

FINANCIAL PLAN



The successful implementation of the Hector International Airport master plan will require the sound judgement on the part of the Municipal Airport Authority to meet changing needs. Among the more important factors influencing decisions to carry out a given recommendation are timing and airport activity. Both of these factors should be used as references in plan implementation.

Experience has indicated that problems have materialized from the standard time-based format of traditional planning documents. The problems

center around their inflexibility and inherent inability to deal with unforeseen changes that may occur on the airport.

While it is necessary for scheduling and budgeting purposes to consider the timing of airport development, the actual need for facilities is established by airport activity. Proper master planning implementation suggests the use of airport activity levels rather than time as guidance for development.

This chapter of the master plan is intended to become one of the primary references used by the Municipal Airport Authority for implementing the plan recommendations. Consequently, the following narrative and graphic presentations must provide understanding of each recommended development item. This understanding of the overall program will be critical in maintaining a realistic and cost effective program that provides maximum benefit to the City of Fargo Municipal Airport Authority and the Federal Aviation Administration.



**AIRPORT DEVELOPMENT
SCHEDULE AND
COST SUMMARIES**

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

examines the overall cost of development and a demand-based schedule.

The development schedule can be initially established dividing the improvement needs into the three planning horizons: short, intermediate, and long term. **Table 6A** summarizes the key activity milestones for each planning horizon.

	Actual 1999	Short Term	Intermediate Term	Long Term
Annual Operations	91,372	117,685	136,830	177,267
Passenger Airlines	7,059	10,850	11,300	12,427
All-Cargo (Jet)	1,880	3,045	4,110	6,010
Air Taxi	12,106	14,890	17,670	24,930
General Aviation	63,837	81,900	96,750	126,900
Military	6,490	7,000	7,000	7,000
Passenger Enplanements	221,368	260,000	300,000	400,000
Air Cargo Landed Weight (tons)	55,570	95,170	133,590	210,440
Based Aircraft	163	202	235	302

The short term horizon covers items of highest priority as well as items that should be developed as the airport approaches the short term activity milestones. Priority items include improvements related to safety, pavement maintenance, crosswind (secondary) runway extension for greater utility, air cargo facility expansion, extension of taxiways for hangar development, and land acquisition. Also included is a reconfiguration of the air carrier apron to allow for loading bridge access to six gates. A project to expand rental car storage and to relocate rental car

service areas to the west side of the terminal area is assumed under current (year 2000) projects, as is development of a segment of the airport perimeter road on the north side of the airfield.

Because of their priority over the next five years, these items will need to be incorporated in Municipal Airport Authority and FAA programming for the FY 2001-05 programming period. However, since the priorities will need to be reestablished each year for programming the projects which are intended to receive federal aid, the Municipal Airport Authority and FAA

will need to revisit the program each year.

As the Municipal Airport Authority reestablishes their projects and develops an updated five-year program, they will need to add projects included in the intermediate planning period. While demand levels will change over time, projects may need to be accelerated or delayed. However, the master plan program should remain viable over a 10-year period, before it becomes necessary to update the overall plan.

Due to the conceptual nature of a master plan, implementation of capital projects should occur only after further refinement of their design and costs through architectural and engineering analyses. Under normal conditions, the cost estimates reflect an allowance for engineering and contingencies that may be anticipated on the project. Capital costs presented in this chapter should be viewed only as estimates subject to further refinement during design. Nevertheless, these estimates are considered sufficiently accurate for performing the feasibility analyses in this chapter. Cost estimates for each development project have been presented in **Exhibit 6A** and are given in current (2000) dollars without future inflationary adjustment.

SHORT TERM IMPROVEMENTS*

The short term capital program includes projects which are assumed to be necessary over the next five years.

* Updated April 2002.

Projects in 2003 include: the rehabilitation of pavements in the southeast area (including Taxiways G2, G3, and G4) and a portion of Taxiway B.

