



# CAPITAL IMPROVEMENT PROGRAM

The analyses completed in previous chapters evaluated development needs at Cox Field Airport over the next 20 years and beyond, based on forecast activity, facility needs, and operational efficiency. In this chapter, basic economic, financial, and management rationale is applied to the development items so that the feasibility of each item contained in the plan can be assessed.

The presentation of the capital improvement program (CIP) has been organized into four sections. First, the airport's capital program needs are categorically recognized. Second, the CIP projects and their allocated cost estimates are itemized into planning horizons that extend through the planning period of the Master Plan. Next, funding sources on the federal, state, and local levels are

identified and discussed and, finally, financing of the development program will be discussed to include projections for future airport cash flows and recommendations for airport rates and charges. The vision of the Master Plan is based on the airport achieving specific demand-based triggers such as growth in based aircraft and an increase in aviation business development.

## *DEMAND-BASED PLAN*

The Cox Field Airport Master Plan has been developed according to a demand-based schedule. Demand-based planning establishes planning guidelines for the airport based upon airport activity levels instead of subjective factors such as points in time. By doing so, the levels of activity derived from the demand forecasts can be re-



lated to the actual capital investments needed to safely and efficiently accommodate the level of demand being experienced at the airport. More specifically, the intention of the Master Plan is that facility improvements needed to serve new levels of demand should only be implemented when the levels of demand experienced at the airport justify their implementation.

As discussed, many development items included in the recommended Master Plan Concept will need to follow demand indicators. For example, the plan includes the construction of new aircraft storage hangars. An increasing number of based aircraft will be the indicator for these 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 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 correspond specifically to actual demand levels, such as maintenance. Maintenance projects are typically associated with day-to-day operations or aging factors and should be monitored and identified by airport management.

A demand-based Master Plan does not specifically require the implementation of any of the demand-based improvements. Instead, it is envisioned that implementation of any Master Plan improvements would be examined against the demand levels prior to implementation. In many ways, this Master Plan is similar to a community's general plan. The Master Plan establishes a plan for the use of airport facilities consistent with the potential aviation needs and capital needs required to support that specific use. However, individual projects in the plan are not implemented until the need is demonstrated and the project is approved for funding. **Table 6A** summarizes the key demand milestones for each of the three planning horizons.

<b>TABLE 6A Planning Horizon Summary Cox Field Airport</b>				
	<b>Current</b>	<b>Short Term</b>	<b>Intermediate Term</b>	<b>Long Term</b>
<b>ANNUAL OPERATIONS</b>				
Total Itinerant	3,050	4,600	6,400	9,900
Total Local	5,000	5,850	8,350	12,750
<b>Total Operations</b>	<b>8,050</b>	<b>10,450</b>	<b>14,750</b>	<b>22,650</b>
<b>BASED AIRCRAFT</b>				
Single Engine Piston	46	50	55	66
Multi-Engine Piston	4	4	4	4
Turboprop	0	1	2	3
Jet	5	6	6	8
Helicopter	1	1	1	2
<b>Total Based Aircraft</b>	<b>56</b>	<b>62</b>	<b>68</b>	<b>83</b>
<b>TOTAL ANNUAL INSTRUMENT OPERATIONS</b>	<b>N/A</b>	<b>138</b>	<b>256</b>	<b>495</b>

## ***AIRPORT DEVELOPMENT NEEDS***

In an effort to identify capital needs at the airport, this section provides analysis regarding the associated development needs of those projects included in the CIP. While some projects will be demand-based, others will be dictated by design standards, safety, or rehabilitation needs. Each development need is categorized according to this schedule. The applicable category (or categories) included are presented on **Exhibit 6A**. The proposed projects can be categorized as follows:

- 1) **Safety/Security (SS)** – these are capital needs considered necessary for operational safety and protection of aircraft and/or people and property on the ground near the airport.
- 2) **Environmental (EN)** – these are capital needs which are identified to enable the airport to operate in an environmentally acceptable manner or meet needs identified in the Environmental Overview outlined in Appendix C.
- 3) **Maintenance (MN)** – these are capital needs required to maintain the existing infrastructure at the airport.
- 4) **Efficiency (EF)** – these are capital needs intended to optimize aircraft ground operations or passengers' use of the terminal building.
- 5) **Demand (DM)** – these are capital needs required to accommodate levels of aviation demand. The im-

plementation of these projects should only occur when demand for these needs is verified.

- 6) **Opportunities (OP)** – these are capital needs intended to take advantage of opportunities afforded by the airport setting. Typically, this will involve improvements to property intended for lease to aviation or non-aviation related development.

## ***CAPITAL IMPROVEMENT SCHEDULE AND COST SUMMARIES***

Once the specific needs for the airport have been established, the next step is to determine a realistic capital improvement schedule and associated costs for implementing the plan. This section will identify these projects and the overall costs of each item in the development plan. The program outlined in the following pages has been evaluated from a variety of perspectives and represents the culmination of a comparative analysis of basic budget factors, demand, and priority assignments.

The recommended improvements are grouped by the planning horizons: short term, intermediate term, and long term. Each year, Cox Field Airport will need to re-examine the priorities for funding, adding or removing projects to the capital programming lists.

**Exhibit 6A** summarizes the CIP for Cox Field Airport through the 20-year planning period of this Master Plan.

Project Description		Development Category	Total Project Cost	FAA/TxDOT Eligible	Local Share
<b>SHORT TERM PROGRAM (1-5 YEARS)</b>					
1	Rehabilitate Runway 14-32 (Crack Seal)	MN	\$177,200	\$159,480	\$17,720
2	Rehabilitate Parallel Taxiway A (Overlay)	MN	1,035,000	931,500	103,500
3	Rehabilitate Aircraft Parking Apron (Overlay)	MN	652,900	587,610	65,290
4	Reconstruct Headwall and Culvert Associated with Drainage for Little Sandy Creek	EN/MN	40,000	20,000*	20,000
5	Extend Parallel Taxiway A 1,400' South to Runway 35 Threshold	SS/EF	1,475,600	1,328,040	147,560
6	Extend Terminal Area/Hangar Access Taxiway 375' West (Phase I)	DM/OP	189,300	170,370	18,930
7	Construct 10-Unit T-Hangar/Linear Box Hangar Complex	DM	600,000	--	600,000
8	Construct Vehicle Access Road Serving Existing and Ultimate Hangar Development	SS/DM	258,000	50,000*	208,000
9	Miscellaneous Annual RAMP Projects	MN	360,000	180,000	180,000
<b>TOTAL SHORT TERM PROGRAM</b>			<b>\$4,788,000</b>	<b>\$3,427,000</b>	<b>\$1,361,000</b>
<b>INTERMEDIATE TERM PROGRAM (6-10 YEARS)</b>					
1	Rehabilitate Taxiway B (Overlay)	MN	\$654,500	\$589,050	\$65,450
2	Relocate the Runway 14 Threshold 280' Southeast and Realign Associated Taxiways	SS	483,100	434,790	48,310
3	Rehabilitate Runway 14-32 to 30,000 pounds SWL (Overlay)	MN	930,900	837,810	93,090
4	Install PAPI-2s on Each End of Runway 14-32	SS	141,100	126,990	14,110
5	Install MIREL on Runway 14-32	SS	575,100	517,590	57,510
6	Install REILs on Runway 14-32	SS	57,400	51,660	5,740
7	Extend Terminal Area/Hangar Access Taxiway 375' West (Phase II)	DM/OP	189,300	170,370	18,930
8	Construct 10-Unit T-Hangar/Linear Box Hangar Complex	DM	600,000	--	600,000
9	Acquire Land for Approach Protection South of Runway 17-35 (51.9 Acres)	SS	106,000	95,400	10,600
10	Install MALSRS on Runway 35	SS	776,900	699,210	77,690
11	Miscellaneous Annual RAMP Projects	MN	500,000	250,000	250,000
<b>TOTAL INTERMEDIATE TERM PROGRAM</b>			<b>\$5,014,300</b>	<b>\$3,772,870</b>	<b>\$1,241,430</b>
<b>LONG TERM PROGRAM (11-20 YEARS)</b>					
1	Rehabilitate Aircraft Parking Apron (Reconstruction)	MN	\$1,915,800	\$1,724,220	\$191,580
2	Improve RSA and OFA Deficiencies Adjacent to North and South Sides of Runway 17-35	SS	409,800	368,820	40,980
3	Rehabilitate Runway 17-35 to 60,000 Pounds SWL (Overlay)	MN	3,482,800	3,134,520	348,280
4	Rehabilitate Parallel Taxiway A to 60,000 Pounds SWL (Overlay)	MN	2,181,700	1,963,530	218,170
5	Construct 10-Unit T-Hangar/Linear Box Hangar Complex	DM	600,000	--	600,000
6	Rehabilitate Existing Terminal Area/Hangar Access Taxiway (Overlay)	MN	546,200	491,580	54,620
7	Close and Remove Runway 3-21 and Associated Pavements	DM/OP	1,381,000	1,242,900	138,100
8	Realign Taxiway Perpendicular to Runway 17-35 (Previously Served Runway 3-21)	SS/EF	500,000	450,000	50,000
9	Acquire Land for Approach Protection Southeast of Runway 14-32 (4.1 Acres)	SS	11,500	10,350	1,150
10	Expand Fuel Farm Storage Capacity (10,000-Gallon Jet A Fuel Storage Tank)	DM	135,000	--	135,000
11	Install MALSRS on Runway 17	SS	593,600	534,240	59,360
12	Construct 10-Unit T-Hangar/Linear Box Hangar Complex	DM	600,000	--	600,000
13	Miscellaneous Annual RAMP Projects	MN	1,000,000	500,000	500,000
<b>TOTAL LONG TERM PROGRAM</b>			<b>\$13,357,400</b>	<b>\$10,420,160</b>	<b>\$2,937,240</b>
<b>TOTAL PROGRAM COSTS</b>			<b>\$23,159,700</b>	<b>\$17,620,030</b>	<b>\$5,539,670</b>

