

# MEMORANDUM

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**TO:** Planning, Development and Environment Committee

**FROM:** Chad E. Leque – Director of Environment (725.6326)

**SUBJECT:** 2015-2021 CAPITAL IMPROVEMENT PROGRAM PUBLIC HEARING -  
ASSESSMENT OF ENVIRONMENTAL EFFECTS

**DATE:** October 25, 2014

At the September 2014 Commission meeting, a public hearing related to the Assessment of Environmental Effects (AOEE) for the 2015-2021 MAC Capital Improvement Program (CIP) was authorized and the members of the Planning, Development and Environment Committee were appointed as the hearing officers. This hearing will be held at a special meeting of the Planning Development and Environment Committee on November 3, 2014, 7:00 pm at the Metropolitan Airports Commission General Office Building located at:

Metropolitan Airports Commission  
General Offices  
6040 28th Avenue South  
Minneapolis, MN 55450

A copy of the AOEE document for the Commission's 2015-2021 CIP is included with the Committee package.

The AOEE evaluates the cumulative environmental effects of the projects included in the 7-year CIP at each of the Commission's airports.



# Metropolitan Airports Commission

## Assessment of Environmental Effects

**Seven-Year Capital Improvement Program 2015 - 2021**

Prepared by the  
Metropolitan Airports Commission  
Environment Department  
October 2014

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Section

1

# Introduction

This report is prepared in accordance with the requirements of Minnesota Statutes 1986, Section 473.614, as amended in 1988 and 1998. It presents an assessment of the environmental effects (AOEE) of projects in the Metropolitan Airports Commission's (MAC) Seven-Year Capital Improvement Program (CIP) from 2015 to 2021 for each MAC airport. Under Minnesota law, the MAC is required to "examine the cumulative environmental effects at each airport of the projects at that airport (in the seven-year CIP), considered collectively." Many of the projects in the CIP entail repair or rehabilitation of existing facilities. Such work will not affect use of the facilities and as such will not add to, or subtract from, cumulative environmental effects. The anticipated measurable effects during construction are discussed in Section 2.

The amended 1986 law also requires the preparation of an Environmental Assessment Worksheet under the Minnesota Environmental Policy Act (MEPA) for projects that meet all of the following conditions:

1. The project is scheduled in the CIP for the succeeding calendar year (2015 in this CIP);
2. The project is scheduled to cost \$5 million or more at Minneapolis-St. Paul International Airport (MSP) or \$2 million or more at any other MAC airport; and
3. The project involves the construction of: (i) a new or expanded structure for handling passengers, cargo, vehicles or aircraft; or (ii) a new runway or taxiway or the extension of an existing runway or taxiway.

Table 1-1 lists all projects included in the Seven-Year Capital Improvement Program for the years 2015 through 2021. An Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) has been prepared for all projects scheduled to be implemented in 2015 that meet the above three conditions in Minnesota Statutes 1986, Section 473.614, for a mandatory EAW. The projects that may have potential for significant environmental effects are presented in Table 1-2.

Table 1-1

2015 - 2021 Capital Improvement Program		2015	2016	2017	2018	2019	2020	2021
Notes	Projects							
	<b>Noise Mitigation</b>							
(8)	Noise Mitigation Consent Decree Amendment			\$3,200,000	\$7,500,000	\$7,500,000	\$4,300,000	
	Subtotal Noise Mitigation Program	\$0	\$0	\$3,200,000	\$7,500,000	\$7,500,000	\$4,300,000	\$0
	<b>10 - Terminal 1-Lindbergh (T1)</b>							
	<b>Safety/Security Projects</b>							
(3)	Automated External Defibrillator Notification System			\$550,000				
(5)	Telecom Room Equipment Continuity and Security	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
	Subtotal Safety/Security Projects	\$1,500,000	\$1,500,000	\$2,050,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
	<b>Facility Rehabilitation</b>							
(2)	Electrical Infrastructure Rehabilitation Program	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$2,500,000
(4)	Terminal Miscellaneous Modifications	\$2,400,000	\$2,400,000	\$2,400,000	\$2,400,000	\$2,400,000	\$2,400,000	\$2,400,000
(4)	Emergency Power Upgrades	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$2,500,000
(2)	Lower Level Roadway/GTC Water Infiltration Mitigation		\$1,000,000	\$500,000				
(2)	Restroom Upgrade Program	\$8,500,000	\$4,500,000	\$4,500,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
(4)	Air Handling Unit Replacement	\$1,500,000	\$1,500,000	\$2,000,000	\$2,000,000	\$2,500,000	\$2,500,000	\$3,000,000
(4)	Conveyance System Upgrades	\$2,900,000		\$2,700,000		\$1,500,000		
(4)	Food Court Service Elevator Replacement		\$2,000,000					
(4)	Passenger Boarding Bridge Replacements	\$4,500,000		\$500,000	\$7,000,000	\$7,000,000	\$6,000,000	\$6,000,000
(2)	Plumbing Infrastructure Upgrade Program	\$500,000		\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
(4)	Way-Finding Sign Backlighting Replacement			\$1,600,000	\$1,600,000	\$1,600,000		
(4)	Lighting Infrastructure Technology and Equipment (LITE)	\$1,600,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$2,250,000
(2)	T1 Tram Systems Upgrades and Retrofit	\$1,450,000	\$2,000,000	\$2,700,000				
(4)	MAC Public Address System (MACpas)	\$1,300,000	\$1,200,000	\$1,100,000	\$1,100,000	\$850,000		\$4,410,000
(5)	T1 Public Walk Aisle Terrazzo Floor Installation			\$4,410,000	\$4,410,000	\$4,410,000	\$6,830,000	\$6,830,000
(5)	T1 Recarpeting Program					\$5,900,000		
(6)	D-Pod Outbound Conveyor/Ticket Counter Expansion	\$200,000						
(2)	MSP Employee Break Rooms				\$2,900,000			
(5)	East Mezzanine Rubber Floor Replacement				\$450,000			
(5)	Center Mezzanine Tile Removal and Replacement		\$1,000,000	\$8,500,000	\$8,500,000	\$8,500,000	\$8,500,000	
(2)	Folded Plate Repairs							
(4)	Mezzanine HVAC/AHU Replacements & Penthouses			\$8,000,000	\$8,000,000			
(4)	Telecom Relocation & Decommissioning		\$1,500,000	\$1,500,000	\$1,500,000			
(2)	C-G Connector Improvements		\$4,500,000					
(2)	Terminal Building Remediation Program	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
	Subtotal Facility Rehabilitation	\$29,350,000	\$28,100,000	\$45,910,000	\$55,690,000	\$49,990,000	\$39,140,000	\$27,060,000
	<b>Passenger Amenities</b>							
(4)	Art Display Areas	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	
(2)	Concessions Upgrades / Revenue Development	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	
(2)	Concessions Rebids	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000			
(5)	Terminal Seating Improvements	\$800,000	\$800,000					
(2)	Ticket Counter Upgrades to ADA	\$800,000	\$800,000					
(4)	Commission Chambers Telecoil Installation							
(2)	Concourse Service Center Upgrades		\$1,000,000	\$1,000,000	\$1,600,000	\$600,000	\$600,000	
(2)	Observation Deck Improvements			\$750,000				
(4)	EVIDs / MUFIDs Digital Signs	\$400,000			\$600,000		\$600,000	
(4)	EVIDs / MUFIDs / MUBIDs / PIDs Technology Upgrades - Equipment Replacement				\$600,000		\$600,000	
(1)	FIS Recheck Operational Improvements			\$8,400,000	\$8,400,000			
	Subtotal Passenger Amenities	\$3,650,000	\$5,250,000	\$4,200,000	\$13,050,000	\$1,050,000	\$1,050,000	\$0

Notes	Projects	2015	2016	2017	2018	2019	2020	2021
	<b>Operational Improvements</b>							
(4)	Intelligent Monitoring and Control Systems (formerly OABA)	\$1,500,000	\$1,500,000	\$1,500,000	\$800,000	\$1,800,000	\$1,800,000	\$1,800,000
(4)	Fiber Optic Cable Infrastructure Upgrade/Expansion	\$1,700,000	\$1,700,000	\$1,000,000	\$900,000	\$900,000		
(3)	Wireless Network Control System	\$600,000	\$1,000,000					
(2)	Landside Operations Offices Reconfiguration			\$500,000				
(4)	MACNet Upgrade - Connectivity Elements	\$2,500,000	\$1,000,000	\$2,000,000	\$2,000,000	\$3,000,000		
(2)	Mezzanine Operational Improvements			\$2,000,000				
	Subtotal Operational Improvements	\$6,300,000	\$5,200,000	\$5,000,000	\$3,700,000	\$5,700,000	\$27,100,000	\$1,800,000
	<b>Concourse G Improvements</b>							
(2)	Concourse G Roof Replacement	\$8,400,000						
(2)	Exterior Glazing Replacement	\$3,400,000						
(2)	Exterior Panel/Sealant Replacement		\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,100,000	\$1,100,000
(2)	Concourse G Rehabilitation		\$2,000,000	\$2,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
(4)	Concourse G HVAC			\$4,000,000	\$4,000,000	\$4,000,000		
(4)	Concourse G Electrical			\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000
(4)	G Concourse Moving Walks			\$2,500,000	\$2,500,000	\$2,500,000		
(5)	G Concourse Fire Protection - Phase 4	\$700,000						
	Subtotal Concourse G Improvements	\$12,500,000	\$3,000,000	\$12,500,000	\$15,500,000	\$15,500,000	\$9,100,000	\$9,100,000
	<b>T1-Lindbergh Expansion/Remodeling</b>							
(7)	Long Term Comp Plan	\$500,000						
(1)	Concourse E Remodeling/Expansion							\$37,000,000
(1)	T1 Checkpoint Consolidation (CP1)	\$18,000,000		\$20,275,000	\$20,075,000	\$20,075,000		
(1)	Baggage Claim Expansion		\$34,075,000	\$13,100,000	\$4,100,000			
(1)	Vertical Circulation Improvements		\$13,100,000					
(5)	South Security Exit			\$11,250,000	\$11,250,000	\$11,250,000	\$6,000,000	
(1)	Ticket/Lobby Operational Improvements		\$11,250,000			\$10,000,000		
(2)	Checkpoint Expansion - Mezzanine							\$24,000,000
(2)	Checkpoint Expansion - CP6							
(2)	Airside Operations Center		\$9,500,000			\$1,250,000		
(1)	Hotel Skyway or other connections	\$18,500,000*	\$67,925,000	\$31,525,000	\$49,775,000	\$41,325,000	\$6,000,000	\$61,000,000
	Subtotal T1 Remodeling	\$18,500,000*	\$67,925,000	\$31,525,000	\$49,775,000	\$41,325,000	\$6,000,000	\$61,000,000
	<b>Concourse G Expansion</b>							
(1)	CBP Primary/Relocation Gates G8-G9 Infill & Penthouse	\$0	\$0	\$0	\$0	\$0	\$0	\$51,000,000
	Subtotal Concourse G Expansion	\$0	\$0	\$0	\$0	\$0	\$0	\$51,000,000
	<b>Roadway Expansion</b>							
(1)	East Curbside Upper Level Check-in			\$19,000,000				
(1)	Lower Level Curbside Expansion					\$10,000,000		
	Subtotal Roadway Expansion	\$0	\$0	\$0	\$19,000,000	\$10,000,000	\$0	\$0
	Subtotal T1 Expansion/Remodeling	\$18,500,000*	\$67,925,000	\$31,525,000	\$68,775,000	\$51,325,000	\$6,000,000	\$112,000,000
	Subtotal Terminal 1-Lindbergh	\$71,800,000	\$110,975,000	\$101,185,000	\$158,215,000	\$125,065,000	\$83,890,000	\$151,460,000
	<b>13 - Energy Management Center</b>							
(4)	Energy Savings Projects	\$900,000	\$2,000,000		\$2,000,000		\$2,000,000	
(4)	Alternative Energy Projects	\$3,000,000						
(4)	Modular Cooling Tower Installation	\$3,900,000	\$2,000,000	\$0	\$2,000,000	\$0	\$2,000,000	\$0
	Subtotal Energy Management Center	\$7,800,000	\$4,000,000	\$0	\$4,000,000	\$0	\$4,000,000	\$0
	<b>21 - Field and Runway</b>							
(2)	Airside Bituminous Rehabilitation/Electrical Construction	\$650,000	\$1,000,000	\$650,000	\$1,000,000	\$650,000	\$1,100,000	\$650,000
(2)	Pavement Joint Sealing/Repair	\$10,200,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000
(2)	Pavement Rehabilitation - Aprons							
(2)	Pavement Reconstruction							
(2)	Miscellaneous Airfield Construction	\$800,000	\$800,000	\$800,000	\$7,500,000	\$800,000*	\$1,300,000	\$900,000
(6)	Baggage Quarantine Building							
(5)	SIDA Incursion Upgrades				\$1,600,000			

