

SECTION 7 – IMPLEMENTATION PLAN

The purpose of the Implementation Plan is to present the sequence and probable timeline for development of the Master Plan and establish a reasonable strategy for funding the planned development over time. This Implementation Plan has been prepared based upon the capital development needs of the Master Plan as well as the Airport’s existing Capital Improvement Program (CIP). It provides the Airport with the necessary information and framework to manage the implementation of the Master Plan throughout the 20-year planning horizon.

Implementation of the Master Plan is typically demand driven; therefore capacity enhancing and delay reducing projects are initiated when demand dictates the need for additional or expanded facilities. Exceptions may occur when existing facilities exceed their useful life and need to be replaced, or when customer service or revenue enhancement initiatives dictate new, expanded or relocated facilities. Accurately predicting the exact timeframe for these milestones is often difficult, which is why implementation and funding decisions are typically made incrementally throughout the planning horizon based on the needs of the Airport at a given point in time. For the purpose of this section, however, it is necessary to provide an assumed timeframe for all development in order to estimate project costs and funding requirements. This is done by correlating development triggers (i.e. operations, passengers, etc.) with future year activity in accordance with *Section 3 - Forecast of Aviation Activity* as well as anticipated operational requirements, revenue enhancement opportunities, and customer service initiatives. Because actual activity levels are likely to vary from the projected forecast, and because other policy positions may change over time, the implementation schedule should be closely monitored and adjusted based on current information.

For presentation purposes, this Chapter is organized as follows:

1. Master Plan Development Sequence – Organizes the Master Plan’s Preferred Development Plan projects into two phases; Future Airport Layout Plan Projects (approximately 2008-2015) and Ultimate Airport Layout Plan Projects (approximately 2016-2027).
2. Master Plan Capital Improvement Program – Provides a list of all capital projects identified as part of the Preferred Development Plan as well as the Airport’s 5-Year Capital Improvement Plan (CIP), including the estimated cost for each project.
3. Funding Plan – Describes a strategy for funding the implementation of the Master Plan Capital Improvement Program, including a description of the various sources of funds and the anticipated use of those funding sources.

7.1 Development Sequence

As part of the stakeholder coordination for the Master Plan, a number of meetings were held with the citizens and elected officials from the communities surrounding the Airport. This coordination led to the development of the Future and Ultimate Airport Layout Plan Proposal for the organization of the Preferred Development Plan. This document is included in the Master Plan Supporting Information for reference. Based on this proposal, which was accepted by the surrounding communities, the Preferred Development Plan is organized into two phases; Future Airport Layout Plan projects and Ultimate Airport Layout Plan projects. Future Airport Layout Plan projects are anticipated to be

implemented over the next several years (through 2015) whereas the Ultimate Airport layout Plan projects are expected to occur later in the planning horizon (beyond 2015).

Projects were sequenced in consideration of several criteria, including anticipated demand and/or operational benefits, revenue enhancement opportunities, and customer service initiatives. When considering demand, development triggers (i.e. operations, passenger activity, etc.) were correlated with future year activity. In some cases, development of one or more projects is required in order to facilitate the development of another project. In these cases, the “enabling” projects were sequenced in advance of the project they are facilitating.

The actual development sequence will vary depending on demand, passenger and airline operating characteristics, economic conditions, airport policy, and other factors. As such, the implementation schedule should be closely monitored and adjusted based on actual conditions and user requirements.

7.1.1 Future Airport Layout Plan Projects (2008-2015)

Future ALP projects are illustrated on **Exhibit 7.1-1**. These projects and their sequencing criteria are summarized below.

1. South Public Parking (4,000 Spaces)

Sequenced to occur in 2010 based on the immediate demand for parking in McNamara Terminal and the need for remote parking options for those users entering the airport from the south.

2. West Cargo Taxiway (Phase 1)

Sequenced to occur in 2010 in order to support the anticipated Air Cargo Development (see Project #3).

3. Air Cargo Development (Phase 1)

Sequenced to occur in 2010 based on the apparent demand identified through the on-going marketing efforts of the Airport.

4. North Centralized Checkpoint

Sequenced to occur in 2010 based on the anticipated federal mandate for airports to screen all vehicle and persons entering the AOA. This mandate, if enacted, will result in an immediate increase in demand at the existing security checkpoints and require additional facilities to accommodate the efficient screening of people and vehicles.

5. South Centralized Checkpoint and Culvert Bridge Improvements

Sequenced to occur in 2010 based on the anticipated federal mandate for airports to screen all vehicle and persons entering the AOA. This mandate, if enacted, will result in an immediate increase in demand at the existing security checkpoints and require additional facilities to accommodate the efficient screening of people and vehicles.

6. Runway 4L-22R High Speed Taxiway Exits

Sequenced to occur in 2010 in order to improve the efficiency of the existing airfield by reducing runway occupancy times for arriving aircraft using Runway 4L-22R.

7. Consolidated Rental Car Facility

Sequenced to occur in 2011 in order to provide needed expansion capacity and improve operational efficiency. There is not enough area within the existing rental car campus to accommodate all rental car companies, resulting in at least one company (Thrifty) operating off-airport. Two other rental car companies (Enterprise and Hertz) do not have enough area within their current lease to operate at full capacity. Enterprise is running a split operation, utilizing additional facilities off-airport and Hertz is planning to demolish Building #278 in order to gain additional area within their lease.

8. Runway 9R-27L High Speed Taxiway Exit

Sequenced to occur in 2012 in order to improve the efficiency of the existing airfield by reducing runway occupancy times for arriving aircraft using Runway 9R-27L.

9. Dirty Snow Storage Area

Sequenced in 2011 to address the dislocation of the existing dirty snow storage area as a result of the completion of the Rogell Drive Connector project from the Airport's CIP (Project C-48).

10. North Employee Parking (2,500 Spaces)

Sequenced to occur in 2010 in order to precede the implementation of Runway 3L Perimeter Taxiway project and the North Centralized Checkpoint. The north employee lot will accommodate a portion of the employee parking demand displaced from the south employee parking lot as a result of the construction of the Runway 3L Perimeter Taxiway (Project #15). It will also be available to accommodate the employee parking demand displaced from the north employee parking lot as a result of the construction of the North Centralized Checkpoint (Project #4). The new location of the North Employee Lot enables expansion to accommodate additional demand.

11. Blue Deck Public Parking Expansion (4,000 Spaces)

Sequenced to occur in 2013 based on the anticipated demand for structured parking. This project becomes highly beneficial to the Airport with the development of an adjacent ground transportation center to facilitate the efficient transfer of passengers between the Blue Deck and the McNamara Terminal.

12. Relocated Executive Terminal

Sequenced to occur in 2013 to coincide with the Runway 21R Extension & Land Acquisition (Project #18). It must be completed prior to commissioning the extended Runway 21R as the existing facility is within the Runway Protection Zone of the extended runway.

13. Runway 3L-21R Centralized Deice Pad Expansion (Phase 1)

Sequenced to occur in 2013 in conjunction with the intent to move toward centralized deicing operations at the Airport and based on the anticipated demand for additional deicing positions. This project is scheduled to occur concurrent with the Runway 21R Extension and Land Acquisition (Project #18).

14. Runway 4R-22L Centralized Deice Pad Expansion (Phase 1)

Sequenced to occur in 2015 in conjunction with the intent to move toward centralized deicing operations at the Airport and based on the anticipated demand for additional deicing positions. This project must be completed ahead of the McNamara Concourse B & C Expansion (Project #40) which impacts the Runway 4R Deicing Pad.

15. Runway 3L Perimeter Taxiways

Sequenced to start in 2013 in anticipation of an FAA mandate that will result in the loss of unabated taxiing along Taxiways Juliet and Tango during north flow operations when the runway is rehabilitated in 2013.

16. West Cargo Taxiway (Phase 2)

Sequenced to occur in 2015 in order to support the anticipated Air Cargo Development (see Project #17).

17. Air Cargo Development (Phase 2)

Sequenced to occur in 2015 based on the future potential demand identified through the ongoing marketing efforts of the Airport.

18. Runway 21R Extension and Land Acquisition (1,500')

This project is anticipated to be started in 2013 based on changes to airfield operations and increased activity. The departure capacity of existing Runway 3L-21R will increase, thus providing additional take-off length and noise benefits to the communities to the north of the airport as identified in the FAR Part 150 Noise Study.

19. McNamara Concourses B and C Expansion (10 Gates)

Additional gate capacity in the McNamara Terminal is anticipated to be needed in 2015 based on the anticipated passenger demand. This project represents a nominal 10 gate expansion of Concourses B & C.

20. New Flight Kitchen

Sequenced to occur in 2014 based on information from Northwest Airlines, the anticipated tenant of the facility and the McNamara Concourses B and C Expansion (Project #19).

21. Taxiway PP Extension

Sequenced to occur in 2013 in order to coincide with the expansion of the Runway 3L-21R Centralized Deicing Pad (Project # 13).

22. Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 400

Sequenced to occur in 2013 based on the desire of the FAA to transition over time to perimeter ARFF stations instead of the current centralized ARFF station deployment.