As discussed in the alternatives chapter, proper safety areas need to be established at each end of Runway 13-31. This will involve relocation of the runway thresholds, shortening the runway to 3,970 feet. This project will allow for the future placement of an airport perimeter road inside the fence, while maintaining the safety areas as prescribed by the FAA. The project includes the lighting and re-marking associated with this project.

It will also be necessary to undertake the engineering for the rehabilitation of Runway 17-35 in 2003.

It may be necessary by 2007 to provide for additional air cargo apron, sortation building, truck court and road extensions in the northwest quadrant. The exact timing of the project will be dictated by the demand created by local air cargo companies.

A major project on the airfield in 2004-05 will be the reconstruction of Runway 17-35 and the relocation of the south threshold. The project will provide for the full establishment of the runway safety area at the south end of the runway, eliminating the need to relocate 19th Avenue North. The project will also include the construction of mid-field exits to reduce runway occupancy times. The need for these exits was confirmed with the air traffic control tower manager during the planning process. Based upon a review of the instrument approaches being

conducted on this runway in low visibility conditions, it is recommended that the Municipal Airport Authority plan for centerline and touchdown zone lighting with the reconstruction project. While the plans have indicated touchdown zone lighting on both Runway 17 and 35, wind data indicates that Runway 35 is used predominately in low visibility conditions. The project, when combined with an upgrade of the approach lighting system, will provide the opportunity for lower published minimums to the runway. Consistent with ongoing efforts by the FAA to update visual approach guidance, the older VASI systems should be replaced with PAPI systems.

The acquisition of properties north of the airport will provide protection under the approach to the planned parallel general aviation runway, protection between the parallel runways, and allow for the expansion of Runway 17-35 by 400 feet to the north.

A line item has also been included for the update of snow removal equipment (SRE), airport rescue and firefighting (ARFF) equipment, and the airport maintenance facilities. While it is difficult to predict when the equipment will need to be updated, it is eligible for federal funding participation. At the present time, ARFF is provided by the North Dakota ANG.

INTERMEDIATE TERM IMPROVEMENTS

The intermediate term planning period is generally assumed to coincide with

the 6-10 year period. The first project included in this period is related to the airfield, and is designed to improve the efficiency of aircraft movements: the construction of Taxiway E, the connection between the west end of Runway 8-26 and the terminal apron.

Several projects are included in the terminal area, including the expansion of the terminal building bag claim lobby, operations area, rental car offices, public parking area, rental car storage area, and employee parking area. It is envisioned that a 50-foot extension of the terminal building along the west side will provide adequate area for each of the functions requiring expansion in the building. Areas were examined in the alternatives evaluation for the expansion of public parking, rental car storage areas, and employee parking, and these same areas have been noted on the plans. A total of 150 public parking spaces, 120 rental car spaces, and 50 employee spaces have been assumed.

Projects in 2010 are proposed to provide taxiway stubs and apron in the north general aviation area. This area is segregated to provide small hangars on the east side and large hangars on the west side. Consequently, the costs associated with the construction of new pavement will vary based upon the demand for small or large hangars.

Another project proposed in this period is the expansion of air cargo facilities. This is identified as the third phase of air cargo development, and includes an additional sortation building, ramp, and truck court.