**KEY**

\*Utilization of RAMP Funds

Development Categories:

- SS - Safety/Security
- EN - Environmental
- MN - Maintenance
- EF - Efficiency
- DM - Demand
- OP - Opportunity

- RAMP - Routine Airport Maintenance Program
- RSA - Runway Safety Area
- OFA - Object Free Area
- PAPI - Precision Approach Path Indicator
- SWL - Single Wheel Loading
- MALSRS - Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
- MIREL - Medium Intensity Runway Lighting
- REIL - Runway End Identification Light



An estimate has been included with each project of federal/state funding eligibility, although this amount is not guaranteed. **Exhibit 6B** graphically depicts development staging by overlaying each project onto the aerial photography of the airport. As a Master Plan is a conceptual document, implementation of these capital projects should only be undertaken after further refinement of their design and costs through architectural and engineering analysis.

The cost estimates for the CIP were developed by the airport engineer who is a sub-consultant to this Master Plan project and are included as an appendix. The 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 CIP are listed in current (2010) dollars. Adjustments will need to be applied over time as construction costs or capital equipment costs change.

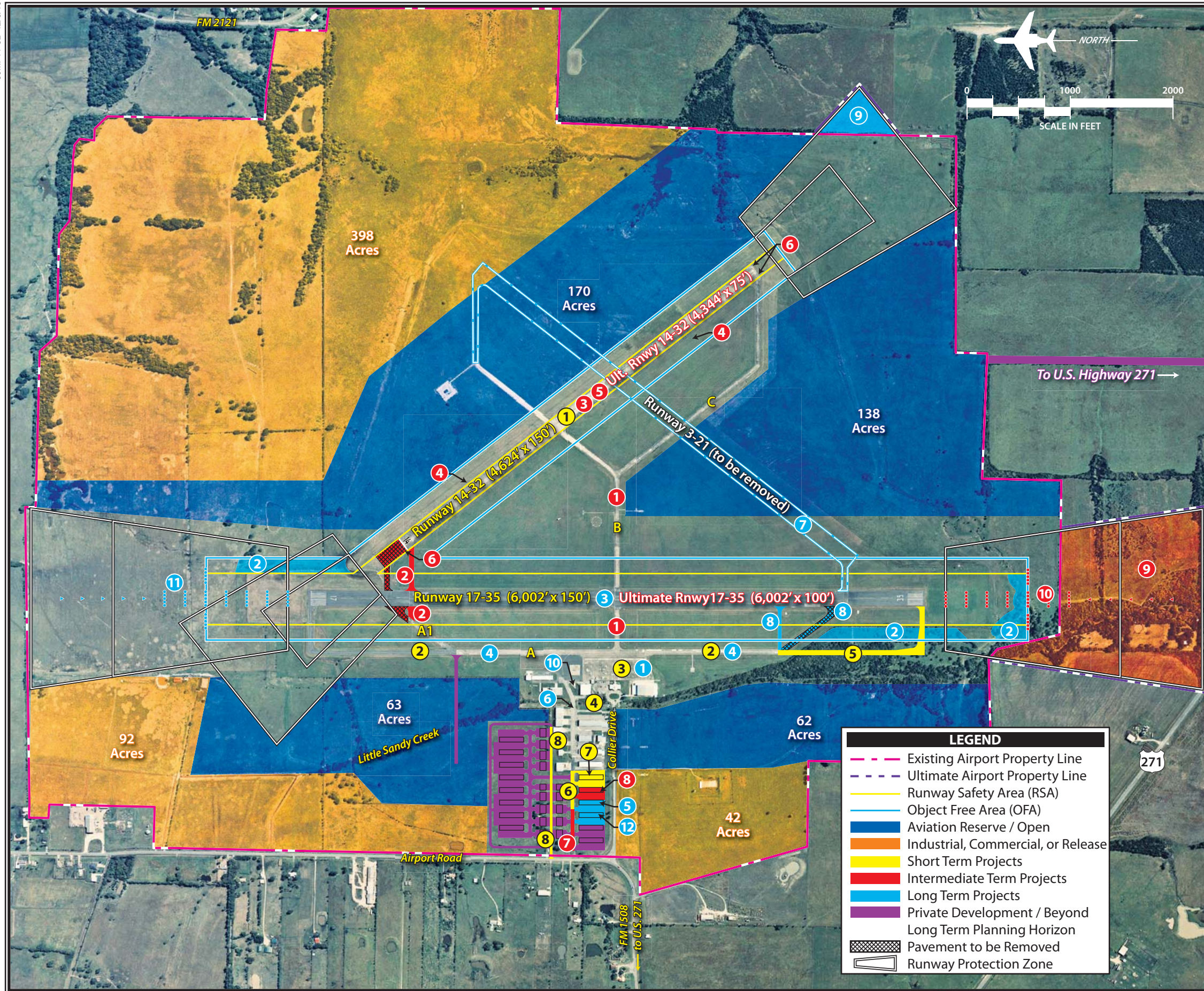
## **SHORT TERM IMPROVEMENTS**

The short term planning horizon includes nine projects for the five-year planning period as presented on **Exhibit 6A** and illustrated on **Exhibit 6B**. Prior to detailing the projects included in the short term CIP, it should be noted that the airport has several projects under design that will be

completed within the current fiscal year 2011 funding cycle. These projects include rehabilitating Runway 17-35 and relocating the medium intensity runway lighting (MIRL) associated with this runway. When this project is complete, Runway 17-35 will have a published width of 100 feet. Additional pavement rehabilitation and drainage improvement projects are being undertaken as well. As a result, the first year of the Master Plan's CIP considers projects that may be accomplished in the 2012 federal/state funding cycle (October 2011 to September 2012).