Notes	Projects	2015	2016	2017	2018	2019	2020	2021
	<b>Sanitary Sewer Replacements</b>							
(2)	TaxwayR			\$1,700,000	\$2,500,000			
(2)	34th Avenue							
(5)	Perimeter Gate Security Imps - Gates 222 & 269		\$1,200,000					
(2)	Runway Planning/Regrooving			\$450,000				
(2)	Establish Taxway J				\$150,000			
(4)	Runway LED Lighting Upgrade				\$1,600,000	\$1,600,000	\$1,600,000	\$1,600,000
(2)	Runway 12L-30R Regrooving			\$350,000				
(1)	Taxway C1 Construction		\$500,000		\$5,000,000			
(4)	Runway 04-22 In-Pavement Guard Lights		\$1,500,000					
(4)	04-22 Glide Slopes Restoration							
(2)	Runway 12R-30L Tunnel Drainage Improvements - Phase 2		\$4,850,000	\$400,000				
	Subtotal Field and Runway	\$11,650,000	\$4,850,000	\$4,350,000	\$20,000,000	\$3,050,000 +	\$4,650,000	\$3,150,000
	<b>26 - Terminal Roads/Landside</b>							
(2)	Tunnel/Bridge Rehabilitation	\$100,000	\$100,000		\$100,000	\$100,000	\$100,000	
(2)	Upper Level Roadway Rehabilitation			\$2,000,000				
(2)	Upper Level Roadway Electrical System Rehabilitation				\$650,000			
(2)	Lower Level Roadway Rehabilitation			\$200,000			\$300,000	
(4)	Variable Message Signs Replacement	\$2,100,000						
	Subtotal Terminal Roads/Landside	\$2,200,000	\$100,000	\$2,300,000	\$750,000	\$100,000	\$400,000	\$0
	<b>31 - Parking</b>							
(2)	T1/T2 Parking Structure Rehabilitation	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$3,000,000
(2)	T1 Short-Term Parking Redesignation				\$350,000			
(4)	T1 Valet/Commercial Entrance Lanes Mods				\$1,000,000			
(4)	T1 Intelligent Parking Guidance System				\$500,000			
(2)	T1 QTA Roadway Replacement				\$500,000			
(2)	Parking Ramp Railing Refinishing Project	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000		
(1)	T1 Parking Ramp Roadway Modifications		\$17,000,000					
(1)	T1 Parking Ramp Revenue Control Building Modifications			\$23,000,000				
(1)	T1 Parking Transit Center and Plaza Modifications			\$15,000,000				
(1)	T1 Parking Ramp Site Preparation and Utilities		\$114,000,000					
(1)	T1 Parking Ramp			\$250,000,000				
(1)	T1 Parking Underground Walkway Extension (future Tram)			\$15,000,000				
(4)	Orange Ramp Add 2 elevators (for 4 total)				\$1,900,000			
	Subtotal Parking	\$3,500,000	\$134,500,000	\$306,500,000	\$7,750,000	\$3,500,000	\$2,500,000	\$3,000,000
	<b>36 - Terminal 2-Humphrey (T2)</b>							
	<b>Passenger Amenities</b>							
(6)	Skyway to LRT Flooring Installation					\$600,000		
(6)	Curbside Canopy Extension			\$750,000	\$750,000			
	Subtotal Passenger Amenities	\$0	\$0	\$750,000	\$750,000	\$800,000	\$0	\$0
	<b>Operational Improvements</b>							
(2)	T2 Lobby Restrooms		\$1,500,000					
(2)	FIS Baggage Claim Improvements		\$1,000,000					
(4)	T2 APC Kiosks	\$600,000						
(2)	T2 Public Walk Aisle Terrazzo Floor Installation			\$1,700,000				
(2)	T2 Recarpeting Program				\$475,000	\$475,000	\$475,000	\$475,000
	Subtotal Operational Improvements	\$600,000	\$2,500,000	\$1,700,000	\$475,000	\$475,000	\$475,000	\$475,000
	<b>Terminal 2-Humphrey North Expansion</b>							
(1)	Gates 11 - 13b Construction		\$35,000,000					
(7)	Gates 14 - 16 Design Fees							
(1)	Gates 14 - 16 Construction		\$5,000,000 *		\$65,000,000			
(1)	Fueling Expansion Gates 14 - 16				\$1,500,000			
	Subtotal Terminal 2-Humphrey North Expansion	\$35,000,000	\$5,000,000	\$0	\$66,500,000	\$0	\$0	\$0
	<b>*Project is unfunded.</b>							
	Subtotal Terminal 2-Humphrey	\$35,800,000	\$7,500,000	\$2,450,000	\$67,725,000	\$1,275,000	\$475,000	\$475,000

Notes	Projects	2015	2016	2017	2018	2019	2020	2021
	<b>39 - Public Areas/Roads</b>							
(2)	Landside Pavement Rehabilitation	\$400,000	\$400,000	\$2,000,000	\$400,000	\$400,000	\$400,000	\$450,000
(2)	Roadway Fixture Relubrication	\$125,000	\$125,000	\$125,000	\$150,000	\$150,000	\$150,000	\$150,000
(2)	Aircraft Viewing Area	\$200,000						
	<b>Subtotal Public Areas/Roads</b>	<b>\$725,000</b>	<b>\$525,000</b>	<b>\$2,125,000</b>	<b>\$550,000</b>	<b>\$550,000</b>	<b>\$550,000</b>	<b>\$600,000</b>
	<b>46 - Hangars and other Buildings</b>							
(2)	Roof Replacements	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
(2)	Drivers Training Facility Rehabilitation		\$550,000					
(2)	FAA Building Parking Lot Upgrades			\$1,050,000				
(2)	Campus Parking Lot Reconstructions		\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000
(2)	Campus Building Rehab Program	\$2,000,000	\$2,000,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
	<b>Subtotal Hangars and other Buildings</b>	<b>\$1,000,000</b>	<b>\$4,200,000</b>	<b>\$4,200,000</b>	<b>\$3,150,000</b>	<b>\$3,150,000</b>	<b>\$3,150,000</b>	<b>\$3,150,000</b>
	<b>56 - Trades/Maintenance Buildings</b>							
(6)	South Field Maintenance Building Wash Bay		\$400,000			\$1,300,000		
(3)	Trades Bldg Pneumatic Controls Retrofit	\$0	\$400,000	\$0	\$0	\$1,300,000	\$0	\$0
	<b>Subtotal Trades/Maintenance Buildings</b>	<b>\$0</b>	<b>\$400,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,300,000</b>	<b>\$0</b>	<b>\$0</b>
	<b>63 - Police</b>							
(6)	Public Safety Facility			\$35,000,000				
(6)	Perimeter Fence Intrusion Detection System			\$1,000,000		\$1,000,000		\$2,000,000
(4)	IVSN Improvements	\$3,000,000**	\$4,000,000**	\$4,500,000	\$3,700,000	\$4,000,000	\$2,000,000	\$2,000,000
(5)	Card Access Modifications - Gate lobby areas concourses e level			\$850,000				
(5)	Passenger Boarding Bridge Card Access Additions			\$3,500,000		\$3,700,000		
(6)	APD Operational Improvements	\$500,000						
	<b>Subtotal Police</b>	<b>\$3,500,000</b>	<b>\$4,000,000</b>	<b>\$9,850,000</b>	<b>\$43,200,000</b>	<b>\$8,700,000</b>	<b>\$2,000,000</b>	<b>\$2,000,000</b>
	<b>66 - Fire</b>							
(3)	MSP Campus Fire Alarm System Upgrade	\$850,000	\$850,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
(5)	Campus Fire Protection			\$10,500,000				
(6)	ARFF #2							
	<b>Subtotal Fire</b>	<b>\$850,000</b>	<b>\$850,000</b>	<b>\$11,000,000</b>	<b>\$500,000</b>	<b>\$500,000</b>	<b>\$500,000</b>	<b>\$500,000</b>
	<b>70 - General Office / Administration</b>							
(3)	G.O. Building Valve Retrofit		\$500,000	\$250,000				
(5)	GO Security Enhancements		\$500,000					
(2)	GO Building Improvements		\$500,000					
	<b>Subtotal General Office / Administration</b>	<b>\$0</b>	<b>\$1,000,000</b>	<b>\$250,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	<b>76 - Environment</b>							
	<b>Environmental Improvements</b>							
(2)	Mother Lake Stormwater Diversion		\$850,000				\$1,100,000	
(4)	Runway 12R-30L Glycol Foremain			\$450,000				
(6)	T1 Concourses C and G Compactor Canopies				\$800,000			
(4)	Runway 30R Deicing Pad Subdrain				\$2,700,000		\$2,700,000	
(4)	Ground Service Equipment (GSE) Electrical Charging Stations	\$1,000,000						
(6)	E85 Tank and Dispenser Modifications		\$550,000					
(6)	Lift Station at ponds					\$500,000		
	<b>Subtotal Environment</b>	<b>\$1,000,000</b>	<b>\$1,400,000</b>	<b>\$450,000</b>	<b>\$3,500,000</b>	<b>\$3,200,000</b>	<b>\$1,100,000</b>	<b>\$0</b>
	<b>Reliever Airports</b>							
	<b>81 - St. Paul</b>							
(7)	Long Term Comp Plan	\$50,000		\$600,000				
(6)	Holman Terminal Subdrain				\$100,000		\$100,000	
(2)	Joint and Crack Repairs		\$200,000		\$200,000		\$200,000	
(2)	MAC Building Improvements							
(2)	Pavement Rehabilitation							
(2)	Runway 14-32	\$1,500,000						
(2)	Runway 13-31							\$4,500,000
(2)	Taxiway E							
(2)	Parking Lot/Byfield		\$1,500,000		\$500,000			
(2)	Airfield Signage/Wind Cone Upgrade		\$500,000					
(2)	Roof Repairs / Replacement			\$200,000				