Year	Project Description	Unit	Total Units	Unit Cost	Total Cost	AIP Eligible	Local Share
2003	Rehab. G2, G3, G4, and Portion of Twy. B, Remark Rwy. 13-31, Undertake Engineering Runway 17-35 Reconstruction	I.s.			\$2,316,000	\$2,084,400	\$231,600
2004-05	Rwy. 17-35 Reconstruction, Edge Lighting, Centerline Lighting, Midfield Taxiways	I.s.			\$20,000,000	\$18,000,000	\$2,000,000
2006	Taxiway Rehabilitation, Perimeter Road (south)	I.s.			\$2,000,000	\$1,800,000	\$200,000
2007	Extend Air Cargo Road/Truck Court	sq. yd.	11,000	25	\$275,000	\$247,500	\$27,500
2007	Air Cargo Apron - Phase 2	I.s.			\$2,800,000	\$2,520,000	\$280,000
2007	Air Cargo Sortation Building - Phase 2	sq. ft.	40,000	50	\$2,000,000	\$0	\$2,000,000
2003-07	Land Acquisition (200 ac.)	I.s.			\$2,000,000	\$1,800,000	\$200,000
2003-07	Upgrade SRE, Maintenance, ARFF Equip.	I.s.			\$1,000,000	\$900,000	\$100,000
	Subtotals				\$32,391,000	\$27,351,900	\$5,039,100
2008	Taxiway Connection (E) to Terminal	I.s.			\$2,300,000	\$2,070,000	\$230,000
2008	Terminal Expansion (Bag Claim Lobby)	sq. ft.	3,750	230	\$860,000	\$645,000	\$215,000
2008	Terminal Expansion - (Ops Area)	sq. ft.	2,750	90	\$250,000	\$187,500	\$62,500
2008	Terminal Expansion - (Rental Car Offices)	sq. ft.	600	120	\$72,000	\$0	\$72,000
2009	Public Parking (150 spaces)	sq. ft.	60,000	2.5	\$150,000	\$0	\$150,000
2009	Rental Car Storage (120 spaces)	sq. ft.	48,000	2.5	\$120,000	\$0	\$120,000
2009	Employee Parking (50 spaces)	sq. ft.	20,000	2.5	\$50,000	\$0	\$50,000
2010	Taxiway Stubs - Large Hangars (North)	sq. yd.	37,800	50	\$1,890,000	\$1,701,000	\$189,000
2010	Taxiway Stubs - Small Hangars (North)	sq. yd.	11,000	30	\$330,000	\$297,000	\$33,000
2010	Update Master Plan	I.s.			\$200,000	\$180,000	\$20,000
2011-12	Air Cargo Apron - Phase 3	I.s.			\$2,800,000	\$2,520,000	\$280,000
2011-12	Air Cargo Sortation Building - Phase 3	sq. ft.	40,000	50	\$2,000,000	\$0	\$2,000,000
2011-12	Extend Air Cargo Road/Truck Court	sq. yd.	11,000	25	\$275,000	\$247,500	\$27,500
2008-12	Upgrade SRE, Maintenance, ARFF Equip.	I.s.			\$1,000,000	\$900,000	\$100,000
	Subtotals				\$12,297,000	\$8,748,000	\$3,549,000
2013-16	Expand GA Apron - North	sq. yd.	28,300	50	\$1,420,000	\$1,278,000	\$142,000
2013-16	Taxiway Stubs - Large Hangars (North)	sq. yd.	52,800	50	\$2,640,000	\$2,376,000	\$264,000
2013-16	Taxiway Stubs - Small Hangars (North)	sq. yd.	11,000	30	\$330,000	\$297,000	\$33,000
2013-16	Terminal Expansion - Pier (upper level)	sq. ft.	7,750	230	\$1,780,000	\$890,000	\$890,000
2013-16	Terminal Expansion - Pier (lower level)	sq. ft.	6,000	90	\$540,000	\$270,000	\$270,000
2013-16	Purchase Two Loading Bridges	I.s.			\$600,000	\$0	\$600,000
2013-16	Public Parking (300 spaces)	sq. ft.	120,000	2.5	\$300,000	\$0	\$300,000
2013-16	Rental Car Storage (150 spaces)	sq. ft.	60,000	2.5	\$150,000	\$0	\$150,000
2013-16	Employee Parking (50 spaces)	sq. ft.	20,000	2.5	\$50,000	\$0	\$50,000
2013-16	Extend Runway 17-35 and Taxiways (400 ft.)	sq. yd.	35,200	70	\$2,460,000	\$2,214,000	\$246,000
2013-16	Relocate GS and MALSR	I.s.			\$1,000,000	\$900,000	\$100,000
2013-16	Realign County Road 20	I.s.			\$1,500,000	\$1,350,000	\$150,000
2013-16	Upgrade SRE, Maintenance, ARFF Equip.	I.s.			\$1,000,000	\$900,000	\$100,000
2017-22	Air Cargo Apron - Phase 4	I.s.			\$2,800,000	\$2,520,000	\$280,000
2017-22	Air Cargo Sortation Building - Phase 4	sq. ft.	40,000	50	\$2,000,000	\$0	\$2,000,000
2017-22	Extend Air Cargo Road/Truck Court	sq. yd.	11,000	25	\$275,000	\$247,500	\$27,500
2017-22	Prepare EA for Runway 8-26 Extension	I.s.			\$150,000	\$135,000	\$15,000
2017-22	Extend Runway 8-26, Twy. C, Strengthen	I.s.			\$11,000,000	\$9,900,000	\$1,100,000
2017-22	Parallel Taxiway System (8-26/South)	sq. yd.	107,200	70	\$7,500,000	\$6,750,000	\$750,000
2017-22	Construct Future Parallel Runway System	I.s.			\$5,000,000	\$4,500,000	\$500,000
	Subtotals				\$42,495,000	\$34,527,500	\$7,967,500
	Totals				\$87,183,000	\$70,627,400	\$16,555,600

