CHAPTER TEN
IMPLEMENTATION PLAN

Prior chapters of the Maine Aviation Systems Plan Update resulted in a report card for current system performance. This report card shows how the system is currently performing related to the ability of individual airports to meet their respective facility and service objectives. The report card also shows how the system is now performing relative to each of the system performance measures and their individual benchmarks. The report card shows where the Maine Aviation System is adequate or deficient, with airport and system deficiencies revealed.

Development costs were estimated for each system airport by comparing existing facilities and applicable facility/service objectives established by the Systems Plan. Development costs include all projects associated with bringing system airports into compliance with the objectives for their recommended system role. Costs to increase overall system performance related to the Systems Plan's performance measures are also identified.

GOALS COMPARISON

This final chapter of the Maine Aviation Systems Plan provides an opportunity to balance FAA, Maine DOT, OPT, and individual airport goals and objectives. The FAA notes that the main purpose of a state aviation system plan is to determine the type, extent, location, timing, and cost of the airport system that is needed to ensure that Maine has a viable transportation system. This Systems Plan had been developed keeping this factor in mind.

SYSTEMS PLAN GOALS

At the onset of the Aviation Systems Plan Update, goals were established to guide the development of the Plan. These goals are as follows:

- **Quality of Life**. To promote an airport system that improves Maine's quality of life by supporting health, welfare, and safety-related services and activities.

- **Capacity**. To have an airport system that adequately serves current and forecast demand.

- **Outreach**. To encourage and recognize system airports that support aviation programs and outreach opportunities in Maine.

- **Safety/Standards**. To provide for a safe airport system, as measured by compliance with applicable FAA standards.

- **Economic Support**. To advance a system of airports that is supportive of Maine's economy, ensuring that the airport system is matched to Maine's socioeconomic and demographic characteristics.

- **Flexibility**. To protect and support an airport system that maintains the flexibility to respond to changes in future needs in Maine, while considering the environment.

- **Accessibility**. To provide an airport system that is easily accessible from both the ground and the air.

Using these goals, specific benchmarks were identified and used to measure the adequacy of Maine's public-use airport system. Existing system compliance/adequacy rates were reviewed to identify areas where enhancement to Maine's airports would be desirable. In order to support short and longer-term air transportation and economic needs, the Aviation Systems Plan Update identified the system of airports that is needed to serve the state's 69 economic service centers. The projects and actions needed at each system airport were summarized in the previous chapter.

MAINEDOT STRATEGIC PLAN GOALS

The Maine Department of Transportation recently updated its Strategic Plan. It was important to the Office of Passenger Transportation for this Aviation Systems Plan to be compatible and consistent with the goals of the Strategic Plan. The mission of the Strategic Plan is "to provide a safe, efficient, reliable transportation system that supports economic opportunity and quality of life." The following six goals are outlined in the Maine Department of Transportation Strategic Plan:

- **Safety**. Improve the safety of travelers, and the safety and health of MaineDOT's workforce.

- **Asset Management**. Efficiently and effectively preserve and maintain Maine's existing transportation system, and maximize its operational efficiencies.

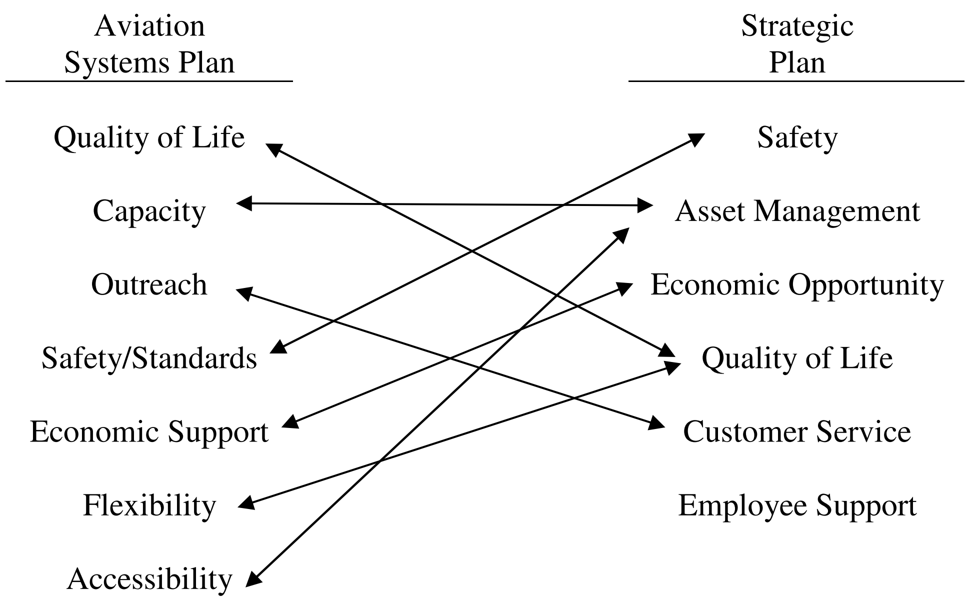
- **Economic Opportunity**. Expand economic opportunity through wise and innovative transportation investment.

- **Quality of Life.** Enhance quality of life by achieving optimal balance between mobility, economic opportunity, natural and cultural resources, and community needs and values.

- **Customer Service**. Enhance MaineDOT's customer service through training and effective external communication with stakeholders and the public.

- **Employee Support**. Enhance the competency and effectiveness of MaineDOT's workforce through effective internal communication, training, and employee development.

When comparing the DOT's Strategic Plan to the Systems Plan, the goals of the Aviation Systems Plan Update are closely aligned with the first four goals of the Strategic Plan. The following graphic reflects the consistency between the goal statements of the two plans.



While not a specific goal of the Aviation Systems Plan, tools resulting from the Systems Plan will help Maine DOT employees be more effective in their jobs.

INDIVIDUAL AIRPORT GOALS AND OBJECTIVES

In developing the Aviation Systems Plan Update, the OPT wanted to have a clearer understanding of how each of the communities in Maine perceives their local airport. It is important to know whether or not system recommendations resulting from this plan are aligned with each community's vision for its airport.

The OPT held airport goals and objectives meetings at most of the public use airports to gauge each community's support for airport growth. Meetings attendees included airport users, airport tenants, city and town leaders, and economic development and chamber of commerce representatives. Each community representative was asked to provide input on:

- Airport background
- Airport issues

- Airport strengths and weaknesses
- Airport opportunities
- Airport development needs

During the meetings, these talking points were then categorized and future projects were prioritized by each group. **Appendix C** presents goals and objectives for each airport that were developed by community representatives. These tables also note whether or not the locally developed objectives for each airport meet or exceed the system objectives, based on the airport's assigned system role.

ROLES AND COMPLIANCE REVIEW

As discussed in prior chapters of this plan, based on current function and future need, roles have been assigned to all public airports in Maine. Roles were developed in conjunction with the Systems Plan Advisory Committee. Many factors, as discussed in Chapter Three, were considered to assign an airport's role. These factors included accessibility, support of tourism, economic contribution, current demand and historic investment. Future roles for airports were based on improved geographic coverage of Maine's primary and secondary service centers. As part of the Systems Plan, airports in Maine are assigned to one of the following roles:

- **Level I** – Level I airports accommodate commercial airline activities and a full range of general aviation aircraft, including business jets. Based on their system roles, some general aviation airports are also classified as Level I airports.

- **Level II** – These airports should be capable of accommodating all business and personal use single- and twin-engine general aviation aircraft. Scheduled commercial airline operations are not accommodated at Level II airports.

- **Level III** – These airports should be capable of accommodating all single-engine and some small twin-engine general aviation aircraft.

- **Level IV** – These airports should be capable of accommodating single-engine general aviation aircraft. Level IV airports may also accommodate "special use" aviation activities. Level IV airports are the most "basic" system airports.

DEVELOPMENT RECOMMENDATIONS

Outcomes from the Maine Aviation Systems Plan Update, as detailed in Chapter Eight and Nine, are actions that would enable the Maine Aviation System to meet established performance measures. Not all recommended projects have associated costs. In some cases, the recommended action has no associated cost. In other instances, costs could not be developed because the full magnitude of the needed project could not be estimated, given the scope of this plan.

Generalized cost estimates associated with moving forward on suggested recommendations for the Maine Aviation System are discussed in this section. Costs identified in this section only associated with meeting established performance measures and facility and service objectives adopted as part of this study. In should be noted that further investigation and justification would be required before many recommendations stemming from the Systems Plan could be implemented. In particular, projects seeking FAA funding would require additional study.

REPLACEMENT AIRPORT

The Systems Plan recognizes the importance of airports as economic development generators. In developing the Systems Plan, improved coverage for Maine's 29 primary and 40 secondary service centers was a key element considered in determining the state's future aviation needs. This process was discussed in Chapter Seven, *Future System Roles*.

The planning process identified several voids, in terms of coverage, for primary service centers. The Project Advisory Committee (PAC) set an objective to have a Level I airport in proximity to all Primary Service Centers. The PAC recommended several changes in current roles to address these voids. Airports recommended to be elevated to Level I, to meet future system needs, include Northern Aroostook Regional, Houlton International, Machias Valley, Wiscasset, Millinocket Municipal, Greenville Municipal, Central Maine Regional, Princeton Municipal and Dexter Regional. There is only one existing airport that appears to be too physically constrained to meet its future Level I airport role. This airport is Machias Valley Airport.

Over the past decade, community leaders in the Central Washington County and Cutler/Machias Valley area have recognized the need for improved airport infrastructure to support economic development. The Machias Valley Airport is too geographically-constrained to meet Level I facility objectives, including a 5,000 foot runway. The *Cutler Comprehensive Airport Study* and *Machias Valley Airport Site Assessment Study* were completed in 2003 and the Environmental Assessment was underway when this chapter was developed. These studies confirm the need for a new airport to serve the Machias Valley area. An airport master plan is currently underway for a replacement airport. The costs for the replacement airport are included in this study's recommended development plan. According to the Environmental Assessment, it will cost approximately $25 million to build the replacement airport. This includes land acquisition, a 5,000 foot long runway, parallel taxiway, apron, fuel, terminal, access road, auto parking, AWOS, MALSR, and t-hangars. There would be additional costs for the airport to meet the recommended objectives for a Level I airport; it is worth noting that the new airport could eventually be upgraded and expanded to meet facilities and services identified as desirable for a Level I Airport.

INDIVIDUAL AIRPORT RECOMMENDATIONS

A summary of the individual airport recommendations to meet MASPU facility and service objectives and actions needed at each airport to more fully fulfill performance measures can be found in **Appendix C**.

COSTS OF THE RECOMMENDED DEVELOPMENT PLAN

The methodology used to develop estimated costs for recommended development included the following:

- Compare existing facilities at each individual airport to facility and service objectives identified for the airport's recommended system level/role.

- Identify specific airport projects and actions needed to reach facility and service objectives.

- Use estimated unit costs identified for the Systems Plan and apply these unit costs to airport needs.

