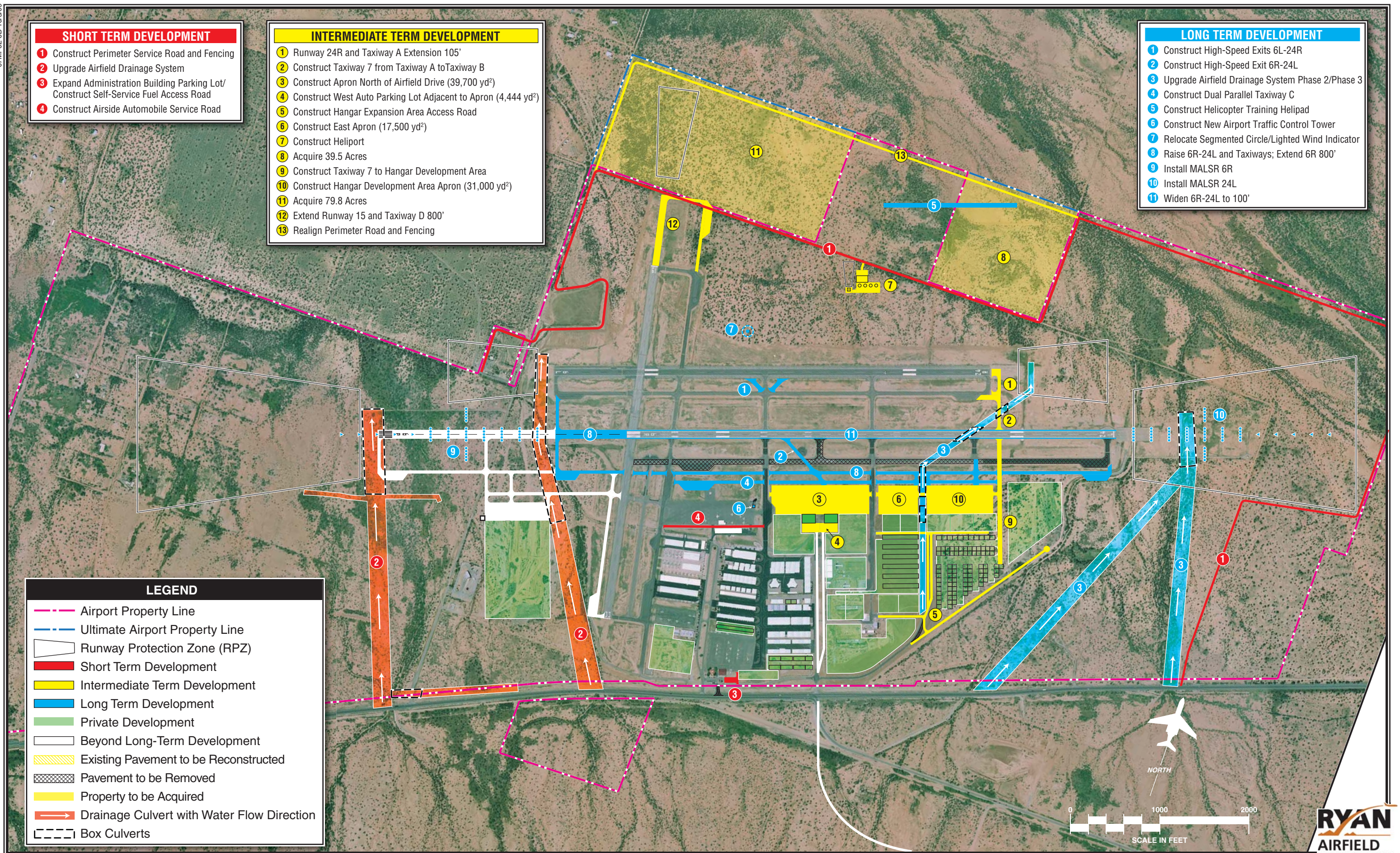
The focus of intermediate term projects is on improving airfield capacity, providing facilities to accommodate the addition of a full-service fixed base operator (FBO), expansion of infrastructure to allow for hangar development on the east side of the airport, and pavement preservation.