Source: Ulteig Engineers and Coffman Associates.
Revised 4-29-02



The intermediate term planning period should also consider the need for additional upgrades to SRE, ARFF, and maintenance equipment, and the update of the airport master plan.

The intermediate term period reflects a limited number of projects to allow for any slippage in projects identified in the short term period. If all projects in the short term are completed on schedule, projects in the long term period could be accelerated.

LONG TERM IMPROVEMENTS

The long term planning period is generally assumed to coincide with the 11-20 year period. Additional projects are proposed in the north general aviation area to provide stubs/ramp for additional hangar development (both large and small hangars) and the expansion of the general aviation ramp.

Based upon actual passenger volumes, and the adequacy of the boarding areas on the second level of the terminal, it is expected that the pier concourse will need to be extended early in this period to provide additional boarding area and gate space. Additional loading bridges will need to be acquired if Gates 1 and 4 remain for jet loading. It is also assumed that additional public parking, rental car, and employee parking will be added.

The extension of Runway 17-35 to 9,400 feet (and parallel taxiways) is included at this time, although critical aircraft demands will dictate the phasing of this project.

A project to realign County Road 20 is included, and upgrades to SRE, ARFF, and maintenance equipment. In the latter portion of this period, additional expansion of air cargo facilities is proposed. It is also assumed that the extension of Runway 8-26, Taxiway C, and the strengthening of this runway will need to take place late in the planning period. With increased use of this runway by air carrier aircraft, it will be necessary to construct a parallel taxiway system on the south side of Runway 8-26 (full length). Based upon available airfield capacity, and the need to provide better separation between heavier and lighter aircraft, the parallel runway/taxiway system for light general aviation aircraft use may also need to be constructed late in the planning period.

CAPITAL IMPROVEMENTS FUNDING

Financing for capital improvements at Hector International Airport does not utilize any general tax monies. Rather, the contributors to the airport's development are its users through a system of leases and fees. These sources include not only the rates and charges for airport use imposed by the Municipal Airport Authority, but also federal airport improvement programs. The following paragraphs outline the key sources for funding.

FEDERAL GRANTS

The United States Congress has long recognized the need to develop and

maintain a system of aviation facilities across the nation for the purpose of national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The most recent legislation is the Airport Improvement Program (AIP) of 1982. AIP has been reauthorized several times with the most recent reauthorization (the **Wendell H. Ford Aviation Investment and Reform Act for the 21st Century**) for four years through federal fiscal year 2003.

The source for AIP funds is the Aviation Trust Fund. The Trust Fund is the depository for all federal aviation taxes such as those on airline tickets, aviation fuel, lubricants, tires and tubes, aircraft registrations, and other aviation-related fees. The funds are distributed under appropriations set by Congress to airports in the United States which have certified eligibility. The distribution of grants is administered by the Federal Aviation Administration.

