Chapter 5. Implementation Planning

Chapter 5. IMPLEMENTATION PLANNING

1. INTRODUCTION

The preceding chapters present a description of the long-term physical development program necessary to accommodate the forecast aviation needs at Dayton International Airport (DAY). The airport's long-term development program, made up of capital projects recommended in this document, is referred to as the "Program" in this chapter. This chapter provides a description of the projects associated with each development phase and a financial plan to implement the Program. Finally, this chapter will evaluate the economic viability of the Program.

The financial analysis of the Program was performed using a multi-step process. The first step was the preparation of a complete project identification, timing, and cost schedule for airport expansion and 5-year Capital Improvement Plan (CIP). The second step identified existing and potential funding sources. In the third step, the sources and uses of funds were matched and applied against the total airport expansion and 5-year CIP costs to arrive at a net funding requirement. In the final step the reasonableness of the anticipated funding was evaluated.

The overall conceptual economic feasibility of the Program is discussed in this section. This financial study was conducted primarily for long-term planning purposes. The analysis is focused on the overall Program and is not intended to be used to determine the actual rates for airport users or justify the potential financing. The key factors in this financial analysis are: one, that the aviation demand materializes as forecast, and two, the FAA provides funds for qualified projects. In addition the airport's principal tenant, Emery Worldwide, must continue its support of the expansion program.

The Program consists of new major capital projects associated with meeting the facility needs of DAY. In addition the airport must continue to fund its normal operating and maintenance costs, as well as major maintenance and other capital projects. Therefore this analysis assumes that normal airport revenues continue and Program funds are additional.

Finally, the overall financial viability of the Program is based on the assumption that future capital projects will only be constructed on an incremental basis as demand dictates and funds become available. If demand materializes before it is forecast, the project phasing can be accelerated. The result is that the Program is logical from a financial viewpoint.

2. FINANCIAL FRAMEWORK

The airport is owned and operated by the City of Dayton. The airport's financial structure is designed to comply with Federal and local law, as well as the terms and conditions of the existing lease and use agreements with the air carriers operating at DAY. References in this section to the airline lease agreements, bond documents, FAA grant program requirements, and various other leases and agreements entered into by the airport are not comprehensive or definitive and represent general concepts under which the airport operates.

At the end of 1997 the airport had outstanding bond indebtedness of $61.4 million which consisted of City of Dayton General Obligation bonds and Airport Revenue Bonds. The future share of local costs identified in the Program is anticipated to be funded partially with additional revenue bonds; it does not matter materially to this analysis if these are airport revenue or general obligation bonds since that decision would be made at the time of financing based on other considerations. The remainder of the local share will be funded with Passenger Facility Charge (PFC) revenue and airport funds derived from user charges. It is the increased aviation activity forecast in this report that provides much of the incremental funding necessary to complete the Program.

Airline review of capital projects occurs through mechanisms contained in current and anticipated airport-airline agreements and through the PFC consultation process. Airport capital plans are also reviewed in the City budget process. Finally, tenant leases may also impact the need for and financing of capital improvements, but any special facility projects should be self-financing based upon a long-term lease. Tenant funded improvements are, of course, totally dependent upon the tenant's desire to implement the Project.

3. CAPITAL DEVELOPMENT PLAN SUMMARY

As discussed in previous chapters, the Program is divided into the following planning phases and is presented on ***Exhibit 5-1***.

- **Phase 1: 1999-2003** – The focus of Phase 1 projects will be to complete the 4,800 foot Runway 6R extension. The 24L threshold will be displaced by 400 feet to provide a standard runway safety area. Runway 6R/24L will have an ultimate length of 11,400 feet. U.S. 40 will be relocated around the Runway 6R extension and a new interchange will be constructed with Terminal Drive. The Airport Access Road will be relocated and land will be acquired south of the airport. In addition, the Amateur Trapshooters Association facility will be acquired in order to extend the runway.

Emery Worldwide is expected to expand their employee parking, aircraft apron, office/administration space, fuel storage, and various support facilities. In addition, construction will begin on a new Cargo Access Road (relocated Dog Leg Road) and a new aircraft maintenance hangar.

- **Phase 2: 2004-2008** – This phase calls for the relocation and 4,100 foot extension of Runway 18/36 to the north, for a total length of 9,500 feet. Ginghamsburg-Frederick Road will be relocated around the runway extension and additional land will be acquired. Construction will continue on the Cargo Access Road. Emery is expected to expand their ground support facilities, aircraft parking ramps, and container repair station. The extension of Runway 18/36 to the north would require a new ATCT to maintain an adequate line-of-sight with the Runway 18 end. Emery Worldwide expansion would require relocation of the existing ASR-9 facility.