The first three projects listed in the short term program include improvements to existing pavements at the airport. Crosswind Runway 14-32 is scheduled for a crack seal while parallel Taxiway A and the existing aircraft parking apron adjacent to the terminal building are to be overlaid. Upon completion of these projects, a large majority of existing airport pavements to include Runways 17-35 and 14-32, parallel Taxiway A, and the aircraft parking apron will have undergone major rehabilitation in the recent past allowing Cox Field Airport to be well-positioned for other capital needs.

Another maintenance-related project in the short term program involves the reconstruction of a headwall and culvert associated with Little Sandy Creek that traverses adjacent to the west side of the terminal building. This will involve replacing the headwall and lengthening pipe in order to improve drainage issues associated with this area.



**SHORT TERM PROGRAM (1-5 YEARS)**

- 1 Rehabilitate Runway 14-32 (Crack Seal)
- 2 Rehabilitate Parallel Taxiway A (Overlay)
- 3 Rehabilitate Aircraft Parking Apron (Overlay)
- 4 Reconstruct Headwall and Culvert Associated with Drainage for Little Sandy Creek
- 5 Extend Parallel Taxiway A 1,400' South to Runway 35 Threshold
- 6 Extend Terminal Area/Hangar Access Taxiway 375' West (Phase I)
- 7 Construct 10-Unit T-Hangar/Linear Box Hangar Complex
- 8 Construct Vehicle Access Road Serving Existing and Ultimate Hangar Development
- 9 Miscellaneous Annual RAMP Projects (Not Pictured)

**INTERMEDIATE TERM PROGRAM (6-10 YEARS)**

- 1 Rehabilitate Taxiway B (Overlay)
- 2 Relocate the Runway 14 Threshold 280' Southeast and Realign Associated Taxiways
- 3 Rehabilitate Runway 14-32 to 30,000 pounds SWL (Overlay)
- 4 Install PAPI-2s on Each End of Runway 14-32
- 5 Install MIRS on Runway 14-32
- 6 Install REILs on Runway 14-32
- 7 Extend Terminal Area/Hangar Access Taxiway 375' West (Phase II)
- 8 Construct 10-Unit T-Hangar/Linear Box Hangar Complex
- 9 Acquire Land for Approach Protection South of Runway 17-35 (51.9 Acres)
- 10 Install MALS on Runway 35
- 11 Miscellaneous Annual RAMP Projects (Not Pictured)

**LONG TERM PROGRAM (11-20 YEARS)**

- 1 Rehabilitate Aircraft Parking Apron (Reconstruction)
- 2 Improve RSA and OFA Deficiencies Adjacent to North and South Sides of Runway 17-35
- 3 Rehabilitate Runway 17-35 to 60,000 Pounds SWL (Overlay)
- 4 Rehabilitate Parallel Taxiway A to 60,000 Pounds SWL (Overlay)
- 5 Construct 10-Unit T-Hangar/Linear Box Hangar Complex
- 6 Rehabilitate Existing Terminal Area/Hangar Access Taxiway (Overlay)
- 7 Close and Remove Runway 3-21 and Associated Pavements
- 8 Realign Taxiway Perpendicular to Runway 17-35 (Previously Served Runway 3-21)
- 9 Acquire Land for Approach Protection Southeast of Runway 14-32 (4.1 Acres)
- 10 Expand Fuel Farm Storage Capacity (10,000-Gallon Jet A Fuel Storage Tank)
- 11 Install MALS on Runway 17
- 12 Construct 10-Unit T-Hangar/Linear Box Hangar Complex
- 13 Miscellaneous Annual RAMP Projects (Not Pictured)

**RAMP** Routine Airport Maintenance Program  
**RPZ** Runway Protection Zone  
**MALS** Medium Intensity Approach Lighting System w/ Runway Alignment Indicator Lights  
**PAPI** Precision Approach Path Indicator  
**REIL** Runway End Identification Light  
**SWL** Single Wheel Loading



The next project deals with taxiway improvements at the airport. Currently, Taxiway A and its entrance/exit taxiway provide 5,000 feet of parallel taxiway access on the west side of Runway 17-35. As previously discussed, in order to obtain improved instrument approach procedures to this runway, a full-length parallel taxiway is recommended that provides entrance/exit access to both runway thresholds. As a result, the CIP calls for the extension of parallel Taxiway A 1,400 feet south connecting to the Runway 35 threshold. In order to construct this taxiway, improvements would be needed on the south end of the airport to include the removal of trees and grading and drainage improvements.

Additional landside development is also proposed in the short term program. As presented, the existing taxiway that currently provides access to several hangar storage facilities on the west side of Little Sandy Creek is planned to be extended approximately 375 feet farther west in order to provide access to future aviation-related development. The short term plan includes the construction of one ten-unit T-hangar/linear box hangar facility and associated taxilanes. The taxiway pavements are fully eligible for federal/state funding. It should be noted that under certain circumstances, hangar facilities may be eligible to receive partial funding assistance (\$150,000 in non-primary entitlement funds to be outlined later in the chapter). Hangar construction is eligible only if other higher-priority airfield items have been completed. As can be seen on the CIP being proposed, sev-

eral airfield maintenance items are listed that would most likely utilize a large majority of funding available through non-primary entitlements. As a result, funding associated with programmed hangar facilities is shown as being the responsibility of the local sponsor.

Further development of the west landside area is called for at the end of the short term planning period. This involves the extension of a vehicle access road east from Airport Road/FM Road 1508 leading to existing and potential hangar development. Furthermore, this roadway would better segregate aircraft and vehicle access bringing an added dimension of safety to the airfield. In order to gain access to existing hangars on the north side of the access taxiway, vehicles must travel east on Collier Drive, enter the aircraft movement area, and cross taxilanes and taxiways prior to reaching the hangar areas. The construction of this proposed roadway would eliminate the need for vehicles to have to cross these active movement areas.

The final project listed in the short term program includes miscellaneous projects which could be funded through the Texas Department of Transportation – Aviation Division (TxDOT) Routine Airport Maintenance Program (RAMP). Each year, TxDOT offers RAMP funds of up to \$50,000 provided the airport sponsor provides a \$50,000 match. Thus, airports can have up to \$100,000 available for pavement maintenance or other general and routine maintenance projects that may arise in the term. The CIP considers Cox Field Airport utilizing

this source to the maximum extent possible. It should be noted that two projects listed in the short term program consider the utilization of RAMP funds including drainage improvements associated with Little Sandy Creek and the construction of the vehicle access road. As a result, an additional \$360,000 in RAMP funds would be available during the five-year planning period.

The total investment necessary for the short term CIP is approximately \$4.79 million. Of this total, approximately \$3.43 million is eligible for FAA/TxDOT grant funding. The remaining \$1.36 million would need to be provided locally.

## **INTERMEDIATE TERM IMPROVEMENTS**

The intermediate term program covers the period years six through ten. Planning new projects beyond a five-year timeframe can be challenging. Project need is heavily dependent upon local demand and the economic outlook of the aviation industry. The use of planning horizons to group potential airport projects provides the airport flexibility to accelerate those projects that are needed immediately and delay those projects that no longer have a high priority.

The intermediate term CIP considers 11 projects for the five-year timeframe. The first project calls for pavement maintenance on Taxiway B. Taxiway B currently connects the crosswind runways on the east side of the airfield to the terminal area on the

west side of Runway 17-35. During this time, Taxiway B is scheduled for rehabilitation in the form of a two-inch pavement overlay.