In this process, facility needs and costs were first identified on an airport-by-airport basis. This chapter of the Systems Plan presents a summary of the individual airport cost estimates. Near-term (2005-2013) and long-term (2014-2021) costs were developed for projects stemming from the Systems Plan.

The unit cost estimates used in this analysis reflect actual costs of similar projects recently completed at Maine airports, as well as standard industry averages. Where possible, actual costs from the state's Capital Improvement Plan (CIP) or individual master plans were used. Those unit costs for which recent actual costs were not available were estimated using industry publications such as the Means Cost Guide. System-planning level cost estimates are discussed in this chapter. Given the wide range of airports and airport settings in Maine, actual costs may vary significantly. Costs shown in this chapter are based on constant 2005 dollars; costs have not been increased to show the impact of inflation.

Specific projects costs have been estimated in the following categories:

- Quality of Life
    - Projects needed to support LifeFlight operations.
- Capacity
    - Landside- aircraft storage, auto parking, terminal/administration building
- Aviation Outreach- No costs associated with recommendations
- Safety and Standards
    - Clear approaches
    - Runway/Taxiway separations
    - RSA improvements/expansions

    - Pavement improvements
    - Vegetation Management Plans
    - Operations Manual
    - Emergency Response Plan
    - Wildlife Management Plan
    - Fuel
- Economic Support
- Flexibility
    - Master Plan Updates
    - Business/Financial Plans
- Accessibility
    - Level I airport improvements- weather reporting, snow removal, de-icing, runway length
- Facility and Service Objectives
    - Runway length projects
    - Runway width projects
    - Taxiway length projects
    - Runway lighting projects
    - Taxiway lighting projects
    - Visual Aids (PAPIs, rotating beacon, segmented circle, wind cone)
    - Weather reporting
    - Hangar storage
    - Apron
    - Terminal space
    - Maintenance building
    - Auto parking spaces
    - Fuel
    - Snow removal equipment
    - De-icing equipment

Total estimated costs are presented in the following sections. It is assumed that non-precision GPS approaches and precision GPS approaches will be available in the near future. Since the cost associated with this technology resides in the aircraft, additional equipment cost associated with providing future non-precision and precision approaches has not been estimated. It is possible that airports may incur additional costs to clear approaches or meet other standards. Theses costs have not been estimated, as this would require a master planning level of detail.

Quality of Life

Most of the quality of life benchmarks are informational. OPT would like airports in Maine to support remote areas, island areas, forest fire spotting, and LifeFlight Operations. OPT has worked closely with LifeFlight of Maine to identify airport actions to meet their needs. These include fuel, approaches, and weather-reporting. Many of the airport actions have already been addressed with funding provided from a separate Maine

DOT bond issue, as discussed in Chapter Eight. However, there are several outstanding projects that LifeFlight would like implemented in order to ensure safe operations. The costs associated with the quality of life performance measure are for the installation AWOS to support LifeFlight operations. (See **Table 10-1**.) All fueling recommendations have been addressed prior to completion of this Plan. The costs associated with installing a GPS approaches with precision capabilities are unknown at this time; these costs were not identified by this Plan.

TABLE 10-1
COSTS TO PROMOTE IMPROVED QUALITY OF LIFE

	NEAR TERM	LONG TERM	TOTAL COST
SUPPORT LIFEFLIGHT OPERATIONS			
LEVEL I	$100,000	$100,000	**$200,000**
LEVEL II	$100,000	$0	**$100,000**
LEVEL III	$100,000	$0	**$100,000**
LEVEL IV	$100,000	$0	**$100,000**
SYSTEM TOTAL	$400,000	$100,000	**$500,000**

SOURCE: WSA

Capacity

In order to reach targets established for the Maine Aviation Systems Plan, actions to improve capacity will be needed.

Airfield Capacity

According to Systems Plan projections, nearly all Maine airports have ample airfield capacity. During the planning period, only Portland International Jetport may face operational capacity deficiencies. A master plan for the Jetport is currently underway. According to preliminary findings, the Jetport may not reach the critical demand/capacity ratios during the planning period this airport has experienced a decline in operational levels since the Systems Plan forecast was completed. Facility requirements, alternatives, and recommendations have not yet been developed. OPT should be aware of any capacity improvements that are recommended in the master plan and should monitor operational levels at the Jetport. Brunswick Naval Air Station, located northeast of the Jetport, has recently been included on the Base Reuse and Closure (BRAC) list. Separate follow-on studies will be conducted to determine if there is a role in the public airport system for the airfield facilities at the naval air station. No system costs have currently been assigned to airfield capacity improvements.

Landside Capacity

To meet current and forecast demand, increased capacity for various landside facilities at airports in Level I, Level II, and Level III will be required. **Table 10-2** presents the anticipated costs for airports in each functional level. Costs for the following facility objectives have been estimated:

- **Hangars**. Hangar storage objectives for based and transient aircraft are related to each airport's existing and forecasted based aircraft and transient operations. A flat cost per hangar space was developed for the Systems Plan.

- **Auto Parking**. Auto parking objectives were determined to fulfill general aviation and commercial service needs. General aviation parking requirements are tied to each airport's current and projected based aircraft. Commercial service requirements are related to current and projected enplanements. A flat cost per auto parking space was developed for the Systems Plan.

- **Terminal/ Administration Building**. Each airport's need for terminal/ administration building space increases as its role in the system is elevavated. Square footage objectives for terminal/ administration buildings were established for each airport level/role. Several airports identified by the Systems Plan as needing terminal improvements have terminal building construction projects planned. These costs were extracted from the state CIP or airport master plans and are included in this study. All other terminal/administration building costs are developed using the average cost per square footage of terminal space of other terminal projects in the state.

TABLE 10-2
COSTS TO PROVIDE LANDSIDE CAPACITY

CATEGORY	AIRPORT LEVEL	NEAR TERM	LONG TERM	TOTAL COSTS
HANGARS				
	LEVEL I	$8,435,000	$2,160,000	$10,595,000
	LEVEL II	$945,000	$280,000	$1,225,000
	LEVEL III	$385,000	$175,000	$560,000
	SYSTEM TOTAL	$9,765,000	$2,615,000	$12,380,000
GA AUTO PARKING				
	LEVEL I	$797,000	$24,000	$821,000
	LEVEL II	$18,000	$10,000	$28,000
	LEVEL III	$2,000	$6,000	$8,000
	SYSTEM TOTAL	$817,000	$40,000	$857,000
AIR CARRIER AUTO PARKING				
	LEVEL I- ONLY	$7,466,000	$4,516,000	$11,982,000
TERMINAL/ADMINISTRATION BUILDING				
	LEVEL I	$550,000	$600,000	$1,150,000
	LEVEL II	$75,000	$180,000	$255,000
	LEVEL III	$225,000	$75,000	$300,000
	SYSTEM TOTAL	$850,000	$855,000	$1,705,000
TOTAL- LANDSIDE CAPACITY				
	LEVEL I	**$17,248,000**	**$7,300,000**	**$24,548,000**
	LEVEL II	**$1,038,000**	**$470,000**	**$1,508,000**
	LEVEL III	**$612,000**	**$256,000**	**$868,000**
	SYSTEM TOTAL	**$18,898,000**	**$8,026,000**	**$26,924,000**

SOURCE: WSA

Safety and Standards

Maine's airports were evaluated for their current ability to meet several key safety and design standards. OPT noted that airports should have appropriate programs and procedures in place to meet this performance measure. Estimated costs to enable the airport system to be fully compliant with the following safety and standards performance measure include the following items:

- **Clear Approaches**. The FAA guidelines call for approaches to all airport runways be clear of any obstacles that penetrate their approach surfaces. For the purpose of the Systems Plan, it is difficult to cost the removal of obstructions in each airport's approach. Identifying and developing costs to this level of detail are master planning as opposed to system planning. All costs associated with this performance measure were derived from planned projects contained in the state CIP or individual airport master plans. It is unknown whether or not additional obstruction removal projects are needed to meet the FAA guidelines for clear approaches. However, it is estimated that the cost to meet this objective will be higher than the cost presented in **Table 10-3**.

- **Runway/Taxiway Separation**. Objectives established in the Systems Plan call for all Level I and Level II to have parallel taxiways (full or partial) to support their primary runways. Some system airports do not have proper seperation for their current runway and parallel taxiway systems to meet their existing ARC, as defined by the FAA. Several airports also need taxiway development to meet the study's facility objective. The costs to meet this objective were derived from the state CIP, airport master plans, and Systems Plan estimates.

- **Runway Safety Areas (RSAs)**. There are several system airports whose RSAs on their primary runway do not meet applicable FAA design standards. These standards are determined by each airport's current ARC and approach types. The costs to bring non-conforming RSAs into compliance were derived from state CIP projects. Northern Aroostook Regional, Greenville Municipal, and Newton Field have addressed their RSA deficiencies in the last few years. At Machias Valley, the deficiency will be addressed with the construction of the replacement airport. Planning is underway at Augusta State to improve its RSAs. RSA improvement projects at Augusta will cost approximately $4 million..

- **Pavement**. As part of the Systems Plan, an objective was set for primary runways at all system airports to have a PCI of 70 or greater. Nearly all airports that were noted as being deficient in Chapter Five have implemented projects to improve their runway pavement condition. The only outstanding airport is Belfast Regional. According to their master plan, it will cost approximately $770,000 to rehabilitate their primary runway. The OPT has a program currently underway that monitors pavement condition and prioritizes pavement projects in the state. Historically, investment to maintain pavement infrastructure has been the number one investment of Maine OPT. Weather, age, usage, and other factors all lead to deterioration of pavement surfaces over time. Primary runways and other paved surfaces at Maine's public airports need to be monitored for their continued ability to meet this benchmark.

- **Plans and Procedures**. In order for system airports to remain compatible with FAA guidelines, the airports should have appropriate plans and procedures in place. These include vegetation management plans, operations manuals/ accident reporting procedures, emergency response plans, and wildlife management plans. Average costs were developed for each of the plans and are reflected in Table 10-3.

- **Fuel**. Airports currently providing fuel should meet NFPA guidelines. In addition, all Level I, II, and III airports should have 100LL fuel. Level I airports should also have Jet A fuel. Several airports have projects currently underway or planned to meet this system objective.