- **Phase 3: 2009-2018** – The projects in Phase 3 will concentrate on a new third parallel runway, roadway improvements, and an additional ARFF facility. In addition, Emery will likely continue to expand their sort hub and maintenance hangar facilities.

Tables 5-1, 5-2 and 5-3 present the cost estimates for the Phase 1, 2, and 3 Master Plan Program and the Airport's 5-year CIP, which is shown on **Table 5-4**. A total cost summary for each development phase, including both the Program and the 5-year CIP, is presented in **Table 5-5**.

The Program at DAY, as well as any other airport or public capital program, is subject to any number of future variables. The Master Plan proposes a conceptual physical plan that can accommodate forecast growth in aircraft operations, passenger enplanements, cargo volume, and other aviation related demands. If the growth does not occur as forecast or if the growth occurs in different areas than foreseen, changes to the phasing plan would be necessary.

Elements of the Program can be accelerated or deferred as needed to meet operational requirements, financial considerations, or fluctuations in forecast activity levels. Future projects should only be constructed if the need is clearly apparent. The expectation is that future capital projects will be constructed only when demand exists and financial resources are available to fund the cost of construction. The key factor insuring the financial feasibility of the Program is the assumption that future capital projects will only be constructed on an incremental basis as needs clearly dictate.

Inflation will change actual project costs and may affect the implementation schedule over the planning horizon. **The project costs are presented in constant 1999 dollars.** However, revenue is also presented in constant 1999 dollars, so inflation alone will not likely be a significant factor in determining the viability of the Program.

Table 5-1
Dayton International Airport
Strategic Master Plan Update Study

Phase 1 Construction Costs (1999-2003)
Runway 6R Extension

	Quantity	Unit	Unit Cost	Total Cost [1/]
Airfield				
Runway 6R Extension [2/]	4,800	LF	$2,500	$12,000,000
Angle Exit Taxiways	800	LF	$2,000	$1,600,000
Taxiway "E" Extension	5,850	LF	$1,500	$8,775,000
Hold Pad	30,500	SY	$100	$3,050,000
South Taxiway Connector	4,100	LF	$1,500	$6,150,000
South Taxiway Connector Bridge	1	EA	$6,000,000	$6,000,000
Aircraft Apron	42,200	SY	$100	$4,220,000
North Taxiway Connector	6,000	LF	$1,500	$9,000,000
New ALSF-II	2	EA	$2,500,000	$5,000,000
New Glide Slope	2	EA	$300,000	$600,000
New Marker Beacons (IM, OM)	4	EA	$285,000	$1,140,000
New RVR	3	EA	$285,000	$855,000
New Localizer	2	EA	$350,000	$700,000
Airfield Total				**$59,090,000**
Roadway				
U.S. 40 Relocation (4-lanes)	12,400	LF	$800	$9,920,000
Airport Access Rd. Relocation (4-lanes)	4,000	LF	$800	$3,200,000
Terminal Drive Relocation (4-lanes)	8,400	LF	$800	$6,720,000
East-West Frontage Roads (2-lanes)	11,600	LF	$400	$4,640,000
Dog Leg Pike Interchange (2-lanes)	7,200	LF	$400	$2,880,000
U.S. 40/Airport Access Connector Road	3,200	LF	$400	$1,280,000
Roadway Bridges	6	EA	$3,000,000	$18,000,000
Roadway Pavement Demolition	64,000	SY	$10	$640,000
Roadway Total				**$47,280,000**
Support Facilities				
Public Auto Parking (surface lot)	554	STALL	$1,700	$941,800
Parking Garage	3,000	STALL	$10,000	$30,000,000
Airport Maintenance Building	28,200	SF	$60	$1,692,000
Airport Maintenance Land	58,260	SF	$25	$1,456,500
Airline Maintenance Hangar	47,000	SF	$160	$7,520,000
Support Facilities Total				**$41,610,300**
Land Acquisition				
Land Acquisition Total				**$4,970,000**
Noise Mitigation				
Residential Soundproofing	1	LS	$15,000,000	$15,000,000
Noise Mitigation Total				**$15,000,000**
Master Plan Sub-Total				**$167,950,300**
Engineering/Contintencies (41%)				$68,859,700
5-Year CIP (Years 1 through 4)	1	LS	$99,820,000	**$99,820,000**
Total Airport Development Cost				**$336,630,000**
Emery Worldwide Development				
Hub Facility Development	1	LS	$92,650,000	$92,650,000
Aircraft Maintenance Hangar Complex	1	LS	$30,350,000	$30,350,000
Miscellaneous Facilities	1	LS	$392,000	$392,000
Emery Worldwide Sub-Total				**$123,392,000**
Engineering/Contintencies (41%)				$50,590,700
Total Emery Worldwide Development Cost				**$173,982,700**
GRAND TOTAL PHASE 1 DEVELOPMENT COST				**$510,612,700**

