

TABLE OF CONTENTS

Section	Page
Preface.....	I
1 Master Plan Vision, Goals and Objectives.....	1-1
WCAA Long-Term Strategic Framework.....	1-1
Master Plan Vision, Goals and Objectives.....	1-1
Master Plan Vision.....	1-1
Master Plan Goals.....	1-2
Master Plan Objectives.....	1-2
2 Inventory of Existing Conditions.....	2-1
Airport Setting.....	2-1
Chronology of Airport History.....	2-1
1930's and 1940's.....	2-2
1950's and 1960's.....	2-2
1970's and 1980's.....	2-4
1990's.....	2-5
Current.....	2-6
Airport Location.....	2-8
Land Use.....	2-9
Airport Ownership and Management.....	2-10
Physical Image.....	2-11
Introduction.....	2-11
Airport Entrances and Gateways.....	2-11
Primary and Secondary Corridors.....	2-12
Meteorological Conditions.....	2-14
Wind and Weather Conditions.....	2-14
Airfield Facilities.....	2-16
Runways.....	2-16
Taxiways.....	2-16
Safety Areas.....	2-16
Deicing Facilities.....	2-20
Airspace.....	2-23
Detroit Regional Airspace.....	2-23
DTW Airspace.....	2-25
Air Traffic Control.....	2-28
IFR Operations.....	2-28
Runway Instrumentation.....	2-29
Navigational Aids.....	2-30
Arrival and Departure Procedures.....	2-30

TABLE OF CONTENTS (continued)

Section	Page
2	
Inventory of Existing Conditions (continued)	
Terminal Area	2-31
Edward H. McNamara Terminal.....	2-31
Smith and Berry Terminal	2-31
New North Terminal	2-31
Terminal Apron Area Pavement	2-31
Landside and Ground Access Facilities	2-36
Airport Access and Circulation.....	2-36
Intra-Terminal Circulation	2-36
Rental Car Operations.....	2-36
Ground Transportation.....	2-38
Public Transportation.....	2-38
Public Parking Facilities Inventory.....	2-39
Employee Parking	2-40
Support/Ancillary Facilities	2-42
Air Cargo	2-42
General Aviation	2-42
Fixed Base Operators.....	2-42
Fuel Facilities.....	2-42
Aircraft Rescue and Fire Fighting (ARFF) Facilities	2-48
Flight Kitchen	2-48
United States Postal Service	2-48
Utilities	2-52
Sanitary Sewer Capacity	2-52
Natural Gas	2-53
Water Main	2-53
Telecommunications	2-53
Electrical Systems.....	2-57
Stormwater Detention Ponds and Wastewater Treatment	2-58
Environmental Overview	2-62
Air Quality	2-62
Local Air Quality	2-62
Noise	2-62
Maximum Sound Level (L_{max}).....	2-63
Sound Exposure Level (SEL).....	2-63
Day-Night Average Sound Level (DNL)	2-63
Noise Contours	2-64
Noise Sensitive Areas	2-64
Land Use	2-66
Geology.....	2-68
Site Geology	2-68
Prime and Unique Farmland.....	2-68

TABLE OF CONTENTS (continued)

Section	Page
2	Inventory of Existing Conditions (continued)
Water Resources	2-68
Surface Water	2-69
Coastal Areas	2-69
Wild and Scenic Rivers	2-69
Ground Water	2-69
Storm Water	2-69
Potable Water Supply	2-69
Biological Resources	2-69
Threatened and Endangered Species	2-70
Unique Habitats	2-70
Floodplains	2-70
Wetlands	2-70
Vegetation.....	2-70
Wildlife	2-71
Cultural Resources	2-71
Socioeconomic	2-72
Demographics	2-72
Environmental Justice.....	2-73
Hazardous Materials and Waste.....	2-74
Light Emissions	2-74
Solid Waste	2-74

Section 2 - Figures, Tables, and Exhibits

Figure 1 – 1956 Aerial	2-3
Figure 2 – 1970 Aerial	2-4
Figure 3 – 1991 Aerial	2-5
Figure 4 – 2005 Aerial	2-7
Figure 5 – Southeast Michigan Regional Map.....	2-9
Figure 6 – DTW Welcome Sign.....	2-11
Figure 7 – DTW Signage	2-12
Figure 8 – Detroit Regional Airspace	2-24
Figure 9 – U.S. Airspace Classes	2-25
Figure 10 – DTW Airspace Map.....	2-26
Figure 11 – Instrument Approach	2-27
Table 2.3-1 – Annual Occurrence of Weather Conditions.....	2-14
Table 2.3-2 – Annual Occurrence of Weather Categories – ATCT Weather Categories.....	2-15
Table 2.7-1 – Public Parking Facility Inventory	2-39
Table 2.8-1 – Above Ground Storage Tanks.....	2-43

TABLE OF CONTENTS (continued)