23. North Terminal Expansion (5 Gates)

Additional gate capacity in the North Terminal is anticipated to be needed around 2015 based on the anticipated growth in passenger demand.

24. Fuel Farm Expansion

Sequenced to occur in 2015 to coincide with the expansion of terminal gates at the McNamara and North Terminals Project #19 and #23).

25. Airline Freight Expansion

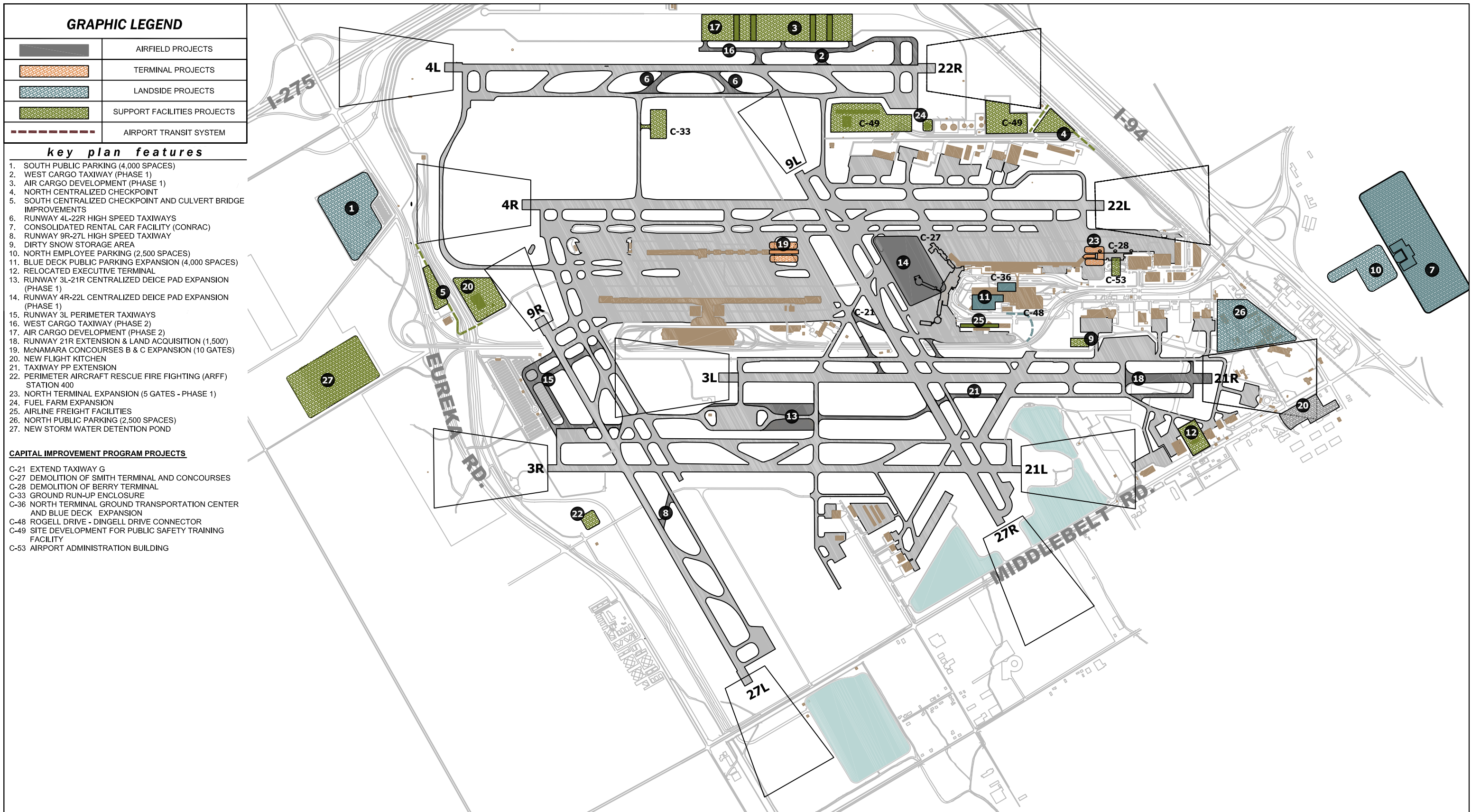
Sequenced to occur in 2015 to coincide with the expansion of gates at the new North Terminal (Project #23).

26. North Public Parking (2,500 Spaces)

Sequenced to occur in 2014 based on anticipated demand for additional remote parking and the need for a convenient long-term parking option for those users entering the Airport from the north.

27. New Stormwater Detention Pond

Sequenced to be occur in 2010 to be concurrent with the construction of the initial phase of the West Cargo Development (Project #3), the additional detention capacity is required to support the additional storm water generated by new impervious surface that would be drained to Pond #6, which is currently at or near capacity.



GRAPHIC LEGEND	
	AIRFIELD PROJECTS
	TERMINAL PROJECTS
	LANDSIDE PROJECTS
	SUPPORT FACILITIES PROJECTS
	AIRPORT TRANSIT SYSTEM

key plan features

1. SOUTH PUBLIC PARKING (4,000 SPACES)
2. WEST CARGO TAXIWAY (PHASE 1)
3. AIR CARGO DEVELOPMENT (PHASE 1)
4. NORTH CENTRALIZED CHECKPOINT
5. SOUTH CENTRALIZED CHECKPOINT AND CULVERT BRIDGE IMPROVEMENTS
6. RUNWAY 4L-22R HIGH SPEED TAXIWAYS
7. CONSOLIDATED RENTAL CAR FACILITY (CONRAC)
8. RUNWAY 9R-27L HIGH SPEED TAXIWAY
9. DIRTY SNOW STORAGE AREA
10. NORTH EMPLOYEE PARKING (2,500 SPACES)
11. BLUE DECK PUBLIC PARKING EXPANSION (4,000 SPACES)
12. RELOCATED EXECUTIVE TERMINAL
13. RUNWAY 3L-21R CENTRALIZED DEICE PAD EXPANSION (PHASE 1)
14. RUNWAY 4R-22L CENTRALIZED DEICE PAD EXPANSION (PHASE 1)
15. RUNWAY 3L PERIMETER TAXIWAYS
16. WEST CARGO TAXIWAY (PHASE 2)
17. AIR CARGO DEVELOPMENT (PHASE 2)
18. RUNWAY 21R EXTENSION & LAND ACQUISITION (1,500')
19. McNAMARA CONCOURSES B & C EXPANSION (10 GATES)
20. NEW FLIGHT KITCHEN
21. TAXIWAY PP EXTENSION
22. PERIMETER AIRCRAFT RESCUE FIRE FIGHTING (ARFF) STATION 400
23. NORTH TERMINAL EXPANSION (5 GATES - PHASE 1)
24. FUEL FARM EXPANSION
25. AIRLINE FREIGHT FACILITIES
26. NORTH PUBLIC PARKING (2,500 SPACES)
27. NEW STORM WATER DETENTION POND

CAPITAL IMPROVEMENT PROGRAM PROJECTS

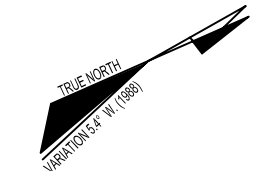
- C-21 EXTEND TAXIWAY G
- C-27 DEMOLITION OF SMITH TERMINAL AND CONCOURSES
- C-28 DEMOLITION OF BERRY TERMINAL
- C-33 GROUND RUN-UP ENCLOSURE
- C-36 NORTH TERMINAL GROUND TRANSPORTATION CENTER AND BLUE DECK EXPANSION
- C-48 ROGELL DRIVE - DINGELL DRIVE CONNECTOR
- C-49 SITE DEVELOPMENT FOR PUBLIC SAFETY TRAINING FACILITY
- C-53 AIRPORT ADMINISTRATION BUILDING

* For Diagrammatic and Illustrative Purposes Only

Plan depicts projects anticipated to be implemented by year 2015



MASTER PLAN STUDY FUTURE ALP PROJECTS



7.1.2 Ultimate Airport Layout Plan Projects (2016-2027)

Ultimate ALP projects are illustrated on **Exhibit 7.1-2**. These projects and their sequencing criteria are summarized below.

28. Relocated South Employee Parking (3,500 Spaces)

Sequenced to occur in 2018 in advance of the Perimeter Taxiway for the 5th Parallel Runway (Project #36), which will traverse the area currently used for employee parking to the south.

29. Airport Transit System and Maintenance Building

Sequenced to be completed in 2017 in order to help relieve curbside congestion, improve air quality, and to provide a higher level of customer service for passengers transferring between the terminals, and the consolidated rental car facility.

30. Land Acquisition (5th Parallel Runway)

This project is anticipated to be completed by 2019 in order to enable the construction of the 5th Parallel Runway (Project 35). This schedule contemplates a three year acquisition process, which may change as more information is made available.

31. Runway 3L-21R Centralized Deice Pad Expansion (Phase 2)

Sequenced to occur in 2020 in order to complete the transition to centralized deicing operations at the airport and in recognition of the additional demand for deicing operations that is anticipated over time.

32. North Public Parking Garage/Intermodal Center

Sequenced to occur in 2020 based on the anticipated demand for additional parking at the Airport.