Under the AIP program, examples of eligible development projects include the airfield, aprons, and access roads. Passenger terminal building improvements (such as bag claim and public waiting lobbies) may also be eligible for a limited amount of FAA funding. However, improvements such as automobile parking, fueling facilities, utilities, hangar buildings, airline ticketing and airline operations areas are not generally eligible for AIP funds. The airport is eligible for 90 percent funding under AIP.

The program provides funding for eligible projects at airports. Through an entitlement program, primary commercial service airports receive a guaranteed minimum of federal assistance each year based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually.

Under the current formula, airports enplaning at least 10,000 passengers annually are entitled to a minimum of \$650,000 in FY 2000. For FY 2001 and beyond, if the AIP is funded at \$3.2 billion or more, then the minimum entitlement amount will be \$1,000,000. If the AIP is funded at less than \$3.2 billion, the minimum entitlement will remain at \$650,000. For the first 50,000 enplanements, the airport receives \$15.60 per enplanement. For the next 50,000 enplanements, the airport receives \$10.40 per enplanement. The next 400,000 boardings provide \$5.20 per enplanement. For the next 500,000, the airport receives \$1.30 per enplanement. For all other enplanements over one million, the airport receives \$1.00 per enplaned passenger.

In addition, airports that have over 100 million pounds of landed weight by all-cargo carriers receive a cargo entitlement. This entitlement is based upon the airport's percentage of the total landed weight at all eligible airports.

Exhibit 6B depicts the history of AIP authorizations and appropriations.

Unfortunately, the funding levels authorized in the legislation are not always the levels appropriated in the annual Congressional budget process. For example, the AIP authorized level for fiscal year 1996 was \$2.161 billion, but only \$1.45 billion was appropriated.

The **Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR 21)** adjusted allocation formulas to increase entitlements over previous levels and to establish special set-asides for noise

programs, general aviation and non-primary airports, and other special programs.

Table 6B outlines estimates of annual entitlement funds for Hector International Airport for each of the planning horizon milestones assuming the current entitlement formula would remain in place over the planning period. It should be kept in mind, however, that Congress may rework the entitlement formula at any time in the future.

TABLE 6B Potential FAA Entitlement Funds and PFCs Hector International Airport			
Period	Annual Enplanements	Annual Entitlement Funding¹	Potential PFCs²
Current	221,368	\$1,931,130	\$582,000
Short Term	260,000	\$2,132,000	\$1,034,000
Intermediate	300,000	\$2,340,000	\$1,193,000
Long Term	400,000	\$2,860,000	\$1,591,000

Notes: 1. Entitlement funding is for passenger only. Assumes current entitlement formula. (AIR 21) National funding at \$3.2 billion.
2. Assumes maximum of \$4.50 in future years (\$3.00 for current year), 90 percent revenue passengers, \$0.08 per passenger to airline for administrative costs.

In a number of cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. These priorities are established by the FAA utilizing a priority code system. Under this system, projects are ranked by their

purpose; projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

Other funds can come through the Facilities and Equipment (F&E) section of the FAA. As activity conditions

warrant, the airport will be considered by F & E for various navigational aids to be installed, owned, and maintained by the FAA.

Whereas entitlement monies are guaranteed on an annual basis, discretionary funds are not assured. **Exhibit 6A** has outlined the amount of funding for the development program that Fargo would be desiring from the FAA. If the combination of entitlement and discretionary funding does not provide enough capital for planned development, projects would either be delayed, require funding from the airport's revenues, or other authorized sources such as those described in the following subsections.

PASSENGER FACILITY CHARGES

The **Aviation Safety and Capacity Expansion Act of 1990** contained a provision for airports to levy passenger facility charges (PFC) for the purposes of enhancing airport safety, capacity, or security or to reduce noise or enhance competition.