Section	Page
2	Inventory of Existing Conditions (continued)
Section 2 - Figures, Tables, and Exhibits (continued)	
Table 2.8-2 – Underground Storage Tanks	2-43
Table 2.9-1 – Sanitary Sewer Capacity	2-52
Table 2.10-1 – Profile of Demographic Characteristics	2-73
Table 2.10-2 – Population Below Poverty Level	2-73
Exhibit 2.4-1, DTW Airfield Map	2-17
Exhibit 2.4-2, DTW Airfield Pavement	2-18
Exhibit 2.4-3, DTW Runway Safety Areas	2-19
Exhibit 2.4-4, Deicing Pad Facilities	2-22
Exhibit 2.6-1, McNamara Terminal and Apron	2-32
Exhibit 2.6-2, Smith Terminal and Apron	2-33
Exhibit 2.6-3, Berry Terminal and Apron	2-34
Exhibit 2.6-4, Proposed North Terminal Layout	2-35
Exhibit 2.7-1, Rental Car Locations	2-37
Exhibit 2.7-2, On-Airport Parking Locations	2-41
Exhibit 2.8-1, Air Cargo Tenant Locations	2-44
Exhibit 2.8-2, General Aviation Locations	2-45
Exhibit 2.8-3, Fixed Base Operator Locations	2-46
Exhibit 2.8-4, Fuel Farm Facility Locations	2-47
Exhibit 2.8-5, ARFF Facility Locations	2-49
Exhibit 2.8-6, Flight Kitchen Facilities	2-50
Exhibit 2.8-7, Air Mail Facilities	2-51
Exhibit 2.9-1, Sanitary Sewer Lines	2-54
Exhibit 2.9-2, Natural Gas Lines	2-55
Exhibit 2.9-3, Water Main	2-56
Exhibit 2.9-4, Telecommunications	2-59
Exhibit 2.9-5, Electrical Systems	2-60
Exhibit 2.9-6, Stormwater Lines and Ponds	2-61
Exhibit 2.10-1, Existing Noise Contours	2-65
Exhibit 2.10-2, Existing Land Use	2-67
3	Forecast of Aviation Activity.....3-1
Historical Aviation Activity	3-1
Airlines Serving the Airport	3-3
Airport History	3-3
Annual Enplanements (1966-2005)	3-7
DTW and U.S. Total Enplanements	3-8
Domestic and International Enplanements, 1984-2005	3-10

TABLE OF CONTENTS (continued)

Section	Page
3 Forecast of Aviation Activity (continued)	
Domestic Originating and Connecting Enplanements, 1984-2005.....	3-14
Scheduled and Nonscheduled Enplanements, 1984-2005	3-16
Air Carrier and Commuter Enplanements, FY1984-2005.....	3-18
Scheduled Enplanements by Airline, CY 2000, 2004, and 2005.....	3-20
Top 20 Domestic Origin & Destination (O&D) Markets	3-23
Air Cargo	3-25
Aircraft Operations	3-27
Scheduled Commercial Passenger Aircraft Departures	3-31
Scheduled Commercial Passenger Aircraft Departures – Fleet Mix	3-31
Forecast of Aviation Activity.....	3-35
Alternative Forecasts of Aviation Activity	3-35
Terminal Area Forecast	3-35
Multivariate Regression Forecast	3-36
Trendline Forecast	3-38
Market Share Forecast	3-38
February 2006 Terminal Area Forecast	3-39
Forecast Enplanements	3-46
Forecast Air Cargo.....	3-51
Forecast Commercial Aircraft Operations.....	3-52
Forecast General Aviation and Military Operations.....	3-54
Forecast Commercial Aircraft Fleet Mix	3-55
Peak Activity.....	3-59
Forecast Summary.....	3-61
Updated Terminal Area Forecast Review	3-62

Section 3 - Figures, Tables, and Exhibits

Table 3.1-1 – Passenger Airlines Serving DTW, CY 2005	3-4
Table 3.1-2 – History of the Airport, Pre-1966.....	3-5
Table 3.1-3 – History of the Airport, 1966-2005	3-6
Table 3.1-4 – Scheduled Enplanements by Airline, CY 2000, CY 2004, and CY 2005	3-21
Table 3.1-5 – Top Twenty O&D Markets from DTW, CY 2005	3-25
Table 3.1-6 – Scheduled Passenger Aircraft Fleet Mix at DTW, CY 1995, 2000, and 2005	3-33
Table 3.2-1 – Alternative Forecasts of Enplanements at DTW	3-40
Table 3.2-2 – Percentage Differences of Alternative Enplanement Forecasts with Respect to the February 2006 TAF.....	3-41
Table 3.2-3 – Alternative Forecasts of Commercial Operations at DTW.....	3-42
Table 3.2-4 – Percentage Differences of Alternative Forecasts of Commercial Operations with Respect to the February 2006 TAF.....	3-43

TABLE OF CONTENTS (continued)