TABLE 10-3
COSTS TO ADDRESS SAFETY AND STANDARD DEFICIENCIES

		NEAR TERM	LONG TERM	TOTAL COST
CLEAR APPROACHES				
	LEVEL I	$3,866,835	$474,700	$4,341,535
	LEVEL II	$940,000	$0	$940,000
	LEVEL III	$1,669,872	$0	$1,669,872
	LEVEL IV	NA	NA	NA
	SYSTEM TOTAL	$6,476,707	$474,700	$6,951,407
RUNWAY/TAXIWAY SEPARATION				
	LEVEL I	$5,728,320	$4,127,771	$9,856,091
	LEVEL II	$4,092,489	$1,323,125	$5,415,614
	SYSTEM TOTAL	$9,820,809	$5,450,896	$15,271,705
RUNWAY SAFETY AREAS				
	LEVEL I	$4,000,000	$0	$4,000,000
	LEVEL II	$125,718	$0	$125,718
	LEVEL III	$260,100	$0	$260,100
	LEVEL IV	$0	$0	$0
	SYSTEM TOTAL	$4,385,818	$0	$4,385,818
PAVEMENT				
	LEVEL I	$0	$0	$0
	LEVEL II	$0	$0	$0
	LEVEL III	$0	$770,000	$770,000
	LEVEL IV	$0	$0	$0
	SYSTEM TOTAL	$0	$770,000	$770,000
PLANS & PROCEDURES				
	LEVEL I	$885,000	$105,000	$990,000
	LEVEL II	$610,000	$0	$610,000
	LEVEL III	$0	$665,000	$665,000
	LEVEL IV	$0	$485,000	$485,000
	SYSTEM TOTAL	$1,495,000	$1,255,000	$2,750,000
FUEL				
	LEVEL I	$250,000	$0	$250,000
	LEVEL II	$159,850	$0	$159,850
	LEVEL III	$163,500	$0	$163,500
	SYSTEM TOTAL	$573,350	$0	$573,350
SAFETY AND STANDARDS- TOTAL				
	LEVEL I	**$14,730,155**	**$4,707,471**	**$19,437,626**
	LEVEL II	**$5,928,057**	**$1,323,125**	**$7,251,182**
	LEVEL III	**$2,093,472**	**$1,435,000**	**$3,528,472**
	LEVEL IV	**$0**	**$485,000**	**$485,000**
	SYSTEM TOTAL	**$22,751,684**	**$7,950,596**	**$30,702,280**

SOURCE: WSA
NOTE: NA=information was not available on the costs to clear approaches at Level IV airports

Economic Support

Maine's airports should support the state economy. This benchmark looked at whether or not Maine's airport facilities are reasonably well-matched to the service areas' economic characteristics. This information was useful in determining where the airport deficiencies in Maine lie. The recommendation associated with the economic support benchmark is to ensure that the airports in the state meet the facility and service objectives for their respective roles.

There are several of the facility and service objectives that are revenue-producing items for an airport, including hangars and fuel. These items can help financially support an airport's operations. It is estimated that the new hangar development needed to meet the landside facility objective for Level I, II, and III airports as developed in the MASPU will cost approximately $12.4 million. Several Level I, II, and III airports need fueling stations to meet their service objectives. It will cost an estimated $516,000 to meet the fuel objectives established for system airports. These costs are included elsewhere in the Systems Plan

Flexibility

Maine airports should be well planned and protected to insure that they can meet future growth. Objectives have been set as part of the Systems Plan for updating Master Plans and ALPs at all airports. In addition, it is suggested that Level I, II, and III airports have business/financial plans that support self-sufficiency. **Table 10-4** presents the costs associated with these planning tools. These costs were developed from the state CIP and Systems Plan estimates, by airport level/role. Costs associated with developing compatible land use planning, having airports included in local comprehensive plans, or reporting activity to OPT have not been estimated.

TABLE 10-4
COSTS TO PROMOTE SYSTEM FLEXIBILITY

		NEAR TERM	LONG TERM	TOTAL COST
MASTER PLANS/ALPS				
	LEVEL I	$3,740,689	$7,959,123	$11,699,812
	LEVEL II	$1,082,277	$1,225,000	$2,307,277
	LEVEL III	$1,050,000	$600,000	$1,650,000
	LEVEL IV	$775,000	$625,000	$1,400,000
	SYSTEM TOTAL	$6,647,966	$10,409,123	$17,057,089
BUSINESS/FINANCIAL PLANS				
	LEVEL I	$180,000	$45,000	$225,000
	LEVEL II	$120,000	$0	$120,000
	LEVEL III	$80,000	$0	$80,000
	SYSTEM TOTAL	$380,000	$45,000	$425,000
FLEXIBILITY TOTAL				
	LEVEL I	**$3,920,689**	**$8,004,123**	**$11,924,812**
	LEVEL II	**$1,202,277**	**$1,225,000**	**$2,427,277**
	LEVEL III	**$1,130,000**	**$600,000**	**$1,730,000**
	LEVEL IV	**$775,000**	**$625,000**	**$1,400,000**
	SYSTEM TOTAL	**$7,027,966**	**$10,454,123**	**$17,482,089**

SOURCE: WSA

Accessibility

One of the highest priorities for the OPT is to have a public airport system that is easily accessible from both the ground and the air. The Systems Plan set objectives for the state's population and service areas to be accessible to:

- Helicopter landing areas
- Attended seaplane facilities
- Airports with special use aviation
- Airports with commercial airline service
- A public airport system
- A Part 135 operator

No financial cost for meeting these accessibility benchmarks were developed.

The accessibility performance measure calls for all Level I airports to have the following:

- AWOS or ASOS
- Precision approach capabilities
- Snow removal and de-icing equipment
- Runway length of 5,000 feet or greater

Table 10-5 summarizes the costs for Level I airports to meet these objectives.

TABLE 10-5
COSTS TO MEET SYSTEM ACCESSIBILITY TARGETS
FOR LEVEL I AIRPORTS

	NEAR TERM	LONG TERM	**TOTAL COST**
ACCESSIBILITY BENCHMARKS			
AWOS OR ASOS	$0	$100,000	**$100,000**
SNOW REMOVAL EQUIPMENT	$380,000	$290,000	**$670,000**
DE-ICING EQUIPMENT	$0	$7,500,000	**$7,500,000**
5,000' RUNWAY LENGTH	$13,265,000	$4,408,500	**$17,673,500**
ACCESSIBILITY TOTAL	**$13,645,000**	**$12,298,500**	**$25,943,500**

SOURCE: WSA

Facility and Service Objectives

Facilities and services that should ideally be in place at all system airports were identified in Chapter Nine. Facility and service objectives differ by airport role or level. **Tables 10-6 through 10-10** show the costs that could be required at Level, Level II, Level III, Level IV, and all airports combined to make all airports 100 percent compliant with facility and service objectives. It is important to note that in some instances, costs may include more than one project. For example, the cost of taxiway lighting is often included in a taxiway lengthening project.

TABLE 10-6
FACILITY AND SERVICE OBJECTIVES COSTS
FOR LEVEL I AIRPORTS

	NEAR TERM	LONG TERM	TOTAL COST
AIRSIDE FACILITIES			
RUNWAY LENGTH	$13,265,000	$4,408,500	$17,673,500
RUNWAY WIDTH	$0	$2,125,213	$2,125,213
TAXIWAY LENGTH	$9,957,394	$6,060,676	$16,018,070
LIGHTING- RUNWAY	$343,230	$1,100,000	$1,443,230
LIGHTING- TAXIWAY	$0	$0	$0
VISUAL AIDS	$98,000	$0	$98,000
WEATHER	$0	$100,000	$100,000
TOTAL	$23,663,624	$13,794,389	$37,458,013
GENERAL AVIATION LANDSIDE FACILITIES			
HANGARS-BASED AIRCRAFT SPACES	$3,500,000	$1,215,000	$4,715,000
HANGARS-TRANSIENT AIRCRAFT SPACES	$4,935,000	$945,000	$5,880,000
APRON TIEDOWN SPACES	$5,612,960	$1,451,520	$7,064,480
GA TERMINAL/ADMINISTRATION BUILDING	$1,050,000	$300,000	$1,350,000
AIRPORT MAINTENANCE BUILDING	$1,195,260	$0	$1,195,260
GENERAL AVIATION AUTO PARKING	$812,000	$24,000	$836,000
TOTAL	$17,105,220	$3,935,520	$21,040,740
SERVICES			
FUEL	$250,000	$0	$250,000
ALL WEATHER EQUIPMENT	$380,000	$7,790,000	$8,170,000
TOTAL	$630,000	$7,790,000	$8,420,000
GRAND TOTAL	**$41,398,844**	**$25,519,909**	**$66,918,753**

SOURCE: WSA

TABLE 10-7
FACILITY AND SERVICE OBJECTIVES COSTS
FOR LEVEL II AIRPORTS

	NEAR TERM	LONG TERM	TOTAL COST
AIRSIDE FACILITIES			
RUNWAY LENGTH	$0	$2,346,300	$2,346,300
RUNWAY WIDTH	$0	$0	$0
TAXIWAY LENGTH	$4,092,489	$1,323,125	$5,415,614
LIGHTING- RUNWAY	$0	$0	$0
LIGHTING- TAXIWAY	$0	$0	$0
VISUAL AIDS	$29,800	$50,000	$79,800
TOTAL	$4,122,289	$3,719,425	$7,841,714
GENERAL AVIATION LANDSIDE FACILITIES	$0		
HANGARS-BASED AIRCRAFT SPACES	$105,000	$140,000	$245,000
HANGARS-TRANSIENT AIRCRAFT SPACES	$840,000	$140,000	$980,000
APRON TIEDOWN SPACES	$777,600	$155,520	$933,120
GA TERMINAL/ADMINISTRATION BUILDING	$75,000	$180,000	$255,000
AIRPORT MAINTENANCE BUILDING	$767,335	$0	$767,335
GENERAL AVIATION AUTO PARKING	$18,000	$10,000	$28,000
TOTAL	$2,582,935	$625,520	$3,208,455
SERVICES			
FUEL	$103,550	$0	$103,550
TOTAL	$103,550	$0	$103,550
GRAND TOTAL	**$6,808,774**	**$4,344,945**	**$11,153,719**

SOURCE: WSA

TABLE 10-8
FACILITY AND SERVICE OBJECTIVES COSTS
FOR LEVEL III AIRPORTS

	NEAR TERM	LONG TERM	TOTAL COST
AIRSIDE FACILITIES			
RUNWAY LENGTH	$0	$0	$0
RUNWAY WIDTH	$0	$0	$0
TAXIWAY LENGTH	$2,947,249	$475,000	$3,422,249
LIGHTING- RUNWAY	$0	$0	$0
LIGHTING- TAXIWAY	$1,000	$0	$1,000
VISUAL AIDS	$42,000	$0	$42,000
TOTAL	$2,990,249	$475,000	$3,465,249
GENERAL AVIATION LANDSIDE FACILITIES			
HANGARS-BASED AIRCRAFT SPACES	$385,000	$175,000	$560,000
APRON TIEDOWN SPACES	$648,000	$103,680	$751,680
GA TERMINAL/ADMINISTRATION BUILDING	$225,000	$75,000	$300,000
GENERAL AVIATION AUTO PARKING	$2,000	$6,000	$8,000
TOTAL	$1,260,000	$359,680	$1,619,680
SERVICES			
FUEL	$162,500	$0	$162,500
TOTAL	$162,500	$0	$162,500
GRAND TOTAL	**$4,412,749**	**$834,680**	**$5,247,429**