The next five projects deal with improvements on crosswind Runway 14-32. The previous chapter indicated the need for the airport to ultimately meet Airport Reference Code (ARC) C/D-II design standards which would apply to primary Runway 17-35. In order to meet the full safety standards, holdlines associated with Runway 17-35 should be placed 255 feet from the runway centerline so as to position aircraft at the holdlines outside the ultimate runway safety area (RSA) associated with the primary runway. To satisfy this standard while also allowing an adequate holdline distance of 200 feet from the Runway 14-32 centerline, existing Taxiway A1 leading to the Runway 14 threshold must be relocated 200 feet south. As a result, 280 feet of pavement on Runway 14-32 should be removed, decreasing the runway length to 4,344 feet. The next project calls for the rehabilitation of Runway 14-32 that would strengthen the pavement to 30,000 pounds single wheel loading (SWL). As previously discussed, the current width of Runway 14-32 is published at 150 feet which exceeds the 75-foot width required for existing and ultimate ARC B-II design. As such, the CIP considers rehabilitating only half of the runway's width, which will decrease the published width to 75 feet.

Lighting and visual approach aids are also programmed for Runway 14-32 at this time. Two-box precision approach path indicator lights (PAPI-2s),

(MIRL), and runway end identification lights (REILs) would allow for improved access to the runway during nighttime and/or poor visibility conditions. Furthermore, during these times if Runway 17-35 would be closed for maintenance or emergencies, these lighting and approach aids, in particular MIRL, would allow the airport to remain open.

Landside projects continue initial development begun in the short term program. Phase II of the taxiway extension is included on the west side of the airport which would allow for more hangar development. A second ten-unit T-hangar/linear box hangar is also proposed in this area.

In an effort to improve airport utilization and safety, the intermediate term CIP calls for a straight-in instrument approach procedure to Runway 35 with the potential for Category I (CAT I) approach minimums (200-foot cloud heights and ½-mile visibility minimums). The plan calls for the fee simple property acquisition of approximately 51.9 acres that would encompass the expanded runway protection zone (RPZ) and installation of the medium intensity approach lighting system with runway alignment indicator lights (MALSR).

Miscellaneous RAMP projects are included as the final project which would account for annual use of the full \$100,000 available from TxDOT. As presented on **Exhibit 6A** and illustrated on **Exhibit 6B**, the total costs associated with the intermediate term program are estimated at approximately \$5.01 million. Of this total,

\$3.77 million is eligible for FAA/TxDOT grant funding, and the local share is projected to be approximately \$1.24 million.

## LONG TERM IMPROVEMENTS

The long term planning horizon considers 13 projects for the ten-year period focused on the continued maintenance of airfield pavements and landside development in addition to improving safety areas. The improvements are listed on **Exhibit 6A** and depicted on **Exhibit 6B**.

The first four projects in the long term are associated with improving the airfield, in particular Runway 17-35 to meet ARC C/D-II aircraft on a regular basis. In order to better accommodate larger aircraft projected to utilize the airport on a more frequent basis, rehabilitation projects are called for on Runway 17-35, parallel Taxiway A, and the aircraft parking apron. Currently, the runway has an SWL loading of 30,000 pounds. Increasing the pavement strength to 60,000 pounds SWL will withstand the runway's projected critical aircraft in ARC C/D-II on a regular basis. Improvements to the RSA and object free area (OFA) adjacent to the north and south sides of Runway 17-35 are also programmed during this time. This would involve removing obstructions in the form of trees and fencing and grading the areas within the safety areas.

The next two projects are related to continued improvements and development of landside infrastructure at the airport. The construction of a ten-

unit T-hangar/linear box hangar is planned in the west terminal area. Furthermore, an overlay of the taxiway providing access to hangar development in this area is called for.

Up until this point, the CIP has dedicated significant funding to the maintenance of airfield pavements associated with Runways 17-35 and 14-32. As previously discussed in Chapter Five, the Master Plan Concept calls for the ultimate closure of crosswind Runway 3-21 at Cox Field Airport. Due to operational and capital costs of maintaining airfield pavements, the FAA and TxDOT will only participate in grant funding assistance for improvements deemed justifiable and/or necessary. The existing three-runway system at the airport is not needed to meet safety requirements or to satisfy airfield capacity; therefore, the closure of Runway 3-21 is called for at this time. The CIP also considers the removal of all pavement associated with this runway; however, the removal of the pavement is not required as many airports have the remains of closed runway pavements. Airports have successfully re-used closed pavement sections as base material for new pavement projects. Further testing and engineering at the time of these proposed projects would determine the likelihood of utilizing portions of pavement associated with Runway 3-21 for such a cause. While the CIP proposes the pavement removal, it is understood that funding limitations and/or the condition of base material for utilization in other pavement projects may dictate the degree to which this occurs, if at all.

In the event that Runway 3-21 is closed, the CIP programs the perpendicular realignment of the acute-angled taxiway on the west side of Runway 17-35. This would improve aircraft efficiency associated with exiting the primary runway, in addition to relocating the taxiway from between the existing four-box visual approach slope indicator (VASI-4) approach aid serving Runway 35.

The remaining projects in the long term CIP consider other airside and landside improvements. In the event that Runway 14-32 is served by a straight-in approach with  $\frac{3}{4}$ -mile visibility minimums, approximately 4.1 acres of land southeast of the runway is programmed for fee simple acquisition in order to protect the associated RPZ. The expansion of the fuel farm to include an additional 10,000-gallon Jet A storage tank is also included. To complement the CAT I approach being proposed on Runway 35, the implementation of a MALSR is also proposed on the north end of the primary runway serving Runway 17. Finally, another T-hangar/linear box hangar facility is proposed depending on based aircraft demand at the airport.

As with the short and intermediate term programs, miscellaneous RAMP projects are also included in the long term program that could cover an array of items including maintaining airfield pavements. Total long term program costs are estimated at \$13.36 million with approximately \$10.42 million eligible for FAA/TxDOT funding assistance. The remaining \$2.9 million would be the responsibility of

the City of Paris. The total CIP program costs are estimated at \$23.16 million through the 20-year planning period of this Master Plan.

## **CAPITAL IMPROVEMENTS SUMMARY**

The CIP covers potential development at Cox Field Airport over the next 20 years. Many of the planned facilities at the airport included on the recommended Master Plan Concept as presented in Chapter Five are not included in the CIP, as they are either projected to be necessary beyond the scope of this plan or assumed to be private development, as is the case for future executive hangar construction. Several airport improvements in the CIP are demand-based. These facilities should be constructed to serve an existing demand at the airport at that time. This plan does not support building facilities in order to attract activity. Because the plan is demand-based rather than time-based, it provides the City of Paris with flexibility to develop facilities as needed. Should demand increase at a greater rate than is forecast, implementation of these improvements can be advanced. Should demand slow, the life of the Master Plan is effectively increased.

As previously discussed, the cost estimates included in the CIP were developed by the airport engineer and are included in Appendix D of this report. Several of the project items listed in Appendix D, in particular pavement maintenance items, have been identified by the airport engineer as projects

that should occur at the airport during the 20-year planning period of this study. Most of these items have been included in the CIP as presented in this chapter; however, some projects are assumed to be included as part of the RAMP offered through TxDOT and include smaller-scale pavement improvements such as crack sealing and joint sealing of taxiways, taxilanes, and aircraft parking apron areas.

## ***CAPITAL IMPROVEMENT FUNDING SOURCES***

As outlined in the previous section, capital improvements for airports can require sizable financial contributions. Most general aviation airports' operating budgets do not provide adequate resources to support necessary capital expenditures, as is the case for Cox Field Airport. For this reason, financing of capital improvements at the airport will not rely solely on the financial resources of the airport or the City of Paris.