Section	Page
3 Forecast of Aviation Activity (continued)	
Section 3 - Figures, Tables, and Exhibits (continued)	
Table 3.2-5 – Base, Low, and High Forecasts of Aviation Activity at DTW	3-44
Table 3.2-6 – Terminal Area Forecasts for DTW, February 2006.....	3-45
Table 3.2-7 – Forecast Enplanements at DTW by Aircraft Type and Traffic Segment.....	3-46
Table 3.2-8 – Forecast O&D and Connecting Enplanements at DTW by Aircraft Type.....	3-49
Table 3.2-9 – Forecast Air Cargo at DTW.....	3-51
Table 3.2-10 – Forecast Commercial Aircraft Operations at DTW	3-52
Table 3.2-11 – Forecast General Aviation and Military Aircraft Operations	3-54
Table 3.2-12 – Projected Aircraft Retirement.....	3-56
Table 3.2-13 – Forecast Scheduled Passenger Aircraft Operations by Aircraft Type and Fleet Mix at DTW	3-57
Table 3.2-14 – Forecast Charter Aircraft Operations by Aircraft Type and Fleet Mix at DTW.....	3-58
Table 3.2-15 – Forecast Cargo Aircraft Operations by Aircraft Type and Fleet Mix at DTW.....	3-58
Table 3.2-16 – Forecast Commercial Fleet Mix at DTW – Summary by Aircraft Class	3-58
Table 3.2-17 – Forecast Annual and Peak Commercial Aircraft Operations at DTW...	3-61
Table 3.3-1 – Summary of Aviation Activity Forecast for DTW	3-62
Exhibit 3.1-1, The Detroit-Ann Arbor-Flint CMSA	3-2
Exhibit 3.1-2, Annual Enplanements at DTW, CY 1966-2005.....	3-7
Exhibit 3.1-3, Annual Percent Change in Enplanements at DTW and Real U.S. GDP, CY 1967-2005.....	3-8
Exhibit 3.1-4, Annual Growth Rates in Airport and U.S. Total Enplanements, CY 1967-2005.....	3-9
Exhibit 3.1-5, Domestic and International Enplanements at DTW, CY 1984-2005.....	3-11
Exhibit 3.1-6, Annual Growth Rates in Domestic and International Enplanements at DTW, CY 1984-2005.....	3-12
Exhibit 3.1-7, International Traffic as a Percentage of Total Enplanements at DTW and in the United States, CY 1984, 1994, 2004, and 2005	3-13
Exhibit 3.1-8, Average Annual Growth Rate of International Enplanements at DTW and in the United States, CY 1984-1994, CY 1994-2004, and CY 2004-2005	3-13
Exhibit 3.1-9, Domestic Originating and Connecting Enplanements at DTW, CY 1984-2005.....	3-14
Exhibit 3.1-10, Annual Growth Rates in Domestic Originating and Connecting Enplanements at DTW, CY 1985-2005	3-15

TABLE OF CONTENTS (continued)

Section	Page
3 Forecast of Aviation Activity (continued)	
Section 3 - Figures, Tables, and Exhibits (continued)	
Exhibit 3.1-11, Scheduled and Nonscheduled Enplanements at DTW, CY 1984-2005	3-17
Exhibit 3.1-12, Air Carrier and Commuter Enplanements at DTW, FY1984-2005	3-18
Exhibit 3.1-13, Annual Growth Rates in Air Carrier and Commuter Enplanements at DTW, FY 1985-2005	3-19
Exhibit 3.1-14, Airline Market Share – Scheduled Enplanements, CY 2000 and CY 2005	3-22
Exhibit 3.1-15, Share of Domestic Originating Enplanements by Airline, CY 2000 and CY 2005	3-24
Exhibit 3.1-16, Air Cargo at DTW, CY 1986-2005	3-26
Exhibit 3.1-17, Distribution of Enplaned Freight and Express Cargo Between All-Cargo and Belly Carriers, CY 2000 and 2005	3-27
Exhibit 3.1-18, Aircraft Operations at DTW, FY 1984-2005	3-29
Exhibit 3.1-19, General Aviation Operations at DTW and Nearby Reliever Airports, FY 1984-2005	3-30
Exhibit 3.1-20, Scheduled Passenger Aircraft Departures from DTW, CY 1994-2005	3-32
Exhibit 3.1-21, Passenger Aircraft Fleet Mix at DTW, CY 1995 and 2005	3-34
Exhibit 3.2-1, Alternative Forecasts of Enplanements at DTW	3-41
Exhibit 3.2-2, Alternative Forecasts of Commercial Operations at DTW	3-43
Exhibit 3.2-3, Forecast Air Carrier and Commuter Enplanements at DTW	3-47
Exhibit 3.2-4, Forecast Domestic and International Enplanements at DTW	3-48
Exhibit 3.2-5, Forecast O&D and Connecting Enplanements at DTW.....	3-50
Exhibit 3.2-6, Forecast Air Carrier and Commuter Aircraft Operations at DTW.....	3-53
Exhibit 3.2-7, Forecast Passenger and Cargo Aircraft Operations.....	3-54
Exhibit 3.2-8, Monthly Distribution of Scheduled Passenger Aircraft Operations at DTW.....	3-59
Exhibit 3.2-9, PMAD Hourly Distribution of Scheduled Passenger Aircraft Arrivals Departures, and Operations at DTW	3-60
4 Demand/Capacity Analysis and Facility Requirements	4-1
Airfield Facilities	4-2
Airfield Capacity.....	4-2
Wind and Weather Conditions.....	4-8
Aircraft Fleet Mix	4-8
Runway Separations and Operating Configurations.....	4-10
Runway Exits and Taxiways	4-13
Airspace and Traffic Patterns	4-13

TABLE OF CONTENTS (continued)