1/ Costs are in 1999 dollars, in millions, and include general conditions (10%), general contractor (6%), contingency (15%), and design/construction fees (10%).

2/ R/W 6R end is extended by 4,800' and R/W 24L end is displaced by 400' for 11,400' total length.

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Table 5-2
Dayton International Airport
Strategic Master Plan Update Study

Phase 2 Construction Costs (2004-2008)
Runway 18 Extension

	Quantity	Unit	Unit Cost	Total Cost [1/]
Airfield				
Runway 18 Extension [2/]	4,100	LF	$2,500	$10,250,000
Taxiway "A" Extension	4,200	LF	$1,500	$6,300,000
Hold Pad	30,500	SY	$100	$3,050,000
Taxiway Exits	2,800	LF	$1,500	$4,200,000
North Terminal Taxiway	6,200	LF	$1,500	$9,300,000
Aircraft Apron	25,550	SY	$100	$2,555,000
Pavement Demolition	800,000	SY	$10	$8,000,000
New MALSR	2	EA	$1,200,000	$2,400,000
New Glide Slope	2	EA	$300,000	$600,000
New Marker Beacons (OM)	2	EA	$285,000	$570,000
New RVR	2	EA	$285,000	$570,000
New Localizer	2	EA	$350,000	$700,000
Airfield Total				**$48,495,000**
Roadway				
Ginghamsburg-Frederick Road Relocation (4-lanes)	10,400	LF	$800	$8,320,000
North Dixie Drive Interchange	1	EA	$1,000,000	$1,000,000
Roadway Demolition	6,400	SY	$10	$64,000
Roadway Total				**$9,384,000**
Support Facilities				
New ATCT/TRACON	1	EA	$20,000,000	$20,000,000
New ASR-11	1	EA	$5,000,000	$5,000,000
Public Auto Parking (surface lot)	200	STALL	$1,700	$340,000
Airport Maintenance Building	20,800	SF	$60	$1,248,000
Airport Maintenance Land	43,000	SF	$25	$1,075,000
Airline Maintenance Hangar	15,500	SF	$160	$2,480,000
Support Facilities Total				**$30,143,000**
Land Acquisition				
Land Acquisition Total				**$2,051,000**
Noise Mitigation				
Residential Soundproofing	1	LS	$20,000,000	$20,000,000
Noise Mitigation Total				**$20,000,000**
Master Plan Sub-Total				**$110,073,000**
Engineering/Contingencies (41%)				$45,130,000
5-Year CIP (Year 5)	1	LS	$9,000,000	**$9,000,000**
Total Airport Development Cost				**$164,203,000**
Emery Worldwide Development				
Facility Development	1	LS	$117,000,000	$117,000,000
Miscellaneous Facilities	1	LS	$2,891,000	$2,891,000
Mill Creek Relocation	16,800	LF	$250	$4,200,000
Detention Basin	260,000	CY	$20	$5,200,000
Hangar Access Road (2-lanes)	2,900	LF	$400	$1,160,000
Cargo Access Road (4-lanes)	16,800	LF	$800	$13,440,000
Logistics Road (2-lanes)	2,600	LF	$400	$1,040,000
Emery Worldwide Sub-Total				**$144,931,000**
Engineering/Contingencies (41%)				$59,421,700
Total Emery Worldwide Development Cost				**$204,352,700**
GRAND TOTAL PHASE 2 DEVELOPMENT COST				**$368,555,700**

1/ Costs are in 1999 dollars, in millions, and include general conditions (10%), general contractor (6%), contingency (15%), and design/construction fees (10%).

2/ R/W 36 end is shortened by 3,300' and R/W 18 end is extended by 4,300' for 9,500' total length.