Capital improvement funding has been made available to eligible airports through various grant-in-aid programs on both the federal and state levels. Historically, Cox Field Airport has received federal and state grants. At this time, all federal and state grants for general aviation airports in Texas, to include Cox Field Airport, are administered through TxDOT. The following discussion outlines key sources of funding potentially available for capital improvements at Cox Field Airport.

## FEDERAL GRANTS

Through federal legislation over the years, various grant-in-aid programs have been established to develop and maintain a system of public airports across the United States. The purpose of this system and its federally based funding is to maintain national defense and to promote interstate commerce. The most recent legislation affecting federal funding was enacted in late 2003 and is titled, *Century of Aviation Re-authorization Act*, or Vision 100.

The four-year bill covered FAA fiscal years 2004, 2005, 2006, and 2007. This bill presented similar funding levels to the previous bill - *Air 21*. Airport Improvement Program (AIP) funding was authorized at \$3.4 billion in 2004, \$3.5 billion in 2005, \$3.6 billion in 2006, and \$3.7 billion in 2007. This bill provided the FAA the opportunity to plan for longer term projects versus one-year re-authorizations. As of December 2010, a new multi-year bill has not been passed. On December 2, 2010, and under the provisions of HR 6473, the 17th extension of FAA's operating authority was proposed by the House of Representatives since the expiration of Vision 100 in September 2007. The authority for HR 6473 will expire on March 31, 2011. The House bill has been sent to the Senate and is currently awaiting approval. The bill will allow for \$1.85 billion to be spent in grant funds. As a result, it is likely that fiscal year 2011 will likely mirror the three previous years with piece-meal funding for FAA funds.

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 Aviation Trust Fund also finances the operation of the FAA. It is funded by user fees, including taxes on airline tickets, aviation fuel, and various aircraft parts. The Aviation Trust Fund also expired in 2007; however, its authorization has been extended similarly to Vision 100.

## Entitlement Funds

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. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually. Cox Field Airport is not served by a commercial airline, thus does not qualify as a commercial service airport and is not eligible for these entitlement funds.

General aviation airports receive up to \$150,000 of funding each year in Non-Primary Entitlement (NPE) funds. The primary requirement to receive NPE funds is inclusion in the National Plan of Integrated Airport Systems (NPIAS). In the past, Cox Field Airport has received NPE funding.

## **Discretionary Funds**

The remaining AIP funds are distributed by the FAA based on the priority of the projects for which they have requested federal assistance through discretionary apportionments. A national priority ranking system is used to evaluate and rank each airport project. Those projects with the highest priority from airports across the country are given preference in funding.

Under the AIP program, examples of eligible development projects include the airfield, public aprons, and access roads. Additional buildings and structures may be eligible if the function of the structure is to serve airport operations in a non-revenue generating capacity, such as maintenance facilities. Some revenue enhancing structures, such as T-hangars, may be eligible if all airfield improvements have been made, but the priority ranking of these facilities is very low.

Whereas entitlement monies are guaranteed on an annual basis, discretionary funds are not assured. If the combination of entitlement, discretionary, and airport sponsor match does not provide enough capital for planned development, projects may be delayed. Other supplemental funding sources are described in the following subsections.

### **FAA Facilities and Equipment (F&E) Program**

The Airway Facilities Division of the FAA administers the Facilities and

Equipment (F&E) Program. This program provides funding for the installation and maintenance of various navigational aids and equipment of the national airspace system. Under the F&E program, funding is provided for FAA airport traffic control towers (ATCTs), enroute navigational aids, on-airport navigational aids, and approach lighting systems.

It is anticipated that the implementation of MALSRs planned for each end of Runway 17-35 would be funded through AIP funds, although they may be eligible for F&E funding. Proposed installation of REIL and PAPI-2 systems on Runway 14-32 could qualify for F&E funds, but would not likely be a high priority.

## **STATE AID TO AIRPORTS**

The State of Texas participates in the federal State Block Grant Program. Under this program, the FAA annually distributes general aviation state apportionment and discretionary funds to TxDOT, which in turn distributes grants to airports within the state. In compliance with TxDOT's legislative mandate that it "apply for, receive, and disburse" federal funds for general aviation airports, TxDOT acts as the agent of the local airport sponsor. Although these grants are distributed by TxDOT, they contain all federal obligations.

The State of Texas also distributes funding to general aviation airports from the Highway Trust Fund as the Texas Aviation Facilities Development Program. These funds are appro-

priated each year by the state legislature. Once distributed, these grants contain state obligations only.

The establishment of a CIP for the state entails first identifying the need, then establishing a ranking or priority system. Identifying all state airport project needs allows TxDOT to establish a biennial program and budget for development costs. The most recent TxDOT CIP, *Aviation Capital Improvement Program 2011-2013*, assumed that approximately \$24 million in annual federal AIP grants, plus \$25 million earmarked for non-primary entitlements and \$16 million in state funds, would be available.

The TxDOT biennial program establishes a project priority system based upon the following objectives (in order of importance):

- Safety – Projects needed to make the facility safe for aircraft operations.
- Preservation – Projects to preserve the functional or structural integrity of the airport.
- Standards – Improvements required to bring the airport up to design standards for the current user aircraft.
- Upgrade – Improvements required to allow the airport to accommodate a larger aircraft or longer stage lengths.
- Capacity – Expansion required to accommodate more aircraft or higher activity levels.
- New Access – A new airport providing new air access to a previously unserved area.

- New Capacity – A new airport needed to add capacity or relieve congestion at other area airports.

Each airport project for Cox Field Airport must be identified and programmed into the state CIP and compete with other airport projects in the state for federal and state funds. In Texas, airport development projects that meet TxDOT's discretionary funds eligibility requirements can receive 90 percent funding from the AIP State Block Grant Program. Eligible projects include airfield and apron facilities. Historically, revenue-generating improvements such as fuel facilities, utilities, and hangars have not been eligible for AIP funding. *Vision 100*, however, provides for the allowance of NPE funds to be utilized for hangar or fuel farm construction if all other airfield needs have been addressed.

The availability of grant funds can fluctuate from year to year. Typically, an airport can expect a grant to cover several projects in one grant-cycle. The next grant opportunity may not arise for a couple of years thereafter. This cycle occurs as TxDOT must administer grants for more than 300 airports and has relatively limited resources. As a result, local budgeting for future capital improvements should consider sporadic grant availabilities.

### **Routine Airport Maintenance Program (RAMP)**

TxDOT has established the RAMP to help general aviation airports main-

tain and, in some instances, construct new facilities. The program was initially designed to help airports maintain airside and landside pavements, but has since been expanded to include construction of new facilities. RAMP is an annual funding source in which TxDOT will provide a 50 percent funding match for projects up to \$100,000. Examples of projects eligible under RAMP include pavement crack sealing, drainage improvements and maintenance, landscaping, public auto parking areas and access roads, expansion of apron areas or new apron areas, and many more.

### **Other State Airport Programs**

Newer programs in the TxDOT funding mechanism include terminal building and ATCT funding. TxDOT has funded terminal building construction on a 50/50 basis, up to a \$1.0 million total project cost. It should be noted that TxDOT has recently considered upgrading the total cost allowance on a case-by-case basis.

TxDOT also funds the construction of up to two ATCTs statewide each year. TxDOT has improved the program so that ATCT funding could be provided on a 90/10 basis, up to a total construction cost of \$1.67 million.