SOURCE: WSA

TABLE 10-9
FACILITY AND SERVICE OBJECTIVES COSTS
FOR LEVEL IV AIRPORTS

	NEAR TERM	LONG TERM	TOTAL COST
AIRSIDE FACILITIES			
RUNWAY LENGTH	$0	$0	$0
RUNWAY WIDTH	$0	$0	$0
LIGHTING- RUNWAY	$16,350	$0	$16,350
VISUAL AIDS	$0	$0	$0
TOTAL	$16,350	$0	$16,350
GRAND TOTAL	**$16,350**	**$0**	**$16,350**

SOURCE: WSA

TABLE 10-10
FACILITY AND SERVICE OBJECTIVES COSTS
FOR ALL AIRPORTS

	NEAR TERM	LONG TERM	TOTAL COST
AIRSIDE FACILITIES			
RUNWAY LENGTH	$13,265,000	$6,754,800	$20,019,800
RUNWAY WIDTH	$0	$2,125,213	$2,125,213
TAXIWAY LENGTH	$16,997,132	$7,858,801	$24,855,933
LIGHTING- RUNWAY	$359,580	$1,100,000	$1,459,580
LIGHTING- TAXIWAY	$1,000	$0	$1,000
VISUAL AIDS	$169,800	$50,000	$219,800
WEATHER	$0	$100,000	$100,000
TOTAL	$30,792,512	$17,988,814	$48,781,326
GENERAL AVIATION LANDSIDE FACILITIES			
HANGARS-BASED AIRCRAFT SPACES	$3,990,000	$1,530,000	$5,520,000
HANGARS-TRANSIENT AIRCRAFT SPACES	$5,775,000	$1,085,000	$6,860,000
APRON TIEDOWN SPACES	$7,038,560	$1,710,720	$8,749,280
GA TERMINAL/ADMINISTRATION BUILDING	$1,350,000	$555,000	$1,905,000
AIRPORT MAINTENANCE BUILDING	$1,962,595	$0	$1,962,595
GENERAL AVIATION AUTO PARKING	$832,000	$40,000	$872,000
TOTAL	$20,948,155	$4,920,720	$25,868,875
SERVICES			
FUEL	$516,050	$0	$516,050
ALL WEATHER EQUIPMENT	$380,000	$7,790,000	$8,170,000
TOTAL	$896,050	$7,790,000	$8,686,050
GRAND TOTAL	**$52,636,717**	**$30,699,534**	**$83,336,251**

SOURCE: WSA

Summary

To fully implement projects identified to meet system performance measures and benchmarks, as well as the facility and service objectives, would take many years and the allocation of at least $115.6 million in federal, state, and local funds. Costs provided in this section have not been developed to the level of detail that would result from master planning, a financial feasibility, or an engineering study. The costs discussed in this section do, nevertheless, provide the Maine DOT and the Office of Passenger Transportation with an understanding of the general cost range that could be associated with achieving higher compliance ratings for each of the system performance measures.

Table 10-11 identifies estimated costs by airport role and the facility and service objectives. Many of the cost estimates for airports used in this analysis were derived from the respective airports' master plan and/or current CIPs. Funding for Maine's Level I airports could approach approximately $87 million.

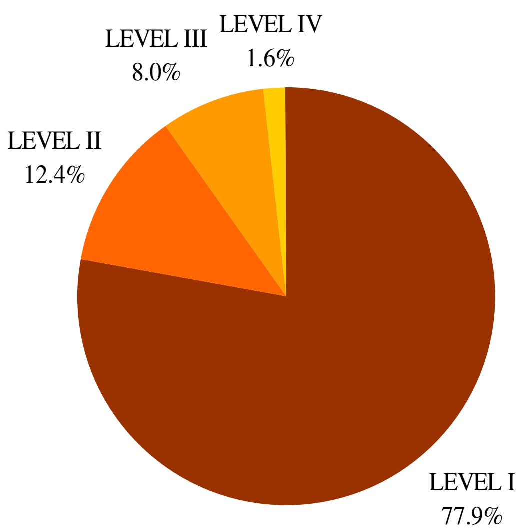
TABLE 10-11
SUMMARY OF TOTAL ESTIMATED SYSTEM PLAN COSTS
BY AIRPORT ROLE

AIRPORT CLASSIFICATION	NEAR TERM COSTS	LONG TERM COSTS	TOTAL ESTIMATED COSTS
LEVEL I	$63,141,080	$37,344,672	$100,485,752
LEVEL II	$10,292,710	$5,744,945	$16,037,655
LEVEL III	$8,809,006	$1,534,680	$10,343,686
LEVEL IV	$1,005,000	$1,096,350	$2,101,350
TOTAL SYSTEM	**$83,247,796**	**$45,720,647**	**$128,968,443**

SOURCE: WSA

The cost section of this final chapter of the Maine Aviation Systems Plan Update indicates that over the next 20-years, at least $115.6 million could be required in order to meet performance measures, benchmarks, and facility/service objectives set in this study. **Exhibit 10-1** summarizes these 20-year costs by airport role. As shown, the majority of these costs, 75 percent, could be incurred to raise the level of performance for the Level I airports in Maine. The remaining 25 percent (14 percent for Level II, 9 percent for Level III, and 2 percent for Level IV airports) would be needed to raise the level of performance of the remaining system airports.

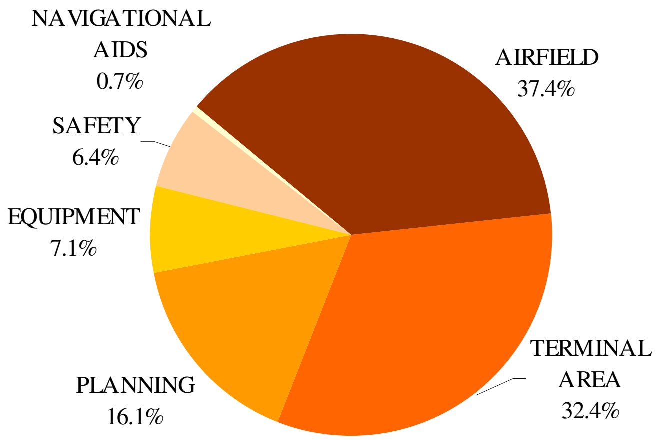
EXHIBIT 10-1
DEVELOPMENT COSTS THROUGH 2021
BY AIRPORT ROLE



SOURCE: WSA

Exhibit 10-2 reflects the development costs through 2021 by project type. Airfield related projects (runway, taxiway, and lighting) would account for 37 percent of the estimated development costs, while terminal area costs (hangars, terminals, apron, auto parking, fuel, maintenance building) could account for 32 percent of the costs.

EXHIBIT 10-2
DEVELOPMENT COSTS THROUGH 2021
BY PROJECT TYPE



SOURCE: WSA

Other Costs

In addition to the projects identified in the Systems Plan, most of the airports in Maine have identified additional needed projects through local planning and goal setting. Airport-specific capital projects and costs are identified in each airport's master plan. Many of the airports in Maine have updated their master plans in the last five years. Many planned projects in airport master plans that will use federal and state funds are identified in the state CIP. The state CIP has estimated project and cost information annually to 2013. **Table 10-12** presents the additional project costs identified in the state CIP and published airport master plans. In addition to the $115.6 million identified to meet Systems Plan recommmendations, an additional $194.7 million could be needed to meet airport needs.

TABLE 10-12
SUMMARY OF ALL PROJECT COSTS

COST CATEGORY	NEAR TERM COSTS	LONG TERM COSTS	TOTAL ESTIMATED COSTS
SYSTEM PLAN COSTS	$83,247,796	$45,720,647	$128,968,443
OTHER CIP COSTS	$120,129,959	$0	$120,129,959
OTHER MASTER PLAN COSTS	$28,212,789	$47,854,143	$76,066,932
TOTAL COSTS	**$231,590,544**	**$93,574,790**	**$325,165,334**

SOURCES: WSA: Airport Master Plans, MaineDOT, OPT

This cost summary is not exhaustive of all the airport projects that could needed through 2021. For example, several airports including, Auburn/Lewiston, Augusta, Central Maine Regional, and Portland International Jetport currently have master plans underway. Improvement costs that will come from these master plans are not included here. Many airports also do not provide project costs throughout the entire Systems Plan's forecast period (through 2021). Most master plans only provide costs through a 15 or 20 year period. Also, fuel prices in recent years have risen dramatically due to the availability of fuel. These rising fuel costs impact the original project cost estimates developed in the state CIP or the airport master plans including pavement projects, runway and taxiway extensions, and apron projects. The cost estimates provided for these types of projects are now much lower than the costs actually needed to perform the project today.

Summary

Between 2006 and 2021, the approximate annual cost to raise the level of performance of airports to meet Systems Plan objectives would be at least \$115.6 million. However, when other desired airport projects are considered, the annual costs are estimated to reach \$215.3 million in the near term and an at least an additional \$95.0 in the longer term for a total of \$310.3 million. On average, this equates to \$26.9 per year in the near term and nearly \$12 million per year in the long term. In 2005, when federal, state, and local funding sources are all considered \$23 million was invested in Maine airports. This amount is below the minimum annual amount that could be needed. The following discussion provides an overview of the funds currently available to Maine's airports.

FUNDING SOURCES

Funding for airport improvement projects is an important issue when considering the future of Maine's aviation system. In order to meet user needs, airports typically rely on funding sources beyond their own revenue. The ability of individual airport sponsors to identify funding sources and to successfully obtain funding, directly impacts development.

There are various sources of funding available to airports in Maine; however, each year, the funding requested far outweighs funding available. In general, funding for capital improvement projects can be secured from the following sources: federal, state, local, or private funds. Implementation of the recommendations presented in the MASPU will require significant effort on the part of all funding agencies. A brief description of each source of funding is presented in the following section.

FEDERAL FUNDING SOURCES AND VISION-100

The FAA, through the Airport Improvement Plan (AIP) grants, distributes federal funds back to the nation's airport system from the Aviation Trust Fund. The Aviation Trust Fund was originally established in 1970 and has since been amended on numerous occasions. The Aviation Trust Fund establishes a source of funds, collected only from the users of the nation's airport system that can be used to fund airport improvements. Only airports included in the National Plan of Integrated Airport Systems (NPIAS) are eligible to apply for FAA funding. Maine's seven commercial service airports and 28 of the 29 general aviation airports are currently part of the NPIAS and are eligible for federal funding.

Table 10-13 presents total AIP funding for all eligible U.S. airports for the fiscal years 1999-2007.