Notes	Projects	2015	2016	2017	2018	2019	2020	2021	
(6)	Cold Equipment Storage Building				\$750,000				
(2)	Storm Sewer Improvements Phase 2			\$1,500,000					
(2)	Maintenance Building Improvements				\$200,000				
(2)	Runway 14-32 Reconstruction							\$5,000,000	
(5)	MAC Security Gate Upgrades	\$250,000							
	Subtotal St. Paul	\$1,550,000	\$2,550,000	\$2,300,000	\$1,750,000	\$4,500,000	\$300,000	\$5,000,000	
	<b>82 - Lake Elmo</b>								
(7)	Long Term Comp Plan	\$50,000							
(1)	Runway 14-32 Replacement		\$500,000	\$5,000,000 ^					
(1)	Airfield Modifications			\$5,000,000 ^					
(6)	Materials Storage Building				\$600,000				
(2)	Parallel Taxiways Reconstruction		\$600,000			\$600,000			
	Pavement Rehabilitation								
	Runway 04-22								
(2)	Alleyways - North Building Area	\$900,000				\$6,000,000			
(2)	Alleyways - South Building Area				\$900,000				
	Subtotal Lake Elmo	\$1,550,000	\$1,100,000	\$10,000,000	\$1,500,000	\$6,600,000	\$0	\$0	
	^Project will not proceed unless Federal funding is received.								
	<b>83 - Airtake</b>								
(7)	Long Term Comp Plan	\$50,000							
(2)	Pavement Rehabilitation - Taxiway A Mill/Overlay		\$400,000						
(1)	South Building Area Development				\$2,700,000			\$8,000,000	
(1)	Runway 12-30 Extension							\$3,500,000	
(2)	Existing Runway 12-30 Reconstruction							\$2,000,000	
(6)	South Building Area Alleyway & Utilities Development		\$1,200,000						
(6)	South Building Area Alleyway Development				\$600,000				
(6)	Materials Storage Building								
	Subtotal Airtake	\$50,000	\$1,600,000	\$0	\$3,300,000	\$2,000,000	\$11,500,000	\$0	
	<b>84 - Flying Cloud</b>								
(7)	Long Term Comp Plan	\$50,000							
	Pavement Rehabilitation								
(2)	Taxiway A - Phase 1	\$800,000							
(2)	Taxiway A - Phase 2		\$1,000,000						
(2)	Taxiway D				\$600,000				
(2)	Taxiway E					\$600,000			
(2)	Alleyways - SE Building Area			\$500,000					
(2)	Runway 10L-28R Reclaim/Overlay							\$1,500,000	
(6)	South Building Area Development					\$600,000			
(2)	Roof Repairs / Replacement				\$100,000				
(6)	Equipment Storage Building						\$2,500,000		
(6)	Runway 18-36 Extension				\$1,500,000				
(2)	Electrical Vault Modifications					\$500,000			
(2)	Runway 10R-28L Grooving								
	Subtotal Flying Cloud	\$850,000	\$1,000,000	\$500,000	\$2,200,000	\$1,700,000	\$2,500,000	\$1,500,000	
	<b>85 - Crystal</b>								
(7)	Long Term Comp Plan	\$50,000							
(4)	Obstruction Removals		\$300,000						
	Pavement Rehabilitation								
(2)	Alleyways				\$550,000			\$550,000	
(2)	Taxiways					\$700,000			
(1)	Runway 14R-32L & Taxiway E Modifications		\$500,000	\$1,000,000					

Notes	Projects	2015	2016	2017	2018	2019	2020	2021
(2)	Roof Repairs / Replacement	\$250,000						
(6)	Materials Storage Building		\$150,000	\$600,000				
(6)	Hangar Demolition - HFI		\$950,000	\$1,600,000 *	\$550,000 *	\$700,000 *	\$550,000 *	\$0 *
	Subtotal Crystal	\$300,000	\$950,000	\$1,600,000 *	\$550,000 *	\$700,000 *	\$550,000 *	\$0 *
<b>86 - Anoka County - Blaine</b>								
(7)	Long Term Comp Plan	\$50,000						
(1)	Building Area Development - Xylite St. Relocation			\$600,000	\$1,000,000			
(6)	Materials Storage Building		\$250,000	\$600,000				
(2)	Roof Repairs / Replacement		\$200,000					
(2)	Maintenance Building Improvements	\$500,000						
(2)	Airfield Signage/Electrical Improvements							
(2)	Pavement Reconstruction				\$600,000			
(2)	Taxway Foxrot			\$500,000				
(2)	Taxway A1					\$750,000		
(2)	Alleyways - North-Central Building Area						\$750,000	
(2)	Alleyways - South-Central Building Area							\$750,000
(2)	Alleyways - West Building Area							\$750,000
(2)	South Service Road & East Landside Road - Pavement Reconstruction							\$1,000,000
(2)	Runways 09-27 and 18-36 Joint and Crack Repairs							\$1,000,000
(4)	Obstruction Removal			\$200,000				
(4)	Air Traffic Control Tower Equipment Upgrades	\$200,000				\$100,000		
(5)	Subtotal Anoka County - Blaine	\$750,000	\$450,000	\$1,300,000	\$1,600,000	\$850,000	\$850,000	\$1,750,000
	Subtotal Reliever Airports	\$5,050,000	\$7,650,000	\$15,700,000 *	\$10,900,000 *	\$16,350,000 *	\$15,700,000 *	\$8,250,000 *
	Total 2015-2021 CIP	\$1,40,975,000	\$279,950,000	\$463,560,000 *	\$325,740,000 *	\$174,240,000 *	\$121,215,000 *	\$172,085,000 *
	Unfunded Projects and Reimbursements 2015-2021 CIP	\$3,000,000	\$9,000,000	\$0	\$0	\$0	\$0	\$0
	<b>Net 2015 - 2021 CIP</b>	<b>\$137,975,000</b>	<b>\$270,950,000</b>	<b>\$463,560,000 *</b>	<b>\$325,740,000 *</b>	<b>\$174,240,000 *</b>	<b>\$121,215,000 *</b>	<b>\$172,085,000 *</b>

\* Preliminary CIP cost updated.

**NOTES:**

- (1) A project that has potential substantive environmental effects.
- (2) A repair, rehabilitation or reconstruction project that does not physically alter the original size (the project does not have substantive environmental effects; an EAW or EIS is not required).
- (3) An electrical or mechanical device that monitors, indicates or controls existing conditions (the project does not have substantive environmental effects; an EAW or EIS is not required).
- (4) A structural, mechanical or electrical device and/or modification of an existing system or structure that does not significantly increase size or passenger capacity (the project does not have substantive environmental effects; an EAW or EIS is not required).
- (5) A project that consists of safety or security enhancements, facility maintenance or upgrades (the project will not have substantive environmental effects; an EAW or EIS is not required).
- (6) A new, replacement or expansion project that does not have substantive environmental effects; an EAW or EIS is not required.
- (7) Design, planning or environmental review fees.
- (8) Residential Noise Mitigation Program efforts are designed to mitigate the impact of aircraft noise and do not require an EAW or EIS.



Section

2

## Projects with Potential Environmental Effects and Effects During Construction

### Projects with Potential Environmental Effects

As is detailed in Table 1-2, there are two Capital Improvement Program (CIP) projects scheduled in 2015 that require the preparation of an Environmental Assessment Worksheet.

In addition, for informational purposes, Table 1-1 identifies those projects in the CIP that do not have a potential substantive effect on the environment (such as the repair, reconstruction or rehabilitation of pavement and buildings, and replacement of existing facilities). The notes in Table 1-1 offer further explanation of the type of work that each project entails and why this work will not have a substantive effect on the environment. Appendix A provides a description of each project in the CIP currently scheduled to be implemented in the years 2015 and 2016, as well as those projects currently scheduled to be implemented in 2017 through 2021 that may have potential substantive environmental effects. The descriptions of projects scheduled to be implemented in 2017 through 2021 are preliminary and subject to change.

### Effects During Construction

Typical mitigation measures will be used during construction to minimize potential adverse environmental effects, such as noise, dust, and erosion caused by the construction process. The environmental effects of construction are temporary and do not constitute long-term cumulative potential effects. As a result, the environmental effects from construction of projects in the CIP are not discussed in Section 3 of this document, which describes cumulative potential environmental effects.

Section

3

## Cumulative Potential Environmental Effects

Under the Minnesota Environmental Policy Act (MEPA), an Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) must assess cumulative potential environmental effects. A cumulative potential effect under MEPA is an effect on the environment that results from the incremental effects of the project under review in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources. In other words, the cumulative potential effects analysis examines whether the incremental effects of a proposed project, combined with other projects in the same geographic area and taking place over the same time period, will have a significant effect on the same environmental resources.

### 2010 MSP Projects

All projects related to the MSP 2010 Program and the Dual Track Airport Planning Process Final Environmental Impact Statement (Dual Track FEIS) have been completed. The Residential Noise Mitigation Program, implemented under the Dual Track FEIS and the settlement in *City of Minneapolis, et al. v. Metropolitan Airports Commission*, File No. 27-CV-05-005474 (Hennepin County District Court), is a measure designed to mitigate the impact of aircraft noise and does not require completion of an EAW or EIS.

### Post 2010 MSP Projects

The Capital Improvement Program (CIP) includes projects for Minneapolis-St. Paul International Airport (MSP) that were not included in the Dual Track FEIS but that may have the potential for substantive environmental effects. These planned projects flow from the Metropolitan Airports Commission's (MAC) MSP 2030 Long-Term Comprehensive Plan Update that was published in July 2010.