### **LOCAL FUNDING**

The balance of project costs, after consideration has been given to grants, must be funded through local resources. Cox Field Airport is operated by the City of Paris and receives assis-

tance from the city for both operational and capital expenditures. A goal for the airport is to generate enough revenue to cover all operating and capital expenditures. As with many general aviation airports, however, this is not always possible and other financial methods are needed.

There are several alternatives for local financing options for future development at the airport, including airport revenues, direct funding (subsidizing) 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. Historically, most facility development at the airport was completed through public financing. A few hangars were constructed by private entities. In the future, a mix of public and private investments could be required. As an example, the capital improvement program has assumed that some landside facility development would be privately developed.

There are several municipal bonding options available, 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 secured by the full faith and credit of the city, and future 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 are reserved for projects that have the highest public priorities.

In contrast to general obligation bonds, limited obligation bonds (sometimes referred to as 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 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. Rev-

enue 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 government agency, produces a unique set of concerns.

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 airport currently supports several leaseholds, which will be explained in greater detail in the next section.

In addition to leasehold financing, it is acceptable for the airport to enter into some form of public/private partnership for various airport projects. Typically, this would be limited to hangar construction, but there are some examples where a private developer con-

structs, for example, a taxilane, then deeds it to the airport for ongoing maintenance. When entering any such arrangement, the airport must be sure that the private developer does not gain an economic advantage over other airport tenants.

## ***FINANCING OF DEVELOPMENT PROGRAM***

Earlier in this chapter, programmed capital expenditures were presented in current (2010) dollars. Future expenditures were categorized according to assigned financing responsibilities, with the airport's responsible expenditures the primary focus of these feasibility analyses. In this section, the base costs assumed to be the financing responsibility of the airport, such as T-hangar construction, are adjusted to reflect available funding to determine the projected local share of these proposed capital expenditures in current dollars. Financing assumptions are then made, and the projected annual airport cost of these planned expenditures is estimated for incorporation into the cash flow analysis.

At the outset, it must be emphasized that long term feasibility analyses such as these must be based on many assumptions. In practice, projects will be undertaken when demand actually warrants, thus changing the underlying assumptions. Further, the actual financing of capital expenditures will

be a function of airport circumstances at the time of project implementation (i.e., revenue bond financing would likely not be used unless the actual level of airport earnings and reserves, along with entitlement and discretionary grants available at a particular time, were insufficient to meet project costs). As a result, the assumptions and analyses prepared for the Master Plan must be viewed in the context of their primary purpose: to examine whether there is a reasonable expectation that recommended improvements will be financially feasible and implementable.

The balance of project costs, after consideration has been given to grants, must be funded through local resources. According to **Exhibit 6A**, local funding will be needed in each planning horizon. This includes \$1.36 million in the short term, \$1.24 million in the intermediate term, and \$2.94 million in the long range.

The operation of the airport generates revenues, which are secured by Federal Grant Assurances, to be utilized only on the airport. While the revenues generated are significant, they are often times not enough to fund both airport operating expenditures and capital improvement requirements. Most general aviation airports in this country do not generate enough revenues to cover operating expenses. Nearly all need some level of community tax or bonding support to fund capital expenditures.

As previously discussed, 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 airport is owned by the City of Paris and conducts its daily operations through the collection of various rates and charges from general aviation

revenue sources. These revenues are generated specifically by airport operations. There are, however, restrictions on the use of revenues collected by the airport. All receipts, excluding bond proceeds or related grants and interest, are irrevocably pledged to the punctual payment of operating and maintenance expenses, payment of debt service for as long as bonds remain outstanding, or to additions or improvements to airport facilities. **Table 6B** presents historical operating expenses and revenues for Cox Field Airport over the past five years.

<b>TABLE 6B</b>					
<b>Historical Operating Revenues and Expenditures</b>					
<b>Cox Field Airport</b>					
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
<b>OPERATING REVENUES</b>					
Terminal Building Lease	\$3,600.00	\$3,600.00	\$3,600.00	\$3,600.00	\$3,600.00
Rent Hangar Storage	720.00	720.00	720.00	720.00	720.00
T-hangar Rentals	60,859.31	62,065.00	66,696.00	66,696.00	66,696.00
Fuel Flowage Fees	8,987.40	7,171.27	6,972.97	6,711.00	6,630.00
Lease and Rentals	11,310.30	9,297.60	11,507.60	13,926.30	10,891.30
<b>TOTAL REVENUES</b>	<b>\$85,477.01</b>	<b>\$82,853.87</b>	<b>\$89,496.57</b>	<b>\$91,653.30</b>	<b>\$88,537.30</b>
<b>OPERATING EXPENSES</b>					
Salaries and Benefits	\$30,807.05	\$32,678.56	\$34,220.20	\$34,416.65	\$0.00
Supplies	5,269.36	9,832.60	5,095.25	1,744.84	2,703.60
Utilities	37,516.00	32,104.47	35,148.50	37,445.83	58,182.76
Professional Consultants	3,475.00	5,243.25	6,825.00	3,900.00	3,631.84
Airport Management	24,990.00	24,990.00	24,990.00	24,990.00	24,990.00
Maintenance – Bldgs/Grounds	32,530.95	6,942.32	36,845.11	51,630.38	9,975.02
Misc Maintenance/Equipment	5,201.63	4,202.87	1,718.54	2,346.69	2,139.87
Auditing	1,374.06	1,500.00	1,500.00	1,500.00	1,500.00
Hangar Loan Amortization	9,677.26	9,677.26	9,677.26	9,677.26	9,677.26
<b>TOTAL EXPENSES</b>	<b>\$150,841.31</b>	<b>\$127,171.33</b>	<b>\$156,019.86</b>	<b>\$167,651.65</b>	<b>\$112,800.35</b>
<b>OPERATING PROFIT/(LOSS)</b>	<b>(\$65,364.30)</b>	<b>(\$44,317.46)</b>	<b>(\$66,523.29)</b>	<b>(\$75,998.35)</b>	<b>(\$24,263.05)</b>

## AIRPORT MANAGEMENT

Cox Field Airport is owned by the City of Paris, the airport sponsor, which has delegated airport departmental responsibilities to the city engineering department. The airport's finances

are directly linked to the City's general fund as opposed to a separate enterprise fund. Historically, the airport was operated through an enterprise fund; however, annualized losses resulted in the city folding the airport budget into the general fund.

Day-to-day operational management of the airport, however, has been contracted to the airport's fixed base operator (FBO). Under this management agreement, the FBO owner acts in the role of a traditional airport manager and has specific duties assigned; however, the FBO owner is considered a contractor and does not receive a salary or associated benefits through the city. The contract includes a financial payment of \$24,990 per year for management duties. Highlights of the contracted airport management duties include:

- Monitoring daily airport activities, on-site between the hours of 8:00 a.m. and 7:00 p.m. every day except Christmas day; also requires the availability of an on-call employee 24 hours per day, 7 days per week;
- Attending all airport board meetings and other local meetings associated with the airport when necessary;
- In communication with the City and the Director of Community Development;
- Preparation of monthly and annual airport reports;
- Enforcement of the airport's minimum standards;
- Oversight of airport maintenance and improvement activities;
- Cleanliness of airport common grounds;
- Assistance with airport budgeting;
- Assistance with airport grants;
- Assuring that the City maintains compliance with all grants, leases, and contracts;

- Maintaining a list of airport fixed assets, to include equipment and property belonging to the City.

Airport management methods are a mixed bag for general aviation airports across the country. Some airport sponsors employ a professional airport management staff, while others may have no real day-to-day management at all. Some airports, similar to Cox Field Airport, are managed by the airport's FBO through a contractual agreement. Recommendations vary as each airport is as unique as the community it serves.