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Table 5-3
Dayton International Airport
Strategic Master Plan Update Study

Phase 3 Construction Costs (2009-2018)
New Parallel 6-24 Runway

	Quantity	Unit	Unit Cost	Total Cost [1/]
Airfield				
Runway 6-24 [2/]	11,000	LF	$2,500	$27,500,000
Parallel Taxiway	11,000	LF	$1,500	$16,500,000
Hold Pad	61,000	SY	$100	$6,100,000
Angled Exit Taxiways	2,400	LF	$2,000	$4,800,000
Taxiway Exits	2,000	LF	$1,500	$3,000,000
North/South Taxiway Connectors	3,000	LF	$1,500	$4,500,000
Taxiway Bridge	2	EA	$6,000,000	$12,000,000
New ALSF-II	2	EA	$2,500,000	$5,000,000
New Glide Slope	2	EA	$300,000	$600,000
New Marker Beacons (IM, OM)	4	EA	$285,000	$1,140,000
New RVR	3	EA	$285,000	$855,000
New Localizer	2	EA	$350,000	$700,000
Airfield Total				**$82,695,000**
Roadway				
By-Pass Connector Road (4-lanes)	16,800	LF	$800	$13,440,000
By-Pass Connector Interchanges	2	EA	$1,000,000	$2,000,000
Miscellaneous Road Connectors (2-lanes)	600	SY	$400	$240,000
Roadway Total				**$15,680,000**
Support Facilities				
New ARFF	1	EA	$250,000	$250,000
Expand Equalization Ponds	2	EA	$750,000	$1,500,000
Public Auto Parking (surface lot)	212	STALL	$1,700	$360,400
Airport Maintenance Building	20,800	SF	$60	$1,248,000
Airport Maintenance Land	43,100	SF	$25	$1,077,500
Airline Maintenance Hangar	16,900	SF	$160	$2,704,000
Support Facilities Total				**$7,139,900**
Land Acquisition				
Land Acquisition Total				**$14,721,000**
Noise Mitigation				
Residential Soundproofing	1	LS	$25,000,000	$25,000,000
Noise Mitigation Total				**$25,000,000**
Airport Development Sub-Total				**$145,235,900**
Engineering/Contingencies (41%)				$59,546,700
Total Airport Development Cost				**$204,782,600**
Emery Worldwide Development				
Aircraft Maintenance Hangar Complex	1	LS	$18,400,000	$18,400,000
Hub Facility Development	1	LS	$115,600,000	$115,600,000
Emery Worldwide Sub-Total				**$134,000,000**
Engineering/Contingencies (41%)				$54,940,000
Total Emery Worldwide Development Cost				**$188,940,000**
GRAND TOTAL PHASE 3 DEVELOPMENT COST				**$393,722,600**

1/ Costs are in 1999 dollars, in millions, and include general conditions (10%), general contractor (6%), contingency (15%), and design/construction fees (10%).

2/ New R/W 6/24 is 11,000' in length.