TABLE 10-13
ALL U.S. HISTORICAL AIP FUNDING (BILLIONS)

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
TOTAL AIP FUNDING	$1.95	$1.85	$3.20	$3.30	$3.40	$3.40	$3.50	$3.60*	$3.70*

*Projected future AIP funding
SOURCE: FAA Airports Financial Assistance Division

VISION-100 was signed into law in December 2003 and reauthorizes the AIP Program Hand through 2007. VISION-100 contains a number of significant changes from previous Airport Improvement Program (AIP) budget authorizations undertaken in conjunction with the development Aviation Trust Fund. The four main changes to the authorization are:

- Non-primary entitlement funds can now be accumulated for up to four years, instead of three.
- Federal portion of AIP eligible projects has increased from 90 percent to 95 percent.
- If no airside improvement projects are needed, AIP funds can be used for items such as fuel farms, aircraft hangars, and general aviation terminals.
- Airports may choose to waive their entitlement funds and FAA can reallocate those funds to airports in same geographical area or state.

Commercial service airports receive entitlement funds based on the number of passengers they enplane during the prior calendar year. Entitlement funding is based on a graduated methodology that provides a lower per enplanements entitlement as total enplanements level increases. This process is used to offset funding disparity that results from the vastly different levels of enplanements occurring at U.S. airports. The minimum passenger entitlement for Primary Airports (those airports enplaning at least 10,000 passengers per year) is $1 million. In Maine, five airports were considered Primary Airports in FY2005 including, Portland International Jetport, Bangor International, Northern Maine Regional, Bar Harbor-Hancock County, and Knox County Regional According to the FAA, these airports received $8.9 million in Primary Entitlements in FY2005. Not all of this money is spent in the year it is recieved. Commercial service airports may also receive cargo funding based on the landed weight of cargo aircraft. Bangor received $88,000 in Cargo Entitlements in FY2005.

General aviation airports (included in the NPIAS) are eligible for State Apportionment funds and Non-Primary Entitlement funds. State Apportionment funds are allocated to states based on a formula using population and geographic size. Those funds are distributed to airports based on FAA prioritization of projects. Maine received $2.0 million in State Apportionment funds in FY2005. General aviation airports are eligible for up to $150,000 in Non-Primary Entitlement funds. To obtain the funds, airports must have a 5-Year CIP with eligible projects that meets AIP funding guidelines. In FY2005, 25 Maine airports received Non-Primary Entitlement funds for a total of $3.7 million.

General aviation and commercial service airports compete for Federal Discretionary funds, which are awarded based on priority ratings given to each potential project by the FAA. The prioritization process ensures that (from the FAA's viewpoint) the most important and most beneficial projects are the first to be completed, given the availability of adequate Discretionary funds. In FY2005, only one Maine airport, Greenville Municipal, received discretionary funds. Greenville received $3.99 million in FAA discretionary funding to rehabilitate Runway 14-32.

Federal funding is limited to development that is justified to meet aviation demand, according to FAA standards. Each airport development project, including those recommended in the Aviation Systems Plan Update, will be subject to eligibility and justification requirements in the normal AIP funding process.

STATE FUNDING

State grants for aviation projects in Maine are administered through the Office of Passenger Transportation (OPT) of the Maine DOT. State funding is available for all publicly-owned airports in Maine. Tax revenue from aviation activities, aircraft registration, fuel tax, and use tax on the sale of aircraft is deposited in Maine's General Fund. However, Maine's aviation funding is "non-dedicated." OPT relies on biennial bond issues from the Legislature. Funding has fluctuated over the last four funding cycles. Between 1999 to 2005, the Maine OPT received a total of $13.0 million in state funding for aviation projects:

- 1999 $4,500,000 (includes $1,500,000 for Loring AFB)
- 2001 $3,250,000
- 2003 $3,600,000 (includes $2,600,000 for Northern Maine Regional Airport and Loring AFB)
- 2005 $1,700,000

Since OPT does not have a dedicated source of revenue each year, programming of aviation capital projects is difficult and funding is subject to change. Historically, needs greatly outweigh available funds, and the unknown financial situation of available money each year makes funding high priority and multi-year projects difficult. Due to rising costs, the funding has grown increasingly scarce in recent years.

Other State Funding

On November 4, 2003, Maine voters overwhelmingly approved a multi-million dollar Transportation Bond, which included $3 million for LifeFlight. Specifically, $2.6 million was granted for helipads and aviation infrastructure. The transportation bond passed by Maine's voters is a public-private initiative to help LifeFlight improve air/medical infrastructure across the state. It will provide more sophisticated weather prediction systems at airports in central, eastern, and northern Maine, on-site refueling at hospitals in Aroostook County, and seed money for a critical care continuing education outreach program. Coupled with in-kind donations and other private contributions, the funds will also help hospitals acquire new or improved helicopter landing pads to improve flight access to health care facilities.

LOCAL FUNDING

Local public airport sponsors such as counties, cities, and airport authorities are responsible for costs associated with airport development projects that remain after federal and state shares have been applied. Historically, in Maine, the local share of federally funded projects has been 5 percent after the 5 percent state share and 90 percent federal share was applied. Beginning in 2004, local match and state match for federal projects is 2.5 percent. For state projects, the local share has varied from 10 percent to 50 percent, depending on the nature of the improvement.

Local government funding of airport development projects is derived from the following sources:

- General Fund Revenues
- Bond Issues
- Airport-Generated Revenues
- Private Funding

Of these, general fund revenues and general obligation bonds are by far the most common funding sources. Revenue bonds supported by airport generated revenues are seldom used because most general aviation airports do not earn enough money to pay operating expenses and the debt service of capital funding requirements.

General Fund Revenues

Capital development expenditures from general fund revenues have been somewhat difficult to obtain in recent years. One reason for this difficulty is the seemingly universal shortfall in local general fund revenues. Budgetary problems have created an environment where local funding is uncertain. The amount of general fund support for airport improvement projects varies by airport and is based upon the local tax base, priority of the development project, historical funding trends, and, of course, local attitudes concerning the importance of aviation.

Bond Issues

Airport authorities can issue bonds without approval from the city or county. However, they must use their own revenue to repay the bonds. Airport revenue and property tax revenue are typically used to repay these bonds.

A city or county can also operate an airport. For these airports, bond issues funding the local share of airport development projects must compete with bond issues for other types of community improvements, such as schools, highways, and sewer systems. As with the general fund apportionment, bond issues supporting airport development depend greatly on the priority assigned to such projects by the local community.

Airport-Generated Revenues

Airport-generated revenues for general aviation airports are those revenues associated with the services that the airport provides. After expenses, net revenues can be used to pay the local share of capital improvement projects. Historically, most general aviation airports have not been able to realize enough revenue to completely cover their expenses and, therefore, often operate at a deficit. As a result, general aviation airports do not typically generate revenues to fund the local share of most development projects.

Commercial service airports, in most cases, do generate enough revenue to cover expenses and realize profits to fund the local share of capital improvement projects. These revenue sources typically come from landing fees, space rentals, auto parking, and fees and commission on gross sales.

Another means for air carrier airports to generate revenue for eligible capital improvement projects is a Passenger Facility Charge (PFC). The PFC program is part of the Aviation Safety and Capacity Expansion Act of 1990, enacted November 5, 1990. The ruling under this act requires the Department of Transportation to issue regulations under which a public agency may be authorized to impose an airport passenger facility charge of up to $4.50/enplaned passenger at a commercial service airport it controls. The proceeds from such PFCs are to be used to finance eligible airport-related projects. PFC-generated revenue can be used to pay all or part of the allowable costs of an approved project. PFCs can be used to pay debt service and financing costs incurred on that portion of a bond issued to carry out approved projects. PFCs may be used in combination with airport grant funds to accomplish an approved project. PFCs can be used to meet the non-federal share of the cost of projects funded under the federal airport grant program.

Private Funds

At publicly owned airports, unless all FAA-required airside improvements have been completed, items such as storage and maintenance hangars, fuel systems, and pay parking lots are not eligible for federal or state grant funding because they are revenue-producing sources, which can generate rental income for the airport. If a local airport sponsor does not wish to undertake the responsibility of financing, constructing, and managing hangar construction, a fixed-base operator is likely to build these facilities. This is provided that the FBO has the long-term lease agreement and that the financial market allows the project to be economically feasible. Some communities have also worked with local businesses to fund improvements.

FUNDING SUMMARY

Table 10-14 presents a summary provided by the Office of Passenger Transportation of total funding for airports in Maine over the last five years. The funding includes both federal and state funding for this time period. Projects that use 100 percent of local funds or PFC funding are not included. The $2.7 million terminal apron reconstruction at Bangor International in 2005 was funded with PFCs. As shown, five commercial airports accounted for over 73 percent of the state funds between 2002 and 2004. In 2005, Greenville Municipal received $4.0 million in FAA discretionary funds for a runway reconstruction; this single project increased the percentage of funds for general aviation airports.

TABLE 10-14
MAINE AIRPORT HISTORICAL FUNDING

	2001	2002	2003	2004	2005
COMMERCIAL- PRIMARY ENTITLEMENTS					
FEDERAL	$2,681,449	$19,443,894	$13,718,414	$18,962,847	$12,280,462
STATE	$173,128	$1,024,017	$722,606	$2,124,022	$323,670
LOCAL	$154,971	$991,590	$673,989	$499,022	$323,671
TOTAL	**$3,009,548**	**$21,459,501**	**$15,115,009**	**$21,585,891**	**$12,927,802**
% OF TOTAL	42.7%	84.7%	73.5%	73.7%	56.6%
GENERAL AVIATION (INCLUDES AUGUSTA)					
FEDERAL	$2,737,499	$2,964,213	$4,497,711	$5,798,731	$9,003,155
STATE	$794,230	$443,068	$628,802	$1,552,430	$441,516
LOCAL	$233,455	$188,843	$313,702	$231,427	$278,154
TOTAL	**$3,765,184**	**$3,596,124**	**$5,440,215**	**$7,582,588**	**$9,722,825**
% OF TOTAL	53.4%	14.2%	26.5%	25.9%	42.6%
STATEWIDE PLANNING					
FEDERAL	$249,610	$133,029	$0	$125,000	$162,000
STATE	$27,735	$151,338	$0	$13,900	$9,000
TOTAL	**$277,345**	**$284,367**	**$0**	**$138,900**	**$171,000**
% OF TOTAL	3.9%	1.1%	0.0%	0.5%	0.7%
TOTAL					
FEDERAL	$5,668,558	$22,541,136	$18,216,125	$24,886,578	$21,445,617
STATE	$995,093	$1,618,423	$1,351,408	$3,690,352	$774,186
LOCAL	$388,426	$1,180,433	$987,691	$730,449	$601,824
TOTAL	**$7,052,077**	**$25,339,992**	**$20,555,224**	**$29,307,379**	**$22,821,627**

SOURCE: Maine DOT, Office of Passenger Transportation

When compared to the recommended plan costs developed in this Systems Plan, the commercial service airports (excluding Augusta) account for approximately 39 percent of the total funding needs in the near-term. This points to the growing funding needs of the general aviation airports in the state.

CONSIDERATION FOR MAINE AVIATION FUNDING

The State of Maine recognizes the importance of its system of airports. To support its airport system, a dedicated source of revenue for state development grants should be in place. In 2005, nearly $1.7 million was made available to the Office of Passenger Transportation to fund two years worth of aviation-related projects. However, a review of the recommendations for airport development, as presented in this Study, reveals that the state airport grant program will not adequately support the overall development needs of the Maine aviation system.

