

Development Program

Introduction

The improvements necessary to efficiently accommodate the forecast aviation demands for Paine Field have been placed into three phases: phase one (0-5 years), phase two (6-10 years), and phase three (11-20 years). The proposed improvements are illustrated graphically by time period on the *PHASING PLAN* (see Figure F1), along with the project cost estimates that are presented on the following pages.

Implementation Schedule and Project List

A list of proactive capital improvement projects has been assembled from the facility requirements documentation previously presented. The project list has been coordinated with the Airport Layout Plan drawing set and the Capital Improvement Program that is periodically updated by airport management and the Federal Aviation Administration. The projects for the first five years are listed in priority order by year. In second and third phases (years 6-20) the projects are listed in priority order without year designators. Paine Field's phased capital improvement program, entitled *DEVELOPMENT PLAN PROJECT COSTS*, is presented as Tables F1, F2, and F3 of this chapter. It is anticipated that the project phasing will invariably alter as local and federal priorities evolve over the coming months and years.

The details of the Development Program, including a capital improvement project list, project cost estimates, a finalized phasing list, and a financial feasibility analysis have been formulated in consideration of comments received from airport staff, the FAA, and the Study Advisory Committee.

This Development Program is sound in terms of identifying capital improvement items that are likely to be needed to accommodate forecast demand. In reality, the Development Program represents a series of choices and alternatives for the airport. By preparing a comprehensive list of development possibilities (as detailed in the Development Plan Project Costs tables), the County will be able to program facility

Table F1
PHASE I (0-5 YEARS) DEVELOPMENT PLAN PROJECT COSTS
Paine Field Master Plan Update

Project Description	Note	Total Costs	Recommended Financing Method		
			Sponsor a)	Private b)	Federal c)
Year 1 (FFY 2002)					
A.1 Construct Taxiway "W"	e)	\$1,000,000	\$100,000	\$0	\$900,000
A.2 Construct West Ramp Hangars (Including Taxilanes) - Phase I		\$5,000,000	\$3,900,000	\$0	\$1,100,000
A.3 Install Sanitary Sewer to Serve Northwest Area		\$350,000	\$350,000	\$0	\$0
A.4 Security Fencing		\$150,000	\$15,000	\$0	\$135,000
A.5 Removal of Airspace Obstructions		\$100,000	\$100,000	\$0	\$0
A.6 Pavement Maintenance		\$200,000	\$200,000	\$0	\$0
YEAR 1 TOTAL		\$6,800,000	\$4,665,000	\$0	\$2,135,000
Year 2 (FFY 2003)					
A.7 Terminal Planning	e)	\$200,000	\$20,000	\$0	\$180,000
A.8 Expand Inner/Outer Terminal Ramp		\$2,050,000	\$205,000	\$0	\$1,845,000
A.9 Install Aircraft Run-Up Area at Taxiway "A-4"		\$55,000	\$5,500	\$0	\$49,500
A.10 National Flight Interpretive Center		\$16,500,000	\$1,500,000	\$15,000,000	\$0
A.11 Upgrade Runway/Taxiway Lighting		\$1,800,000	\$180,000	\$0	\$1,620,000
A.12 Security Fencing		\$150,000	\$15,000	\$0	\$135,000
A.13 Security Lighting		\$100,000	\$10,000	\$0	\$90,000
A.14 Removal of Airspace Obstructions		\$100,000	\$10,000	\$0	\$90,000
A.15 Pavement Maintenance		\$200,000	\$200,000	\$0	\$0
A.16 National Guard Land Swap (3 Acre Parcel Between 27th Ave. W and Beverly Edmonds Road)		\$0	\$0	\$0	\$0
YEAR 2 TOTAL		\$21,155,000	\$2,145,500	\$15,000,000	\$4,009,500
Year 3 (FFY 2004)					
A.17 Construct East Ramp	e)	\$515,000	\$51,500	\$0	\$463,500
A.18 Rehabilitate Runway 16L/34R - Overlay		\$1,025,000	\$102,500	\$0	\$922,500
A.19 Install Sewer Line K5/K6 Ramp Area		\$245,000	\$147,000	\$98,000	\$0
A.20 Airspace Obstruction Removal		\$100,000	\$10,000	\$0	\$90,000
A.21 Pavement Maintenance		\$200,000	\$200,000	\$0	\$0
A.22 Construct Taxiway "K-1"		\$950,000	\$95,000	\$0	\$855,000
YEAR 3 TOTAL		\$3,035,000	\$606,000	\$98,000	\$2,331,000
Year 4 (FFY 2005)					
A.23 South Ramp Rehabilitation	e)	\$2,000,000	\$200,000	\$0	\$1,800,000
A.24 Construct Access - West Side Corporate Hangar Area		\$560,000	\$560,000	\$0	\$0
A.25 Utilities - West Side Corporate Hangar Area - K5/K6		\$185,000	\$18,500	\$0	\$166,500
A.26 Northwest Area Drainage		\$8,000,000	\$800,000	\$0	\$7,200,000
A.27 Rehabilitate Central Ramp		\$1,150,000	\$115,000	\$0	\$1,035,000
A.28 Site Preparation for North Ramp Hangar Area		\$2,300,000	\$230,000	\$0	\$2,070,000
A.29 Construct Corporate FBO Terminal		\$1,500,000	\$150,000	\$1,350,000	\$0
A.30 Pavement Maintenance		\$200,000	\$20,000	\$0	\$180,000
YEAR 4 TOTAL		\$15,895,000	\$2,093,500	\$1,350,000	\$12,451,500

Notes

Cost estimates, based upon 2002 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- a) Sponsor Funding - Current revenues, cash reserves, bonds, etc.
- b) Private Funding - subject to developer, tenant, or revenue bond financing.
- c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
- d) 100% FAA F&E Funding - no costs listed
- e) FFY - Federal Fiscal Year [October 1 through September 30 (i.e., FFY 2002 is October 1, 2001 through September 30, 2002)]