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Table 5-4

Dayton International Airport
Strategic Master Plan Update Study

5-Year Capital Improvement Plan

	Dayton International Airport	Cost by Year 2000	2001	2002	2003	2004	Total Cost
1	Environmental Study	$1,500,000					$1,500,000
2	T/W "W" Ph. III Engineering	$250,000					$250,000
3	Noise Land Acquisition/Monitoring/Insulation	$1,000,000					$1,000,000
4	Road Rehabilitation/Engineering (McCauley Dr., Wright Dr., Maintenance Dr.)	$900,000					$900,000
5	Emery Employee Lot Construction/Engineering	$1,650,000					$1,650,000
6	Fire Station Remodel/Inspection	$992,000					$992,000
7	R/Ws 6L and 18 Rehab. Engineering/Design	$275,000					$275,000
8	T/W "W" Ph. III Airfield Lighting	$420,000					$420,000
9	NE Deicing Apron Extension Engineering/Construction	$6,000,000					$6,000,000
10	T/Ws "A" and "Z" Rehabilitation	$1,100,000					$1,100,000
11	Cargo and Terminal Aircraft Apron Rehabilitation	$1,100,000					$1,100,000
12	United States Air and Trade Show Upgrade	$1,000,000					$1,000,000
13	FAR Part 150 Noise Study Professional Services	$300,000					$300,000
14	Environs (Land Use) Study	$300,000					$300,000
15	Land Acquisition	$500,000	$14,000,000	$4,000,000			$18,500,000
16	Field Maintenance Building/Garage Renovation	$500,000					$500,000
17	Parking Lot Expansion (Economy Lot)	$500,000					$500,000
18	T/Ws H, K, L, J, E, and V Rehabilitation	$1,000,000					$1,000,000
19	Economic Development	$500,000		$2,000,000			$2,500,000
20	R/Ws 6L and 18 Pavement Rehabilitation		$5,000,000				$5,000,000
21	Residential Sound Insulation		$5,000,000		$11,000,000	$4,000,000	$20,000,000
22	Air Traffic Control Tower Design		$2,000,000				$2,000,000
23	T/W "R" Rehabilitation		$4,000,000				$4,000,000
24	Infrastructure Rehabilitation		$2,000,000				$2,000,000
25	Roadway Improvement Design (U.S. 40, Terminal Access Rd.)		$4,000,000				$4,000,000
26	Air Traffic Control Tower Construction/Inspection			$19,000,000			$19,000,000
27	Taxiway/Apron Rehabilitation			$5,000,000		$4,000,000	$9,000,000
28	Gateway Center Construction					$1,000,000	$1,000,000
Total Dayton Int'l. Airport 5-Year CIP		**$19,787,000**	**$36,000,000**	**$30,000,000**	**$11,000,000**	**$9,000,000**	**$105,787,000**
	Dayton - Wright Brothers Airport						
1	R/W 2-20 Rehabilitation	$2,000,000					$2,000,000
2	Land Acquisition	$1,000,000					$1,000,000
3	Environmental Overview	$33,000					$33,000
Total Dayton-Wright Brothers Airport 5-Year CIP		**$3,033,000**					**$3,033,000**
GRAND TOTAL 5-YEAR CIP		**$22,820,000**	**$36,000,000**	**$30,000,000**	**$11,000,000**	**$9,000,000**	**$108,820,000**

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Table 5-5
Dayton International Airport
Strategic Master Plan Update Study

Construction Phasing Costs
Master Plan Phase/Principal Project

	(1999-2003) Phase 1 - R/W 6R Extension	(2004-2008) Phase 2 - R/W 18 Extension	(2009-2018) Phase 3 - New 6-24 Runway	TOTAL COST
Airfield	$59,090,000	$48,495,000	$82,695,000	$190,280,000
Roadway	$47,280,000	$9,384,000	$15,680,000	$72,344,000
Support Facilities	$41,610,300	$30,143,000	$7,139,900	$78,893,200
Land Acquisition	$4,970,000	$2,051,000	$14,721,000	$21,742,000
Noise Mitigation	$15,000,000	$20,000,000	$25,000,000	$60,000,000
Emery Worldwide	$123,392,000	$144,931,000	$134,000,000	$402,323,000
Sub-Total	$291,342,300	$255,004,000	$279,235,900	$825,582,200
Engineering/Contingency 1/	$119,450,400	$104,551,700	$114,486,700	$338,488,800
5-Year CIP	$99,820,000	$9,000,000	$0	$108,820,000
TOTAL COST	**$510,612,700**	**$368,555,700**	**$393,722,600**	**$1,272,891,000**

1/ Includes costs for general conditions (10%), general contractor (6%), contingency (15%), and design/constructi fees (10%). These contingencies do not apply to 5-Year CIP amounts.
2/ Costs are in 1999 dollars.

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While the revenue and expense forecasts herein have made certain allowances for price changes and contingencies, the potential for change in the ultimate project costs will require the airport to be flexible in its timing and planning approach to individual projects. The cost of construction itself is also subject to significant variance depending on competition for workers and material costs at the time of actual construction, as well as the changing requirements of local and FAA regulations. The construction phasing may be modified as availability of funds (as well as aviation demand) influence the Program. Ultimate construction of recommended capital projects should occur only after further refinement of the design and costs through architectural and engineering analyses.

4. FINANCING PLAN

This section presents the capital financing plan for the Program, including potential funding sources, and phasing of Program costs.

(1) Potential Funding Sources

The potential funding sources for financing the future capital expenditures under the Program include FAA Airport Improvement Program (AIP) grants, PFCs, tenant financing, and local airport funding. Roadway and access funding is anticipated from the sources above, as well as federal, state, and local governments. The structure of the financing plan will ultimately affect the cost of implementing the Program and will increase the final cost. Each of the major potential sources of capital funding is discussed below.

1. FAA AIP Grants

Federal grants-in-aid are apportioned to airports based upon their annual passenger enplanements (entitlement grants) and the priority of additional capital projects for which funding is requested (discretionary grants). The priority of projects to be awarded discretionary grants is determined by the judgment of the Secretary of Transportation and administered at the district level of the FAA. Certain other specific types of grants are available from the FAA such as grants for Reliever airports, navigation aids, and demonstration projects. However, all such FAA grants are for capital construction or planning. FAA grants cannot be used for operating expenses or debt repayment.