33. Concessions Distribution Center

Sequenced to occur in 2020 to coincide with the ultimate gate expansion of the McNamara Concourses B and C Expansion (Project #40) although it could occur sooner or later based on demand or operational efficiency gains.

34. Relocated ARFF Training Facility

Sequenced to be completed by 2019 in advance of the construction of the 5th Parallel Runway (Project #35). The existing ARFF training facility is located along the alignment of the 5th Parallel Runway and must be relocated in order to allow construction of the new runway.

35. 5th Parallel Runway

Sequenced to be complete by 2021 based on the need for additional runway capacity.

36. Perimeter Taxiway for 5th Parallel Runway

Sequenced to be completed in 2021 concurrent with the construction of the 5th Parallel Runway Project #35).

37. West Cargo Taxiway (Phase 3)

Sequenced to occur around 2020 in order to support the anticipated Air Cargo Development (see Project #38).

38. Air Cargo Development (Phase 3)

Sequenced to occur in 2020 based on the future potential demand identified through the on-going marketing efforts of the Airport.

39. Airfield Maintenance Complex Satellite

Sequenced to be completed concurrently with the construction of the 5th Parallel Runway (Project #35).

40. McNamara Concourses B and C Expansion (20 Gates)

Additional gate capacity in the McNamara Terminal is anticipated to be needed around 2020 based on the anticipated passenger demand.

41. Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500

Sequenced to occur in 2018 based on the desire of the FAA to transition over time to perimeter ARFF stations instead of the current centralized ARFF station deployment.

42. North Terminal Expansion (5 Gates)

Additional gate capacity in the North Terminal is expected to be needed around 2020 based on the anticipated passenger demand.

43. Runway 4R-22L Centralized Deice Pad Expansion (Phase 2)

Sequenced to occur in 2020 in order to complete the transition to centralized deicing operations and in recognition of the additional demand for deicing operations that is anticipated over time..

44. Taxiway J Extension

Sequenced to coincide with the commissioning of the 5th Parallel Runway (Project #35) in 2021.

45. Taxiway S Extension

Sequenced to occur in 2023.

46. Taxiway U Extension

Sequenced to occur in 2024.

47. Taxiway H Extension

Sequenced to occur in 2025.

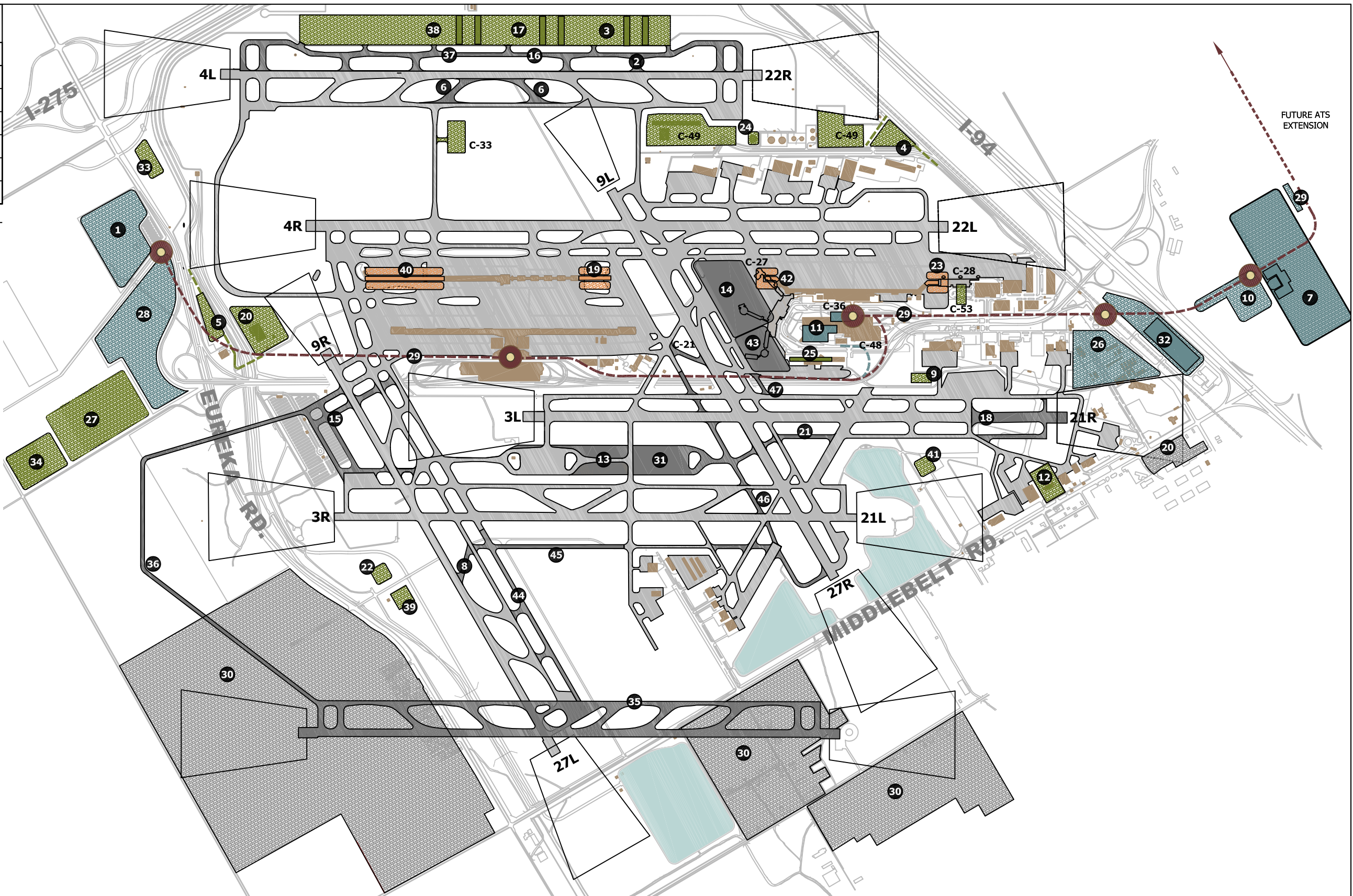
GRAPHIC LEGEND	
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	BUFFER ACQUISITION
	AIRPORT TRANSIT SYSTEM

key plan features

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18. RUNWAY 21R EXTENSION & LAND ACQUISITION (1,500')
19. McNAMARA CONCOURSES B & C EXPANSION (10 GATES)
20. NEW FLIGHT KITCHEN
21. TAXIWAY PP EXTENSION
22. PERIMETER AIRCRAFT RESCUE FIRE FIGHTING (ARFF) STATION 400
23. NORTH TERMINAL EXPANSION (5 GATES - PHASE 1)
24. FUEL FARM EXPANSION
25. AIRLINE FREIGHT FACILITIES
26. NORTH PUBLIC PARKING (2,500 SPACES)
27. NEW STORM WATER DETENTION POND
28. RELOCATED SOUTH EMPLOYEE PARKING (3,500 SPACES)
29. AIRPORT TRANSIT SYSTEM & MAINTENANCE BUILDING
30. LAND ACQUISITION - FIFTH PARALLEL RUNWAY
31. RUNWAY 3L-21R CENTRALIZED DEICE PAD EXPANSION (PHASE 2)
32. NORTH PUBLIC PARKING GARAGE / INTERMODAL CENTER
33. CONCESSIONS DISTRIBUTION CENTER
34. RELOCATED ARFF TRAINING FACILITY
35. FIFTH PARALLEL RUNWAY
36. PERIMETER TAXIWAY FOR FIFTH PARALLEL RUNWAY
37. WEST CARGO TAXIWAY (PHASE 3)
38. AIR CARGO DEVELOPMENT (PHASE 3)
39. AIRFIELD MAINTENANCE COMPLEX SATELLITE
40. McNAMARA CONCOURSES B & C EXPANSION (20 GATES)
41. PERIMETER AIRCRAFT RESCUE FIRE FIGHTING (ARFF) STATION 500
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CAPITAL IMPROVEMENT PROGRAM PROJECTS

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- C-27 DEMOLITION OF SMITH TERMINAL AND CONCOURSES
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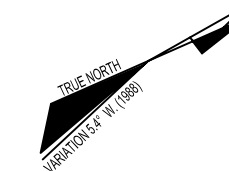


* For Diagrammatic and Illustrative Purposes Only

Plan depicts projects anticipated to be implemented by year 2027



MASTER PLAN STUDY ULTIMATE ALP PROJECTS



7.2 Master Plan Capital Improvement Program

The Master Plan Capital Improvement Program represents a comprehensive list of capital projects that are anticipated to occur throughout the 20 year planning horizon. It includes the Airport's current 5-year Capital Improvement Plan (CIP) and those capital projects identified in this Master Plan as the Preferred Development Plan. **Table 7.2-1** provides a summary list of the Master Plan Capital Improvement Program and their estimated costs. A more detailed cost estimate of the Preferred Development Plan projects is included for reference in the Master Plan Supporting Information.