Table F1 (Continued)
PHASE I (0-5 YEARS) DEVELOPMENT PLAN PROJECT COSTS
Paine Field Master Plan Update

Project Description	Note	Total Costs	Recommended Financing Method		
			Local a)	Private b)	Federal c)
Year 5 (FFY 2006)					
A.31 Purchase New Snowblower	e)	\$350,000	\$35,000	\$0	\$315,000
A.32 South Side Grading - Northwest Area		\$1,200,000	\$1,200,000	\$0	\$0
A.33 Construct East Ramp Aviation Center		\$1,500,000	\$150,000	\$1,350,000	\$0
A.34 Construct Phase I West Side Commercial Area - South		\$5,000,000	\$500,000	\$4,500,000	\$0
A.35 North Ramp Hangar Development - Phase II		\$6,250,000	\$625,000	\$5,625,000	\$0
A.36 Construct K5/K6 Ramp Area		\$2,000,000	\$200,000	\$0	\$1,800,000
A.37 Construct K5/K6 Hangars		\$10,000,000	\$1,000,000	\$9,000,000	\$0
A.38 Pavement Maintenance		\$200,000	\$200,000	\$0	\$0
YEAR 5 TOTAL		\$26,500,000	\$3,910,000	\$20,475,000	\$2,115,000
Sub-Total/Phase I		\$73,385,000	\$13,420,000	\$36,923,000	\$23,042,000

Notes

Cost estimates, based upon 2002 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- a) Sponsor Funding - Current revenues, cash reserves, bonds, etc.
- b) Private Funding - subject to developer, tenant, or revenue bond financing.
- c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
- d) 100% FAA F&E Funding - no costs listed
- e) FFY - Federal Fiscal Year [October 1 through September 30 (i.e., FFY 2002 is October 1, 2001 through September 30, 2002)]

Table F2

PHASE II (6-10 YEARS, FFY 2007 through 2011) DEVELOPMENT PLAN PROJECT COSTS (see note e)
Paine Field Master Plan Update

Project Description	Note	Total Costs	Recommended Financing Method		
			Sponsor a)	Private b)	Federal c)
B.1 Construct West Ramp Hangars (Including Taxilanes) - Phase II		\$3,500,000	\$3,325,000	\$0	\$175,000
B.2 Purchase ARFF Vehicle		\$650,000	\$65,000	\$0	\$585,000
B.3 Construct new ARFF Facility		\$2,000,000	\$200,000	\$0	\$1,800,000
B.4 Construct Taxiway "A-2.5"		\$1,050,000	\$105,000	\$0	\$945,000
B.5 Construct Taxiway "K-2.5"		\$1,000,000	\$100,000	\$0	\$900,000
B.6 Improved Non-Precision Approach to Runway 34L	d)	\$0	\$0	\$0	\$0
B.7 Utility Improvements for ARFF and Passenger Terminal		\$120,000	\$12,000	\$0	\$108,000
B.8 Redevelop Navy Housing Property - Phase I		\$30,000,000	\$3,000,000	\$27,000,000	\$0
B.9 Construct Administration/Passenger Terminal		\$9,800,000	\$4,900,000	\$0	\$4,900,000
B.10 Improve 100th St. SW/Terminal Access		\$800,000	\$80,000	\$0	\$720,000
B.11 Construct New Terminal Ramp		\$2,650,000	\$265,000	\$0	\$2,385,000
B.12 Administration/Passenger Terminal Parking		\$3,400,000	\$340,000	\$0	\$3,060,000
B.13 Security Fencing		\$150,000	\$15,000	\$0	\$135,000
B.14 Security Lighting		\$100,000	\$10,000	\$0	\$90,000
B.15 Airspace Obstruction Removal		\$100,000	\$10,000	\$0	\$90,000
B.16 Construct Airport Maintenance Facility		\$1,900,000	\$190,000	\$0	\$1,710,000
B.17 West Side Commercial Area - Central		\$30,000,000	\$3,000,000	\$27,000,000	\$0
B.18 Construct "K5/6" Ramp Area		\$2,000,000	\$200,000	\$0	\$1,800,000
B.19 Construct "K5/6" Hangars		\$10,000,000	\$1,000,000	\$9,000,000	\$0
B.20 112th St. SW Rehabilitation		\$860,000	\$860,000	\$0	\$0
B.21 112th St. SW Commercial/Business Development		\$3,000,000	\$300,000	\$2,700,000	\$0
B.22 Pavement Rehab (Average Cost Times 5 Years)		\$1,000,000	\$1,000,000	\$0	\$0
B.23 Purchase 7.5 Acres East of Public Works Facility		\$1,300,000	\$1,300,000	\$0	\$0
B.24 Purchase 1-Acre Parcel Associated with Air Guard		\$260,000	\$26,000	\$0	\$234,000
B.25 Construct Phase II West Side Commercial Area - South		\$5,000,000	\$500,000	\$4,500,000	\$0
Sub-Total/Phase II		\$110,640,000	\$20,803,000	\$70,200,000	\$19,637,000

Notes

Cost estimates, based upon 2002 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- a) Sponsor Funding - Current revenues, cash reserves, bonds, etc.
- b) Private Funding - subject to developer, tenant, or revenue bond financing.
- c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
- d) 100% FAA F&E Funding - no costs listed
- e) FFY - Federal Fiscal Year [October 1 through September 30 (i.e., FFY 2002 is October 1, 2001 through September 30, 2002)]

Table F3

PHASE III (11-20 YEARS, FFY 2012 through 2021) DEVELOPMENT PLAN PROJECT COSTS (see note e)
Paine Field Master Plan Update