2. Passenger Facility Charges

In October of 1990, Congress passed the Aviation Safety and Expansion Act of 1990. In this legislation, sponsoring public agencies of airports were authorized to collect PFCs subject to rules and regulations to be issued by the Secretary of Transportation. The final rules and regulations were issued by the Department of

Transportation in May 1991. The legislation authorizes a maximum charge of $3.00 to be imposed by an airport on originating and connecting enplaning passengers (with a maximum of two PFCs imposed on each one-way passenger trip). The revenues derived from PFCs may be used as a funding source for the local airport share of eligible capital project costs directly or they may be used to pay debt service on bonds issued to finance eligible airport capital projects. Eligible airport capital projects include those projects which preserve or enhance airport capacity, safety, and the security of the national air transportation system; reduce or mitigate airport noise impacts; or furnish opportunities that enhance competition among air carriers. PFCs are anticipated to be a major source of capital funding since they currently generate approximately $3 million annually at DAY. While there is discussion in Washington of potentially raising the per-passenger rate, this analysis assumes $3.00 throughout the planning period.

PFCs are anticipated as a major source of revenue for capital projects over the 20-year planning period. At the $3.00 per passenger rate over $70 million would be generated and at $5.00 per passenger (proposed in the latest FAA reauthorization bill), well over $110 million is possible. However, airport repairs, rehabilitation, and other improvement projects at DAY will compete for these funds, so not all of these potential funds will be available for the Program.

3. Bonds

The most common method of funding airport projects is bonding. However this is not a source of funds, but a method to obtain funds today to build a project and pay-it-back over 15 to 30 years. As previously mentioned, the airport has over $60 million of bonds outstanding, but these are assumed to have an existing funding source.

As stated above, future PFC revenues can be used to leverage future bond repayment. The airport currently is repaying some of its bonds with a pledge of future PFC revenue. Either airport revenue bonds or general obligation bonds are also available to fund airport capital projects. General obligation bonds of the City of Dayton would have a lower interest rate and less potential airline restrictions than airport revenue bonds, but the City may only have a limited amount of debt capacity available for airport use. Therefore, airport revenue and general obligation bonds are used interchangeably in this report since they are similar in their ability to leverage airport funds.

4. Tenant

Airport capital projects are also occasionally funded from other sources. General aviation (GA) operators, cargo carriers, and airlines can build airport facilities (such as hangars and concourses) with special facility revenue bonds, corporate borrowing, or their own cash flow. Special facility revenue bonds are issued by the governmental entity and repaid with the direct rental payments of the facility user. Private firms such as concessionaires or developers can also finance airport improvements. For example, a parking lot concessionaire may finance construction of a new parking garage based on a long-term lease.

Direct tenant payment (rather than through rates and charges) is not assumed to be a major source of airport capital funds in the future other than special facility type projects. Tenants normally pay for improvements through rents, fees, and other charges.

5. Airport Funding

The balance of Program costs, after consideration has been given to FAA grants, PFCs, highway funds, and other funding sources, must be funded through airport resources. This direct payment of capital costs is accomplished through the use of operating revenues and certain reserves. If bonds or other borrowings are used, they are also repaid by collection of rents, fees, and other charges. The ultimate viability of the Program is dependent upon the airport's ability to collect revenue sufficient to fund operating costs, debt, and capital costs. Airline agreements are a key part of this equation, since once airline approval for projects is obtained, they are obligated to fund such projects.

6. Highway and Access Funding

The surrounding roadway system (on and off-airport) can also be funded by federal, state and local highway sources. Due to the critical nature of the requirement for access to the cargo sort/distribution function at DAY, substantial external highway funding is anticipated. For the purpose of this analysis state and local economic development funds are assumed to be in the form of grants for access projects, such economic development grants are believed likely due to the number of jobs and large benefit to the community caused by the airport expansion.