Table 7.2-1: Master Plan Capital Improvement Program Cost Estimate

AIRFIELD IMPROVEMENTS	COST ESTIMATE (x\$000's)
Reconstruct RW 3R/21L, RSA, & South End of Taxiway "W"	46,750
Apron Reconstruction East of Taxiway "K"	10,300
Reconstruct Taxiway "K" - Phase 1	8,709
Grade and Pave Taxiway K Islands	350
Retrofit Taxiway Lighting	373
Airfield Lighting Control and Monitoring System	2,609
Reconstruct RW 9L/27R (Design only)	3,000
Reconstruct RW 9L/27R (Non-Design)	29,266
Reconstruct Taxiway "V"	10,285
Reconstruct Taxiway "H"	2,621
Reconstruct Taxiway "F"	3,775
Extend Taxiway "G"	4,500
Reconstruct RW 4R/22L (Design only)	4,000
Reconstruct Taxiway "Y-11"	1,247
Reconstruct Taxiways "Y-16" and "Y-17"	1,902
Replace Obsolete Airfield Signage	100
Reconstruct RW 4R/22L (Non-Design)	39,053
Runway 3L/21R Planning	700
Environmental Processing for RW 3L/21R Extension	2,667
Runway Surface Monitor System (SCAN) on RW 4L/22R	1,000
West Cargo Taxiway - Phase 1	5,609
Reconstruct Taxiway "Z"	4,523
Reconstruct Balance of Taxiway "W"	25,350
Runway 4L/22R High Speed Taxiways	11,058
Reconstruct Southern Portion of RW 3L/21R	33,000
Runway 21R Extension (1,500') and Land Acquisition	46,743
Reconstruct Taxiway "S5"	2,178
Reconstruct Taxiway "K" - Phase 2	8,504
Reconstruct Taxiway "M"	3,779
Reconstruct Taxiway "M3, M4, M5"	3,063
Runway 9R/27L High Speed Taxiway	3,369
Reconstruct Taxiway "V" - Phase 2	14,688
Reconstruct Taxiway "Z" - Phase 2	1,926
Reconstruct Taxiway "F" - Phase 2	6,954
Reconstruct Taxiway "M" - Phase 2	24,398

Taxiway PP Extension	16,884
Reconstruct Taxiway "S" & "S4"	6,593
Reconstruct Taxiway "PP2"	2,063
Runway 3L Perimeter Taxiways	24,506
West Cargo Taxiway - Phase 2	6,440
Reconstruct Taxiway "H" - Phase 2	3,255
Runway 3L/21R Centralized Deicing Pad Expansion (Phase 1)	20,425
Runway 4R/22L Centralized Deicing Pad Expansion (Phase 1)	34,750
Reconstruct RW 9R/27L & TW "T"	100,000
TERMINAL PROJECTS	
North Terminal Redevelopment	456,100
McNamara Terminal - Phase II	175,000
McNamara Terminal - In-line Explosive Detection	60,000
DANTeC Capital Acquisitions	1,767
DANTeC Start-up Costs	1,412
Digital Info Displays at North Terminal	600
Demolition of Berry Terminal	7,000
Demolition of Smith Terminal and Concourses	7,000
Relocated Executive Terminal	19,723
McNamara Concourses B&C Expansion (10 Gates)	179,792
North Terminal Expansion (5 Gates)	119,856
NOISE MITIGATION PROGRAM	
Residential Sound Insulation Program	82,714
Part 150 Study Update	1,700
Runway Approach Zone Land Acquisition	2,000
Ground Run-up Enclosure	5,000
PARKING PROJECTS	
Automated Parking Revenue Mgmt System	6,779
North Terminal Grd Transp Ctr and Blue Deck Expansion	31,113
South Cell Phone Lot	250
Blue Deck Restoration - Phase 1	4,283
Blue Deck Restoration - Phase 2	933
Blue Deck - Elevators and Walkways	1,200
Replace Blue Deck Signage	500
Replace Revolving Doors at McNamara Grnd Trnsp Ctr	80
McNamara Parking Deck Rehabilitation	4,000
Reconstruct Yellow Lot	1,500
South Public Parking (4,000 Spaces)	23,507
Blue Deck Parking Expansion (4,000 Spaces)	138,054
North Employee Parking (2,500 Spaces)	13,230
North Public Parking (2,500 Spaces)	15,190

ROAD PROJECTS	
Intelligent Transportation System - Phase 1	5,102
Rogell Road Improvements	1,224
Lower Rogell Improvements - South Area	190
Replace Primary Roadway Signage	600
Landscape Enhancement - Phase 5	120
Rehabilitate Airport Service Drives	5,000
Modify Berry Terminal Roadways	825
Roadway Bridge Repairs - Design Only	355
Evaluate South Access Road Exhaust Fans	150
South Access Road N. Tunnel Drainage Repair	150
Rogell Drive-Dingell Drive Connector	3,500
Intelligent Transportation System - Phase 2	3,019
SUPPORT FACILITIES	
Site Development for Public Safety Training Facility	542
Pistol Range at Training Facility	2,500
Relocate County Equipment - Training Facility	1,667
Airport Administration Building	35,000
NT Ground Service Equipment Fuel Rack	1,968
Rehabilitate Triturator #527	750
Relocate Security Badging Office	950
Central Inventory Room in Building 703 & Equipment	90
Vehicle Driving/Training Range	500
Relocate WCAA Offices from Smith Concourses A & B	300
Install Rooftop HVAC Unit - Inventory Room Building 703	18
Explosive Storage Magazine for Public Safety Training Fac.	18
Air Cargo Development - Phase 1	10,000
Consolidated Rental Car Facility	240,000
South Centralized Checkpoint and Culvert Bridge Improvements	5,861
North Centralized Checkpoint	2,364
Rifle Range	900
Building 278 Demolition	375
Building 358 Demolition	3,000
Dirty Snow Storage Area	392
Air Cargo Development - Phase 2	12,000
Perimeter Aircraft Rescue Fire Fighting Station #400	4,837
New Flight Kitchen	25,000
Fuel Farm Expansion	3,988
Airline Freight Facilities	6,451
UTILITIES PROJECTS	
De-icing Fluid Force Main to DWSD	12,500
Utility Meter Replacement	200
New Purification System at Powerhouse	447
Electrical Meter Replacement	458

Replace Outfall Structure at Pond 4	1,200
Rebuild Rogell Sanitary Lift Station	250
North Powerhouse - Steam Plant Evaluation	84
Install Chilled Water BTU Metering Equipment	65
Primary Electrical Cable Study and Testing - Phase II	60
New Storm Water Detention Pond	6,177
OTHER PROJECTS	
Airport Layout Plan - 2004 Update	310
Update Master Plan	2,626
Automated Vehicle Identification System	2,000
Extend Satellite TV from McNamara to North Terminal	150
Payroll Time and Attendance Software	633
Bio-Fuel Converter Filtering Equipment and Installation	100
Utility Upgrades for Metro Pointe Development	900
Replace Roofs on 3 Buildings	693
Fuel Management System	325
Develop Pet Boarding Facility	300
Consolidated Rental Car Facility Study & Env Processing	200
ARFF Rapid Intervention Vehicle	140
Demolition Related to Airport Gas Station	125
China Cargo/Logistics Development Feasibility Study	90
Replace Police Body Armor	25
ULTIMATE ALP PROJECTS	
Relocated South Employee Parking	24,892
Airport Transit System and Maintenance Building	734,857
Land Acquisition (5th Parallel Runway)	172,275
Runway 3L-21R Centralized Deicing Pad Expansion (Phase 2)	46,413
North Public Parking Garage/Intermodal Center	220,189
Concessions Distribution Center	6,838
Relocated ARFF Training Facility	3,942
5th Parallel Runway	285,967
Perimeter Taxiway for 5th Parallel Runway	75,151
West Cargo Taxiway (Phase 3)	29,008
Air Cargo Development (Phase 3)	15,000
Airfield Maintenance Complex Satellite	14,445
McNamara Concourses B and C Expansion (20 Gates)	392,943
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500	5,986
North Terminal Expansion (5 Gates)	107,107
Runway 4R-22L Centralized Deicing Pad Expansion (Phase 2)	27,972
Taxiway J Extension	36,153
Taxiway S Extension	12,967
Taxiway U Extension	16,715
Taxiway H Extension	23,315
Grand Total	\$4,666,185

7.3 Funding Strategy

The purpose of the Master Plan is to identify facilities that are beneficial to the users and can be implemented without creating an undue financial burden to the users. To that end, the funding strategy identifies a number of potential funding sources and makes reasonable assumptions as to the level of funding that will be available to the Airport from each source over time.

For context, this section includes a brief overview of the financial structure of the Airport. This is followed by a discussion of the possible sources and uses of funds. Finally, a funding plan for the Master Plan Capital Improvement Program is presented.

7.3.1 Financial Structure

The financial structure of the WCAA is governed primarily by the Master Bond Ordinance, Bond Series Ordinances, and by the Airline Use and Lease Agreements. The Ordinances provides conditions for the issuance of bonds and the subsequent treatment of revenues and expenses related to those bonds. The Airline Agreements dictate the treatment of revenues and expenses related to the administration, operation and maintenance (O&M) of the Airport as well as conditions for the issuance of debt for capital projects.