In September 2010, the MAC and the Federal Aviation Administration (FAA) began preparation of a joint Environmental Assessment (EA)/Environmental Assessment Worksheet (EAW) under MEPA and the National Environmental Policy Act (NEPA) for projects the MAC may implement at MSP through the year 2020.

In March 2013, the FAA determined that the 2020 Improvements EA/EAW was adequate under NEPA, and issued a Finding of No Significant Impact and Record of Decision for the projects discussed in the EA/EAW. In April 2013, the MAC determined that the EA/EAW was adequate under MEPA, and issued an Adequacy Determination and Negative Declaration on the need for an EIS for the projects discussed in the 2020 Improvements EA/EAW.

The 2015-2021 CIP includes a number of projects from the 2020 Improvements EA/EAW, including provisions for additional Residential Noise Mitigation predicated on actual noise contours for the preceding year. On September 25, 2013 the First Amendment to Consent Decree (Amendment) was adopted for *City of Minneapolis, et al. v. Metropolitan Airports Commission*, File No. 27-CV-05-005474

(Hennepin County District Court). The Amendment is designed to mitigate the impact of additional aircraft noise until the year 2024 and does not require completion of an EAW or EIS.

### St. Paul Downtown Airport Projects (Reliever)

The MAC completed an update to the St. Paul Downtown Airport (STP) Long-Term Comprehensive Plan (LTCP) in June 2010 and plans to begin another update in 2015. The 2010 plan does not propose any substantive expansion or enhancement of the facilities at STP. It is anticipated the 2015 STP LTCP update will endorse these same recommendations.

Other than updating the STP LTCP, the only 2015 project at STP involves pavement rehabilitation for Runway 14-32. No additional environmental review is required because the proposed project is a repair, rehabilitation, or reconstruction project that does not physically alter the original size of any structures and does not have the potential for substantive environmental effects.

Future CIP projects at STP include joint and crack repairs, MAC building improvements (planned for 2016, 2018 and 2020); pavement rehabilitation for Taxiway E, airfield signage/wind cone upgrades and MAC security gate upgrades (planned for 2016); Holman Terminal subdrain, roof repairs and replacement and phase two of the storm sewer improvements (planned for 2017); pavement rehabilitation for the parking lot, construction of a cold equipment storage building and maintenance building improvements (planned for 2018); pavement rehabilitation for Runway 13-31 (planned for 2019); and Runway 14-32 reconstruction (planned for 2021). These projects are maintenance and rehabilitation activities that will not require additional environmental review.

### Lake Elmo Airport Projects (Reliever)

The MAC is currently preparing an update to the Long-Term Comprehensive Plan (LTCP) for Lake Elmo Airport (21D). The recommendation in the December 2008 plan includes the construction of the East Building Area and extension of Runway 4-22 from 2,499 feet to 3,200 feet. The MAC prepared an EAW for the East Building Area development in October 2001. The document identified increased storm water runoff, the conversion of approximately 32 acres of farmland on MAC property, and an impact of 0.016 acres to a 3.30-acre Type 3 (small, shallow) wetland. When this project is scheduled in a future CIP, the MAC will design the project to accommodate the storm water runoff on-site and will obtain all environmental permits necessary to implement the project.

Although the 2008 21D LTCP originally envisioned an extension would occur on the crosswind Runway 4-22, the MAC is considering accommodating the extended runway length as part of a Runway 14-32 replacement project to bring the runway into FAA Runway Protection Zone (RPZ) compliance, which could be implemented in 2017. The project would involve construction of a new, longer runway that would be parallel to the existing Runway 14-32. The existing runway would then become a taxiway and other airfield modifications would be made to support the new runway location. All 21D LTCP updates and required environmental study would be completed prior to the proposed construction of a runway extension, a taxiway extension, or a replacement runway. All of these potential projects would involve grading, paving, storm sewer management, lighting and pavement marking. Since there are wetlands on the airport property, an evaluation would be completed to review any potential impacts as part of the documentation listed above.

Other than updating the 21D LTCP, the only 2015 CIP projects at 21D include the reconstruction of the parallel taxiways (planned for 2015, 2016 and 2019) and pavement rehabilitation for the North Building Area Alleyways. No additional environmental review is required because the proposed projects are repair, rehabilitation, or reconstruction projects that do not physically alter the original size of any structures and do not have the potential for substantive environmental effects.

Other future CIP projects at 21D include constructing a new materials storage building and pavement rehabilitation for the South Building Area Alleyways (planned for 2018); and pavement rehabilitation for Runway 04-22 (planned for 2019). These projects are maintenance and rehabilitation activities that will not require additional environmental review.

## Airlake Airport Projects (Reliever)

The MAC is currently preparing an update to the Long-Term Comprehensive Plan (LTCP) for Airlake Airport (LVN). The recommendation in the December 2008 plan includes completing the final phase of the South Building Area alleyway, utility development, and the extension of Runway 12-30 from 4,098 feet to 5,000 feet. It is anticipated that the LVN LTCP update will endorse these same recommendations. The MAC prepared an EAW for the Airlake Airport South Building Area Development project in January 1999. The EAW addressed the storm water runoff and designated trout stream impacts. In 2001, the initial grading for the building area was completed with the construction of a storm water detention pond to capture runoff before it enters the designated trout stream. The trout stream was also relocated under a permit issued by the Minnesota DNR as part of the project. The South Building Area Alleyway Development is planned for 2016 with the final phase of construction scheduled for completion in 2019. This will involve the placement of aggregate base and asphalt material for hangar area taxi lanes and the installation of sanitary sewer and water services. All of this work was evaluated in the 1999 EAW.

The LVN LTCP details the reconstruction and extension of Runway 12-30 to 5,000 feet and the realignment of Cedar Avenue. This project is currently planned for 2020. The MAC published the Final Scoping Decision Document and the Final EAW in March 2011 and is planning to initiate an EIS for the project when a solid project implementation timeline is determined. The MAC will have to identify funding sources for implementation of the proposed runway extension and will not proceed with the runway extension project until the necessary environmental review is completed.

Other future CIP projects at LVN include pavement rehabilitation for Taxiway A (planned for 2016); and construction of a new materials storage building (planned for 2018). Other than updating the LTCP, there are no 2015 projects scheduled for Airlake Airport.

## Flying Cloud Airport Projects (Reliever)

The MAC updated the Flying Cloud Airport (FCM) Long-Term Comprehensive Plan (LTCP) in October 2010 and plans to begin another update in 2015. The 2010 plan proposes a 109-foot extension of Runway 18-36 to the north (currently planned in 2018), increasing the overall runway length to 2,800 feet. It is anticipated the FCM LTCP update will endorse these same recommendations.

Other than updating the FCM LTCP, the only 2015 project at FCM is pavement rehabilitation for Taxiway A (planned for 2015 and 2016). No additional environmental review is required because the proposed project is a repair, rehabilitation, or reconstruction project that does not physically alter the original size of any structures and does not have the potential for substantive environmental effects.

Other future CIP projects at FCM include pavement rehabilitation for the southeast building area alleyways (planned for 2017); pavement rehabilitation for Taxiway D and roof repairs or replacement (planned for 2018); pavement rehabilitation for Taxiway E, south building area development and electrical vault modifications (planned for 2018); construction of a new equipment storage building (planned for 2019); and runway 10L-28R pavement rehabilitation reclaim and overlay (planned for 2021). These projects are maintenance and rehabilitation activities that will not require additional environmental review.

## Crystal Airport Projects (Reliever)

The MAC is currently preparing an update to the Long-Term Comprehensive Plan (LTCP) for Crystal Airport (MIC). The recommendation in the December 2008 plan is to close two of the airport's four runways. It is anticipated that the MIC LTCP update will endorse these same recommendations. The MAC is in the process of determining the best course of action for implementing the long-term plan. The FAA must approve the proposed runway closures.

The 2015-2021 CIP includes the Runway 14R-32L and Taxiway E modifications project, scheduled for 2016 and 2017. The project involves the reconstruction and conversion of the existing runway pavement into a taxiway, and would not be implemented until the necessary approvals and required environmental study associated with the runway closure are completed.

Other than updating the MIC LTCP, the only 2015 projects at MIC includes roof repair or replacement on the MAC-owned buildings and HFI hangar demolition. No additional environmental review is required because the proposed project is either a repair, rehabilitation, or reconstruction projects that does not physically alter the original size of any structures or a new, replacement or expansion project that does not have the potential for substantive environmental effects.

Other future CIP projects include obstruction removals (planned for 2016); construction of a new materials storage building (planned for 2017); pavement rehabilitation for the alleyways (planned for 2018 and 2020); and pavement rehabilitation for the taxiways (planned for 2019). These projects are maintenance and rehabilitation activities that will not require additional environmental review.

## Anoka County – Blaine Airport Projects (Reliever)

The MAC and the Federal Aviation Administration (FAA) prepared and approved a Final Environmental Impact Statement (FEIS) for the Anoka County-Blaine Airport (ANE) in January 2003. All projects included in the FEIS are now complete, except for one. The FEIS included the proposed Xylite Street Relocation Project which is planned for 2018 in the CIP. This project may affect water quality and wetlands. To protect wetland areas, ditches will accommodate runoff. Minor wetlands impacted by construction will be mitigated according to watershed district and Minnesota DNR requirements.

The MAC plans to begin updating the ANE Long Term Comprehensive Plan (LTCP) in 2015. Upon finalization of the ANE LTCP, environmental documentation, if needed, will be completed as part of the planning and related CIP processes.

Other than updating the LTCP, the 2015 projects at ANE include airfield signage and electrical improvements and Air Traffic Control Tower equipment upgrades. No additional environmental review is required for these activities because they will not have substantive environmental effects.

Other future CIP projects include roof repairs or replacement and MAC maintenance building improvements (planned for 2016); construction of a new materials storage building, pavement reconstruction for Taxiway A1 and Runways 09-27 and 18-36 joint and crack repairs (planned for 2017); Taxiway Foxtrot reconstruction (planned for 2018); alleyway pavement reconstruction in the north-central building area and obstruction removal (planned for 2019); alleyway pavement reconstruction in the south-central building area and a second phase of Air Traffic Control Tower equipment upgrades (planned for 2020); and pavement reconstruction in the west building area alleyways, as well as on the south service and east landside roads (planned for 2021).