Section	Page
4 Demand/Capacity Analysis and Facility Requirements (continued)	
New Technology.....	4-13
New Large Aircraft.....	4-13
Airfield Demand	4-14
Rolling 20-Minute Peak-Period Demand Capacity Analysis	4-14
Airfield Demand/Capacity Analysis	4-16
Runway Length.....	4-17
Takeoff Runway Length.....	4-18
Arrival Runway Length.....	4-21
Taxiway and Apron Flow Assessment.....	4-23
Remote Aircraft Deicing Facilities	4-25
Instrumentation and Lighting.....	4-26
Instrumentation and Approach Capability.....	4-26
Lighting.....	4-27
Summary of Airfield Facilities Requirements	4-28
Terminal Area Facilities.....	4-30
Existing Terminal Facilities & Utilization.....	4-30
Airline Operating Strategies	4-31
Airline Market Share	4-31
Existing Aircraft Gates	4-32
Existing Aircraft Gate Utilization.....	4-35
McNamara Terminal	4-35
North Terminal	4-36
Forecast of Aviation Activity Summary	4-37
Future Facility Requirements.....	4-38
Methodology.....	4-38
McNamara Terminal Future Gate Requirements.....	4-38
Annual Enplanements per NBEG.....	4-39
Annual Operations per NBEG.....	4-39
McNamara Gate Requirements Analysis Results.....	4-39
North Terminal Future Gate Requirements	4-40
North Terminal	4-40
Annual Enplanements per NBEG.....	4-40
Peak Month Enplanements per NBEG.....	4-41
Annual Operations per NBEG.....	4-41
Peak Month Average Day Operations per NBEG.....	4-41
North Terminal Gate Requirements Analysis Results.....	4-42
Future Gate Requirement Summary	4-42
Passenger Terminal Building Areas.....	4-43
McNamara Terminal.....	4-43
Terminal Ticketing Positions	4-45
Security Screening Check Point Stations	4-46

TABLE OF CONTENTS (continued)

Section	Page
4 Demand/Capacity Analysis and Facility Requirements (continued)	
Baggage Processing Facilities	4-46
In-Line Baggage Processing.....	4-46
Baggage Claim	4-46
International Federal Inspection Services (FIS) Facilities	4-46
McNamara Terminal Building Area Requirements.....	4-47
North Terminal	4-47
Terminal Ticketing Positions	4-49
Security Screening Check Point Stations	4-49
Baggage Processing.....	4-49
In-Line Baggage Processing.....	4-49
Baggage Claim	4-49
International Federal Inspection Services (FIS) Facilities	4-49
North Terminal Building Area Requirements	4-50
Summary of Terminal Facility Requirements.....	4-50
Surface Transportation Facilities	4-51
Airport Access and Circulation.....	4-51
Access Roadways Existing Conditions	4-51
Access Roadways Future Facility Requirements.....	4-53
Terminal Curbfront Area	4-55
Terminal Curbfront Existing Conditions	4-55
Smith Terminal Curbfront Existing Conditions	4-55
McNamara Terminal Curbfront Existing Conditions.....	4-56
Berry Terminal Curbfront Existing Conditions.....	4-56
Summary of Terminal Curbfront Future Requirements	4-56
Parking Facilities	4-57
On-Airport Parking Facilities Existing Capacity.....	4-57
On-Airport Parking Facilities Future Demand	4-57
Employee Parking Existing Conditions.....	4-57
Employee Parking Future Demand.....	4-58
Rental Car	4-58
Connectivity.....	4-59
Summary of Surface Transportation Facility Requirements.....	4-60
Support Facilities	4-61
Air Cargo Facilities.....	4-63
General Aviation and Corporate Facilities.....	4-65
Air Traffic Control Tower	4-66
Aircraft Rescue and Firefighting (ARFF).....	4-66
Airfield Maintenance/Snow Removal Equipment Facilities	4-67
Snow Storage	4-68
Aircraft Maintenance Facilities.....	4-68
Flight Kitchens.....	4-69

TABLE OF CONTENTS (continued)

Section	Page
4 Demand/Capacity Analysis and Facility Requirements (continued)	
Fuel Storage	4-69
Administration Building	4-71
Public Safety Training Facility	4-71
Ground Run-Up Enclosures	4-71
Employee Security Screening	4-71
Vehicular Security Checkpoints/Guard Posts	4-72
Concessions Distribution Complex.....	4-72
Summary of Support Facility Requirements.....	4-73
Utilities Infrastructure Demand/Capacity Analysis	4-74
Sanitary Sewer Capacity	4-74
Natural Gas	4-74
Water Main	4-74
Telecommunications	4-74
Electrical Systems	4-75
Deicing Facilities/Stormwater	4-75
Summary of Utilities/Infrastructure Requirements.....	4-76
Summary of Facility Requirements.....	4-77

Section 4 - Figures, Tables, and Exhibits

Figure 1 – Average Aircraft Delay vs. Average Demand	4-2
Figure 2 – DTW Rolling 20-Minute Peaks, Arrivals and Departures, 2005 PMAD August 17, 2005	4-15
Figure 3 – IFR Capacity vs. Projected Demand.....	4-17
Table 4.1-1 – Hourly Runway Capacity – ATCT Throughput Rates	4-4
Table 4.1-2 – Annual Occurrence of Weather Categories – ATCT Weather Categories.....	4-8
Table 4.1-3 – Aircraft Fleet Mix by Aircraft Category – Commercial Aircraft Operations	4-9
Table 4.1-4 – Aircraft Classification.....	4-9
Table 4.1-5 – Operations Forecast Summary	4-14
Table 4.1-6 – Hourly Runway Capacity – ATCT Throughput Rates	4-16
Table 4.1-7 – Aircraft Stage Lengths and Representative Markets Served	4-18
Table 4.1-8 – Takeoff Runway Length Requirements	4-19
Table 4.1-9 – Required Runway Length for Departing Aircraft.....	4-20
Table 4.1-10 – Runway Landing Length Requirements	4-21
Table 4.1-11 – Required Runway Length for Arriving Aircraft.....	4-22
Table 4.1-12 – Existing Runways: Length, Use, and Adequacy.....	4-23
Table 4.1-13 – Aircraft Deicing Spray Times.....	4-25
Table 4.1-14 – Deicing Facilities Requirements.....	4-26