Although FAA funds from VISION-100 provide much-needed additional funding to improve the public aviation system, it will not provide OPT enough funding to support the development of projects identified in the state CIP, individual airport CIPs, and through the system planning process.

Between FY2006 and FY2013, OPT estimates that approximately $3.8 million will be requested from the state for funding for Maine Non-Primary Airport projects. (See **Table 10-15**.) OPT estimates that between $1.7 and $2.0 million will be requested by primary airports between 2006 and 2013. Another $47.5 million in Non-Primary Airport CIP needs has already been assigned to an "unfunded" category due to the anticipated shortfall in funding on the Federal, state, and local levels. The unfunded requests for the Primary Airports are not inclusive of all the funds that will be requested during the forecast period. Portland International Jetport and Bangor International do not report funding needs versus programmed projects. It is estimated that the average annual funding requested by Non-Primary Airports in Maine will be in excess of $6.4 million each year. With approximately $850,000 made available each year in state funding, it is obvious that the OPT will not be able to respond to all funding requests during the period.

TABLE 10-15
ESTIMATE OF STATE FUNDING DEFICIENCY FOR NON-PRIMARY AIRPORTS
2006-2013

Non-Primary State Requests (2.5% of Total Request)	$3,764,000
Unfunded Non-Primary Requests (not met by federal, state, and local funds)	$47,467,000
Total Non-Primary Funding Requested 2006-2013	**$51,231,000**
Average State Funds Requested by Non-Primary Airports	$6,403,875
Average Annual State Funds Available (2005/2006)	$850,000
Estimated Annual State Deficit for Non-Primary Airports 2006-2013	**$5,553,875**

SOURCE: WSA

It is apparent that additional funding is critical to Maine's Airport System. Potential sources of additional financial resources for the airport system are limited. Many states set aside aviation fuel taxes, sales tax, other aviation-related monies collected from airport users to help fund airports projects and provide matching funds for airports receiving federal grants. The following section details the revenue that the State of Maine collects from airport users. These taxes are deposited into its Maine's General Fund.

AVIATION TAX REVENUE AND FEES COLLECTED

As part of the Systems Plan, an effort was made to determine the amount of revenue taxes generated by aviation. This gives Maine insight into the revenue that is collected by the state versus the amount that is distributed for airport maintenance and development. Currently, OPT receives funds from biennial bond appropriations as part of voter-approved transportation bonds. In 2005, $1.7 million was appropriated for 2006 and 2007 for aviation.

Tax revenues from aviation activities are remitted to the General Fund. Maine's aviation funding process is "non-dedicated," relying on a portion of transportation bond, where statutory guidance does not provide for proportional allocations to the aviation sector.

Maine assesses the following taxes on aviation activity:

- Jet Fuel Excise Tax
- Aviation Gas Excise Tax and Sales Tax
- Aircraft Sales and Use Tax
- Aircraft Registration Fees

Aviation Fuel Taxes

Maine assesses taxes on aviation fuel sold in the state. Jet fuel is assessed a $0.034 per gallon excise tax. Jet fuel used on international commercial service flights is exempt. Aviation gasoline (AvGas) is assessed a five percent sales tax and an additional $0.22 excise tax per gallon; the tax rate is for all gasoline sold in the state other than jet fuel. For aircraft users, aviation gas taxes can be refunded up to $0.18 per gallon if requests are made to the State Assessor and gasoline invoices are submitted.

Actual sales and excise tax collected on aviation fuel are available from the Maine Revenue Services, Sales, Fuel and Special Tax Division. According to their records, $919,167 in taxes were collected on 27.0 million gallons of jet fuel sold between July 2004 and June 2005. An additional 17.4 million gallons of jet fuel was sold for use by commercial service airlines making international flights; there was no tax on this fuel. 1.2 million gallons of aviation gasoline fuel was also sold between July 2004 and June 2005. The state collected $307,702 in taxes on aviation gasoline during the period. As shown in **Table 10-16**, total annual taxes collected by the state were over $1.2 million.

TABLE 10-16
STATE AVIATION FUEL TAXES COLLECTED JUNE 2004-2005

CATEGORY	GALLONS	TAX
INTERNATIONAL JET FUEL- EXEMPT	17,354,646	$0
TAXABLE JET FUEL	27,037,698	$919,167
TAXABLE AVIATION FUEL	1,225,103	$307,772
TOTAL	**45,617,447**	**$1,226,939**

SOURCE: Maine Revenue Services, Sales, Fuel, and Special Tax Division

Aircraft Sales Tax

Another tax source in Maine is from aircraft and part sales. A 5 percent state sales tax is placed on all aircraft and parts sales. According to Maine Revenue Services (MRS), the state collected a little over $300,000 in taxes from aircraft dealers in 2005 on both aircraft and parts sales. A breakout of the sales tax is not available. In addition, MRS reported an additional $61,000 in tax revenue from aircraft purchased at casual sale or purchased at a retail sale outside of Maine. These aircraft owners must pay tax when registering the aircraft with the state.

Aircraft Registration Fees

Personal property taxes are not levied on aircraft based in Maine. Aircraft owners are, however, required to pay annual registration fees. The annual fee is calculated with the aircraft blue book average price multiplied by a millage rate dependent on aircraft age. For example, the average blue book price is multiplied by 9 mills for aircraft one year old or less; 7 mills for 2nd year; 5 mills for 3rd year; 4 mills for 4th year; and 3 mills for 5th and succeeding years. The fees collected for aircraft registration could not be obtained.

Summary of Aviation-Related Taxes and Fees

At least $1.6 million a year is collected from aviation related taxes:

- Aviation Fuel — $1.23 million
- Aircraft and Aircraft Parts Sales — $0.36 million
- Aircraft Registration Fees — unknown

The Maine Revenue Services receives approximately $1.6 million tax dollars annually from aviation fuel sales, sales tax, and tax on aircraft/repair parts. This does not include annual aircraft registration fees. This compares to the $850,000 that is appropriated to Maine DOT, OPT for aviation projects in 2006.

<u>SPECIAL MAINE FUNDING NEEDS</u>

There are aviation funding needs for Maine's airports that currently do not qualify for typical FAA funding, including projects at privately owned and small publicly owned airports. OPT supports funding initiatives by the Maine Legislature that could at some future date make "set aside" funds available to meet the needs of these various groups, including rural airports supporting LifeFlight operations, island airports, and private airports.

Emergency Access at Airports (LifeFlight)

As discussed earlier in this chapter, through an organized, politically-driven effort, Life Flight of Maine received additional state funding to support its operations and improve access to the state's rural airports. Jet fuel and AvGas and weather reporting systems were installed at several rural airports in Maine as part of this initiative. Although this $2.6 million in funding was only a one-time occurrence, rural airports may continue to work with LifeFlight of Maine to gain additional funding to improve emergency access, including improved approaches.

Island Airports

As discussed in prior chapters, Maine's unique geography includes many islands. The state has set minimum standard guidelines for the two publicly owned and five privately owned airports providing access to the people on Maine's islands. Recognizing the geographic limitations of the islands, Maine's suggested guidelines for these airports are less demanding than FAA standards. State funding to maintain island airports should be provided in order to improve and maintain access to island airports.

Fuel at Seaplane Bases

Maine's seaplane bases also provide a unique role in the airport system, providing access to the many remote areas and lakes in the State. There is currently a lack of fuel at seaplane bases around the state and many aircraft operators must fly long distances to access fuel for their planes. It is recommended that additional funding be sought to provide fuel at additional seaplane bases in Maine, especially those in the Allagash Wilderness.

Private Airports

There is no FAA or state funding available for private airports to maintain or improve their airfields. OPT recognizes the desirability of providing support to the state's private airports. One state that provides funding for private airports is Pennsylvania. Pennsylvania is able to provide assistance to its private airports through its Aviation Development Program (ADP), funded through jet and avgas taxes collected at state airports. Eligible project costs for projects at airports not eligible for federal funding, but eligible for state funding, are typically be funded up to 75 percent from ADP funds with the remaining 25 percent of funding coming from local or private sources.

SEARCHING FOR ADDITIONAL AIRPORT FUNDING

Federal Funding Sources

The airport funding available from the FAA is based on eligibility, limited to qualifying projects, and only available to publicly owned airports. There are additional funding needs for airports in Maine including:

- Small airport projects that do not rank high enough using the FAA's prioritization process
- Projects at private airports
- Revenue-producing projects such as hangars, parking, terminals, etc. (prior to meeting FAA-required airside improvements)
- Site development for on airport industrial parks
- Projects needed for economic development
- Projects that can help airports be financially self-sustaining

Although additional federal funding for airports from the FAA is limited, there may be other federal sources the Maine airports can tap into for funding airport projects. There are three additional federal agencies that offer funding assistance for certain types of airport projects. These agencies include the Federal Highway Administration (FHWA) of U.S. Department of Transportation; the Economic Development Administration (EDA) of the U.S. Department of Commerce; and the U.S. Department of Agriculture (USDA).

FHWA's Transportation and Community and System Preservation Pilot Program

The FHWA's Transportation and Community and System Preservation Pilot Program (TCSP) was developed in response to the increasing interest in "smart growth" policies that encourage investments in existing infrastructure over new construction, investment in high-growth corridors, and efficient access to jobs and services. The key purpose of this program is to devise neighborhood, local, metropolitan, state, or regional strategies that improve the efficiency of the transportation system, minimize environmental impacts, and reduce the need for costly public infrastructure investments. TCSP funds have been used by communities for several airport-related programs including airport access road improvements and construction, parking projects, and sewer and utilities for on-airport industrial park development. Some specific examples of airport-related projects include:

- Delong Mountain (AK): Undertake a study for an airport facility to serve passenger and cargo traffic to northwest Alaska ($281,230).

- Los Angeles International Airport (CA): Green Airport Initiative - Provide cleaner, more environmentally friendly vehicles available for rental by the general public ($1,982,615).

- Cedar Rapids (IA): Eliminate railroad grade crossing conflicts by constructing the Edgewood Road viaduct near Hwy 30/151/218 and the airport ($2,973,922).

- Jackson (MS): Construct airport connectors to improve traffic flow and transit access and enhance economic development ($871,000).

- Bowling Green (KY): Construct the Transpark Access Road ($1,700,000).

- Dayton (OH) (Huffman Prairie Flying Field): Improve pedestrian, roadway, and transit access to link two aviation-related historic sites; Pedestrian & Multimodal Gateway Entrance ($656,203, $1,486,961).

EDA's Grant Program

<u>Public Works Grants</u>
The EDA provides public works grants to public entities for economic development related projects in economically distressed areas, including transportation facilities and infrastructure improvements, such as sewer and water utilities. These grants require a matching share, usually 20 to 50 percent, and are restricted to infrastructure development. Such public works projects must be necessary to promote long-term, sustainable local economic growth by attracting and encouraging private sector investment and the creation (or at least the retention) of local employment opportunities for area residents.