Having reviewed the airport management agreement and the airport's financial position, recommendations to change the current agreement at Cox Field Airport would be unwarranted. The current structure provides for daily management without the expense of full-time city personnel expenses. The contracted airport management costs paid to the airport's FBO are actually lower than the typical salary for a professional airport manager. Moreover, the airport's FBO provides stability as it is also an airport business. Cox Field Airport would be considered an entry level professional airport position and would likely experience relatively regular turnover due to the upward movement desire for most likely candidates. Considering all factors, the current arrangement is likely the best option for the City of Paris and Cox Field Airport. Future changes in FBO or other industry practices could result in re-evaluating this position. Until that time, however, the current practice is favored and this Master Plan recommends its continuance.

## **OPERATING REVENUES**

Operating revenues at Cox Field Airport fall into five categories, including terminal building lease, fuel flowage fees charged to the FBO, T-hangar rentals, and hangar rental storage associated with the City-owned T-hangars, and private land leases charged to private hangar owners on airport property. As shown in **Table 6B**, over the past five years, the airport has not generated sufficient revenues to cover and/or exceed operational expenses. Operating revenues do not include grants received or transfers in from other City sources.

### **Hangar Leases**

The largest income center for the airport is T-hangar rentals, accounting for 75 percent of all operational revenue. This category includes the rental revenues derived from the month-to-month leases of city-owned hangar facilities. The rate varies as each facility offers differing amenities. Primarily, the rates differ based on size and door openings ranging from \$60 per month for open-span hangars (no doors, only roof) of 1,000 square feet, to \$162 per month for a 44-foot wide door and 1,267 square-feet of executive hangar space. Existing rental rates are very similar to and competitive with those at competing airports. In fact, the airport board has recently conducted a lease rate comparison with Mount Pleasant Municipal Airport. At Mount Pleasant, a 42-foot door hangar is \$130 per month, while a larger 48-foot door hangar rents for

\$180 per month. Based on this survey and the consultant's experience at other regional airports, the current hangar rental lease structure is in-line with market rates.

### **Aviation Land Lease Rates**

Private hangar development at airports is becoming increasingly common as many communities lack the resources to expend on new hangars. The practice involves the lease of undeveloped airport property to a private entity so that the entity can construct a hangar or associated aviation use structure/facility.

Allowing for private development of aviation facilities offers the airport sponsor the ability to accommodate aviation demand, thereby increasing airport use without expending its resources to attract demand. In return, the sponsor obtains an annual lease and associated revenues. For private developers, land lease allowances offer the user an opportunity to develop facilities to specifically serve his needs with a relatively low cost as the land is leased and not purchased. As a result, the private developer can expend more money on facilities versus property.

Land lease rates vary widely depending on factors such as market, availability, resources available (utilities, apron, etc.), and location on the airport (accessibility factors). Land lease rates at Cox Field Airport are \$0.12 per square-foot per year. Airports in larger metropolitan areas are typically

higher, ranging upwards of \$0.25 per square foot per year in the Dallas/Fort Worth Metroplex. Regionalized general aviation airport land lease rates, however, are more typical, ranging between \$0.08 and \$0.15 per square foot per year. It appears that the current land lease rate is appropriate for the City of Paris market.

Land leases must conform to FAA rules and regulations based on Federal Grant Assurances. As such, the airport must provide fair and equitable rates for all desiring available spaces. Moreover, the FAA generally frowns upon very long lease terms, especially those exceeding 30 years. Exceedingly long terms can be considered exclusive use rights. For this reason, most airports offer 20- to 30-year term land leases with options for additional term lengths. A term of 20 years is typically the minimum required for the developer to secure a bank loan for construction. Cox Field Airport land leases are 25 years for up to 5,000 square-foot facilities, 30 years for 5,000 to 20,000 square-foot facilities, and negotiable for larger developments. These terms are in line with the aviation industry and should continue.

Another factor that typifies most land lease rates is a reversionary clause. A reversion clause states that the improvement will revert to the sponsor at the expiration of the lease. As such, a privately built hangar without an exercised option will be transferred to airport property at the end of the lease term. The term length generally offers the owner the opportunity to fully

depreciate the hangar facility. At Cox Field Airport, a reverted hangar can then be rented at current hangar rental rates. Therefore, the owner can continue to base in the hangar, but would be required to pay a monthly lease once the original lease expires. As noted, reversionary clauses are quite common at airports. This practice should continue as long as it serves the city and airport's purposes in the future. If a reversionary clause is removed, it would require that a new lease be negotiated with the existing owner at the expiration of the original lease, or the facility would need to be sold and the new owner would need to have a new lease approved by the city.

### **FBO Leases**

The airport's FBO has two contracts which provide two associated revenue sources. The FBO conducts its business from the airport's terminal building. The city leases the terminal building to the FBO for this purpose at a rate of \$3,600 per year. This rate and revenue center is appropriate for Cox Field Airport. Future revenues from this center should incorporate consumer price index (CPI) adjustments.

The FBO also has a contract for aviation fuel resale. The lease includes a charge of \$0.05 per gallon of fuel delivered to the airport. Due to the fluctuating nature of fuel sales, this revenue center offers varying income. Over the last five years, fuel flowage

fees ranged from a low of \$6,630 in 2010 to a high of \$8,987.40 in 2006.

The current fuel flowage rate of \$0.05 per gallon is somewhat low based on similar airports. This rate will generally range from a low of \$0.06 to a typical high of \$0.12 per gallon for similar airports in the state and nationally. If the typically lower rate of \$0.06 were charged, fuel flowage fees would have increased by more than \$1,300 in 2010. Obviously, the higher range figure of \$0.10 per gallon would have doubled 2010 fuel flowage revenues.

Consideration should be given to increasing the fuel flowage fee when the current lease rate agreement expires in 2011. The rate will require a negotiation between the city and FBO and should better reflect the market rates stated above. Another option for the city would be to take over fuel vending altogether. This option is less desirable as the city would need to employ a minimum of three individuals to manage and dispense fuels. Revenues generated off of fuel sales would not sufficiently cover the personnel costs for city workers given historical fuel sales at Cox Field Airport.

## **OPERATING EXPENSES**

Operation of Cox Field Airport requires the expenditure of revenues for airport and maintenance functions. As presented in **Table 6B**, operational expenditures have outpaced revenues for the last five years. Between 2006 and 2009, the airport supported a city

employee to perform airport maintenance and mowing services. In 2010, that employee was removed from airport responsibilities and reassigned within the city. At this time, there are no city personnel costs associated with airport operation.

As previously noted, the day-to-day operations of the airport are entrusted, through contract, to the FBO. The current contract provides \$24,990 annually to the FBO to provide these services. Moreover, as previously noted, it appears that this expense is a good option for the requisite services and should remain unless conditions warrant a change. This expense center accounted for 22 percent of total operational expenses in 2010.

The largest expense center for airport operation is utilities at \$58,182.76, equating to 52 percent of total operational costs. Expenses associated with utilities include telephone, insurance, electricity, water, natural gas, and miscellaneous. Electricity costs have generally been the largest in this expense category; however, in 2010, a miscellaneous charge was the highest cost.

The next two highest expense items are for building/grounds maintenance and the loan amortization of city hangars. These two expense categories account for 18 percent (nine percent each) of total operational costs. Other expense items include supplies, consultants, miscellaneous maintenance/equipment, and financial auditing.

While operational expenses have exceeded revenues, operational expenses do not appear to be out of line with those for similar airports. As noted, the city employee dedicated to the airport for maintenance operations has been reassigned, saving the airport budget approximately \$35,000 per year. If the airport did not require the \$25,828.89 miscellaneous utility charge, airport revenues for 2010 would have slightly exceeded expenses.