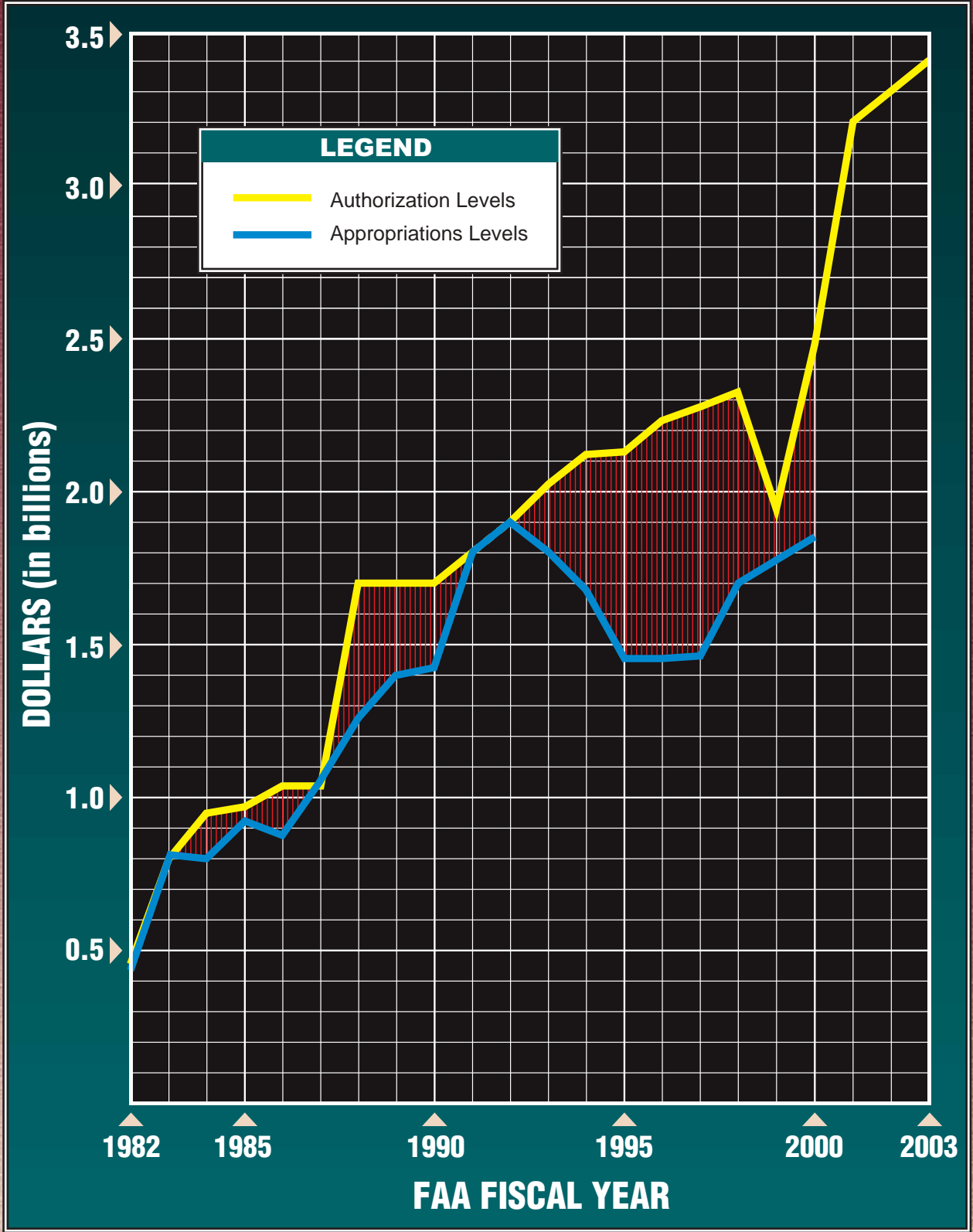
14 CFR Part 158 of May 29, 1991 establishes the regulations that must be followed by airports choosing to levy PFC's. Passenger facility charges may be imposed by public agencies controlling a commercial service airport with at least 2,500 annual passengers with scheduled service. Authorized agencies were allowed to impose a charge of \$1.00, \$2.00, or \$3.00 per enplaned passenger. Recent legislation (AIR 21) passed in early 2000 has allowed the cap to increase to \$4.50.