(2) Projected Sources of Capital Funds for the Master Plan Program/5-Year CIP

Table 5-6 shows the estimated cost for each project as well as the funding assumptions. Projects totaling approximately $1,273 million in 1999 dollars are recommended for construction over the next 20 years for airfield, passenger terminal, roadway, cargo, GA, highway access, and support facility improvements. The dollar amounts associated with each type of potential funding source are shown in this section. Most importantly, each series of projects was evaluated to determine its potential AIP eligibility. The availability and timing of potential funding sources is a critical factor influencing both the cost and scheduling of the Program and 5-year CIP. The financing plan developed in this report is based on the completion of the Program and 5-year CIP as scheduled and the forecast of aircraft operations and enplanements presented in this Master Plan Update. A discussion of each potential funding source is presented below:

1. FAA Grants

DAY is eligible for approximately $1.6 million annually in FAA passenger entitlement grants; this amount, or a higher amount based on future passenger volume, is assumed to continue throughout the planning period. Additional amounts

Table 5-6
Dayton International Airport
Strategic Master Plan Update Study
Proposed Airport Expansion Program - Potential Source of Funds Estimate

Phase 1 1999-2003		**Phase 1 1999 - 2003**			
	Total [1/]	**FAA**	**Highway**	**Airport**	**Emery**
Airport Expansion Elements					
Runways, Taxiways, Apron	$80	$72	$0	$8	$0
Access Roads	$66	$33	$20	$13	$0
Land Acquisition	$7	$6	$0	$1	$0
Support Facilities (terminal, parking, etc.)	$17	$4	$0	$13	$0
Parking Garage	$42	$0	$0	$42	$0
Noise Mitigation	$21	$17	$0	$4	$0
5-Year CIP (Years 1 through 4)	$100	$81	$6	$13	$0
Total Phase 1 Airport Costs	$334	213	$26	$95	$0
Emery Expansion Elements					
Sort Hub Expansion	$131	$0	$0	$0	$131
Maintenance Hangar	$43	$0	$0	$0	$43
Land Acquisition	$1	$0	$0	$1	$0
Total Phase 1 Emery Related Costs	$174	$0	$0	$1	$173
TOTAL PHASE 1 COST	**$510**	**$213**	**$26**	**$96**	**$173**

Phase 2 2004-2008		**Phase 2 2004-2008**			
	Total	**FAA**	**Highway**	**Airport**	**Emery**
Airport Expansion Elements					
Runways, Taxiways, Apron	$68	$62	$0	$6	$0
Access Roads	$13	$7	$4	$2	$0
Land Acquisition	$3	$2	$0	$1	$0
Support Facilities (terminal, parking, etc.)	$42	$11	$0	$32	$0
Noise Mitigation	$28	$23	$0	$5	$0
5-Year CIP (Year 5)	$9	$7	$0	$2	$0
Total Phase 2 Airport Costs	$164	$111	$4	$48	$0
Emery Expansion Elements					
Sort Hub Expansion	$182	$0	$0	$0	$182
Access Roads	$23	$0	$13	$5	$5
Total Phase 2 Emery Related Costs	$204	$0	$13	$5	$187
TOTAL PHASE 2 COST	**$368**	**$111**	**$17**	**$53**	**$187**

Phase 3 2009-2018		**Phase 3 2009-2018**			
	Total	**FAA**	**Highway**	**Airport**	**Emery**
Airport Expansion Elements					
Runways, Taxiways, Apron	$117	$105	$0	$12	$0
Access Roads	$22	$11	$5	$6	$0
Land Acquisition	$21	$17	$0	$4	$0
Support Facilities (terminal, parking, etc.)	$10	$2	$0	$8	$0
Noise Mitigation	$35	$28	$0	$7	$0
Total Phase 3 Airport Costs	$205	$164	$5	$37	$0
Emery Expansion Elements					
Sort Hub Expansion	$163	$0	$0	$0	$163
Maintenance Hangar	$26	$0	$0	$0	$26
Total Phase 3 Emery Related Costs	$189	$0	$0	$0	$189
TOTAL PHASE 3 COST	**$394**	**$164**	**$5**	**$37**	**$189**
GRAND TOTAL	**$1,273**	**$488**	**$48**	**$185**	**$549**
Percent of Total		**38%**	**5%**	**15%**	**43%**

Source: Landrum & Brown Totals may not add due to rounding.
1/ Costs are in 1999 dollars, in millions, order of magnitude estimates.
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from cargo entitlement funds are also anticipated. Over the 20 year planning period, over $50 million is anticipated from entitlement grants, plus approximately $438 million in discretionary grants, resulting in FAA payment of $488 million of Program and 5-year CIP costs.