EDA grants have traditionally been used to support local water and sewer improvements along with access roads serving industrial parks or sites. For example, the City of Alamogordo, New Mexico received a $350,000 EDA grant to provide the first phase of infrastructure improvements to an airport business park adjacent to the White Sands Regional Airport. The infrastructure improvements include curbs, gutters, sewer connections, drainage, and road improvements. EDA grants can also be used to help finance railroad sidings and spurs, vocational training centers, business incubator facilities, airport improvements and tourism facilities, etc. as long as they enhance industrial expansion potentials and assist in creating long-term employment opportunities.

<u>Technical Assistance Grants</u>
Non-profit economic development organizations and general purpose local governments can apply for non-construction grants which can be used to offset up to 75 percent of the total eligible costs for a technical assistance project. Such grants are most commonly associated with the development of information and/or specific data or to secure the expertise necessary (1) to promptly respond to one or more pressing economic development issues of a local or regional nature; (2) to help shape and then implement specific local or regional programs; or (3) foster demonstration programs of possible state or national significance which directly support economic development within the District. The end result of Technical Assistance grants is usually a report or some type of presentation of a strategy for addressing the economic development issues at hand.

Normally, technical assistance grants are completed within 12 months or less of the date of EDA grant award.

Economic Adjustment Grants

Through this EDA program, non-profit economic development organizations and general purpose local governments can apply for non-construction grants which can be used to offset up to 75 percent of the total eligible costs. Eligible costs include those for developing and implementing a viable strategy that addresses major economic adjustment problems. These could be problems resulting from sudden and severe loss of local jobs (such as a plant closing) or the long-term deterioration in the local economy.

Such grants are most commonly utilized to secure the expertise necessary: (1) to promptly respond to one or more pressing economic adjustment problems of a local or regional nature and (2) to help shape and then implement specific local or regional facility marketing or development incentive programs. As such, the end result of Economic Adjustment grants is usually a report or some form of marketing and/or new incentive which collectively represent a local strategy for addressing the economic adjustment problems in question. Normally, these adjustment grants are completed within 12 months or less of the date of EDA grant award.

USDA's Grant Programs

Local governments, special taxing districts, and non-profit public service organizations can utilize the direct loan and the newer loan guarantee provisions administered by the Rural Development Division of the United States Department of Agriculture (USDA).

Community Facility Loans & Guarantees

Under this USDA program, general purpose local governments, special taxing districts, and non-profit organizations are eligible to apply for below-market, fixed-rate, long-term loans which can be used by the applicant to construct, enlarge or improve essential community facilities, including airports and airport hangars. Such projects must be able to document that comparable financing at reasonable rates and terms is not available through other private sector credit sources in order to be considered.

Water & Waste Disposal Grants and Loans

Through this USDA program, special purpose rural water or sewer districts, non-profit public organizations and general purpose governments are eligible to apply for grants and/or below-market, long-term, fixed rate loan funds. Such USDA resources can be used to construct, enlarge or improve essential water and waste disposal facilities (including those for solid waste) provided that comparable credit through private sector sources is not readily available.

Water and waste disposal grants and loans awarded by USDA have been used to help finance municipal or rural water district projects in distressed counties and/or rural communities of less than 10,000 residents. Grants are limited; therefore, they are used exclusively in combination with USDA loans and then only when necessary to reduce monthly user charges to a level which is more affordable for the project's intended rural beneficiaries.

Programs In Other States

Maine DOT, OPT operates with a small budget compared to other state aviation agencies. OPT has limited resources available to assist in the maintenance and development of airports. With limited funding, it is difficult for the OPT to make significant improvements in the state's aviation system. The majority of the funding for the state's aviation program is used to match federal grants. As previously noted, Maine matches the FAA 95 percent grants with 2.5 percent state money. In addition to federal matching grants, the state also provides matching grants for non-FAA eligible projects.

A review of other funding sources and programs used in other state aviation agencies was conducted and is summarized below. This review should not be considered wholly comprehensive, but it does present information on programs that could be considered to enhance Maine's future airport funding.

Hangar Programs

Several states use a revolving loan program to assist airports with hangar development. These programs provide low interest or interest-free loans to airport sponsors for building new hangars. The loans are paid back into the fund over short periods (five to ten years), and these loans continue to revolve as other airports apply for loans and the loans continue to be repaid. This program usually requires an up front appropriation to initiate the program. Florida's Department of Transportation provides hangar grants up to 50 percent to airport sponsors to propagate the development of hangar facilities. The Iowa General Assembly appropriates $581,000 for landside development such as terminal, hangar and fuel facility construction and/or renovation at public use general aviation airports. The program is a 70 percent state and 30 percent local matching fund program. As previously noted, hangars provide an opportunity for airports to generate revenue as well as additional demand that can help to sustain the operating costs of the airports.

Pavement Programs

Airport pavements represent one of the most significant investments in the aviation system. As such, it is imperative that the pavements be maintained to high standards to prolong the useful life. Alabama implemented a pilot program for pavement maintenance in 1999 that was considered successful. This pilot program could be considered for permanent inclusion in Alabama's airport funding program if sufficient monies were available. Other states use a set-aside for airport pavement preservation wherein a certain percentage of their available funding is dedicated to pavement preservation. In addition to pavement preservation, some state agencies offer marking and/or crack sealing programs for airports. The marking program operated by Nebraska is one in which the state owns the equipment and actually marks the airports at a lower cost. The airport sponsor pays the Nebraska Department of Aeronautics to complete the marking, but at a significantly reduced rate.

Airport Operation and Maintenance (O&M) Program

Airport sponsors must expend monies to maintain and operate their airports including paying utilities (lighting, buildings, weather system, navigation aids), equipment, staff, and routine maintenance (pavements, buildings, equipment). These O&M costs can be significant to the sponsor depending on the activity at the airport. Minnesota's Department of Transportation offers reimbursement for a portion of these costs depending on the amount of the expense, airport size, and complexity of operation. This reimbursement reduces the burden on the sponsor and ensures the longevity of the airports in the system. This program is especially helpful to small airports that perform important roles in the airport system.

Fuel Storage

Another means for airport revenue generation is fuel sales. To assist airport sponsors with the installation, improvement or increase in fuel storage capacity, some states offer a fuel storage loan program. These programs provide low or interest-free loans to airport sponsors to engineer, purchase, and install fueling systems at up to 50 percent of the cost of the project.

Terminal Buildings

Some states provide a grant programs to aid in the funding of terminal buildings. Alabama's existing state grant program allows for funding of general aviation terminal buildings. Terminal building costs that are for public use or publicly accessible areas are eligible up to a maximum of $150,000. Under the existing priority rating system, terminal buildings receive such a low priority that they typically do not get funded. Other state aviation agencies offer similar programs, but use resource allocation methods wherein a certain percentage is dedicated to terminal building development.

Summary

It is important to note that all of these programs require additional funding. Maine's current funding structure and program application is such that, with the increased level of FAA funding provided as part of VISION-100, much of the state's airport funding has been used to match FAA grants. There has been little remaining to initiate new programs that have large start-up costs

CONTINUOUS PLANNING RECOMMENDATIONS

The final section of this report identifies steps for evaluating progress of the system and providing sustainable planning. Maine DOT, OPT plans to revisit the findings from the Systems Plan at regular intervals. Monitoring performance over time will identify gaps and assist in developing strategies to meet the ongoing needs of the aviation system. As the system is monitored, further refinement to airport roles, as assigned in this plan, may be warranted.

The FAA recognizes that continuous planning is a key to a success of a state airport system. Continuous system planning is typically comprised of the following five elements:

- Surveillance
- Reappraisal
- Service and Coordination
- Special Studies
- Updates

<u>SURVEILLANCE</u>

Aviation is a dynamic and fluid industry, one that is constantly changing. As aviation changes, the system of airports supporting aviation demand will also continue to change. As part of the continuous planning process, surveillance is recommended as it relates to the demand components and to the facilities/services of the airports.

As part of the Maine Aviation Systems Plan Updated, data on a number of demand indicators for system airports have been assembled; these include statistics on the number of aircraft based at each airport in the system and total annual aircraft takeoffs and landings at each airport. As part of the continuous planning effort, the following actions should be considered:

Activity Indicators

As part of the Systems Plan, a benchmark has been developed that all system airports should have a system in place to maintain, update, and report annual aviation activity statistics to OPT. OPT should use and build upon the database of based aircraft, operations, and enplanements information that has been assembled for each airport as part of this Systems Plan. Information on total based aircraft, as well as the mix of these aircraft, should be updated at a minimum on an annual basis. Given the nature of certain airports in the system, tracking seasonal changes in the total number and the types of aircraft based and operating at each airport would also prove useful. To ensure that data on total based aircraft and the based fleet is consistent from year to year, it is recommended that counts of based aircraft (annual and seasonal) should be undertaken in the same month each year and that OPT should develop a procedure for updating and tracking this type of information for its airports. In order to track operations and based aircraft in the state, it is recommended that airports be required to provide this information to OPT before matching grant funds are awarded.

Similar to most general aviation airports in the United States, nearly all of Maine's airports are non-towered. Therefore, total annual operations for these airports are based on estimates at best, as opposed to actual data or counts. As part of the continuous planning process, it is recommended that OPT work to establish a more formalized procedure for estimating activity at each of the general aviation airports. It is recommended that estimates of total annual operations should be updated annually at a minimum.

Future planning and development of all Maine airports is tied to the most demanding or the critical/design aircraft for each airport. This may be an aircraft that is based at the airport or, in other instances, it may be an aircraft or a "group" of aircraft that visit the airport on a regular basis. The FAA defines "regular basis" as being 250 takeoffs or landings, or 500 total annual operations, each year. Each airport's Airport Reference Code (ARC), which determines its applicable FAA design standards, is determined by this design aircraft. It is possible that over time, Maine airports may be frequented by larger, more demanding aircraft. It will be important to record and document any such change, so as to justify evolving to a more demanding ARC. The FAA often requires documentation on critical aircraft operations to support any runway lengthening, or precision approach establishment. Logs and journals on the types of aircraft that operate at Maine airports, along with the frequency of their operations, is important to establishing future ARCs for all airports. It is recommended that OPT work with on-site operators at each airport to establish mechanisms for identifying and tracking critical aircraft operations.

Facilities/Services

It is likely that over time, Maine airports will improve and expand their facilities. One of the products of the Systems Plan was a facilities-based "report card" showing just how each airport currently provides or does not provide the facilities that the Systems Plan identified as being desirable for each airport's respective system role. As conditions at system airports change and as improvements are realized, it is recommended that OPT update the airport specific facility report cards. This should be done each year to provide OPT with a visual picture of how the system is moving toward its designated targets. Airport specific summaries provided at the end of this chapter provide information on facility improvements that have been identified as being desirable for each airport to best meet its system role.