Airport revenues typically refer to:

- Charges, fees, rentals, and rates charged for services, facilities, or commodities furnished by the Airport
- Terminal concessions, rentals, auto parking fees, or service charges
- Airplane landing fees;
- Charges and rentals from other facilities and services; and
- Investment earnings or general revenues derived from the operation of the Airport

Airport expenses typically refer to

- O&M expenses and reserves
- Debt service and debt service coverage for outstanding bonds

WCAA, through the Master Bond Ordinance agrees to charge and collect rates, charges and rental fees for the use and operation of the Airport as may be necessary and appropriate in order to pay all O&M expenses, O&M Reserves, debt service, and debt service reserves and coverage.

7.3.1.1 Existing Airline Agreements¹

The Airline Agreements establish ratemaking procedures for the term of the agreements. Airline rates and charges are made up of two principal components, terminal rental and aircraft landing fees. Following the airlines Beneficial Occupancy of the North Terminal, McNamara Terminal Rental Rates and North Terminal Rental Rates will be calculated separately. The Signatory Airlines guarantee they will pay the net cost of operating the Airport, including operating expenses and all debt service requirements. If the WCAA incurs a deficit in any particular year, it has the ability to increase landing fees to the Signatory Airlines up to the amount of the deficit. If the WCAA realizes a surplus, they must refund the surplus to the Signatory Airlines.

Generally, the Airport cannot issue bonds to finance the cost of capital projects and include bond debt service and coverage requirements in Signatory Airline fees unless they have received a Weighted Majority approval. Weighted Majority is defined as either (1) Signatory Airlines which, in the aggregate, landed 85 percent or more of the landed weight of all Signatory Airlines for the proceeding 12-month periods for which records are available, or (2) all but one Signatory Airlines regardless of landed weight.

7.3.2 Funding Sources and Eligibility

In developing a funding strategy for implementing the Master Plan Capital Improvement Program, an important step is the consideration of the various funding sources available. Several traditional funding sources for airport capital development are discussed below.

7.3.2.1 Federal Grants/Airport Improvement Program (AIP)

Certain airport capital projects are eligible for FAA funding through the FAA's Airport Improvement Program (AIP). The previous FAA AIP authorization bill is titled "The Century of Aviation Reauthorization Act – Vision 100" and was signed by President Bush on December 13, 2003. For purposes of this analysis, it was assumed that the federal government will continue to participate in funding airport capital projects throughout the 20 year planning horizon based on levels similar to the previous authorization bill. However, alternative funding scenarios, including elimination of AIP funding for DTW, are also possible and should be evaluated if funding parameters change over time.

AIP Entitlement funds for primary airports (those with at least 10,000 passengers per year) are calculated based upon the number of passenger boardings at the airport. If full funding is made available for AIP obligation, the minimum amount of entitlement money available to a primary airport is \$650,000, and the maximum is \$22,000,000, in accordance with Title 49 U.S.C., Section 47114(c)(1)(B). These funds are calculated as follows:

- \$7.80 for each of the first 50,000 passenger boardings
- \$5.20 for each of the next 50,000 passenger boardings

¹ Wayne County Airport Authority, 2007

- \$2.60 for each of the next 400,000 passenger boardings
- \$0.65 for each of the next 500,000 passenger boardings
- \$0.50 for each passenger boarding in excess of 1 million

It is important to note that in any fiscal year in which the annual appropriation exceeds \$3.2 billion, the amount of entitlement money apportioned to an airport is increased by doubling the amount that would otherwise be apportioned under the formula. Under this set of circumstances (which has occurred each of the last several years), the minimum AIP entitlement funding level is increased to \$1,000,000 rather than \$650,000, and the maximum is increased to \$26,000,000 rather than the \$22,000,000.

Application of the current formula to forecast enplanement levels at DTW results in total FAA AIP entitlement funding over the 20 year planning horizon of around \$119M. It is important to note that there are a number of proposals being considered by the federal government that would alter the allocation of AIP entitlement funds, particularly for large hub airports like DTW. The WCAA will monitor legislative changes and adjust projections as appropriate.

In addition to the entitlement funds, the FAA also provides discretionary AIP grants to airports. Because of the unique nature of discretionary grants, they are more difficult to project. Based on the projected need, the importance of DTW to the national airspace system, and the number of projects that are high priority capacity projects, it is reasonable to assume an average annual amount of around \$20M-\$25M in FAA discretionary funding will be provided to DTW.

As a general rule, only those projects that are non-revenue producing, such as runways, taxiways, apron, air traffic control facilities and navigational aids, roads, and maintenance and rescue facilities and equipment are eligible for AIP funding. For large hub airports like DTW, AIP funds may be used to pay for up to 75 percent of the total project cost for eligible projects. For large hub airports with substantial capital programs like DTW, it is unreasonable to expect full AIP funding for all projects that are eligible. However, for planning purposes it is important to understand what projects are eligible for AIP funding, if available.

7.3.2.2 Passenger Facility Charges

The Aviation Safety and Capacity Enhancement Expansion Act of 1990 authorized the Secretary of Transportation to grant airports the authority to impose a Passenger Facility Charge (PFC) to fund eligible airport projects. Initially, the maximum PFC level was set at \$3.00 for each enplaned passenger. On April 5, 2000, with the enactment of the *Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR21)*, the maximum PFC level was raised to \$4.50. Detroit Metro Airport currently collects a PFC of \$4.50 for each enplaned passenger. DTW has already pledged PFC revenue to pay the debt service on several ongoing and completed projects. Assuming 91% of the enplanements at Detroit Metro are eligible for PFC collection, and the maximum PFC level remains at \$4.50, the Airport could collect \$1.9B of PFC revenue over the 20 year planning horizon. \$2.1B of PFC revenue is already committed to pay for ongoing and completed capital projects, leaving

a shortfall of approximately \$200M at the current PFC level of \$4.50. Any shortfall in PFC funding must be made up from other eligible funding sources.

An alternative scenario is an increase in the PFC to \$6.00 or more. Any increase in the PFC above \$4.50 will likely require forfeiture of any future AIP entitlement grants. Even so, an increase in the PFC to \$6.00 would net over \$600M of additional funds for eligible capital development.

Revenues from Passenger Facility Charges (PFC) are earmarked for projects that enhance and/or preserve the safety, capacity, security, and competitiveness of airports within the national air transportation system. Additionally, PFC revenues may be used to mitigate adverse noise effects of airport operations. As a general rule, eligible projects that can be funded with PFC revenues include any Airport Improvement Program (AIP) eligible development or planning project, noise compatibility projects, gates and related areas for movement of passengers and baggage, access projects on airport property, and construction, repair or improvement of areas used for the operation of aircraft or projects that deal with compliance under the Americans with Disabilities Act, the Clean Air Act, or the federal Water Pollution Control Act.

7.3.3 Customer Facility Charges

A Customer Facility Charge (CFC) is similar to a PFC, except it is imposed on rental car customers instead of airline passengers. CFC's are used to fund rental car related projects. CFC's can be structured as a transaction fee (per rental car transaction) or as a daily charge (per rental day). The amount of the fee varies from airport to airport, but is usually in the range of \$3.00 to \$4.50 per transaction day or \$10.00 to \$12.00 per transaction.

There are two advantages to using special facility bonds backed by a CFC as the funding source. First, special facility bonds are not issued on parity with other airport obligations and are not secured by any airport revenues or property or any RAC revenues or property. The bondholder's only claim is on the CFC revenues. Consequently, special facility bonds have no impact on the Airport's debt capacity. Second, the bond rating is based on the strength of the rental car market and not the financial strength of the individual rental car companies. Given their heavy debt load and thin margins, rental car companies can be considered a risk. The rental car market, on the other hand, is typically considered to be strong. Consequently, the bond market has viewed CFC backed special facility bonds favorably.

Detroit Metro Airport does not currently collect a CFC. However, assuming 95% of the projected rental car customers at Detroit Metro were eligible for CFC collection, and the maximum CFC level was set at \$12.00 per transaction, the Airport could collect around \$240M in CFC revenue over the 20 year planning horizon.

CFC's may be used to pay any and all costs associated with a rental car project including design, engineering, consulting, financing, construction costs and debt service. Airports also have the discretion to use CFC's to pay transportation costs and operation and maintenance expenses.

7.3.4 State Grants

The State of Michigan Department of Transportation Bureau of Aeronautics provides grants to support the commercial service and general aviation airports in the State of Michigan. Detroit Metro Airport

does not typically receive State funding for capital development. As such, no state funding has been assumed in this funding plan.

7.3.5 Third Party Investment

Additional sources of revenue for capital development include third party financing. One example of third party financing that has occurred at other airports around the country is for a developer to finance a capital project, especially those projects with strong positive cash flow. Third party financing typically involves a long-term ground lease from the airport after which the facility ownership reverts to the airport. This type of financing can be attractive because it enables the airport to preserve capital for higher priority projects. Projects that are suited for third party financing include general aviation and corporate hangar development and cargo development when a tenant or tenants has already been identified.

7.3.6 General Airport Revenue Bonds (GARBS)

Any cost not covered by one or more of the other funding sources are expected to be funded through General Airport Revenue Bonds (GARBS) that are backed by the revenues from the airlines. These funds are collected by the airport in the form of landing fees and terminal rental rates. Typically, before GARBS can be issued for a capital project, a majority-in-interest of the airlines must approve the project. The total amount of GARBS required to fund the Preferred Development Plan will depend on the level of AIP funding and PFC and CFC levels.