TABLE OF CONTENTS (continued)

Section	Page
4 Demand/Capacity Analysis and Facility Requirements (continued)	
Section 4 - Figures, Tables, and Exhibits (continued)	
Table 4.1-15 – DTW Runways and Approach Minimums	4-27
Table 4.1-16 – DTW Approach Light Systems.....	4-28
Table 4.2-1 – DTW Terminal Enplanement Market Share	4-31
Table 4.2-2 – DTW Terminal Operations Market Share.....	4-32
Table 4.2-3 – NBEG Gate Requirements	4-32
Table 4.2-4 – McNamara Terminal Existing Gates 2005	4-33
Table 4.2-5 – North Terminal Existing Gates 2005	4-33
Table 4.2-6 – North Terminal Future – Existing Gates 2008.....	4-33
Table 4.2-7 – McNamara Terminal Activity Levels & Associated Metrics	4-35
Table 4.2-8 – 2005 Comparison Airport Activity Levels	4-36
Table 4.2-9 – North Terminal Activity Levels & Associated Metrics	4-36
Table 4.2-10 – 2005 Comparison Airport Activity Levels	4-37
Table 4.2-11 – Forecast of Aviation Activity Summary	4-37
Table 4.2-12 – McNamara Terminal Annual Enplanements per NBEG Method	4-39
Table 4.2-13 – McNamara Terminal Annual Operations per NBEG Method	4-39
Table 4.2-14 – McNamara Terminal NBEG Gate Requirements Summary	4-40
Table 4.2-15 – North Terminal Annual Enplanements per NBEG Method.....	4-40
Table 4.2-16 – North Terminal Peak Month Enplanements per NBEG	4-41
Table 4.2-17 – North Terminal Annual Operations per NBEG Method.....	4-41
Table 4.2-18 – North Terminal PMAD Operations per NBEG Method	4-42
Table 4.2-19 – North Terminal NBEG Requirements Summary	4-42
Table 4.2-20 – Recommended DTW Future NBEG Requirement	4-43
Table 4.2-21 – McNamara Terminal Activity Level & Associated Metrics.....	4-44
Table 4.2-22 – McNamara Terminal Building Square Foot per Gate Requirements.....	4-44
Table 4.2-23 – McNamara Terminal – Existing and Future Utilization Characteristics	4-45
Table 4.2-24 – North Terminal Activity Levels & Associated Metrics	4-47
Table 4.2-25 – North Terminal Square Foot per Gate Requirements	4-48
Table 4.2-26 – North Terminal Existing and Future Utilization Characteristics	4-48
Table 4.3-1 – Vehicular Average Daily Traffic	4-53
Table 4.3-2 – Vehicular Peak Hour Traffic.....	4-54
Table 4.3-3 – Access Roadway Demand/Capacity Ratios	4-55
Table 4.3-4 – On-Airport Parking Facilities Future Demand	4-57
Table 4.3-5 – Employee Parking Facilities Requirements	4-58
Table 4.4-1 – Cargo Facilities Square Footage	4-64
Table 4.4-2 – Cargo Facility Requirements	4-65
Table 4.4-3 – General Aviation Facilities	4-65
Table 4.4-4 – Airfield Maintenance/Snow Removal Equipment Facilities	4-67
Table 4.4-5 – Aircraft Maintenance Facilities	4-68

TABLE OF CONTENTS (continued)

Section	Page
4 Demand/Capacity Analysis and Facility Requirements (continued)	
Section 4 - Figures, Tables, and Exhibits (continued)	
Table 4.4-6 – Flight Kitchen Requirements	4-69
Table 4.4-7 – Fuel Storage Requirements	4-70
Table 4.5-1 – Sanitary Sewer Capacity	4-74
Exhibit 4.1-1, Existing IFR Capacities.....	4-5
Exhibit 4.1-2, Short-Term IFR Capacities with Planned Improvements of Existing Airfield	4-6
Exhibit 4.1-3, VFR Capacities	4-7
Exhibit 4.1-4, Existing Airfield Configuration	4-12
Exhibit 4.1-5, Taxiway Flow Diagram.....	4-24
Exhibit 4.2-1, Existing Terminals	4-34
Exhibit 4.3-1, Surface Transportation Facilities	4-52
Exhibit 4.4-1, Existing Support Facilities	4-62
5 Alternatives Development and Evaluation	5-1
Airfield Element.....	5-1
Airfield Alternatives Development	5-1
Pre-screening Airfield Alternatives	5-4
Terminal Element.....	5-35
Terminal Alternatives Development	5-35
Pre-screening Terminal Alternatives	5-36
Airfield/Terminal Concepts.....	5-48
Airfield/Terminal Concept Evaluation.....	5-48
Landside Element.....	5-61
Pre-screening Landside Alternatives	5-61
Landside Alternatives Development	5-62
Landside Alternatives Evaluation	5-63
Preferred Airfield/Terminal/Landside Concept	5-70
Preferred Airfield/Terminal/Landside Concept Refinement.....	5-72
Airfield.....	5-72
Runway 3L-21R Extension	5-72
Taxiways	5-72
Remote Aircraft Deice Pads	5-72
Terminal.....	5-74
Landside.....	5-75
Parking.....	5-75
Employee Parking	5-76
Roadways, Terminal Curbfronts, and Ground Transportation Centers	5-76

TABLE OF CONTENTS (continued)