## Appendix A

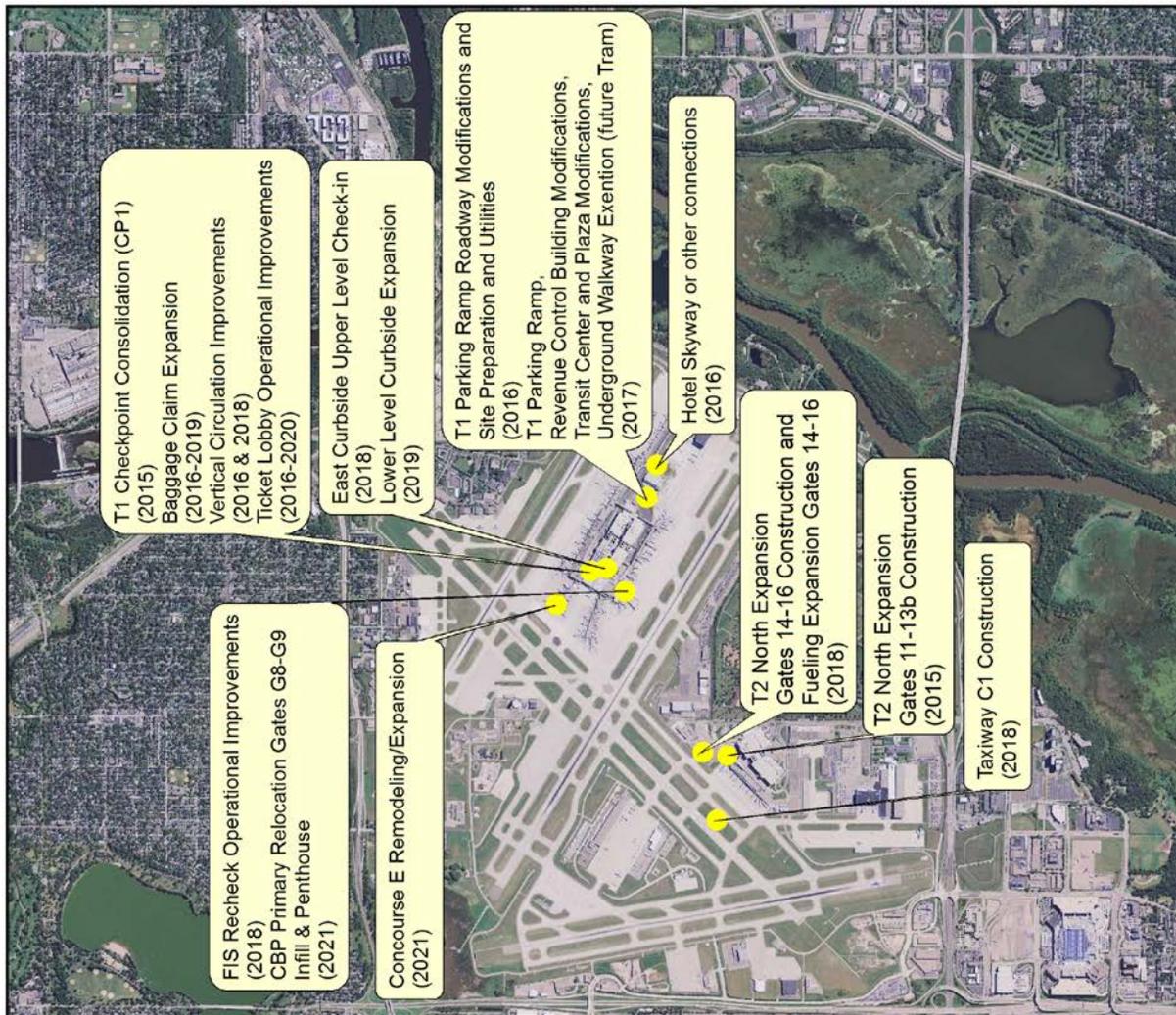
### **Description of Projects in the 2015 – 2021 Capital Improvement Program**

**Figure A-1**  
**Capital Improvement Projects with Potential Environmental Effects**

Minneapolis - St. Paul International Airport  
 2015-2021

**Proposed Project Schedule**

2015	T1 Checkpoint Consolidation (CP1)
2016	T2 North Expansion - Gates 11-13b Construction
	Baggage Claim Expansion
	Vertical Circulation Improvements
	Ticket Lobby Operational Improvements
	Hotel Skyway or other connections
	T1 Parking Ramp Roadway Modifications
	T1 Parking Ramp Site Preparation and Utilities
2017	Baggage Claim Expansion
	Ticket Lobby Operational Improvements
	T1 Parking Ramp
	T1 Parking Ramp Revenue Control Building Modifications
	T1 Parking Transit Center and Plaza Modifications
	T1 Parking Underground Walkway Extension (future Tram)
2018	Baggage Claim Expansion
	Vertical Circulation Improvements
	Ticket Lobby Operational Improvements
	FIS Recheck Operational Improvements
	East Curbside Upper Level Check-In
	Taxiway C1 Construction
	T2 North Expansion - Gates 14-16 Construction
	T2 North Expansion - Fueling Expansion Gates 14-16
2019	Baggage Claim Expansion
	Ticket Lobby Operational Improvements
	Lower Level Curbside Expansion
2020	Ticket Lobby Operational Improvements
2021	Concourse E Remodeling/Expansion
	CBP Primary Relocation Gates G8-G9 Infill & Penthouse



## 2015 Capital Improvement Program

### Terminal 1-Lindbergh

#### Safety/Security Projects

Telecommunications Room Equipment Continuity and Security \$1,500,000

The MAC network (MACNet) carries credit card data from the Landside Parking Revenue Control System. The credit card industry has created security standards that merchants, like the MAC, are required to meet to protect card holder data. Among these requirements are security standards for the physical locations where MACNet equipment is located. Additionally, the network equipment itself must have added security features to prevent unauthorized network access. This program will address these standards by providing security equipment and relevant network hardware for the 150 telecommunications rooms on the MSP campus. This program is being coordinated with the iVSN and Fiber Optic Cable Infrastructure Upgrade/Expansion programs to avoid duplication of effort and cost. This will be a multi-year program.

#### Facility Rehabilitation

Electrical Infrastructure Rehabilitation Program \$1,500,000

There are 53 electrical substations that serve the Terminal 1-Lindbergh complex. It is imperative that these substations be inspected, cleaned and upgraded in order to ensure their continued performance. This is a continuation of a multi-year program that began in 2009.

Terminal Miscellaneous Modifications \$2,400,000

Each year, there is a list of maintenance projects that are beyond the capability of the MAC's maintenance staff and trades to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. The list of potential projects will be compiled and prioritized in early 2015.

Summarized below are the categories of the projects that are included in the Terminal Miscellaneous Modifications program:

Building Exterior Rehabilitation \*

A continuation of the program to rehabilitate the exterior of the terminals and other MAC buildings, including roof and curtainwall rehabilitation.

Terminal Electrical Modifications \*

An ongoing program to address electrical issues in the terminals due to age and deterioration of the existing systems or modifications necessary for improved reliability.

Terminal Mechanical Modifications \*

An ongoing program to address mechanical issues in the terminals due to age and deterioration of the existing systems or modifications necessary for improved reliability.

Terminal Miscellaneous Modifications

\*

An ongoing program to update and remodel areas within the terminals to keep abreast of changing requirements. This may be accomplished through a series of small individual projects to meet the requirements of the various tenants or may be consolidated into a single project.

MSP Campus Modifications

\*

An ongoing program to modify or remodel areas within other facilities around the MSP campus to meet the needs of the various tenants/general public/MAC departments utilizing the facilities.

Emergency Power Upgrades

\$1,500,000

A study and survey of Terminal 1-Lindbergh transfer switches and emergency lighting were completed in 2008. This year's project will continue the design and implementation of emergency power and lighting corrective work identified in these studies.

Restroom Upgrade Program

\$8,500,000

A study of all restrooms in Terminal 1-Lindbergh was completed in 2010 and a program developed to upgrade/modernize them. From this study, each restroom was prioritized as to its condition. This program will provide for the phased modernization of the Terminal 1-Lindbergh restrooms to include upgraded finishes, lighting, air quality, energy saving upgrades, and ADA compliance.

Air Handling Unit Replacement

\$1,500,000

There are existing air handling units serving Terminal 1-Lindbergh that were installed with the original terminal construction in 1958-60 and are over 40 years old. A study of these units has been completed that evaluated each unit's age, condition, and its ability to heat or cool the spaces it serves adequately. A multi-year program to provide for the replacement of the units that have been identified as needing replacement has been implemented. The project costs include modifications to building walls to facilitate the removal of existing equipment and installation of the new units, upgraded electrical and temperature controls, and asbestos abatement.

Conveyance System Upgrades

\$2,900,000

A study of the MSP campus conveyance systems including elevators, escalators, moving walks, dumbwaiters, and material lifts was completed by the Facilities Department's conveyance consultant. The study evaluated the useful life of each system including the availability of replacement parts and technical support of the equipment. Many of the systems are being operated by outdated technology that is generally less efficient than modern control equipment. Some of the systems do not include safety devices or features that are commonly installed on modern equipment. This multi-year program modernizes and replaces elements of the conveyance systems.

Passenger Boarding Bridge Replacements

\$4,500,000

Many of the passenger boarding bridges are at the end of their useful life. The current understanding between the MAC and the Terminal 1-Lindbergh airlines is to replace/refurbish the bridges over time starting with the ones in the worst condition. The new/refurbished passenger bridges will become the property of the MAC. This project is part of a multi-phased program to

replace/refurbish the bridges at Terminal 1-Lindbergh, and will provide one new or refurbished bridge on Concourse E.

Plumbing Infrastructure Upgrade Program \$500,000

In 2010, MAC staff prepared a preliminary study of the reliability and maintainability of the existing plumbing infrastructure. Portions of the existing plumbing infrastructure serving Terminal 1-Lindbergh are over 40 years old, have systems that are undersized for today's demands, contain isolation valves that are either inaccessible or no longer functional, and utilize aging water meter systems. There are also deteriorated sections of the existing sanitary and storm water systems. This ongoing program was implemented in 2012 to upgrade the plumbing infrastructure system to meet current code requirements and MAC standards. The focus of the 2015 project is to continue the survey and replacement of aging plumbing systems.

Lighting Infrastructure Technology and Equipment (LITE) \$1,600,000

This is a multi-year program that analyzes, assembles, and organizes lighting system upgrade recommendations for the MSP campus. Annual investment in lighting infrastructure is necessary to ensure its safe operation, to reduce energy and maintenance costs, and to implement technology upgrades that improve lighting quality. Light fixtures age and degrade due to time, heat or exterior elements. Lighting technologies also change and upgrades will provide for more energy-efficient lighting systems.

T1 Tram Systems Upgrades and Retrofit \$1,450,000

The MAC Hub and Concourse Tram systems were originally placed into public service in 2001 and 2004, respectively. As part of the installation, the automatic train control system utilized multiple components provided by GE Intelligent Platforms. In late 2011, GE indicated it would discontinue support of selected components beyond the year 2019. This project will replace and upgrade the GE components to Tram Control Systems on both the Hub and Concourse Trams. Completion is required prior to December 2019. Both Trams are integral to the overall efficient flow of passengers throughout the airport and are expected to continue that role into the foreseeable future.