Project Description	Note	Total Costs	Recommended Financing Method		
			Sponsor a)	Private b)	Federal c)
C.1 Redevelopment of Navy Housing Property - Phase II		\$30,000,000	\$3,000,000	\$27,000,000	\$0
C.2 Overlay Runway 16R/34L		\$5,200,000	\$520,000	\$0	\$4,680,000
C.3 Rehabilitate South Ramp		\$3,000,000	\$300,000	\$0	\$2,700,000
C.4 Construct "K5/6" Ramp Area		\$2,000,000	\$200,000	\$0	\$1,800,000
C.5 Construct "K5/6" Hangars		\$10,000,000	\$1,000,000	\$9,000,000	\$0
C.6 Airspace Obstruction Removal		\$100,000	\$10,000	\$0	\$90,000
C.7 Pavement Rehab (Average Cost Times 10 Years)		\$2,000,000	\$2,000,000	\$0	\$0
C.8 Land/Easements - R/W 34L Precision Approach RPZ		\$8,000,000	\$800,000	\$0	\$7,200,000
C.9 Replace VASI with PAPI	d)	\$0	\$0	\$0	\$0
Sub-Total/Phase III		\$60,300,000	\$7,830,000	\$36,000,000	\$16,470,000
GRAND TOTALS		\$244,325,000	\$42,053,000	\$143,123,000	\$59,149,000

Notes

Cost estimates, based upon 2002 data, are intended for preliminary planning purposes and do not reflect a detailed engineering evaluation.

- a) Sponsor Funding - Current revenues, cash reserves, bonds, etc.
- b) Private Funding - subject to developer, tenant, or revenue bond financing.
- c) FAA AIP (Airport Improvement Program) - Unless Otherwise Noted
- d) 100% FAA F&E Funding - no costs listed
- e) FFY - Federal Fiscal Year [October 1 through September 30 (i.e., FFY 2002 is October 1, 2001 through September 30, 2002)]

improvements to meet demands, while also responding to financial realities and select development items that are in harmony with current development needs. To keep from being short-sighted in its development strategy for the airport, and to be fiscally responsible, the county may choose to selectively implement the capital items.

Cost Estimates

Cost estimates for individual projects, based on current dollars, have been prepared for the improvement projects that have been identified as potentially needed during the 20-year planning period. Facility costs have been formulated using unit prices extended by the size of the particular facility and tempered with specific considerations related to the region, the airport, and the development site. That being said, these estimates are intended to be used for planning purposes only and should not be construed as construction cost estimates, which can only be compiled following the preparation of detailed engineering design documents. It is strongly recommended that the County should refine the cost estimates for major capital projects (e.g., National Flight Interpretive Center, K5/K6 hangars, the new ARFF facility, the redevelopment of the Navy Housing Area, the passenger terminal, etc.) with detailed conceptual development documentation as soon as practicle.

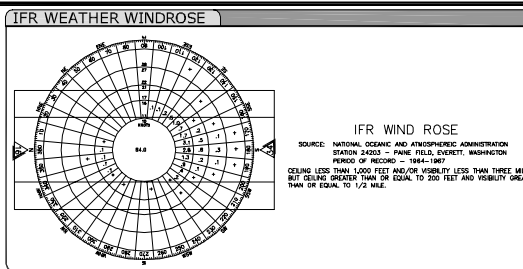
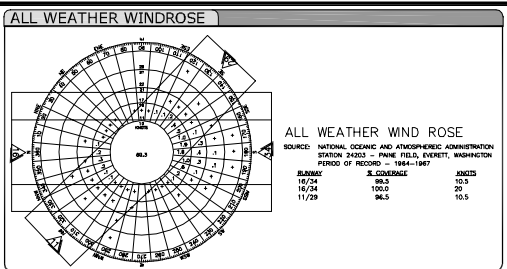
Capital Improvement Program (CIP)

To assist in preparation of the FAA's effort to provide grant funding to the most needed projects, airport staff keeps on file and up to date with the FAA, a capital improvement project list. The projects and costs provided in the previously presented table, entitled *PHASE I (0 to 5 YEARS) DEVELOPMENT PLAN PROJECT COSTS*, have been organized by year, in a format similar to that used by the FAA. The projects, phasing, and costs presented in this Master Plan Update are the best projections that can be made at the time of formulation. The purpose of the project list, phasing, and costs listed here is to provide a progressive projection of capital needs, which can then be utilized in local and federal financial programming. It is realized that as soon as this long-range planning document is published, the project list starts to be out of date and; therefore, it will always differ to some degree with the airport's 5-year CIP on file with the FAA.

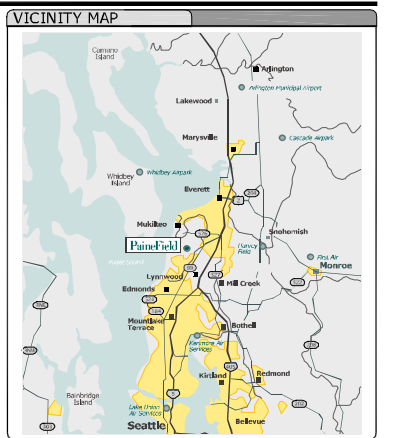
Phasing Plan

To supplement the information provided by the project list and project cost estimates, an illustration has been prepared. This graphic, entitled *PHASING PLAN*, indicates the suggested phasing for improvement projects throughout the 20-year planning period.