Section	Page
5 Alternatives Development and Evaluation (continued)	
Rental Cars	5-76
Airport Transit System (ATS)	5-77
Support Facilities	5-78
Airline Freight	5-79
Cargo	5-79
Airfield Maintenance Complex	5-79
Aircraft Rescue and Fire Fighting Facilities (ARFF)	5-79
Fuel	5-79
Flight Kitchens	5-79
General Aviation/Corporate (Executive Terminal)	5-80
Concessions Distribution Center	5-80
Security Checkpoints/Guard Posts	5-80
Public Safety Training Facility	5-80
Dirty Snow Storage	5-80
Administration Building	5-81
Perimeter Service Roads	5-81
ARFF Training Facility	5-81
Aircraft Maintenance	5-81
Stormwater Detention	5-81

Section 5 - Figures, Tables, and Exhibits

Figure 5.3-1 – Airfield/Terminal Evaluation Matrix	5-60
Figure 5.4-1 – Landside Facilities Location Screening Matrix	5-61
Figure 5.4-2 – Landside Evaluation Matrix	5-69
Figure 5.5-1 – Proposed Runway 3L Deice Pad Expansion	5-73
Figure 5.5-2 – Proposed Runway 22L Deice Pad Expansion	5-73
Figure 5.5-3 – Proposed North Terminal Expansion (North)	5-74
Figure 5.5-4 – Proposed North Terminal Expansion (South)	5-74
Figure 5.5-5 – New/Expanded Parking Facility Locations	5-75
Figure 5.5-6 – Support Facilities Location Screening Matrix	5-78
Table 5.3-1 – Environmental Considerations of Airfield Alternatives	5-52
Exhibit 5.1-1, Airfield Option A1	5-7
Exhibit 5.1-2, Airfield Option A2	5-8
Exhibit 5.1-3, Airfield Option A3	5-9
Exhibit 5.1-4, Airfield Option A4	5-10
Exhibit 5.1-5, Airfield Option A5	5-11
Exhibit 5.1-6, Airfield Option A6	5-12
Exhibit 5.1-7, Airfield Option A7	5-13

TABLE OF CONTENTS (continued)

Section	Page
5 Alternatives Development and Evaluation (continued)	
Section 5 - Figures, Tables, and Exhibits (continued)	
Exhibit 5.1-8, Airfield Option A8	5-14
Exhibit 5.1-9A, Airfield Option A9A	5-15
Exhibit 5.1-9B, Airfield Option A9B	5-16
Exhibit 5.1-10, Airfield Option A10	5-17
Exhibit 5.1-11, Airfield Option A11	5-18
Exhibit 5.1-12, Airfield Option A12	5-19
Exhibit 5.1-13, Airfield Option A13	5-20
Exhibit 5.1-14, Airfield Option A14	5-21
Exhibit 5.1-15, Airfield Option A15	5-22
Exhibit 5.1-16, Airfield Option A16	5-23
Exhibit 5.1-17, Airfield Option A17	5-24
Exhibit 5.1-18, Airfield Option A18	5-25
Exhibit 5.1-19, Airfield Option A19	5-26
Exhibit 5.1-20, Airfield Option A20	5-27
Exhibit 5.1-21, Airfield Option A21	5-28
Exhibit 5.1-22, Airfield Option A22	5-29
Exhibit 5.1-23, Airfield Option A23	5-30
Exhibit 5.1-24, Airfield Option A24	5-31
Exhibit 5.1-25, Airfield Option A25	5-32
Exhibit 5.1-26, Airfield Option A26	5-33
Exhibit 5.1-27, Airfield Option A27	5-34
Exhibit 5.2-1, Terminal Alternative T1	5-38
Exhibit 5.2-2, Terminal Alternative T2	5-39
Exhibit 5.2-3, Terminal Alternative T3	5-40
Exhibit 5.2-4, Terminal Alternative T4	5-41
Exhibit 5.2-5, Terminal Alternative T5	5-42
Exhibit 5.2-6, Terminal Alternative T6	5-43
Exhibit 5.2-7, Terminal Alternative T7	5-44
Exhibit 5.2-8, Terminal Alternative T8	5-45
Exhibit 5.2-9, Terminal Alternative T9	5-46
Exhibit 5.2-10, Terminal Alternative T10	5-47
Exhibit 5.3-1, Combination A7/A21-T1	5-54
Exhibit 5.3-2, Combination A7/A21-T10	5-55
Exhibit 5.3-3, Combination A11-T1	5-56
Exhibit 5.3-4, Combination A11-T10	5-57
Exhibit 5.3-5, Combination A23A-T5	5-58
Exhibit 5.3-6, Combination A23A-T9	5-59
Exhibit 5.4-1, Landside Alternative LN1	5-64
Exhibit 5.4-2, Landside Alternative LN2	5-65

TABLE OF CONTENTS (continued)

5 Alternatives Development and Evaluation (continued)

Section 5 - Figures, Tables, and Exhibits (continued)