Prior approval is required from the Department of Transportation (DOT) before an airport is allowed to levy a PFC. DOT must find that the projected revenues are needed for specific, approved projects. Any AIP-eligible project, whether development or planning related is eligible for PFC funding. Gates and related areas for the movement of passengers and baggage are eligible as are on-airport ground access projects. Any project approved must preserve or enhance safety, security, or capacity; reduce/mitigate noise impacts; or enhance competition among carriers.

PFC's may be used only on approved projects. However, PFC's can be utilized to fund 100 percent of a project. They may be used as matching funds for AIP grants or to augment AIP-funded projects. PFC's can be used for debt service and financing costs of bonds for eligible airport development. These funds may also be commingled with general revenue for bond debt service. Before submitting a PFC application, the airport must give notice and an opportunity for consultation to airlines operating at the airport.

PFC's are to be treated similar to other airport improvement grants rather than as airport revenues, and will be administered by the FAA. Participating airlines are able to retain up to eight cents per passenger for administrative handling purposes.

Hector International Airport has imposed a PFC (\$3.00 per enplanement) and is dedicating revenues from this source to several projects, including:



Source: FAA



terminal building, security, and noise equipment needs. **Table 6B** outlines the estimated PFC revenue at the recently increased cap of \$4.50 per enplaned passenger.

STATE FUNDS

In support of the state airport system, the North Dakota Aeronautics Commission also participates in airport development projects. The state's participation varies with each project and is determined on a priority basis. Funding originates from the general fund, aircraft excise taxes, and aviation fuel taxes.

The aircraft excise taxes collected are transmitted to the aeronautics commission special fund. They may be used at commercial airports for airport construction or improvement projects as approved by the aeronautics commission. Each public airport in the state served by at least one airline is eligible for general fund grants, within the limits of legislative appropriations. Taxes collected from aviation fuel taxes are applied to general aviation grants and may be used for airport construction or improvement projects, including airport administration and terminal buildings, hangars, landing strips, purchase of sites and navigational aids.

The level of state grants received by the Municipal Airport Authority over the past decade has averaged \$75,000 on an annual basis.

AIRPORT OPERATING FUND/ FUTURE REVENUE SOURCES

The Municipal Airport Authority has established a separate fund for the operation of the airport. Included in the airport fund are a number of various revenue and expense accounts. Included in the revenue accounts are terminal building rentals, rental car fees, airline landing fees, fuel flowage fees, hangar leases, tie-down rentals, and miscellaneous rent. The direct cost centers include airfield, terminal building, and other buildings on the airport, while indirect cost centers include administration and safety.

While the airport should be able to generate sufficient revenues from its operating sources to cover operating expenses, it be dependent upon AIP grants and PFC revenues to fund the majority of the capital projects recommended in this plan.

The airport also has the ability to develop land parcels not required for future aeronautical purposes in commercial/industrial development. Other opportunities for non-aeronautical development may also exist, and should be pursued to provide revenue support for the airport operation. One of the drawings in the airport layout plans is used to depict the areas available for non-aeronautical revenue support. This drawing will be included in the final report.

IMPLEMENTATION

Experience has indicated that problems have materialized from the standard

format of time-based planning documents. These problems center around the plan's inflexibility and inherent inability to deal with new issues that develop from unforeseen changes that may occur after it is completed. The format used in the development of this Master Plan has attempted to deal with

this issue by providing more flexibility in the program. The primary issues upon which this Master Plan is based will remain valid for many years. The primary goal is for the airport to maintain a self-supporting position without sacrificing service to the public.