Another product of the Systems Plan was a services-based "report card" that showed how each airport currently provides or does not provide services that the System Plan identified as being desirable for each airport's respective system role. OPT should establish mechanisms for identifying changes in the services provided at each airport. As conditions at system airports change and as improvements are realized, it is recommended that OPT also update the airport specific service report cards. This should be done each year to provide OPT with a visual picture of how the system is moving toward its designated targets. Airport specific summaries provided at the end of this chapter provide information on service improvements that have been identified as being desirable for each airport to best meet its system role. Data on each airport's facilities and services should be refreshed annually and airport specific reports cards on facilities and services updated.

REAPPRAISAL

Aviation in Maine will continue to change over time. As demand levels and other facets of the system change, conclusions drawn as part of the Systems Plan may need to be reevaluated. Many of the airport-specific recommendations contained in the Systems Plan are tied to findings from the Systems Plan's demand/capacity analysis. Additionally, each airport's current ARC was an important consideration in many of the study's final recommendations. Should it be necessary to upgrade the ARC for any of the Maine airports or should airports fall short of or exceed demand projects contained in the Systems Plan, the conclusions/ recommendations presented in this plan may warrant reevaluation.

As part of the continuous planning process, it is recommended that OPT compare activity levels projected in the System Plan to actual demand levels at each of the key forecast milestones. Based on this comparison, decisions to slow down or to accelerate projects that are needed to meet anticipated demand can be made.

As was recommended above, OPT should develop a procedure for identifying and tracking demand by each airport's most demanding (critical) aircraft. In this way, it will be possible for OPT to determine if changes in current ARCs at any of the system airports are needed. As part of the Systems Plan's Safety/Standards performance measure, each airport was evaluated for its ability to meet FAA design standards and development guidelines as it relates to the airport's existing ARC. If demand characteristics at any system airport change to support a more demanding ARC, then FAA standards for that airport would also change. As part of the Systems Plan, OPT set an objective to have all airports be totally compliant with all appropriate FAA standards. The Systems Plan identifies projects for each airport that are needed to enable them to be compliant with standards as determined by the current ARC. If more demanding aircraft use Maine airports in the future, upgrades to ARCs may be warranted. These upgrades would in turn lead to revised and most likely more demanding design standards for those airports.

Each airport was reviewed for its ability to provide both adequate airside and landside capacity. This determination was made based on current and projected demand levels for all airports. Most capacity shortfalls identified in the Systems Plan related to aircraft parking and hangar storage. Actual demand for these facilities at each airport should continue to be monitored by OPT over the planning period to determine the need to act on system recommendations as they pertain to these two types of facilities.

The Systems Plan identified a future shortfall in operational capacity only at Portland International Jetport. Demand at system airports will continue to grow and more general aviation aircraft that historically have operated from the Jetport seek operating alternatives at other airports in the Maine system, demand/capacity ratios could change. The Systems Plan provided an estimate of each airport's ability to process activity on an annual basis. This estimate is presented in the report as each airport's annual service volume (ASV). As demand continues to grow, it is possible that FAA-established triggers could be reached that would require additional airfield operating capacity. Therefore, it is recommended that when OPT annually updates its operations estimates for each airport, they also should compare these estimates to the ASV for each airport presented in this study. When an airport reaches a demand/capacity ratio of 60 percent (as per FAA criteria), the airport sponsor should begin to plan for options to increase the airport's ability to process operational activity. At 80 percent, the airport sponsor should act on those plans.

SERVICE AND COORDINATION

As part of the continuous planning process for Maine, OPT should purse several coordination and communications activities. These activities are focused on coordination between OPT and the airports, OPT and the communities that host the airports, and OPT and other state and federal agencies. Continuous planning efforts in this category include the following:

- **Security Issues** – Following the events of 9/11, the Transportation Security Administration (TSA) was established and a host of new security guidelines, including equipment, and personnel requirements, were put in place at airports in the U.S. serving scheduled commercial airlines. Formal Federal guidelines for appropriate security measures at general aviation airports are still forthcoming. Recognizing that security at general aviation airports should be commensurate with the risk they pose, the Systems Plan identified basic security related facility improvements that should be considered for all Maine airports. OPT, through various organizations such as AAAE, AOPA, NBAA, NASAO, and other should continue to monitor as part of the continuous planning process federally mandated security requirements for general aviation airports. These recommendations should be incorporated into each airport's CIP, as may be appropriate.

- **Airport Advisory Groups** – During the Systems Plan, in order to develop individual airport goals and objectives, meetings were held in each airport community. These meetings are the first step in establishing effective dialog between OPT, host communities and municipalities, economic development groups, airport users, and others. It is a recommendation of this plan that as part of the continuous planning effort, these groups continue to meet on an on-going and regular basis. Meetings should be held at least once a year to provide an opportunity to discuss aviation and airport issues that are of statewide and /or local importance.

SPECIAL STUDIES

As part of the continuous system planning process, there is often a need for follow on special studies that are desirable to address needs identified during the system planning process. As part of the continuous system planning process, the need for the following special studies have been identified and are recommended:

- **Master Plans** – The Systems Plan concluded that it was desirable for all system airports to have current master plans and ALPs. It is the recommendation of this plan that as part of the continuous system planning process, each of the airports have a master plan and that the master plan include the development of a complete ALP set, including a future ALP. Master plans and ALPs for the OPT airports should be updated every 5-15 years or as conditions warrant.

- **Land Use Compatibility Guidelines** – Incompatible land use in the airport environment has the potential to limit the future growth and development of airports in Maine. Recognizing this fact, follow-on steps should be taken to develop guidelines for land use compatibility. Land use compatibility can generally be described as the compatibility of the area around each airport where the height of objects should be limited so as not to impede safe airport operations, where noise impacts could most logically be expected, and where typical aircraft traffic patterns would occur. These guidelines could be used by all system airports to enable them to better meet the system plan's objectives.

- **Runway Approach Obstruction Study** – One of the objectives for the Maine Aviation System is for all system airports to have clear approaches to both ends of their primary runway. To meet this objective, it is recommended that a follow-on study be conducted. Coordination and meetings with each of the airports and municipalities would be included as part of this follow-on study. The study would include the development of a model height zoning ordinance that would be taken to each municipality. The objective would be to have all municipalities tailor the model zoning ordinance to their particular situation, and for each to adopt a height zoning ordinance, while ensuring unobstructed approaches to each airport's primary runway. Follow-on study is needed to identify where obstructions cannot be resolved and to determine where obstructions have been mitigated through lighting.

- **Vegetation Management Plans/Wildlife Management Plans** – It is a goal for the system to have all airports compliant with applicable regulatory minimums. It is the recommendation of this plan that the currency of all applicable regulatory permits and plans be monitored; and that such documents be updated as needed.

While many airports have ongoing efforts to clear vegetation that penetrates critical safety area at most system airports, many of Maine's general aviation airports do not have Vegetation Management Plans or Wildlife Management Plans. The purpose of these plans is to define vegetative or wildlife management and maintenance practices that would allow airports to prevent future penetrations through FAA-mandated airspace surfaces. As part of the continuous planning process, it is recommended that Vegetation Management Plans and Wildlife Management Plans and be prepared for Level I, II, and III airports, that actions/recommendations of these plans be followed by OPT, and that these plans be updated at appropriate intervals.

- **Pavement Management Plan (Continuous)** – One of the objectives for the Systems Plan is for all airports to have a pavement condition index (PCI) of at least 70 on their primary runways. To meet and maintain this objective, it is a recommendation of the continuous planning process, that pavement management be conducted on a continuous basis for the airports in Maine. This would identify current pavement condition, possible maintenance or rehabilitation projects, and costs attributable to each system airport.

- **Business Plans** – As part of the continuous planning process, it is recommended that actual business plans be prepared for each of the airports. These business plans should include the development and adoption of minimum standards for all airports in the Maine system.

- **Emergency Plans and Operations Manuals** – The Systems Plan also recommends that all airports have an operations manual and Level I and II airports have Emergency Plans.

- **NAVAIDS Study** – It is recommended that a comprehensive navigational aids study be developed to review existing navigational aids, aviation weather collection, and other systems in place that assist pilots and other users in Maine. A study could include an examination of existing facilities, an evaluation of the capability of state airports to support improved or new NAVAIDS, and quantification of the costs associated with the upgrade and improvement of the NAVAIDS in the state

- **Economic Impact Study** –It is a recommendation of the continuous planning process, that a comprehensive economic impact study be conducted for the airports in Maine. This study would identify current jobs, payroll, and annual economic activity attributable to each system airport. Maine DOT, OPT plans to develop an economic impact study in 2006.

- **Passenger Demand/Air Service Potential** – It is a recommendation of the continuous planning process that OPT should undertake an analysis to measure the state's total demand for commercial airline travel. While all six of Maine's commercial airports can quantify the volume of passengers they serve, most airports can not readily determine their unconstrained passenger demand levels. All airports in Maine experience some degree of passenger "leakage," with much of this leakage going to commercial airports in neighboring states. A study to quantify the economic disbenefit to Maine from out-of-state commercial passenger leakage is needed. The study should also measure the demand for commercial airline travel on a county-by-county basis; it is possible to identify airports/markets in the state that could have the potential to support new or improved scheduled airline service.

UPDATES

The final element of the continuous planning process addressed needed updates. As noted above, once master plans are completed for each of the airports, these should be updated at appropriate intervals. The final section of the this report identifies OPT's plans for preparing master plans and ALPs and for keeping them current in accordance with objectives established by the Systems Plan. In addition to these updates, the following actions are also recommended as part of the continuous planning process.

- **System "Report Card"** – The system "report card" is a tool which allows the OPT to visualize their achievement of target goals over the life span of the Systems Plan. It is recommended that the report card be updated every year to ensure its accuracy and to track the progression of airports in Maine.

- **Plans and Permitting Regulatory Control** – The recommendation to update master plans, ALPS, and other regulatory plans has been previously discussed.

- **Aviation Systems Plan** – The Aviation Systems Plan Update provides OPT with a blueprint for the development of its airport system. As the aviation industry changes over time, as Maine's airports grow, and as the state's socio-economic and demographic characteristics change, the System Plan should again be updated. It is recommended that as part of the continuous planning process that OPT consider updating the System Plan on a five to ten year interval.

SUMMARY

The Maine Aviation Systems Plan has identified costs elevate the overall performance of the state's airport system and to enable individual airports in the system to fulfill their designated roles. The Systems Plan estimates that approximately $6.1 million annually is needed to improve and maintain Maine's Aviation System.

Airports in Maine are critical transportation and economic resources. For communities throughout Maine, airports are important economic catalysts. Employers throughout Maine agree that commercial and general aviation airports are critical to business attraction and retention. By responding to performance measures, benchmarks, and facility/service objectives outlined in the Maine Aviation Systems Plan Update, Maine will have a flight plan that will take them through the next 20 years.