Exhibit 5.4-3, Landside Alternative LN3.....5-66

Exhibit 5.4-4, Landside Alternative LS15-67

Exhibit 5.4-5, Landside Alternative LS25-68

Exhibit 5.5-1, Combination A7/A21-T1-LN1.....5-71

6 Preferred Development Plan.....6-1

Airfield.....6-1

Terminal.....6-1

Landside.....6-1

Support Facilities6-2

Preferred Development Plan Projects6-2

South Public Parking (4,000 Spaces)6-2

West Cargo Taxiway (Phase 1)6-2

Air Cargo Development (Phase 1)6-3

North Centralized Checkpoint.....6-3

South Centralized Checkpoint and Culvert Bridge Improvements6-3

Runway 4L-22R High Speed Taxiways6-3

Consolidated Rental Car Facility (CONRAC)6-4

Runway 9R-27L High Speed Taxiways6-4

Dirty Snow Storage6-4

North Employee Parking (2,500 Spaces)6-4

Blue Deck Public Parking Expansion (4,000 Spaces).....6-5

Relocated Executive Terminal6-5

Runway 3L-21R Centralized Deice Pad Expansion (Phase 1).....6-5

Runway 4R-22L Centralized Deice Pad Expansion (Phase 1).....6-6

Runway 3L Perimeter Taxiways6-6

West Cargo Taxiway (Phase 2)6-6

Air Cargo Development (Phase 2)6-7

Runway 21R Extension and Land Acquisition (1,500').....6-7

McNamara Concourse B and C Expansion (10 Gates)6-7

New Flight Kitchen6-7

Taxiway PP Extension.....6-8

Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 4006-8

North Terminal Expansion (5 Gates)6-8

Fuel Farm Expansion.....6-8

Airline Freight Expansion6-9

North Public Parking (2,500 Spaces)6-9

New Stormwater Detention Pond.....6-9

Relocated South Employee Parking (3,500 Spaces)6-9

Airport Transit System and Maintenance Building.....6-10

TABLE OF CONTENTS (continued)

Section	Page
6 Preferred Development Plan (continued)	
Land Acquisition (5 th Parallel Runway)	6-10
Runway 3L-21R Centralized Deice Pad Expansion (Phase 2).....	6-10
North Public Parking Garage/Intermodal Center	6-11
Concessions Distribution Center	6-11
Relocated ARFF Training Facility	6-11
5 th Parallel Runway	6-11
Perimeter Taxiway for 5 th Parallel Runway	6-12
West Cargo Taxiway (Phase 3)	6-12
Air Cargo Development (Phase 3)	6-12
Airfield Maintenance Complex Satellite	6-13
McNamara Concourse B and C Expansion (20 Gates)	6-13
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500	6-13
North Terminal Expansion (5 Gates)	6-13
Runway 4R-22L Centralized Deice Pad Expansion (Phase 2).....	6-13
Taxiway J Extension.....	6-14
Taxiway S Extension.....	6-14
Taxiway U Extension	6-14
Taxiway H Extension	6-14

Section 6 - Figures, Tables, and Exhibits (continued)

Exhibit 6.1-1, Preferred Development Plan	6-16
7 Implementation Plan.....	7-1
Development Sequence	7-1
Future Airport Layout Plan Projects (2008-2015)	7-2
South Public Parking (4,000 Spaces)	7-2
West Cargo Taxiway (Phase 1)	7-2
Air Cargo Development (Phase 1)	7-2
North Centralized Checkpoint	7-2
South Centralized Checkpoint and Culvert Bridge Improvements	7-3
Runway 4L-22R High Speed Taxiways	7-3
Consolidated Rental Car Facility (CONRAC)	7-3
Runway 9R-27L High Speed Taxiway Exits	7-3
Dirty Snow Storage Area.....	7-3
North Employee Parking (2,500 Spaces)	7-3
Blue Deck Public Parking Expansion (4,000 Spaces).....	7-4
Relocated Executive Terminal	7-4
Runway 3L-21R Centralized Deice Pad Expansion (Phase 1).....	7-4
Runway 4R-22L Centralized Deice Pad Expansion (Phase 1).....	7-4

TABLE OF CONTENTS (continued)

Section	Page
7 Implementation Plan (continued)	
Runway 3L Perimeter Taxiways	7-4
West Cargo Taxiway (Phase 2)	7-4
Air Cargo Development (Phase 2)	7-4
Runway 21R Extension and Land Acquisition (1,500')	7-5
McNamara Concourse B and C Expansion (10 Gates)	7-5
New Flight Kitchen	7-5
Taxiway PP Extension.....	7-5
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 400	7-5
North Terminal Expansion (5 Gates)	7-5
Fuel Farm Expansion.....	7-5
Airline Freight Expansion	7-5
North Public Parking (2,500 Spaces)	7-6
New Stormwater Detention Pond.....	7-6
Ultimate Airport Layout Plan Projects (2016-2027).....	7-8
Relocated South Employee Parking (3,500 Spaces)	7-8
Airport Transit System and Maintenance Building.....	7-8
Land Acquisition (5 th Parallel Runway).....	7-8
Runway 3L-21R Centralized Deice Pad Expansion (Phase 2).....	7-8
North Public Parking Garage/Intermodal Center	7-8
Concessions Distribution Center	7-8
Relocated ARFF Training Facility	7-9
5 th Parallel Runway	7-9
Perimeter Taxiway for 5 th Parallel Runway	7-9
West Cargo Taxiway (Phase 3)	7-9
Air Cargo Development (Phase 3)	7-9
Airfield Maintenance Complex Satellite	7-9
McNamara Concourse B and C Expansion (20 Gates)	7-9
Perimeter Aircraft Rescue Fire Fighting (ARFF) Station 500	7-9
North Terminal Expansion (5 Gates)	7-10
Runway 4R-22L Centralized Deice Pad Expansion (Phase 2).....	7-10
Taxiway J Extension.....	7-10
Taxiway S Extension.....	7-10
Taxiway U Extension	7-10
Taxiway H Extension	7-10
Master Plan Capital Improvement Program.....	7-12
Funding Strategy	7-16
Financial Structure	7-16
Existing Airline Agreements	7-17
Funding Sources and Eligibility.....	7-17
Federal Grants/Airport Improvement Program.....	7-17
Passenger Facility Charges	7-18