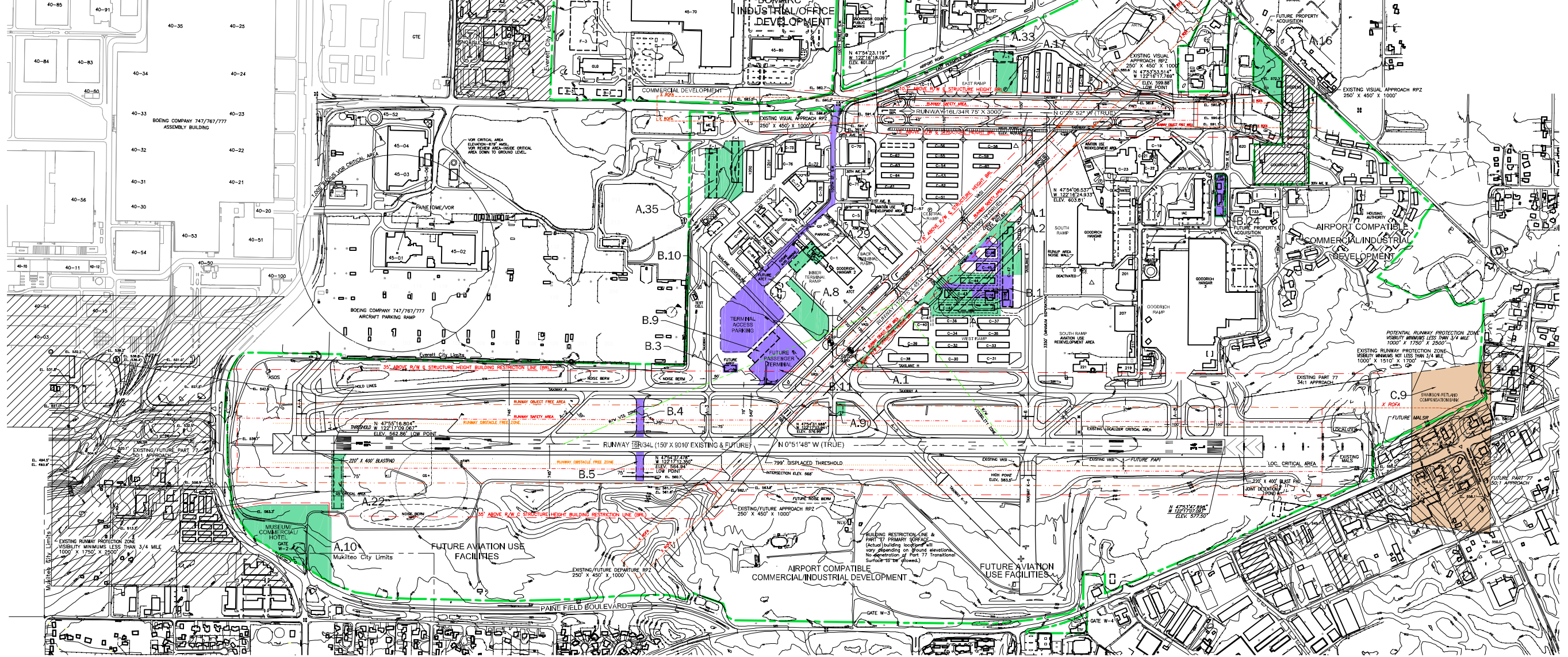
RUNWAY DATA	RUNWAY 16R/34L		RUNWAY 16L/34R		RUNWAY 11/29	
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	1/2	1/2	1/2	1/2	1/2	1/2
FAR PART 77 APPROACH SLOPE	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'
RUNWAY WIDTH X LENGTH	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'	150' X 9010'
PAVEMENT TYPE	ASPHALT/CONCRETE	ASPHALT/CONCRETE	ASPHALT	ASPHALT	ASPHALT	ASPHALT
PAVEMENT STRENGTH (IN 1000 LBS.)	HRB DOT 8.50 DOT	HRB DOT 8.50 DOT	HRB DOT 8.50 DOT	HRB DOT 8.50 DOT	HRB DOT 8.50 DOT	HRB DOT 8.50 DOT
RUNWAY LIGHTING	HRB (E 150)	HRB (E 150)	HRB (E 150)	HRB (E 150)	HRB (E 150)	HRB (E 150)
EFFECTIVE RUNWAY GRADIENT %	0.38	0.38	0.33	0.33	0.93	0.83
RUNWAY LINE-OF-SITE	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET
WIND COVERAGE % (100 KNOTS)	99.5	99.5	99.5	99.5	99.5	99.5
WIND COVERAGE % (50 KNOTS)	99.5	99.5	99.5	99.5	99.5	99.5
VISUAL APPROACH AIDS	MULSPR/MULSP	MULSPR/MULSP	RELS/PAPI	RELS/PAPI	VASI	VAS/RELS
INSTRUMENT APPROACH AIDS	RELS/PAPI	RELS/PAPI	RELS/PAPI	RELS/PAPI	RELS/PAPI	RELS/PAPI
AIRPORT REFERENCE CODE	B-1	B-1	B-1	B-1	B-1	B-1
CRITICAL AIRCRAFT	B-747-400	B-747-400	KING AIR B100	KING AIR B100	KING AIR B100	KING AIR B100
RUNWAY SAFETY AREA DIMENSIONS	500' X 11010'	500' X 11010'	120' X 3480'	120' X 3480'	120' X 4994'	120' X 4994'
RUNWAY OBJECT FREE AREA DIMENSIONS	800' X 11010'	800' X 11010'	250' X 3480'	250' X 3480'	250' X 4994'	250' X 4994'
OBSTACLE FREE ZONE CRITERIA	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET	CRITERIA MET
RUNWAY END COORDINATES	141 475474.8881' N 1217170.8881' E	141 475474.8881' N 1217170.8881' E	141 475474.8881' N 1217170.8881' E	141 475474.8881' N 1217170.8881' E	141 475474.8881' N 1217170.8881' E	141 475474.8881' N 1217170.8881' E
RUNWAY ELEVATIONS	END HIGH POINT LOW POINT	562.86' 563.3' 562.86'	END HIGH POINT LOW POINT	562.86' 563.3' 562.86'	END HIGH POINT LOW POINT	562.86' 563.3' 562.86'
TOLDO DOWN ZONE ELEVATION	579.85/570.27'	579.85/570.27'	604.17/600.9'	604.17/600.9'	588.59/607.5'	588.59/607.5'
DECLARED DISTANCES	TORA TODA ASDA LDA	9010'/9010' 9010'/9010' 9010'/9010' 9010'/9010'	3000'/3000' 3000'/3000' 3000'/3000' 3000'/3000'	3000'/3000' 3000'/3000' 3000'/3000' 3000'/3000'	4514'/4514' 4514'/4514' 4514'/4514' 4514'/4514'	4514'/4514' 4514'/4514' 4514'/4514' 4514'/4514'
DISPLACED THRESHOLD COORDINATES					3715/4444'	3715/4444'
DISPLACED THRESHOLD ELEVATION					576.99'	576.99'