MAC Public Address System \$1,300,000

The MAC Public Address System (MACpas) project includes planning to continue component upgrades for the MAC's public address system. A multi-year update and migration strategy has been formulated to eliminate discontinued components and maintain the operation and reliability of the system. The current public address system was installed in 1999, provides travelers with over 12,000 messages daily and has exceeded its expected life cycle. The upgrade and migration will incorporate IP-based systems designed to run on MACNet 2.0 as it develops. The MACpas project will facilitate updating and migration with minimal disruption to MAC operations. Work will also be done in concert with other MAC projects, helping to eliminate numerous system reconfigurations. The phasing plan as projected is flexible and can be accelerated as needed. The program includes IP-based microphone stations, IP-based amplifier frames, and network-based controllers. MACpas will be more efficient, user friendly, and much easier and efficient to support.

MSP Employee Break Rooms \$200,000

This project will provide two break rooms, likely one centralized in Terminal 1-Lindbergh and one midway down Concourse C. It is expected that the break rooms will have a quiet area for employees that work multiple shifts on the campus and a separate area for employees to eat, read, converse with others, etc. out of view of public areas. By providing quality work support

areas, front line and other employees will be able to rest and eat out of view of the public, supporting an enhanced airport experience.

Terminal Building Remediation Program \$1,500,000

Continual maintenance of MAC buildings is imperative to passenger and employee comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. Building envelope issues include: curtain wall systems, glazing, sealant repair/replacement, louver repair/replacement, metal panel repair/replacement, and soffit repair/replacement and insulation systems. In addition to the age of the MAC's buildings, recent weather events including high winds, rain deluges, and the extreme heat and cold seasons have contributed to the need for this as an on-going program.

Passenger Amenities

Art Display Areas \$250,000

This program is a continuation of the existing program, in partnership with Airport Foundation MSP, to provide opportunities and space build out for the display of permanent and temporary/rotating art exhibits. This year's project will provide doors, work surface, temporary stage, and other work at the short film space on the C Concourse and self-contained musical performance audio boxes for the main mall.

Concessions Upgrades/Revenue Development \$200,000

This is an annual program to fund miscellaneous upgrades such as finishes, furniture, signage, and/or modified connections to utilities for the concession programs.

Concessions Rebids \$2,000,000

This four-year program, beginning in 2015, will provide support for lease required infrastructure to be brought to lease-lines, shell-space for new build-outs, and for other major changes required to implement the next phase of concessions at Terminal 1-Lindbergh.

Terminal Seating Improvements \$800,000

This program is a continuation of the 2013 seating replacement in Terminal 1-Lindbergh. The next four years' projects will complete the change-out of public seating to the new standards selected in 2013, including power, at locations such as Concourse C, ticket lobby, baggage claim, east mezzanine, vertical circulation towers, tram level, GTC atrium, GTC ground level, rental car locations, etc. The improved seating standard will continue to replace Terminal 1-Lindbergh bucket seating as well as relocated Terminal 2-Humphrey seating throughout these areas.

EVIDSs/MUFIDs Digital Signs \$400,000

This project will include new and replacement digital toppers, digital food courts signs, digital directories and brochure holders.

## Operational Improvements

Intelligent Monitoring and Control Systems (IMACS formerly OABA) \$1,500,000

This is a continuation of a multi-year program to upgrade all MAC building automation systems to an open architecture protocol so that the MAC can bid maintenance and construction contracts more competitively. This project will replace sole-source controllers such as Siemens and Legacy Honeywell with controllers from Honeywell, Circon, Distech, or TAC systems that are all LonMark certified products. (This project was formerly known as OABA, which is a component of IMACS.)

Fiber Optic Cable Infrastructure Upgrade/Expansion \$1,700,000

This project provides for the upgrade/installation of air-blown fiber optic cable at various airport locations, and installation of manhole/duct bank with tube and fiber optic cable. The project also includes fiber modifications, repairs and upgrades as necessary to maintain and improve the fiber infrastructure at MSP. This multi-year program provides for the expansion of cabling infrastructure including replacing materials that don't meet current MAC standards and adding capacity between locations where existing capacity has been consumed.

Wireless Network Control System \$600,000

This program provides for a campus-wide wireless network to be implemented in phases. This system will allow remote wireless access to the MAC Facilities Intelligent Monitoring and Control System (IMACS). The system will allow access to data and drawings from the MAC network as well as from remote vehicles on the airfield.

MACNet Upgrade – Connectivity Elements \$2,500,000

The MACNet provides the critical and required infrastructure to support all of the current and future MAC voice, data, and video systems. This includes systems supporting mission critical applications and systems that are used by Airside and Landside Operations, Public Safety, Airport Planning and Development, Environment, Finance, Human Resources Departments, and overall MAC administration. This system has been modified over time to support the current systems in place as well as new systems, business, and operational requirements as they have been identified. The current version of MACNet, however, has reached its operational capacity and is not capable of supporting future growth. The upgraded MACNet will be implemented over a number of years to provide the necessary infrastructure to support all next generation systems and applications to be implemented in upcoming years.

## Concourse G Improvements

Concourse G Roof Replacement \$8,400,000

Approximately 113,500 SF of roofing, including the area over the Mill-City Concessions, has been re-roofed at Concourse G per roof studies prepared over the course of several years. This project would finish the re-roofing of 113,000 SF including the FIS roof, over-flow roof drains, fall protection, addition of ladders, etc. to provide an OSHA and Building Code compliant, energy efficient system.

Clerestory Glazing Replacement \$3,400,000

The Concourse G pod areas are raised above the general ceiling with clerestory windows. These windows and curtain wall system are leaking due to age. To complete the Concourse G building envelope securement, the entire curtain wall system needs to be replaced. This project continues

to reflect the MAC's mission to maintain its building stock and infrastructure as an asset and meet its most recent sustainability goals.

Concourse G Fire Protection – Phase 4 \$700,000

This project provides code- and MAC Standards-required visual notification in multiple locations and repairs building air infiltration and exfiltration which has caused heating loss throughout areas that should maintain indoor ASHRAE temperature standards. The air infiltration and exfiltration cause damage to the fire protection system installed in 2012-2013, and this project will finish repairing the damage.

T1-Lindbergh Expansion/Remodeling

Long-Term Comprehensive Plan \$500,000

This project is to update the Long-Term Comprehensive Plan for MSP.

T1 Checkpoint Consolidation (CP1) \$18,000,000

This project consolidates existing Checkpoints 1, 2, 3 and 4 into one 10-lane checkpoint in the north lobby to improve lobby utilization, facility efficiencies, TSA staffing efficiencies, and guest wayfinding and to reduce lobby congestion. During construction, Checkpoint 5 may be reopened to ease the impact of the Checkpoint 1 closure. (See Figure A-2).

Energy Management Center

Alternative Energy Projects \$900,000

As part of an ongoing program, this project will evaluate potential alternative energy projects including solar power, wind power, geothermal technology for heating and cooling of new buildings, and other alternative energy approaches for the MAC.

Modular Cooling Tower Installation \$3,000,000

The MAC Energy Management Center (EMC) has requested an additional cooling tower to provide redundancy and emergency back up for the Terminal 1-Lindbergh cooling system. While improvements over the years have made the EMC much more efficient than ever before, the plant is still short on cooling tower capacity. During 90 - 95 degree days, the tower runs at 100% of capacity. If the EMC plant were to lose even one element of the towers, it would lose the ability to keep the airport at appropriate cooling and comfort levels. Equipment replacement time for these types of cooling systems can be up to 48 hours, during which time the MAC would lose cooling control of the terminal building.

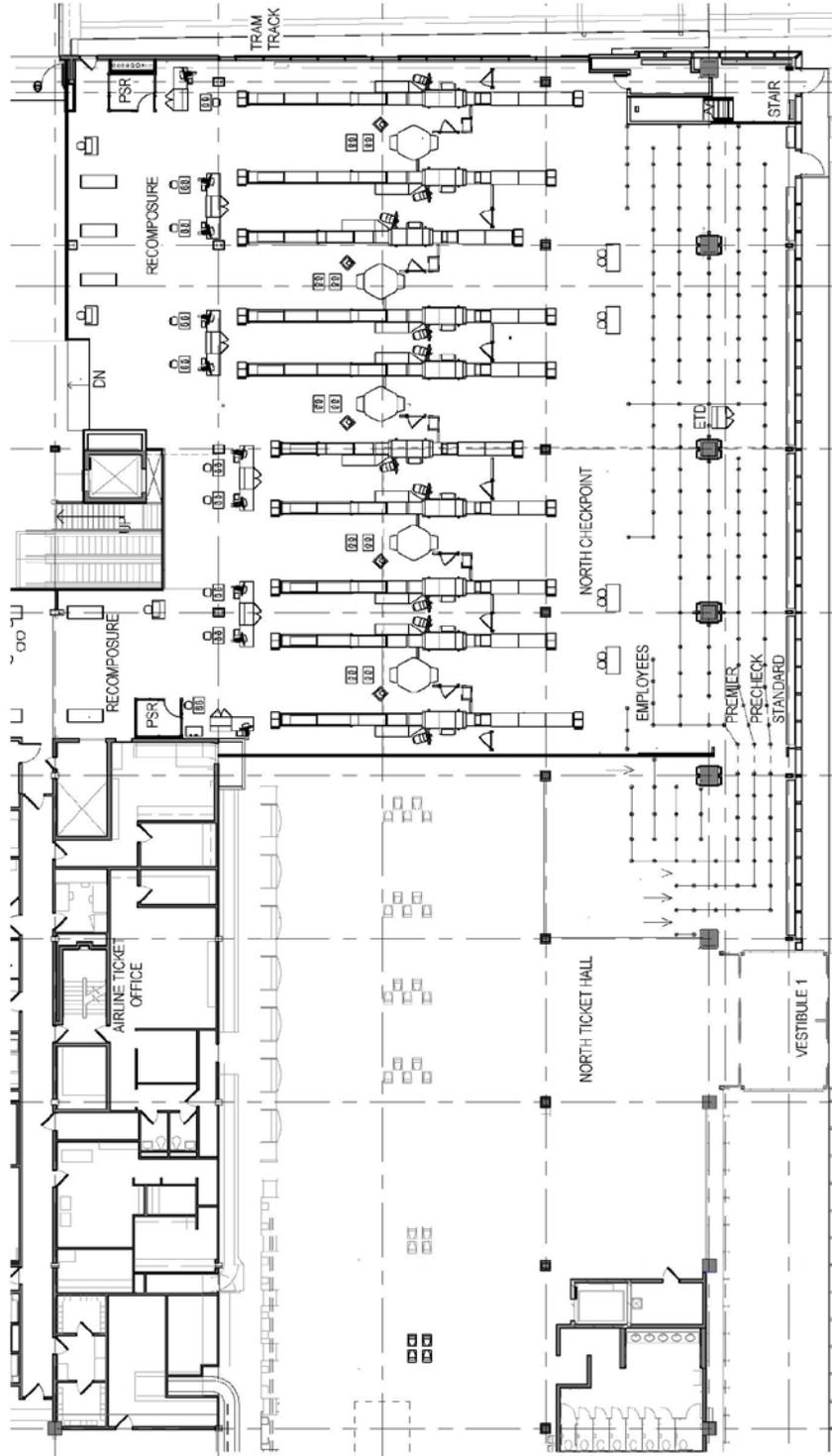
Field and Runway

Pavement Joint Sealing/Repair \$650,000

This is an ongoing program to provide for the resealing of joints, sealing of cracks, and limited surface repairs on existing concrete pavements. The areas scheduled for sealing will be as defined in the overall joint sealing program or as identified by staff inspection in the early spring of each year.