Runway 24R is planned to be extended by 105 feet. This extension will allow Runway 6L-24R to be capable of accommodating a wider range of aircraft and will improve airfield redundancy. A taxiway (Taxiway 7) from the extended Runway 24R end will extend south to the hangar development area.

Runway 15-33 is planned to be extended 800 feet in the intermediate term horizon to an ultimate length of 4,800 feet. This is the FAA recommended runway length for use by ARC B-I (small airplane exclusively) aircraft, which is the design aircraft for Runway 15-33.

A heliport is planned in the intermediate term on the north side of the airfield. This location has a separation distance of approximately 950 feet from the centerline of Runway 6L-24R, which would allow for simultaneous visual flight rule (VFR) operations. This separation will allow fixed-wing and itinerant rotorcraft to operate more independently of each other, thus improving airfield capacity and enhancing safety. The plan allows for helicopter parking and an FBO facility next to the heliport.







Intermediate term CIP planning includes landside facility improvements to accommodate a full-service FBO at Ryan Airfield. These improvements include the construction of a 39,700 square yard apron along the flight line and a 4,444 square yard automobile parking lot to be used by an FBO.

For the future development of the eastern portions of the landside area, utilities must first be installed. An intermediate term project is planned to be undertaken to provide this east side of the airport with water, sanitary sewer, electricity and gas, and telecommunication services.

Once private development of hangar facilities to the east of the landside area is planned, the construction of a new east side access road should be undertaken. A total of 48,500 square yards of apron is planned at the north end of the hangar development area along the Taxiway B flight line. This apron will serve aviation related businesses.

The purchase of a combined 119.3 acres of land from private entities is planned in the intermediate term horizon. The land acquisitions would provide runway approach protection and allow for future airside development. The land areas to be transferred are depicted on **Exhibit 6B** by yellow shading.

Additional CIP projects planned in the intermediate term horizon include adding an additional floor to the existing airport traffic control tower (ATCT) for increased office space and the installation of additional airfield

lighting systems. A total of \$1.3 million is included in this planning period for on-going pavement maintenance needs such as crack sealing, rejuvenating seal coats, and slab replacements as necessary.

**The total investment necessary for the intermediate term CIP is approximately \$22.5 million. Of this total, \$19.8 million is eligible for FAA grant funding, \$1.8 million is eligible for state funds, with the airport sponsor responsible for \$907,424.**

## **LONG TERM PLANNING HORIZON**

Long term improvements, as presented on **Exhibit 6B** with blue shading, continue the expansion of airside facilities and aircraft aprons to accommodate a wider range of business jet aircraft and overall airport operational growth.

Over half of the long term CIP costs come from projects to improve the drainage, safety, and capacity of Runway 6R-24L and Taxiway B. Runway 6R-24L, a portion of Runway 15-33 and several associated taxiways need to be raised, in some locations over six feet, to allow for the installation of drainage culverts under the runway. Associated taxiways will be raised in conjunction to meet grading standards. Taxiway B will be relocated to meet the ARC D-II design separation standard of 425 feet, ultimately allowing for instrument approach visibility minimums to be lower than  $\frac{3}{4}$ -miles for the primary runway. An 800 foot



extension of Runway 6R-24L and Taxiway B to the west is included in this project, which will shift the Runway 6R threshold so that it does not fall on the crosswind runway. This threshold shift will improve airfield capacity and reduce the potential for runway incursions. A separate project is planned in the long term to widen Runway 6R-24L to 100 feet to meet ARC D-II design standards.

Additional airfield capacity and safety improvements in the long term include the construction of dual parallel Taxiway C for Runway 6R-24L and the construction of high-speed exit taxiways on the primary and parallel runways.