SPONSOR APPROVAL	
NAME-TITLE	DATE
NOTES	
1. THIS DRAWING IS FOR PLANNING AND DESIGN ONLY AND IS NOT INTENDED FOR ENGINEERING PURPOSES.	
2. ALL LAT/LONG COORDINATE DATA IS HARNES.	
3. PHOTOGRAMMETRIC MAPPING BY WALKER AND ASSOCIATES, SEATTLE, WA. PREPARED FOR SNOHOMISH COUNTY AIRPORT, JUNE 1998. (1" = 100' MAP ACCURACY). AERIAL PHOTOS DATED MAY 15, 2001.	
4. DIGITAL FILE HORIZONTAL COORDINATE SYSTEM IS WASHINGTON STATE PLANE, NORTH ZONE 1983/1991 ADJUSTED, VERTICAL NAVD 88.	



NOTES: 1. This drawing reflects current planning standards applicable to Paine Field Airport to the greatest extent possible. This drawing should not be used as a standard for planning or design.
2. Runway End and Airport Reference Point Lat/Long coordinate data is NAD83/91. Runway elevation vertical datum NAVD 88.



NON-STANDARD CONDITIONS	
DESCRIPTION	EXISTING/FUTURE
RUNWAY OBJECT FREE AREA BEYOND R/W 11 THRESHOLD	B-1 (MALL/C)
RUNWAY VISIBILITY ZONE	

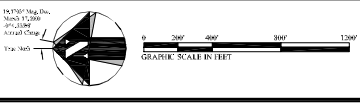
BUILDING LEGEND	
NO. DESCRIPTION	NO. DESCRIPTION
B-25 ROMAN BUSINESS PARK	C-47 FUTURE T-HANGARS
B-26 ROMAN BUSINESS PARK	C-48 FUTURE T-HANGARS
C-1 GOODRICH/PRECISION ENGINES/AIRPORT OFFICES	C-51 M-T-HANGARS
C-2 G. A. TERMINAL/FUTURE SERVICES	C-52 JET DECK RESTAURANT (TO BE REMOVED)
C-3 NORTHERLY AVIATION/CANON INTERIORS	C-53 T-HANGARS
C-4 FUTURE SERVICES (TO BE REMOVED)	C-219 UMERA DISCOUNT
C-11 (CROWN AVIATION)	C-71 TYS
C-18 T-HANGARS (EAST CONDO)	C-72 MUSEUM OF FLIGHT
C-19-20 MELVANT	C-73 MUSEUM OF FLIGHT
C-20-21 WEST CONDO HANGARS	C-74 HANGAR
C-22 WEST CONDO HANGARS	C-75 HANGAR
C-23 T-HANGARS	C-76 HANGAR
C-24 T-HANGARS	C-77 RANGER CORP.
C-25 T-HANGARS	C-78 HONEYWELL
C-26 T-HANGARS	C-79 EVERETT COMMUNITY COLLEGE
C-27 T-HANGARS	C-80 EVERETT COMMUNITY COLLEGE
C-28 T-HANGARS	C-81 EVERETT COMMUNITY COLLEGE
C-29 T-HANGARS	C-82 ATWMS
C-30 T-HANGARS	C-83 BOEING COMPANY
C-31 T-HANGARS	C-84 BOEING COMPANY
C-32 T-HANGARS	
C-33 T-HANGARS	
C-34 T-HANGARS	
C-35 T-HANGARS	
C-36 T-HANGARS	
C-37 T-HANGARS	
C-38 T-HANGARS	
C-39 T-HANGARS	
C-40 T-HANGARS	
C-41 T-HANGARS	
C-42 T-HANGARS	
C-43 T-HANGARS	
C-44 T-HANGARS	
C-45 T-HANGARS	
C-46 T-HANGARS	