7.3.7 Other Potential Funding Sources

Other potential funding sources include other federal agencies such as the Federal Highway Administration or the Department of Homeland Security. Occasionally, airport projects, such as roadway improvements or security screening facilities, are eligible for funding from other federal agencies. Other potential funding sources may also include airlines and other airport tenants who may fund on-airports projects such as flight kitchens, cargo facilities, fuel farms, or concession distribution facilities, etc. through special facility or other financing mechanisms.

7.3.8 Funding Plan

The Master Plan Capital Improvement Program was developed to meet the goals of the Wayne County Airport Authority. This funding plan is intended to provide an understanding of the various funding sources available and the likely contributions from each source over the planning horizon. **Table 7.3-1** provides a summary of the sources and uses of funds for the Master Plan Capital Improvement Program. A detailed allocation of the sources and uses of funds is provided in **Table 7.3-2**. It should be noted that this funding plan assumes the PFC is increased from \$4.50 to \$6.00 in 2011. A spending projection by year is provided in **Table 7.3-3**.

Table 7.3-1: Sources and Uses of funds Summary

Anticipated Costs (x000):		
Airport 5-Year CIP	\$	1,357,106
Master Plan Preferred Development Plan	\$	3,309,079
Total	\$	4,666,185
Anticipated Funding Plan:		
AIP Grants	\$	528,699
Passenger Facility Charge 1/	\$	423,198
Customer Facility Charge	\$	240,000
3rd Party Funding	\$	119,865
GARB Requirement	\$	3,024,860
Other Funding	\$	329,562
Total	\$	4,666,185

Source: Jacobsen/Daniels Associates

1/ Net of current PFC obligations; Assumes \$6.00 PFC in 2011

The financial feasibility of the Master Plan Capital Improvement Program will ultimately be determined when the demand, operational and environmental benefits, and/or customer service levels warrant the Airport to request FAA and airline funding approval for capital projects.

Table 7.3-2: Master Plan Capital Improvement Program Sources and Uses of Funds

PROJECT DESCRIPTION	PROJECT COST ESTIMATE (x000)	FUNDING SOURCES										
		EXISTING SOURCES						FUTURE SOURCES				
		BONDS	AIP GRANT	PFC	ADF	R & R	OTHER	BONDS	AIP GRANT	PFC	CFC	3rd Party
AIRFIELD IMPROVEMENTS												
Reconstruct RW 3R/21L, RSA, & South End of Taxiway "W"	46,750	12,773	33,977									
Apron Reconstruction East of Taxiway "K"	10,300	10,300										
Reconstruct Taxiway "K" - Phase 1	8,709	6,101	1,000						1,608			
Grade and Pave Taxiway K Islands	350	350										
Retrofit Taxiway Lighting	373							373				
Airfield Lighting Control and Monitoring System	2,609							2,609				
Reconstruct RW 9L/27R (Design only)	3,000	793							2,207			
Reconstruct RW 9L/27R (Non-Design)	29,266								7,316	21,950		
Reconstruct Taxiway "V"	10,285	6,373								3,912		
Reconstruct Taxiway "H"	2,621	1,624								997		
Reconstruct Taxiway "F"	3,775	2,339								1,436		
Extend Taxiway "G"	4,500								1,125	3,375		
Reconstruct RW 4R/22L (Design only)	4,000	2,478								1,522		
Reconstruct Taxiway "Y-11"	1,247	773								474		
Reconstruct Taxiways "Y-16" and "Y-17"	1,902								475	1,427		
Replace Obsolete Airfield Signage	100					100						
Reconstruct RW 4R/22L (Non-Design)	39,053								9,763	29,290		
Runway 3L/21R Planning	700	700										
Environmental Processing for RW 3L/21R Extension	2,667								667	2,000		
Runway Surface Monitor System (SCAN) on RW 4L/22R	1,000			1,000								
West Cargo Taxiway - Phase 1	5,609											5,609
Reconstruct Taxiway "Z"	4,523								1,131	3,392		
Reconstruct Balance of Taxiway "W"	25,350								6,337	19,013		
Runway 4L/22R High Speed Taxiways	11,058								11,058			
Reconstruct Southern Portion of RW 3L/21R	33,000								8,250	24,750		
Runway 21R Extension (1,500') and Land Acquisition	46,743								35,057	11,686		
Reconstruct Taxiway "S5"	2,178								544	1,634		
Reconstruct Taxiway "K" - Phase 2	8,504								2,126	6,378		
Reconstruct Taxiway "M"	3,779								945	2,834		
Reconstruct Taxiway "M3, M4, M5"	3,063								766	2,297		
Runway 9R/27L High Speed Taxiway	3,369								3,369			
Reconstruct Taxiway "V" - Phase 2	14,688								3,672	11,016		
Reconstruct Taxiway "Z" - Phase 2	1,926								481	1,445		
Reconstruct Taxiway "F" - Phase 2	6,954								1,738	5,216		
Reconstruct Taxiway "M" - Phase 2	24,398								6,099	18,299		
Taxiway PP Extension	16,884								12,663	4,221		
Reconstruct Taxiway "S" & "S4"	6,593								1,648	4,945		
Reconstruct Taxiway "PP2"	2,063								516	1,547		
Runway 3L Perimeter Taxiways	24,506								18,380	6,126		
West Cargo Taxiway - Phase 2	6,440											6,440
Reconstruct Taxiway "H" - Phase 2	3,255								814	2,441		
Runway 3L/21R Centralized Deicing Pad Expansion (Phase 1)	20,425								15,319	5,106		
Runway 4R/22L Centralized Deicing Pad Expansion (Phase 1)	34,750								26,062	8,688		
Reconstruct RW 9R/27L & TW "T"	100,000								25,000	75,000		
TERMINAL PROJECTS												
North Terminal Redevelopment	456,100	448,317	5,100	2,683								
McNamara Terminal - Phase II	175,000	175,000										
McNamara Terminal - In-line Explosive Detection	60,000	39,000							21,000			
DANTEC Capital Acquisitions	1,767								1,767			
DANTEC Start-up Costs	1,412								1,412			
Digital Info Displays at North Terminal	600				600							
Demolition of Berry Terminal	7,000								1,750	5,250		
Demolition of Smith Terminal and Concourses	7,000								1,750	5,250		
Relocated Executive Terminal	19,723											19,723
McNamara Concourses B&C Expansion (10 Gates)	179,792								179,792			
North Terminal Expansion (5 Gates)	119,856								119,856			
NOISE MITIGATION PROGRAM												
Residential Sound Insulation Program	82,714	27,924	54,790									
Part 150 Study Update	1,700	386	1,314									
Runway Approach Zone Land Acquisition	2,000					2,000						
Ground Run-up Enclosure	5,000					1,000				4,000		
PARKING PROJECTS												
Automated Parking Revenue Mgmt System	6,779	5,100				1,679						
North Terminal Grd Transp Ctr and Blue Deck Expansion	31,113	24,500				6,613						
South Cell Phone Lot	250					250						
Blue Deck Restoration - Phase 1	4,283	4,283										
Blue Deck Restoration - Phase 2	933	933										
Blue Deck - Elevators and Walkways	1,200					1,200						
Replace Blue Deck Signage	500					500						
Replace Revolving Doors at McNamara Grnd Trnsp Ctr	80						80					
McNamara Parking Deck Rehabilitation	4,000								4,000			
Reconstruct Yellow Lot	1,500	1,500										
South Public Parking (4,000 Spaces)	23,507								23,507			
Blue Deck Parking Expansion (4,000 Spaces)	138,054								138,054			
North Employee Parking (2,500 Spaces)	13,230								13,230			
North Public Parking (2,500 Spaces)	15,190								15,190			
ROAD PROJECTS												
Intelligent Transportation System - Phase 1	5,102			2,160						2,942		
Rogell Road Improvements	1,224	250				974						
Lower Rogell Improvements - South Area	190						190					
Replace Primary Roadway Signage	600	600										
Landscape Enhancement - Phase 5	120					120						
Rehabilitate Airport Service Drives	5,000	5,000										
Modify Berry Terminal Roadways	825	825										
Roadway Bridge Repairs - Design Only	355					355						
Evaluate South Access Road Exhaust Fans	150						150					
South Access Road N. Tunnel Drainage Repair	150						150					
Rogell Drive-Dingell Drive Connector	3,500	1,750										1,750
Intelligent Transportation System - Phase 2	3,019	1,509										1,510
SUPPORT FACILITIES												
Site Development for Public Safety Training Facility	542									542		
Pistol Range at Training Facility	2,500	1,061							1,439			
Relocate County Equipment - Training Facility	1,667	969							698			
Airport Administration Building	35,000	6,000				10,000			19,000			
NT Ground Service Equipment Fuel Rack	1,968						1,968					
Rehabilitate Triturator #527	750	750										
Relocate Security Badging Office	950					950						
Central Inventory Room in Building 703 & Equipment	90					90						
Vehicle Driving/Training Range	500								500			
Relocate WCAA Offices from Smith Concourses A & B	300					300						
Install Rooftop HVAC Unit - Inventory Room Building 703	18					18						
Explosive Storage Magazine for Public Safety Training Fac.	18						18					
Air Cargo Development - Phase 1	10,000											10,000
Consolidated Rental Car Facility	240,000									240,000		
South Centralized Checkpoint and Culvert Bridge Improvements	5,861								2,930			2,931
North Centralized Checkpoint	2,364								1,182			1,182
Rifle Range	900											900
Building 278 Demolition	375	375										
Building 358 Demolition	3,000	3,000										
Dirty Snow Storage Area	392								392			
Air Cargo Development - Phase 2	12,000											12,000
Perimeter Aircraft Rescue Fire Fighting Station #400	4,837								3,628	1,209		
New Flight Kitchen	25,000											25,000
Fuel Farm Expansion	3,988								3,988			
Airline Freight Facilities	6,451								4,838	1,613		