The following section will analyze future revenues and expenses. It is the goal of this subsection to provide airport management with the information needed to maintain a self-sufficient financial position while continuing to invest in airport projects.

## **PROJECTED CASH FLOW**

Operating revenues and expenditures have been forecast and were averaged to present an annual cash flow figure for each of the planning horizons. The projections were made utilizing several basic assumptions. Any long term cash flow projection should be taken for what it is, a point-in time analysis that is dependent upon the specific assumptions made. Obviously, if any of the assumptions change, this analysis would no longer be applicable. However, the analysis is done to present methods for improving the airport's financial position over time. The basic assumptions utilized include:

### *Revenues*

- Terminal building lease rate will increase slightly over the period;
- Additional rent storage will become available once new hangars are constructed;
- T-hangar construction (10-unit facilities) was assumed in the years 2015, 2020, 2025, and 2030 with rents increasing to \$205, \$235, and \$250 per month through the period;
- Fuel flowage fee rate was assumed to increase to \$0.07 in the short term, \$0.08 in the intermediate term, and \$0.09 in the long term;
- Land leases for private aviation development were assumed to increase by 20,000 square feet every five years;
- Non-aviation development was assumed to occur to include the addition of 10 acres every five years at a rate starting at \$0.15 per square foot per year up to \$0.20 per square foot per year in the long term.

### *Expenses*

- City personnel will not be added to manage or maintain the airport;
- The current airport management agreement will continue with the current FBO or new FBO, if necessary, with the rate increasing approximately 10 percent per ten years;
- Hangar loans will be secured to build 40 T-hangars amortized with 15-year notes at 6.0 percent interest rates;

- Remaining expenses projected using average growth rates of 1.5% to 2.0%.

### Future Cash Flow Analysis

Revenues are anticipated to continue to grow with aviation activity and an overall positive economic outlook as presented in **Table 6C**. As more aircraft base at the airport, additional revenues from hangar rentals, land leases, and fuel sales will increase proportionately.

Rates and fees should be increased based upon the CPI or other similar

economic index. Where airport fees are considered too low, additional increases should be undertaken to bring the fees up to current market standards. The current land lease rates and fees are considered in line with market standards; as such, no immediate corrective action on the rates and fees is recommended. The airport has in place lease adjustment terms. Some leases are increased annually, while others are renegotiated at specified intervals. The cash flow analysis did consider future market corrections which assumed land lease rates increasing from \$0.12 per square foot per year to \$0.20 per square foot per year.

<b>TABLE 6C</b>			
<b>Average Annual Projected Operating Revenues and Expenditures</b>			
<b>Cox Field Airport</b>			
	<b>Short Term</b>	<b>Intermediate Term</b>	<b>Long Term</b>
<b>OPERATING REVENUES</b>			
Terminal Building Lease	\$3,600	\$4,500	\$5,250
Rent Hangar Storage	876	1,620	2,450
T-hangar Rentals	71,616	96,936	139,416
Fuel Flowage Fees	10,214	15,710	25,673
Lease and Rentals	11,837	15,156	21,412
Non-aviation Land Leases	13,068	78,408	176,418
<b>TOTAL REVENUES</b>	<b>\$111,211</b>	<b>\$212,330</b>	<b>\$370,619</b>
<b>OPERATING EXPENSES</b>			
Supplies	\$2,842	\$3,061	\$3,425
Utilities and Fly-In	60,554	65,234	72,991
Professional Consultants	3,780	4,072	4,556
Airport Management Agreement	25,992	31,000	38,000
Maintenance - Buildings & Grounds	25,000	29,010	42,139
Misc Maintenance and Equipment	2,249	2,484	2,885
Auditing	1,515	1,515	1,515
Hangar Loan Amortization	10,536	51,600	116,100
<b>TOTAL EXPENSES</b>	<b>\$132,468</b>	<b>\$187,976</b>	<b>\$281,611</b>
<b>OPERATING PROFIT/(LOSS)</b>	<b>(21,257)</b>	<b>24,354</b>	<b>89,008</b>

The future cash flow assumes that the airport will construct new T-hangar

facilities to accommodate some of the growth projected in based aircraft.

Privately built T-hangars will also be likely; however, those revenues would be included in the land lease rental category. The cash flow analysis assumed that four, 10-unit T-hangar facilities would be built, one facility every five years. These facilities are not high-priority-grant-eligible, so the analysis here and in the CIP presented earlier considered that the City would finance construction. The analysis considered the increase of T-hangar rates to \$205 per month in the short term, increasing to \$235 per month in the intermediate term. Long term construction will likely require increased rental costs, which were assumed at \$250 per month.

Revenue from fuel sales is also forecast to increase, as future fuel contracts were assumed to include a higher fuel flowage fee. The current rate of \$0.05 was increased to \$0.07 in the short term, \$0.08 in the intermediate term, and \$0.09 by the end of the planning period. The analysis anticipates fuel sales to increase by five percent annually, matching the average annual growth in aircraft operations at the airport.

The Master Plan presents a concept that opens up some airside property to private development. Future aviation land lease revenue assumes that approximately 20,000 square feet will be leased in each planning horizon. Non-aviation development is also planned. The airport has several hundred acres of land available for these purposes. The analysis considered a very conservative figure of ten acres developed for non-aviation uses during each of

the planning horizons. All annualized private land lease square footage rates were assumed to increase from \$0.12 in the short term to \$0.15 by the intermediate term and ultimately \$0.20 by the end of the planning period.

Cash flow projections indicate future revenues should rise at a greater rate than expenses, and that the airport could become financially self-sufficient by the intermediate term of the planning period. Obviously, the greatest revenue growth would be for non-aviation land leases, and without this revenue stream, the airport would continue to lose money. As a result, it should be considered a high priority for the City to encourage non-aviation land uses, especially for areas along Airport Road/FM Road 1508 as it would require less investment to develop.

## ***AIRPORT ECONOMIC IMPACT***

As noted in Chapter One, TxDOT completed a study in 2005 analyzing the economic impact of airports in the State of Texas. The study provides an economic impact analysis of every general aviation airport in the state, thus quantifying aviation's total economic impact statewide. This information is valuable as those unfamiliar with aviation may not fully understand the benefits aviation brings to their communities.

The study indicated that general aviation in the state of Texas supports 62,000 jobs with payroll benefits of

more than \$2.5 billion. In total, more than \$8.7 billion in economic activity can be attributed to general aviation activity in the state. Those figures are remarkable when considering that the commercial airports provide even more economic impacts.

The study also indicates that general aviation airports provide services which are difficult to associate with an economic figure. Services such as business development, agricultural enhancements, medical transportation and evacuation, access to remote areas, law enforcement, fire protection, wildlife management, and recreation are all primary functions provided by general aviation airports. These services are vital, yet are difficult to quantify in terms of dollars.

The study presented significant economic impacts for Cox Field Airport. Approximately \$2.1 million in direct output is attributed from airport activity, including the 1,220 general aviation visitors to the community each year. This economic activity supports \$101,000 in payroll. Secondary impacts indicated an additional \$2.0 million in indirect economic output due to the operation of the airport. In total, the airport is estimated to provide \$30.7 million in total economic impact while supporting 27 local jobs with \$977,000 in payroll.

While current airport operational expenses exceed revenues, total economic impacts dwarf the difference. Based on projected future revenues, the airport could become profitable, especially if industrial/commercial uses are

introduced on airport property. It is evident that the airport plays an important role in the community, providing valued aviation services to those that live and work in the city while also producing a significant economic impact. As a result, the City of Paris should continue to support the airport and its continued operation through regular maintenance as well as facilitating future developments.

## ***SUMMARY***

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 strive to become 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 development 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 manager, thereby improving the plan's effectiveness.

In summary, the planning process requires the airport management to 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.