Figure A-2

2015 Checkpoint Consolidation  
Metropolitan Airports Commission



North Checkpoint Plan



Comm. No. 2014153 19 September 2014



ARCHITECTURAL ALLIANCE

Pavement Rehabilitation – Aprons \$10,200,000

This project provides for reconstruction of approximately 22,000 square yards of concrete apron located along Concourse C between Gates C4 and C9. Work will include removals, storm sewer installation, concrete pavement, pavement marking and replacement of existing fuel utilities.

Miscellaneous Airfield Construction \$800,000

This is an ongoing program to consolidate various incidental repairs beyond the workload capabilities of the Field Maintenance personnel, or to handle airfield problems requiring repair that come up unexpectedly.

Terminal Roads/Landside

Tunnel/Bridge Rehabilitation \$100,000

The MSP campus has MAC-owned bridges and tunnels. Bridge and tunnel inspections are conducted each year to identify maintenance and repairs which are then implemented in a timely fashion.

Variable Message Signs Replacement \$2,100,000

This project replaces variable message signs on the inbound roadways and at parking ramps at Terminal 1-Lindbergh and Terminal 2-Humphrey that are at end of life with signs compatible with new MACNet systems.

Parking

T1/T2 Parking Structure Rehabilitation \$2,500,000

This is an annual program to maintain the integrity of the airport's multi-level parking structures. Projects typically include concrete repair, joint sealant replacement, expansion joint repairs, concrete sealing and lighting improvements.

Parking Ramp Railing Refinishing Project \$1,000,000

This multi-year project will address the parking ramp metal railings that have weathered and degraded over time. The paint has chipped and peeled away, which caused the exposed metal rail to rust and erode. The rust from the degrading metal railings has stained the concrete walls and concrete slabs creating an unsightly appearance for airport customers and resulting in concrete repair work in the surrounding areas. More critically, the degraded metal railings are at risk of detachment.

Terminal 2-Humphrey

Operational Improvements

T2 APC Kiosks \$800,000

Completion of this project will provide expedited passenger processing for US and Canadian citizens, Visa Waiver, including legal residents, and green-card holders and students, similar to the Terminal 1-Lindbergh APC Phase 2 installation and requested upgrades and additional kiosks. The processing will not reduce CBP staffing requirements, but will reduce wait times in the primary

processing area and balance a disparity between T1 and T2 facilities. A larger percentage of passengers will be able to use the initial implementation at T2 due to the O&D nature of the T2 activities.

#### Terminal 2-Humphrey North Expansion

Gates 11 – 13b Construction \$35,000,000

This project will provide three new gates with associated gate lobbies, and four new passenger boarding bridges for current and future fleet mixes, with ground boarding accommodation at the northern most gate, providing maximum short- and long-term flexibility. The build-out will include: public walkways; gate lobby space; restrooms; vending; publicly accessible power; video display installations (EVIDs/MUFIDs); and way-finding signage revisions on the north end of the terminal. (See Figure A-3).

#### Public Areas/Roads

Landside Pavement Rehabilitation \$400,000

This is an ongoing program to construct or reconstruct bituminous pavements outside of the Air Operations Area (AOA). Inspection of pavements and appurtenances determines what areas are to be prioritized for rehabilitation under each year's project.

Roadway Fixture Refurbishment \$125,000

Many of the light poles, clearance restriction bars, sign units, fence sections, and canopies on the airport roadways are in need of repainting and maintenance. This project provides for refurbishment of these fixtures utilizing seasonal staff as available when bid.

Aircraft Viewing Area \$200,000

This project will create a parking area for the public to view and watch aircraft. Project includes parking, landscaping, signage, a satellite restroom, and cameras. This will be outside the AOA.

#### Hangars and other Buildings

Roof Replacements \$1,000,000

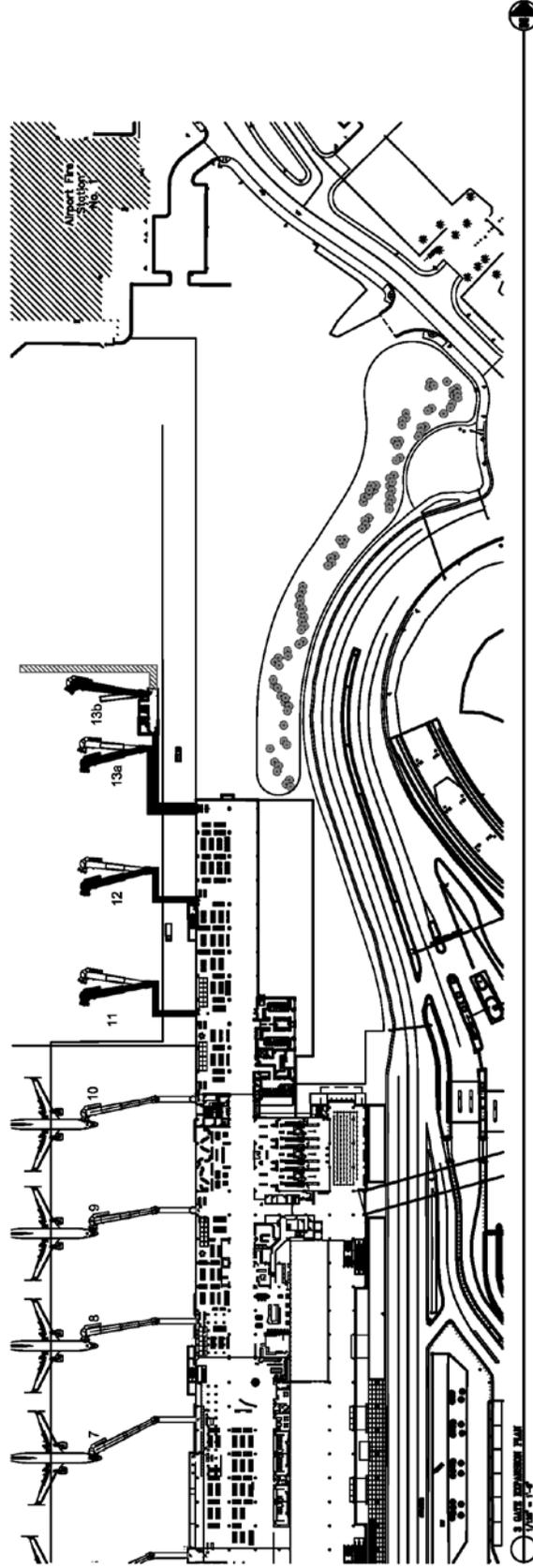
A report has been developed within the MAC that evaluates one-half of the roofs every other year. This ongoing program allows those roofs that have been evaluated to be prioritized and programmed for repair. Emergency repairs may also be needed on some roofs; this program will provide dollars for such instances.

#### Police

iViSN Improvements \$3,000,000

This project is the continuation of the program to systematically replace and integrate the approximately 1800 existing cameras into the new iViSN system and to expand the camera coverage within the terminals. A grant application has been approved by the TSA for 100% of the project costs.

Figure A-3



T2-HUMPHREY  
3-GATE AREA PLAN

TOTAL 3 GATE AREA = 44,023 SF

APD Operational Improvements \$500,000

The Airport Police Department (APD) has a number of operational improvement projects to facilitate more efficient work within the department and accommodate growth in its operations. These projects may include: Badging Office remodeling, including: additional storage and office reconfigurations; Inventory Center relocation to be nearer APD administration; T2 Patrol Operations Center; and remote evidence room improvements.

Fire

MSP Campus Fire Alarm System Upgrade \$850,000

In an effort to improve monitoring reliability and eliminate the existing single point of failure configuration, this two-year project will include database redundant systems, device controller upgrades and the decentralization of the fire alarm master control equipment.

Environment

Ground Service Equipment (GSE) Electrical Charging Stations \$1,000,000

This project will purchase and install charging stations for electric ground support equipment (GSE). These fast, energy-efficient charging stations allow for simultaneous charging, adjustable charging rates, and automatic shut-off when the GSE are fully charged or when overheating occurs. The charging stations are to be installed at T1 for use by Delta GSE. This project supports the proposed long-term goal of converting all Delta GSE to electric power, thereby reducing overall air emissions and noise pollution at MSP from fossil fuel-burning GSE. Delta will pay for electric usage of the charging units.

St. Paul

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for St. Paul Downtown Airport.

Pavement Rehabilitation – Runway 14-32 \$1,500,000

This is an ongoing program to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or, in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This year's project includes rehabilitation of the Runway 14-32 pavement through the installation of a bituminous overlay. The runway lighting system will also be upgraded and repaired as required.

Lake Elmo

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for Lake Elmo Airport.

Parallel Taxiways Reconstruction \$600,000

This project is part of an ongoing effort to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or, in some instances reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project

includes the full-depth reconstruction of the oldest portions of Taxiway Bravo parallel to Runway 04-22.

Alleyway Rehabilitation (Alleyways North Building Area) \$900,000

This is an ongoing effort to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or, in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes rehabilitation of alleyways in the North Building Area.

#### Airlake

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for Airlake Airport.

#### Flying Cloud

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for Flying Cloud Airport.

Pavement Rehabilitation (Taxiway A – Phase 1) \$800,000

This is an ongoing program to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes the full-depth reconstruction of the portion of Taxiway Alpha which lies east of Runway 18-36, and will include taxiway lighting systems installation.

#### Crystal

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for Crystal Airport.

Roof Repairs/Replacement \$250,000

This project provides for a response to deficiencies in some of the roof structures on MAC buildings. This project accounts for identification of the exact type of roof deficiencies as well as completion of the most cost-effective repairs or replacements.

#### Anoka County – Blaine

Long-Term Comprehensive Plan \$50,000

This project is to update the Long-Term Comprehensive Plan for Anoka County - Blaine Airport.