Table 7.3-2: Master Plan Capital Improvement Program Sources and Uses of Funds

PROJECT DESCRIPTION	PROJECT COST ESTIMATE (x000)	FUNDING SOURCES											
		EXISTING SOURCES						FUTURE SOURCES					
		BONDS	AIP GRANT	PFC	ADF	R & R	OTHER	BONDS	AIP GRANT	PFC	CFC	3rd Party	OTHER
UTILITIES PROJECTS													
De-icing Fluid Force Main to DWSD	12,500	1,750	6,750						1,375	2,625			
Utility Meter Replacement	200					200							
New Purification System at Powerhouse	447												
Electrical Meter Replacement	458								458				
Replace Outfall Structure at Pond 4	1,200	1,200											
Rebuild Rogell Sanitary Lift Station	250					250							
North Powerhouse - Steam Plant Evaluation	84				84								
Install Chilled Water BTU Metering Equipment	65					65							
Primary Electrical Cable Study and Testing - Phase II	60					60							
New Storm Water Detention Pond	6,177							5,256	921				
OTHER PROJECTS													
Airport Layout Plan - 2004 Update	310					310							
Update Master Plan	2,626	438	1,313			875							
Automated Vehicle Identification System	2,000	1,000											1,000
Extend Satellite TV from McNamara to North Terminal	150					150							
Payroll Time and Attendance Software	633					633							
Bio-Fuel Converter Filtering Equipment and Installation	100					100							
Utility Upgrades for Metro Pointe Development	900					900							
Replace Roofs on 3 Buildings	693					693							
Fuel Management System	325					325							
Develop Pet Boarding Facility	300					300							
Consolidated Rental Car Facility Study & Env Processing	200					200							
ARFF Rapid Intervention Vehicle	140						140						
Demolition Related to Airport Gas Station	125						125						
China Cargo/Logistics Development Feasibility Study	90						90						
Replace Police Body Armor	25						25						
ULTIMATE ALP PROJECTS													
Relocated South Employee Parking	24,892							24,892					
Airport Transit System and Maintenance Building	782,268							262,268		300,000			220,000
Land Acquisition (5th Parallel Runway)	175,774							87,887	43,944	43,944			
Runway 3L-21R Centralized Deicing Pad Expansion (Phase 2)	46,413							46,413					
North Public Parking Garage/Intermodal Center	220,189							198,170				22,019	
Concessions Distribution Center	6,838											6,838	
Relocated ARFF Training Facility	3,942							3,942					
5th Parallel Runway	293,648							146,824	73,412	73,412			
Perimeter Taxiway for 5th Parallel Runway	77,298							77,298					
West Cargo Taxiway (Phase 3)	29,008											29,008	
Air Cargo Development (Phase 3)	15,000											15,000	
Airfield Maintenance Complex Satellite	14,445							14,445					
McNamara Concourses B and C Expansion (20 Gates)	392,943							392,943					
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500	5,986							5,986					
North Terminal Expansion (5 Gates)	107,107							107,107					
Runway 4R-22L Centralized Deicing Pad Expansion (Phase 2)	27,972							27,972					
Taxiway J Extension	36,153							36,153					
Taxiway S Extension	12,967							12,967					
Taxiway U Extension	16,715							16,715					
Taxiway H Extension	23,315							23,315					
GRAND TOTAL	\$ 4,666,185	\$ 798,024	\$ 104,244	\$ 5,843	\$ 31,434	\$ 3,396	\$ 33,687	\$ 2,226,836	\$ 424,455	\$ 417,355	\$ 240,000	\$ 119,865	\$ 261,045

Table 7.3-3: Master Plan Capital Improvement Program Spending Projection

PROJECT DESCRIPTION	PROJECT COST ESTIMATE (x000)	SPENDING PROJECTION																		
		ESTIMATED SPENT THROUGH 8/09	FY 2009	FY 2010	FY 2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
		AIRFIELD IMPROVEMENTS																		
Reconstruct RW 3R/21L, RSA, & South End of Taxiway "W"	46,750	44,782	1,968																	
Apron Reconstruction East of Taxiway "K"	10,300	9,000	1,300																	
Reconstruct Taxiway "K" - Phase 1	8,709	7,200	1,509																	
Grade and Pave Taxiway K Islands	350	325	25																	
Retrofit Taxiway Lighting	373	233	140																	
Airfield Lighting Control and Monitoring System	2,609	1,355	1,254																	
Reconstruct RW 9L/27R (Design only)	3,000	-	3,000																	
Reconstruct RW 9L/27R (Non-Design)	29,266	-	15,000	14,266																
Reconstruct Taxiway "V"	10,285	-	8,000	2,285																
Reconstruct Taxiway "H"	2,621	-	2,100	521																
Reconstruct Taxiway "F"	3,775	-	1,900	1,875																
Extend Taxiway "G"	4,500	-	3,000	1,500																
Reconstruct RW 4R/22L (Design only)	4,000	-	1,333	2,667																
Reconstruct Taxiway "Y-11"	1,247	-	150	1,097																
Reconstruct Taxiways "Y-16" and "Y-17"	1,902	-	250	1,652																
Replace Obsolete Airfield Signage	100	-	100																	
Reconstruct RW 4R/22L (Non-Design)	39,053	-	-	7,000	20,000	12,053														
Runway 3L/21R Planning	700	-	-	200	500															
Environmental Processing for RW 3L/21R Extension	2,667	-	-	1,000	1,667															
Runway Surface Monitor System (SCAN) on RW 4L/22R	1,000	-	-	900	100															
West Cargo Taxiway - Phase 1	5,609	-	-	5,609																
Reconstruct Taxiway "Z"	4,523	-	-	2,000	2,523															
Reconstruct Balance of Taxiway "W"	25,350	-	-	-	750	12,000	12,600													
Runway 4L/22R High Speed Taxiways	11,058	-	-	-	1,000	10,058														
Reconstruct Southern Portion of RW 3L/21R	33,000	-	-	-	2,000	26,000	5,000													
Runway 21R Extension (1,500') and Land Acquisition	46,743	-	-	-	-	15,581	15,581	15,581												
Reconstruct Taxiway "S5"	2,178	-	-	-	-	478	1,700													
Reconstruct Taxiway "K" - Phase 2	8,504	-	-	-	-	680	7,824													
Reconstruct Taxiway "M"	3,779	-	-	-	-	302	3,477													
Reconstruct Taxiway "M3, M4, M5"	3,063	-	-	-	-	563	2,500													
Runway 9R/27L High Speed Taxiway	3,369	-	-	-	-	800	2,569													
Reconstruct Taxiway "V" - Phase 2	14,688	-	-	-	-	-	2,200	12,488												
Reconstruct Taxiway "Z" - Phase 2	1,926	-	-	-	-	-	425	1,501												
Reconstruct Taxiway "F" - Phase 2	6,954	-	-	-	-	-	1,254	5,700												
Reconstruct Taxiway "M" - Phase 2	24,398	-	-	-	-	-	5,314	19,084												
Taxiway PP Extension	16,884	-	-	-	-	-	900	15,984												
Reconstruct Taxiway "S" & "S4"	6,593	-	-	-	-	-	-	659	5,934											
Reconstruct Taxiway "PP2"	2,063	-	-	-	-	-	-	206	1,857											
Runway 3L Perimeter Taxiways	24,506	-	-	-	-	-	-	2,451	22,055											
West Cargo Taxiway - Phase 2	6,440	-	-	-	-	-	-	644	5,796											
Reconstruct Taxiway "H" - Phase 2	3,255	-	-	-	-	-	-	326	2,930											
Runway 3L/21R Centralized Deicing Pad Expansion (Phase 1)	20,425	-	-	-	-	-	-	2,043	18,383											
Runway 4R/22L Centralized Deicing Pad Expansion (Phase 1)	34,750	-	-	-	-	-	-	3,475	31,275											
Reconstruct RW 9R/27L & TW "T"	100,000	-	-	-	-	-	-	10,000	90,000											
TERMINAL PROJECTS																				
North Terminal Redevelopment	456,100	400,615	54,885	600																
McNamara Terminal - Phase II	175,000	173,235	1,273	492																
McNamara Terminal - In-line Explosive Detection	60,000	49,520	7,490	2,990																
DANTeC Capital Acquisitions	1,767	1,267	500																	
DANTeC Start-up Costs	1,412	995	417																	
Digital Info Displays at North Terminal	600	100	500																	
Demolition of Berry Terminal	7,000	-	250	6,750																
Demolition of Smith Terminal and Concourses	7,000	-	-	1,000	4,000	2,000														
Relocated Executive Terminal	19,723	-	-	-	-	986	18,737													
McNamara Concourses B&C Expansion (10 Gates)	179,792	-	-	-	-	-	-	17,979	161,813											
North Terminal Expansion (5 Gates)	119,856	-	-	-	-	-	-	11,986	107,870											
NOISE MITIGATION PROGRAM																				
Residential Sound Insulation Program	82,714	82,638	76																	
Part 150 Study Update	1,700	1,632	68																	
Runway Approach Zone Land Acquisition	2,000	472	1,528																	
Ground Run-up Enclosure	5,000	-	800	4,200																