REVISIONS	
NO.	DATE

AIRPORT DATA	
EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	609.85'
AIRPORT REFERENCE POINT (ARP)	562.86'
AIRPORT REFERENCE CODE	B-1
MEAN MAX. TEMPERATURE (HOTTEST MONTH)	77°
MEAN MIN. TEMPERATURE (COLDEST MONTH)	37°
WIND DIRECTION (MOST FREQUENT)	110°
WIND VELOCITY (GUST)	12.5 MPH
WIND VELOCITY (HOURLY)	12.5 MPH
WIND VELOCITY (DAILY)	12.5 MPH
WIND VELOCITY (MONTHLY)	12.5 MPH
WIND VELOCITY (YEARLY)	12.5 MPH
WIND VELOCITY (10-MINUTE)	12.5 MPH
WIND VELOCITY (1-HOUR)	12.5 MPH
WIND VELOCITY (3-HOUR)	12.5 MPH
WIND VELOCITY (6-HOUR)	12.5 MPH
WIND VELOCITY (12-HOUR)	12.5 MPH
WIND VELOCITY (24-HOUR)	12.5 MPH
WIND VELOCITY (1-MONTH)	12.5 MPH
WIND VELOCITY (3-MONTH)	12.5 MPH
WIND VELOCITY (6-MONTH)	12.5 MPH
WIND VELOCITY (1-YEAR)	12.5 MPH
WIND VELOCITY (3-YEAR)	12.5 MPH
WIND VELOCITY (6-YEAR)	12.5 MPH
WIND VELOCITY (10-YEAR)	12.5 MPH
WIND VELOCITY (20-YEAR)	12.5 MPH
WIND VELOCITY (30-YEAR)	12.5 MPH
WIND VELOCITY (50-YEAR)	12.5 MPH
WIND VELOCITY (100-YEAR)	12.5 MPH

LAYOUT PLAN LEGEND	
EXISTING	FUTURE
AIRPORT PROPERTY LINE	
AIRPORT SECURITY FENCE	
AIRPORT BUILDINGS	
RAILROAD FENCE	
PAVED ROADS	
RUNWAY PROTECTION ZONE	
RAILROAD FACILITY	
BUILDING RESTRICTION LINE	
RUNWAY SAFETY AREA	
RUNWAY OBJECT FREE AREA	
FUEL STORAGE AREA	
AIRPORT SEASON	
LIGHTED WIND CONE	
RUNWAY APPROACH PATH INDICATOR (PAPI)	
RUNWAY END BENTLEIGH LIGHTS (REEL)	
WASH BACK	

Figure F1 Phasing Plan
Prepared by
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1616 East 15th Street
Everett, WA 98203
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info@bdc-c.com



This plan represents a suggested schedule and variance from it may be necessary, especially during the latter time periods. Attention has been given to the first five years because the projects outlined in this time frame include many critical improvements. The demand for certain facilities, especially in the latter time frame, and the economic feasibility of their development are to be the prime factors influencing the timing of individual project construction. Care must be taken to provide for adequate lead-time for detailed planning and construction of facilities in order to meet aviation demands. It is also important to minimize the disruptive scheduling where a portion of the facility may become inoperative due to construction and to prevent extra costs resulting from improper project scheduling.

Financial Plan and Implementation Strategy

Funding sources for the capital improvement program depend on many factors, including Airport Improvement Program (AIP) project eligibility, the ultimate type and use of facilities to be developed, debt capacity of the airport, the availability of other financing sources, and the priorities for scheduling project completion. For planning purposes, assumptions were made related to the funding source of each capital improvement. The projects costs provided in the Development Plan Project tables are identified with likely funding sources.

Sources of Capital Funding

AIP Entitlement Grants. The Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21), enacted in April 2000, established the first-ever Non Primary Airports Entitlement Program. AIR-21 sets aside grant funding for general aviation airports listed in the National Plan of Integrated Airport Systems (NIPAS) for pavement maintenance work. General aviation airports can each receive up to \$150,000 per year based on FAA's assessment of maintenance needs over a five-year period. This funding set-aside is available for each federal fiscal year (2001-2003) when Congress appropriates at least \$3.2 billion for FAA's AIP grant program. For the convenience of the airport sponsor, if a project is anticipated to cost in excess of \$150,000, the participating airport can roll over (save) the Non Primary Entitlement funds until federal fiscal year 2003 (the end of AIR-21), at which time the accumulated total of rolled-over funds can be used for larger projects. These set-aside funds cannot be transferred to another airport and any unused funds at the end of the entitlement program revert to the FAA. It should also be noted that Paine Field has been designated by the FAA as a "Super Reliever". Although this designation does not appear to offer any advantages with regard to receiving FAA grants at this time (lack of adequate funding in the program), it could in the future.

Although not a funding source available for use at Paine Field currently, it is important to note that, for airports with commercial passenger and/or cargo service, the AIP also provides passenger and cargo entitlement grants for eligible improvement projects. For these airports, funding received is based on a formula using the airport's passenger enplanements and cargo weight, which is reported two years prior to the current grant year. Since the enactment of AIR 21, the minimum amount of this type of entitlement funding for primary commercial service airports is \$1,000,000 per year.

AIP Discretionary Grants. The FAA also provides discretionary grants on a 90/10 basis to airports similar to Paine Field. This source of funding is over and above entitlement funding, and is provided to airports for projects that have a high federal priority for enhancing safety, security and capacity of the airport and would be difficult to fund otherwise. The dollar amounts of individual grants vary and can be significant in comparison to entitlement funding. Discretionary grants are awarded at the FAA's sole prerogative. Discretionary grant applications are evaluated based on need, the FAA's project priority ranking system, and the FAA's assessment of a project's significance within the national airport and airway system.

Further, per FAA, discretionary funds are those established in various set-asides plus any appropriated funding remaining after all apportionment funds have been allocated. These funds are assigned at the discretion of the FAA Administrator, to support noise mitigation projects and the highest-priority development that will benefit the National Airspace System (NAS). These discretionary set-aside funds are designed to achieve specific funding minimums for the noise program, reliever airports, and the conversion of military airports. The Capacity/Safety/Security/Noise (CSSN) fund is to be used to preserve and enhance capacity, safety, and security and carry out noise compatibility programs, and include Letters of Intent (LOIs). The Noise funds are used towards FAR Part 150 Noise Compatibility Programs (NCP). The remaining discretionary funding is also referred to as "pure discretionary" and is assigned to projects at the Administrator's discretion.