To calculate FAA payments to the Program, 90 percent of the costs of the "Runways, Taxiway and Aprons" category was assumed since this is normally considered by the FAA as the most important category for funding. "Access roads" were assumed at 50 percent payment for FAA funding. While almost all of the access roads are likely eligible for 90 percent FAA funding, a lower amount is assumed due to potential limitations on FAA funding. "Land acquisition" is assumed for FAA payment at 80 percent. This is slightly less than the 90 percent eligibility due to the potential that some limitations on available land acquisition funds occurs. The new FAA ATCT is eligible for 100 percent FAA funding, but a 90 percent payment is assumed since the need for some local payment is anticipated. "Support facilities (terminal, parking, etc.)" is assumed for FAA funding at 25 percent because only half of the public space of any terminal expansion is eligible and assumed for funding, and many of the maintenance support items in this category have a low FAA priority ranking. Finally, "noise mitigation" is assumed at 80 percent FAA funding since this is the maximum eligibility. It is assumed the FAA will pay for none of the Emery expansion related elements.

2. State/County Highway and Economic Development Grants

Due to the need for highway access to the airport and the importance of its job creation and distribution function, substantial public funding of regional and on-airport roads is assumed. Federal, state and local funding for roads is expected for a total of approximately $48 million over 20 years.

3. Tenant (Emery)

Emery Worldwide is assumed to fund all of its hub facility expansion and maintenance hangar costs. Emery is also assumed to fund a portion of the cost of access roadways to the northwest area of the airport. The remainder of this northwest area access funding is assumed to come from highway, economic development and airport sources. Total Emery funding over the 20 year planning period is estimated at $549 million. However, some of this amount will likely be in the form of special facility bonds issued by the airport, but ultimately paid by Emery.

4. Airport Funding

The remainder of Program and 5-year CIP costs totaling $185 million are assumed to be funded by the airport. A combination of PFCs, increased fees, and use of any reserves and earnings is anticipated. Considerable airline negotiation, planning and ingenuity will be required for the airport to obtain the funds necessary at the appropriate time.

(3) Construction Phasing of Program Project Costs

This section describes the funding phasing assumptions through 2018.

1. Phase 1

The total cost of Phase 1 is $510 million. Approximately $173 million dollars will be funded by tenants in Phase 1, consisting solely of Emery expansion elements. The airport will spend an estimated $96 million of its PFCs, tenant fee and/or other funds to cover the local share of the various projects, including a 3,000 stall parking garage. The FAA is assumed to fund $213 million and various sources of highway funding are assumed to supply $26 million.

2. Phase 2

A total of approximately $368 million will be spent in Phase 2, $187 million of which will be tenant funded. The FAA is anticipated to fund $111 million and various highway sources will fund $17 million. The airport share is approximately $53 million.

3. Phase 3

Approximately $394 million will be spent in Phase 3. This consists of FAA funding in the amount of $164 million, highway funding at $5 million, airport funding at $37 million, and Emery funding at $189 million.

In total, $1.3 billion is anticipated to be spent for the Program and 5-year CIP. Approximately 43 percent or $549 million is Emery funded. Some 38 percent is FAA funded. The airport and highway/economic development grants fund the remainder.

5. SUMMARY

It must be emphasized that this long-term economic viability analysis is based on a number of assumptions which are likely to change, possibly materially, resulting in a significant impact to the results presented in this analysis. It is typical that the initial Program and 5-year CIP schedule will change during project implementation. Actual financing of capital expenditures will be a function of the airport's circumstances and market conditions at the time of project implementation. The assumptions regarding future FAA grants and PFC funds are major considerations in the financing analysis and are subject to change. The assumptions and analyses presented in this Master Plan must be viewed in the context of their primary purpose: to examine whether there is a reasonable expectation that the recommended improvements will be

economically feasible as currently planned. The final implementation plan must be structured to provide for any unforeseen circumstances which may affect the underlying assumptions contained in any preliminary feasibility analysis.

The conclusion of this DAY financial analysis is that the Program and 5-year CIP is viable if the forecast levels of federal funds, PFCs, and airline fees can be obtained, including a restructuring of the current airline use agreement during this period. To accomplish the entire DAY Program and 5-year CIP in the time schedule outlined, the airport will be required to seek substantial levels of outside contributions and higher user fees than in the past. Analyses must also be performed that will demonstrate to the airlines that the value of doing business at DAY will be enhanced by the recommended improvements.

In conclusion, the capital improvement projects presented in this Master Plan Update appear to be a logical and necessary Program and 5-year CIP which should be pursued by the airport and its tenants. Attaining all of the desired capital improvement goals will be dependent upon future aviation demand and obtaining sufficient levels of outside funding.

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