TABLE OF CONTENTS (continued)

Section	Page
7	Implementation Plan (continued)
	Customer Facility Charges7-19
	State Grants.....7-19
	Third Party Investment7-20
	General Airport Revenue Bonds (GARBS).....7-20
	Other Potential Funding Sources7-20
	Funding Plan7-20
Section 7 - Figures, Tables, and Exhibits (continued)	
	Table 7.2-1 – Master Plan Capital Improvement Program Cost Estimate7-12
	Table 7.3-1 – Sources and Uses of Funds Summary.....7-21
	Table 7.3-2 – Master Plan Capital Improvement Program Sources and Uses of Funds.....7-22
	Table 7.3-3 - Master Plan Capital Improvement Program Spending Projection.....7-24
	Exhibit 7.1-1, Future ALP Projects7-7
	Exhibit 7.1-2, Ultimate ALP Projects7-11
8	Environmental Overview.....8-1
	Background8-1
	Project Description.....8-1
	CIP Projects8-3
	Future ALP Projects (2008-2015)8-3
	Ultimate ALP Projects (2016-2027).....8-4
	Environmental Factors Considered in Alternatives Evaluation8-6
	Potential Effects of Proposed Development.....8-9
	Noise and Compatible Land Use8-9
	CIP Project Effects8-9
	Future ALP Project Effects.....8-10
	Ultimate ALP Project Effects8-10
	Air Quality8-10
	CIP Project Effects8-11
	Future ALP Project Effects.....8-11
	Ultimate ALP Project Effects8-11
	Water Resources8-11
	CIP Project Effects8-12
	Future ALP Project Effects.....8-12
	Ultimate ALP Project Effects8-12
	Biological Resources8-13
	CIP Project Effects8-13

TABLE OF CONTENTS (continued)

Section	Page
8 Environmental Overview (continued)	
Future ALP Project Effects.....	8-13
Ultimate ALP Project Effects	8-14
Historic, Archaeological, Architectural, and Cultural Resources	8-14
CIP Project Effects	8-15
Future ALP Project Effects.....	8-15
Ultimate ALP Project Effects	8-15
Social and Socioeconomic	8-15
CIP Project Effects	8-16
Future ALP Project Effects.....	8-16
Ultimate ALP Project Effects	8-16
Hazardous Materials and Solid Waste	8-16
CIP Project Effects	8-17
Future ALP Project Effects.....	8-17
Ultimate ALP Project Effects	8-18
Light Emissions and Visual Effects	8-18
CIP Project Effects	8-18
Future ALP Project Effects.....	8-18
Ultimate ALP Project Effects	8-19
Prime and Unique Farmland	8-19
CIP Project Effects	8-19
Future ALP Project Effects.....	8-20
Ultimate ALP Project Effects	8-20
Summary of Effects and Anticipated Requirements	8-21
Section 8 - Figures, Tables, and Exhibits	
Table 8.1-1 – Environmental Considerations of Airfield Alternatives	8-8
Table 8.3-1 – Potential Environmental Effects of Master Plan Projects.....	8-23
Exhibit 8.1-1, Preferred Development Plan	8-2
9 Airport Layout Plans Package.....	9-1
Cover and Data Sheet.....	9-1
Existing Airport Layout Drawing	9-2
Future and Ultimate Airport Layout Drawings	9-2
Airport Airspace Drawings	9-3
Approach Plan and Profiles	9-3
FAR Part 77 Overview.....	9-3
Terminal Area Plan	9-3
Airport Property Map.....	9-4

TABLE OF CONTENTS (continued)

Section	Page
9	Airport Layout Plans Package (continued)
	Land Use Plans.....9-4
10	Stakeholder Coordination Program.....10-1
	WCAA Coordination10-1
	WCAA Board Briefings.....10-1
	WCAA Staff Coordination10-2
	Stakeholder Committees10-2
	Citizen’s Advisory Committee10-2
	Technical Advisory Committee10-4
	Public Awareness Campaign.....10-6
	Advertisement of Public Awareness Campaign.....10-6
	Public Information Workshops10-7
	Master Plan Open Houses10-8
	Public Comments10-8
	Informational and Educational Materials.....10-8
	Editorial Board Meetings.....10-9

Section 10 - Figures, Tables, and Exhibits

Figure 10.1 – Master Plan Website.....	10-9
Table 10.1-1 – WCAA Board Briefings.....	10-1
Table 10.2-1 – Citizen’s Advisory Committee Meetings.....	10-3
Table 10.2-2 – Citizen’s Advisory Committee Individual Meetings.....	10-3
Table 10.2-3 – Technical Advisory Committee Meetings.....	10-4
Table 10.2-4 – Technical Advisory Committee Individual Meetings.....	10-5
Table 10.3-1 – Public Information Workshops.....	10-8
Table 10.3-2 – Master Plan Open Houses.....	10-8
Table 10.3-3 – Editorial Board Meetings.....	10-9

Supporting Information

FAA Operating Configurations Memo
 Preferred Development Plan Cost Estimate
 Future and Ultimate ALP Proposal
 FAA Approval Letter with 2006, 2007, and 2008 Terminal Area Forecasts
 WCAA Airspace Review Request Letter and FAA Response
 Forecast Analysis Memo