Passenger Facility Charges (PFC). The Aviation Safety and Capacity Act of 1990 contained provisions for airports to levy passenger facility charges (PFC) of up to \$3 per enplaned passenger for the purpose of funding qualified airport enhancement projects. The proceeds from PFCs are eligible to be used for AIP eligible projects and for certain additional projects that preserve or enhance capacity, safety or security; mitigate the effects of aircraft noise; or enhance airline competition. PFCs may also be used to pay debt service on bonds and other indebtedness incurred to carry out eligible projects. Further, the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21) of 2000 modified the current PFC program in several

ways, the most significant of which was the approval to raise PFC collection rates up to \$4.50 per enplaned passenger.

The FAA PFC Branch reports that as of May 1, 2002, 330 U.S. airports have been approved to collect PFCs. The PFC Branch further reports that 112 small hub, non hub and commercial service airports have been approved to raise their PFC levels to either \$4 or \$4.50 per passenger. Paine Field would be eligible to levy a passenger facility charge following the initiation of commercial passenger service at the airport.

FAA Regional Airport Plan. The Regional Airport Plan (RAP) provides a link between national/regional objectives, the FAA Airports Division's five-year plan, and specific decisions associated with the preparation of the Airport Division's Airport Capital Improvement Plan (ACIP) at focus airports (commercial service, certificated, and GA airports with over 75 based aircraft). *The focus of the Regional Airport Plan is on discretionary funding allocated to all discretionary categories within the Northwest Mountain Region.* Since 1997, the Northwest Mountain Region's total AIP has averaged approximately 10 percent of the national funds available and the region's discretionary funding averaged approximately 14 percent of available national discretionary funding. To provide reasonable assurance of needed support, spread over several years, a list of Airport Capital Improvement Projects (ACIP) is maintained in the RAP. Many projects that require major funding expenditures have benefited from the RAP programming approach. The RAP is an important planning tool used by the Region's Airports Division as the best possible estimate of the potential availability of funding and the Region's best forecast of the airport improvement work it can support financially.

Historic Review of FAA Grants Received. Following is a list of FAA AIP grants received in the 10-year period 1990 through 1999. It can be noted that the airport has benefited from improvements that have been primarily funded by the federal government. On average, during the period 1990 to 2002 the airport received approximately \$2.4 million per year in AIP grants. There is no guarantee that the airport will continue to receive federal matching funds at the same level it has had in the past. On the other hand, unless the AIP program changes substantially, it is certainly reasonable to assume that the airport will continue to receive some amount of federal matching funds in the future.

Project 3-53-0028-14 (1990). Signage Phase I, security gates, lighting controls. Federal participation - \$320,785.

Project 3-53-0028-15 (1991). Taxiway F south construction, Phase II signage. Federal participation - \$241,182.

Project 3-53-0028-16 (1992). Signage, Phase III; rehabilitate HIRL Runway 16R/34L. Federal participation - \$971,816.

Project 3-53-0028-17 (1992). Master Plan and Environmental Assessment. Federal participation - \$200,000.

Project 3-53-0028-18 (1993). Runway 16R/34L and Taxiway Alpha shoulders. Federal participation - \$2,732,270.

Project 3-53-0028-19 (1994). Runway 16R/34L resurfacing. Federal participation - \$2,300,000.

Project 3-53-0028-22 (1996). Reconstruct Runway 34L. Federal participation - \$1,434,147.

Project 3-53-0028-23 (1996). Reconstruct Taxiway A7. Federal participation - \$233,853.

Project 3-53-0028-25 (1998). Runway 16R/34L Safety Area Improvements. Federal participation - \$4,642,452.

Project 3-53-0028-26 (1998). Runway 16R/34L Safety Area Improvements. Federal participation - \$1,495,000.

Project 3-53-0028-27 (1999). Runway 16R/34L Safety Area Improvements. Federal participation - \$3,450,000.

Project 3-53-0028-28 (1999). Runway 16R/34L Safety Area Improvements. Federal participation - \$3,881,139.

Project 3-53-0028-29 (1999). Runway 16R/34L Safety Area Improvements. Federal participation - \$471,976.

Project 3-53-0028-30 (1999). Runway 16R/34L Safety Area Improvements. Federal participation - \$3,000,000.

Project 3-53-0028-31 (2000). Master Plan Update. Federal participation - \$233,492.

Project 3-53-0028-32 (2001). Rehabilitate Runway 16R/34L Centerline. Federal participation - \$360,000.

Project 3-53-0028-33 (2001). Construct Runway 16R/34L Safety Area. Federal participation - \$730,076.

Project 3-53-0028-34 (2002). West Ramp Hangar Development. Federal participation - \$2,000,000.

FAA Facilities & Equipment Funds. Within the FAA's budget appropriation, money is available in the Facilities and Equipment (F&E) Fund to purchase navigational aids and air safety-related technical equipment, including Air Traffic Control Towers (ATCTs) for use at commercial service airports in the national airport system. Each F&E development project is evaluated independently through a cost/benefit analysis to determine funding eligibility and priority ranking. The qualified projects are totally funded (i.e., 100%) by the FAA, with the remaining projects likely being AIP or PFC eligible. In addition, the airport will apply for NAVAID maintenance funding through the F&E program for those facilities that are not F&E funded. It is possible that some of the proposed navigational aid-related development projects for Paine Field would qualify for F&E funding, if available.

Private Third Party Financing. Many airports use private third party financing when the planned improvements will be primarily used by a private business or other organization. Such projects are not ordinarily eligible for federal funding. Projects of this kind typically include hangars, FBO facilities, fuel storage, exclusive aircraft parking aprons, industrial aviation use facilities, non-aviation office/commercial/industrial

developments, and various other projects. Private development proposals are considered on a case by case basis. Often, airport funds for infrastructure, preliminary site work, and site access are required to facilitate privately developed projects on airport property.