Table 7.3-3: Master Plan Capital Improvement Program Spending Projection

PROJECT DESCRIPTION	PROJECT COST ESTIMATE (x000)	SPENDING PROJECTION																		
		ESTIMATED SPENT THROUGH 8/09	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
PARKING PROJECTS																				
Automated Parking Revenue Mgmt System	6,779	5,084	1,695																	
North Terminal Grd Transp Ctr and Blue Deck Expansion	31,113	24,028	7,085																	
South Cell Phone Lot	250	210	40																	
Blue Deck Restoration - Phase 1	4,283	3,536	747																	
Blue Deck Restoration - Phase 2	933	105	828																	
Blue Deck - Elevators and Walkways	1,200	800	400																	
Replace Blue Deck Signage	500	-	500																	
Replace Revolving Doors at McNamara Grnd Trnsp Ctr	80	-	80																	
McNamara Parking Deck Rehabilitation	4,000	-	2,000	2,000																
Reconstruct Yellow Lot	1,500	-	100	1,400																
South Public Parking (4,000 Spaces)	23,507	-	-	-	2,351	21,156	-	-												
Blue Deck Parking Expansion (4,000 Spaces)	138,054	-	-	-	-	20,708	45,558	71,788												
North Employee Parking (2,500 Spaces)	13,230	-	-	-	-	-	-	1,323	11,907											
North Public Parking (2,500 Spaces)	15,190	-	-	-	-	-	-	1,519	13,671											
ROAD PROJECTS																				
Intelligent Transportation System - Phase 1	5,102	537	3,600	965																
Rogell Road Improvements	1,224	1,206	18																	
Lower Rogell Improvements - South Area	190	100	90																	
Replace Primary Roadway Signage	600	450	150																	
Landscape Enhancement - Phase 5	120	96	24																	
Rehabilitate Airport Service Drives	5,000	-	500	2,000	2,500															
Modify Berry Terminal Roadways	825	-	210	615																
Roadway Bridge Repairs - Design Only	355	-	355																	
Evaluate South Access Road Exhaust Fans	150	-	150																	
South Access Road N. Tunnel Drainage Repair	150	-	150																	
Rogell Drive-Dingell Drive Connector	3,500	-	-	-	500	3,000														
Intelligent Transportation System - Phase 2	3,019	-	-	-	-	-	3,019													
SUPPORT FACILITIES																				
Site Development for Public Safety Training Facility	542	400	142																	
Pistol Range at Training Facility	2,500	2,000	500																	
Relocate County Equipment - Training Facility	1,667	1,000	667																	
Airport Administration Building	35,000	200	2,000	17,000	15,800															
NT Ground Service Equipment Fuel Rack	1,968	1,000	968																	
Rehabilitate Triturator #527	750	500	250																	
Relocate Security Badging Office	950	50	900																	
Central Inventory Room in Building 703 & Equipment	90	80	10																	
Vehicle Driving/Training Range	500	-	500																	
Relocate WCAA Offices from Smith Concourses A & B	300	-	300																	
Install Rooftop HVAC Unit - Inventory Room Building 703	18	-	18																	
Explosive Storage Magazine for Public Safety Training Fac.	18	-	18																	
Air Cargo Development - Phase 1	10,000	-	-	10,000																
Consolidated Rental Car Facility	240,000	-	-	4,800	79,200	79,200	76,800	-												
South Centralized Checkpoint and Culvert Bridge Improvements	5,861	-	-	5,861	-	-	-	-												
North Centralized Checkpoint	2,364	-	-	2,364	-	-	-	-												
Rifle Range	900	-	-	500	400															
Building 278 Demolition	375	-	-	375																
Building 358 Demolition	3,000	-	-	200	2,800															
Dirty Snow Storage Area	392	-	-	-	392	-	-	-												
Air Cargo Development - Phase 2	12,000	-	-	-	-	-	2,040	9,960												
Perimeter Aircraft Rescue Fire Fighting Station #400	4,837	-	-	-	-	-	4,837	-												
New Flight Kitchen	25,000	-	-	-	-	-	-	2,500	22,500											
Fuel Farm Expansion	3,988	-	-	-	-	-	-	399	3,589											
Airline Freight Facilities	6,451	-	-	-	-	-	-	645	5,806											
UTILITIES PROJECTS																				
De-icing Fluid Force Main to DWSD	12,500	2,800	6,300	3,400																
Utility Meter Replacement	200	67	133																	
New Purification System at Powerhouse	447	113	334																	
Electrical Meter Replacement	458	258	200																	
Replace Outfall Structure at Pond 4	1,200	-	200	1,000																

Table 7.3-3: Master Plan Capital Improvement Program Spending Projection

PROJECT DESCRIPTION	PROJECT COST ESTIMATE (x000)	SPENDING PROJECTION																		
		ESTIMATED SPENT THROUGH 8/09	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
		Rebuild Rogell Sanitary Lift Station	250	-	250															
North Powerhouse - Steam Plant Evaluation	84	-	84																	
Install Chilled Water BTU Metering Equipment	65	-	65																	
Primary Electrical Cable Study and Testing - Phase II	60	-	60																	
New Storm Water Detention Pond	6,177	-	-	6,177																
OTHER PROJECTS																				
Airport Layout Plan - 2004 Update	310	306	4																	
Update Master Plan	2,626	2,576	50																	
Automated Vehicle Identification System	2,000	-	1,500	500																
Extend Satellite TV from McNamara to North Terminal	150	125	25																	
Payroll Time and Attendance Software	633	190	443																	
Bio-Fuel Converter Filtering Equipment and Installation	100	90	10																	
Utility Upgrades for Metro Pointe Development	900	-	900																	
Replace Roofs on 3 Buildings	693	-	693																	
Fuel Management System	325	-	325																	
Develop Pet Boarding Facility	300	-	300																	
Consolidated Rental Car Facility Study & Env Processing	200	-	100	100																
ARFF Rapid Intervention Vehicle	140	-	140																	
Demolition Related to Airport Gas Station	125	-	125																	
China Cargo/Logistics Development Feasibility Study	90	-	90																	
Replace Police Body Armor	25	-	25																	
ULTIMATE ALP PROJECTS																				
Relocated South Employee Parking	24,892	-									2,489	22,403								
Airport Transit System and Maintenance Building	782,268	-					39,113	39,113	234,680	234,680	234,680									
Land Acquisition (5th Parallel Runway)	175,774	-						17,577	79,098	79,098										
Runway 3L-21R Centralized Deicing Pad Expansion (Phase 2)	46,413	-										4,641	41,772							
North Public Parking Garage/Intermodal Center	220,189	-									11,009	11,009	66,057	66,057	66,057					
Concessions Distribution Center	6,838	-										684	6,154							
Relocated ARFF Training Facility	3,942	-									394	3,548								
5th Parallel Runway	293,648	-								14,682	14,682	88,094	88,094	88,094						
Perimeter Taxiway for 5th Parallel Runway	77,298	-								7,730	23,189	23,189	23,189							
West Cargo Taxiway (Phase 3)	29,008	-										2,901	26,107							
Air Cargo Development (Phase 3)	15,000	-										1,500	13,500							
Airfield Maintenance Complex Satellite	14,445	-									1,444	13,000								
McNamara Concourses B and C Expansion (20 Gates)	392,943	-										39,294	176,824	176,824						
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500	5,986	-								599	5,387									
North Terminal Expansion (5 Gates)	107,107	-										10,711	48,198	48,198						
Runway 4R-22L Centralized Deicing Pad Expansion (Phase 2)	27,972	-										2,797	25,175							
Taxiway J Extension	36,153	-											3,615	32,538						
Taxiway S Extension	12,967	-												1,297	11,671					
Taxiway U Extension	16,715	-													1,671	15,043				
Taxiway H Extension	23,315	-														2,332	20,984			
GRAND TOTAL	\$ 4,666,185	\$ 821,276	\$ 146,167	\$ 117,861	\$ 136,483	\$ 205,565	\$ 212,335	\$ 233,809	\$ 453,725	\$ 435,674	\$ 339,279	\$ 313,190	\$ 201,369	\$ 515,070	\$ 382,789	\$ 99,891	\$ 13,342	\$ 17,375	\$ 20,984	\$ -