Medium intensity approach lighting systems with runway alignment indicator lights (MALSRs) are planned for each end of Runway 6R-24L to achieve ½-mile instrument approach capability minimums.

A helicopter touchdown and lift-off area (TLOF) is planned to be constructed north of the heliport. This TLOF area will consist of a 1,500 foot long, 50 foot wide section of pavement where helicopters can perform training operations. This TLOF area will improve airfield capacity by segregating fixed-wing and rotorcraft operations.

Additional drainage improvements on the east side of the airport are planned to channel water around and under Runway 6R-24L towards the northeast end of the airfield.

A new ATCT is planned to be constructed in the long term. This new  
*June 11, 2010*

ATCT is planned to be located on the site of the existing ATCT.

A total of \$3.0 million is included in this planning period for on-going pavement maintenance needs such as crack sealing, rejuvenating seal coats, and slab replacements as necessary.

**The total investment necessary for the long term CIP is approximately \$43.8 million. Of this total, \$41.6 million is eligible for FAA grant funding; \$1.1 million is eligible for state funds, with the airport sponsor responsible for \$1.1 million.**

## **POTENTIAL FUTURE PROJECTS**

Once the high priority projects identified in the CIP have been addressed and operational levels identified in the long term planning horizons in **Table 6A** have been exceeded, future projects can be considered. The implementation of many of the potential future items should be based upon actual demand. Those projects, such as the extension of Runway 6R and the construction of additional apron should not be undertaken unless there is an existing demand for such facilities.

Potential future projects are listed in **Table 6B** without associated costs. Each project will need to be readdressed in the next master plan to determine its continued relevance to the efficient use of the airport and to establish cost estimates. These projects are depicted in white on **Exhibit 6B**.

**TABLE 6B****Potential Future Projects  
Ryan Airfield**

| Project # | Project Description                                                                            |
|-----------|------------------------------------------------------------------------------------------------|
| 1.        | Construct Airfield Drive divided roadway.                                                      |
| 2.        | Extend Runway 6R and Taxiway B by 2,000 feet.                                                  |
| 3.        | Relocate Runway 6R MALSR                                                                       |
| 4.        | Construct partial-parallel taxiways southwest of the intersection of Runways 6R-24L and 15-33. |
| 5.        | Construct general aviation apron on the west side of Runway 15-33 for general aviation use.    |
| 6.        | Install self-service fuel facilities on west apron.                                            |

## **PLAN IMPLEMENTATION**

The best means to begin implementation of the recommendations in this master plan is to first recognize that planning is a continuous process that does not end with completion and approval of this document. Rather, the ability to continuously monitor the existing and forecast status of airport activity must be provided and maintained. The issues upon which this master plan is based will remain valid for a number of years. The primary goal is for the airport to best serve the air transportation needs of the region, while continuing to be economically self-sufficient.

The actual need for facilities is most appropriately established by airport activity levels rather than a specified date. For example, projections have been made as to when additional hangars may be needed at the airport. In reality, however, the timeframe in which the development is needed may be substantially different. Actual demand may be slower to develop than expected. On the other hand, high levels of demand may establish the need to accelerate the development. Although every effort has been made in this master planning process to conservatively estimate when facility de-

velopment may be needed, aviation demand will dictate when facility improvements need to be delayed or accelerated.

The real value of a usable master plan is in keeping the issues and objectives in the minds of the managers and decision-makers so that they are better able to recognize change and its effect. In addition to adjustments in aviation demand, decisions made as to when to undertake the improvements recommended in this master plan will impact the period that the plan remains valid. The format used in this plan is intended to reduce the need for formal and costly updates by simply adjusting the timing. Updating can be done by the TAA, thereby improving the plan's effectiveness.

In summary, the planning process requires that the TAA consistently monitor the progress of the airport in terms of aircraft operations and based aircraft. Analysis of aircraft demand is critical to the timing and need for new airport facilities. The information obtained from continually monitoring airport activity will provide the data necessary to determine if the development schedule should be accelerated or decelerated.