Airport Revenues. At many airport facilities, generating the necessary cash flow to balance the operations and maintenance can be a difficult task. A review of the financial documentation for Paine Field indicates that the airport is operationally self-supporting. The airport is operated as an enterprise department, with its income and expenses held separately from other Snohomish County funds.

As identified in the airport’s annual income and expense reports, major sources of revenue for the airport include: airport fees, commercial leases, hangars and tie-downs, utility fees, and fuel fees. Major expenditures include: salaries and wages, personnel benefits, professional services, utilities, supplies, debt service, and repair and maintenance. The following table, entitled *OPERATING REVENUE AND EXPENSE SUMMARY, 1997-2001*, provides the annual totals for operational revenue and operational expense without consideration for depreciation. The conclusion to be drawn with this information is that the airport is operationally self supporting and has generated funds each year from operational activities for capital improvements. During the past five years, the airport had an average annual net operational income of approximately \$1,412,000. Capital requirements exceeded net income during this period.

Table F4
OPERATING REVENUE AND EXPENSE SUMMARY, 1997-2001
Paine Field Master Plan Update

Year	Revenues	Expenses	Net Income (Loss) ¹
1997	\$6,025,000.00	\$4,921,000.00	\$1,104,000.00
1998	\$6,435,000.00	\$5,230,000.00	\$1,205,000.00
1999	\$6,673,000.00	\$5,198,000.00	\$1,475,000.00
2000	\$7,148,000.00	\$5,818,000.00	\$1,330,000.00
2001	\$7,766,000.00	\$5,821,000.00	\$1,946,000.00

Source: Paine Field Financial Reports

¹ Actual. Not including depreciation of capital assets.

Generation of money to adequately fund capital costs associated with the operation of an airport is a daunting challenge. Some general aviation airports rely on supplemental money from municipal or county general funds to assist with funding major projects. Snohomish County's general fund does not appear to be able to provide the type of financial assistance necessary to fund the airport's capital needs identified in this Master Plan Update. Careful planning will be required to ensure that the airport's capital needs are met with the scarce dollars that are available.

Summary - Master Plan Capital Improvement Program Financial Implications

The previously presented *DEVELOPMENT PLAN PROJECT COSTS* tables provide a reasonable estimate of the money that will be needed to fund the capital improvement program at the airport. With the best information available today, the tables provide information related to what projects will be needed, when those projects are likely to be constructed, and how the improvements are likely to be funded (e.g., local, federal, etc.). It is realized that the timing for project implementation will change as sponsor and FAA priorities evolve; however, the projections of funding needs are reasonable estimates for long-term capital improvement planning purposes.

The financial implications for financing of airport improvements are probably best summarized in a presentation of the total expected expenditures, broken down by phase and recommended financing method. This information is presented in the following table, entitled *CAPITAL IMPROVEMENT EXPENDITURES BY PHASE*.

Table F5
CAPITAL IMPROVEMENT EXPENDITURES BY PHASE
Paine Field Master Plan Update

Phase	CIP Total Cost	Sponsor Funding	Private Funding	Federal AIP Funding
Phase I (0-6 Years)	\$73,185,000	\$12,365,000	\$36,923,000	\$23,897,000
Phase II (6-11 Years)	\$110,640,000	\$19,903,000	\$70,200,000	\$20,537,000
Phase III (11-20 Years)	\$60,300,000	\$6,030,000	\$36,000,000	\$18,270,000
TOTALS	\$244,125,000	\$38,298,000	\$143,123,000	\$62,704,000

It should also be noted that projects represented as potentially needed in this *Master Plan Update* are based on forecast demand; only those projects that are required to meet actual demand will be proposed for construction. If demands do not increase as rapidly as anticipated, a number of the proposed projects should be revised, eliminated, or delayed. On the other hand, if demand occurs more rapidly than forecast, the project schedule will be accelerated. The ability to fund projects is also often directly tied to demand.

Because demand and improvement needs can best be defined in the short-term, the Phase I project list is the most comprehensive and is generally the most challenging to finance. As indicated in the table above, Federal funding needs could total as much as \$24 million dollars during the five years comprising Phase I and sponsor funding needs could be just over \$12 million. If averaged over the five year period, the federal share would be approximately \$4.8 million per year and sponsor funding would be approximately \$2.5 million per year.

If the average potential federal funding need over the next five years (\$4.8 million) is compared with the average annual federal funds that were received during the 1990s (\$2.4 million), it can be seen that the CIP detailed in the Master Plan Update represents an aggressive program. Even with the increases in AIP funding over the past few years, Paine Field's needs may exceed the capabilities of the FAA to participate. The Master Plan Update's CIP is also aggressive from a sponsor funding standpoint. This is demonstrated if the average potential sponsor funding need over the next five years (\$2.5 million) is compared with the past five year's average annual net operational income (\$1.4 million).

Certainly, the capital improvement financial implications of the CIP are significant for Snohomish County and the FAA; yet, they are not unreasonable or unattainable for an airport facility like Paine Field, whose role is regionally, nationally, and internationally critical.

These financial implications also illustrate the need to best utilize the tremendous asset that the airport has in undeveloped land. The use of the undeveloped land in the future will certainly help determine the financial well being of the airport in the future. It is also understood that decisions on how to use these undeveloped lands are difficult, with consideration of many different factors being required. First, in consideration of the need to support its mission as an aviation use facility and to meet its federal grant assurance obligations, the airport land must be used to accommodate potential aviation demands. Secondly, the land must be used to provide income to best support the continued operation and maintenance of the airport. Decisions on the use of airport lands are further complicated by the need to consider potential environmental impacts (e.g., water quality, wetlands, air quality, noise, etc.). As a long-term physical

development plan document, this Master Plan Update provides guidance on how airport land should be utilized in consideration of these complex issues.