Airfield signage/Electrical Improvements \$500,000

The existing airfield electrical system requires improvements and upgrades to increase reliability, replace old infrastructure, and add taxiway edge lighting to a portion of Taxiway Charlie. The project will address aging airfield signs, circuitry, and regulators with the primary focus being the airfield guidance sign systems.

Air Traffic Control Tower Equipment Upgrades

\$200,000

The Anoka County-Blaine control tower is owned by the MAC. The equipment used by the air traffic controllers has been in service for over 15 years and needs to be replaced and/or updated to ensure continued reliability.

## 2016 Capital Improvement Program

### Terminal 1-Lindbergh

#### Safety/Security Projects

Telecommunications Room Equipment Continuity and Security \$1,500,000

The MAC network (MACNet) carries credit card data from the Landside Parking Revenue Control System. The credit card industry has created security standards which merchants, like the MAC, are required to meet to protect card holder data. Among these requirements are security standards for the physical locations where MACNet equipment is located. Additionally, the network equipment itself must have added security features to prevent unauthorized network access. This program will address these standards by providing security equipment and relevant network hardware for the 150 telecommunications rooms on the MSP campus. This program is being coordinated with the iVSN and Fiber Optic Cable Infrastructure Upgrade/Expansion programs to avoid duplication of effort and cost. This is a multi-year program.

#### Facilities Rehabilitation

Electrical Infrastructure Rehabilitation Program \$1,500,000

There are 53 electrical substations that serve the Terminal 1-Lindbergh complex. It is imperative that these substations be inspected, cleaned and upgraded in order to ensure their continued performance. This is a continuation of a multi-year program that began in 2009.

Terminal Miscellaneous Modifications \$2,400,000

Each year, there is a list of "maintenance" projects that are beyond the capability of the MAC's maintenance staff and trades to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. The list of potential projects will be compiled and prioritized in early 2016.

Summarized below are the categories of the projects that are included in the Terminal Miscellaneous Modifications program:

Building Exterior Rehabilitation \*

A continuation of the program to rehabilitate the exterior of the terminals and other MAC buildings including roof and curtainwall rehabilitation.

Terminal Electrical Modifications \*

An ongoing program to address electrical issues in the terminals due to age and deterioration of the existing systems or modifications necessary for improved reliability.

Terminal Mechanical Modifications \*

An ongoing program to address mechanical issues in the terminals due to age and deterioration of the existing systems or modifications necessary for improved reliability.

Terminal Miscellaneous Modifications

\*

An ongoing program to update and remodel areas within the terminals to keep abreast with changing requirements. This may be accomplished through a series of small individual projects to meet the requirements of the various tenants or may be consolidated into a single project.

MSP Campus Modifications

\*

An ongoing program to modify or remodel areas within other facilities around the MSP campus to meet the needs of the various tenants/general public/MAC departments utilizing the facilities.

Emergency Power Upgrades

\$1,500,000

A study and survey of Terminal 1-Lindbergh transfer switches and emergency lighting was completed in 2008. This year's project will continue the design and implementation of emergency power and lighting corrective work identified in this study.

Lower Level Roadway/GTC Water Infiltration Mitigation

\$1,000,000

Water infiltration through the structural concrete slab above the Ground Transportation Center and lower level of Terminal 1-Lindbergh has required the use of buckets and other containers to collect the water. Long-term water infiltration of structural members will result in deterioration of the structural concrete and will shorten the life of the structure. This project will continue the efforts to determine the causes of the infiltration and complete repairs.

Restroom Upgrade Program

\$4,500,000

A study of all restrooms in Terminal 1-Lindbergh was completed in 2010 and a program developed to upgrade/modernize them. From this study, each restroom was prioritized as to its condition. This program will provide for the phased modernization of the Terminal 1-Lindbergh restrooms to include upgraded finishes, lighting, air quality, energy saving upgrades, and ADA compliance.

Air Handling Unit Replacement

\$1,500,000

There are existing air handling units serving Terminal 1-Lindbergh that were installed with the original terminal construction in 1958-60 and are over 40 years old. A study of these units has been completed that evaluated each unit's age, condition, and its ability to heat or cool the spaces it serves adequately. A multi-year program to provide for the replacement of the units that have been identified as needing replacement will be implemented. The project costs include modifications to building walls to facilitate the removal of existing equipment and installation of the new units, upgraded electrical and temperature controls, and asbestos abatement.

Food Court Service Elevator Replacement

\$2,000,000

This project replaces and upgrades the two side-by-side service elevators located in the central food court at Terminal 1-Lindbergh. These elevators are critical to keeping the vendors throughout the airport supplied. These elevators are nearing the end of standard service life. The elevators will be removed in their entirety including cabs, hoist systems, and associated equipment and replaced with all new equipment and cabs that are designed to freight standards.

Plumbing Infrastructure Upgrade Program \$500,000

In 2010, MAC staff prepared a preliminary study of the reliability and maintainability of the existing plumbing infrastructure. Portions of the existing plumbing infrastructure serving Terminal 1-Lindbergh are over 40 years old, have systems that are undersized for today's demands, contain isolation valves that are either inaccessible or no longer functional, and utilize aging water meter systems. There are also deteriorated sections of the existing sanitary and storm water systems. This ongoing program was implemented in 2012 to upgrade the plumbing infrastructure system to meet current code requirements and MAC standards. The focus of the 2016 project is to continue the survey and replacement of aging plumbing systems.

Lighting Infrastructure Technology and Equipment (LITE) \$1,500,000

This is a multi-year program that analyzes, assembles, and organizes lighting system upgrade recommendations for the MSP campus. Annual investment in lighting infrastructure is necessary to ensure its safe operation, to reduce energy and maintenance costs, and implement technology upgrades that improve lighting quality. Light fixtures age and degrade due to time, heat, or exterior elements. Lighting technologies also change and upgrades will provide for more energy-efficient lighting systems.

T1 Tram Systems Upgrades and Retrofit \$2,000,000

The MAC Hub and Concourse Tram systems were originally placed into public service in 2001 and 2004, respectively. As part of the installation, the automatic train control system utilized multiple components provided by GE Intelligent Platforms. In late 2011, GE indicated it would discontinue support of selected components prior to the year 2020. This project will replace and upgrade the GE components to Tram Control Systems on both the Hub and Concourse Trams. Both Trams are integral to the overall efficient flow of passengers throughout the airport and are expected to continue that role into the foreseeable future.

MAC Public Address System \$1,200,000

The MAC Public Address System (MACpas) project includes planning to continue component upgrades for the MAC's public address system. A multi-year update and migration strategy has been formulated to eliminate discontinued components and maintain the operation and reliability of the system. The current public address system was installed in 1999, provides travelers with over 12,000 messages daily and has exceeded its expected life cycle. The upgrade and migration will incorporate IP-based systems designed to run on MACNet 2.0 as it develops. The MACpas project will facilitate updating and migration with minimal disruption to MAC operations. Work will also be done in concert with other MAC projects helping to eliminate numerous system reconfigurations. The phasing plan as projected is flexible and can be accelerated as needed. The program includes IP-based microphone stations, IP-based amplifier frames, and network-based controllers. MACpas will be more efficient, user friendly, and much easier and efficient to support.

T1 Folded Plate Repairs \$1,000,000

This five-year program to rehabilitate the existing structure will allow continued operations of Terminal 1-Lindbergh as an arrivals and departures building for the foreseeable future. This year's project will apply the finish/film on the underside of the east and west cantilevers, to match the north and south cantilevers and provide a moisture barrier for the system, while allowing vapor to escape from the concrete system. Future projects will remove the existing five layers of roofing, including asbestos, flammable wood construction, and additional weight of lightweight topping, and provide a low-slope roof with overflows at the grid line C and L girders where the false roof will create a heated inspection area for all 17 bays of the repaired 120' long-spans. The rehabilitation

will also provide a greater depth of insulation under the new PVC roof, will provide a greater level of access to the roof, require minimal modifications to the catwalk system, and allow gird line 1, 8, 9, and 17 to match the remainder of the new false roofs between.

Telecom Relocation & Decommissioning \$1,500,000

The Telecommunications Relocation & Decommissioning program includes a plan to vacate the current area occupied by Old M1 (LT-1242A-C) and the existing Main Point of Presence (MPOP). The existing conditions of the Old M1 and the MPOP space are restrictive. Critical fiber and copper connections run through the old space, terminating in the new M1 space.

A proactive approach to the relocation and retirement of the above-mentioned equipment is needed in order to continue supporting connectivity needs and free up the existing space for future plans at Terminal 1-Lindbergh. The complete removal of Old M1 and build-out of a new space for the MPOP will take place in phases over the span of this three-year program.

C-G Connector Improvements \$4,500,000

High winds contributed to the soffit panels falling from the underside of the C-G Connector. The panels were secured temporarily and a study was undertaken to review the situation. The study revealed that the soffit panel structure is in need of structural enhancements and replacement. In addition, there is a high-pressure steam pipe, located 30 feet underground, which follows the line of this connector. The high-pressure steam pipe is leaking and in the confined space has created a dangerous situation for MAC staff. During the previously discussed study a route was found through the C-G connector for the replacement of the high-pressure steam pipe. This project would correct two safety issues.

Terminal Building Remediation Program \$1,500,000

Continual maintenance of MAC buildings is imperative to passenger and employee comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. Building envelope issues include: curtain wall systems, glazing, sealant repair/replacement, louver repair/replacement, metal panel repair/replacement, and soffit repair/replacement and insulation systems. In addition to the age of the MAC's buildings, recent weather events including high winds, rain deluges, and the extreme heat and cold seasons have contributed to the need for this as an on-going program.

Passenger Amenities

Art Display Areas \$250,000

This program is a continuation of the existing program, in partnership with the Airport Foundation MSP, to provide opportunities and space build out for the display of permanent and temporary/rotating art exhibits. This year's project will accomplish a portion of the remaining work identified in the 2008 Arts & Culture Committee's Master Plan: repair existing commissioned art, didactics for all existing commissioned artwork, permanent naming/monumentation at the Concourse C Art Gallery, and development of additional infrastructural support for the Arts & Culture program.

Concessions Upgrades/Revenue Development \$200,000

This is an annual program to fund miscellaneous upgrades such as finishes, furniture, signage, and/or modified connections to utilities for the concession programs.

Concessions Rebids \$2,000,000

This four-year program, beginning in 2015, will provide support for lease required infrastructure to be brought to lease-lines, shell-space for new build-outs, and for other major changes required to implement the next phase of concessions at Terminal 1-Lindbergh.

Terminal Seating Improvements \$800,000

This program is a continuation of the 2013 seating replacement in Terminal 1-Lindbergh. The next three years' projects will complete the change-out of public seating to the new standards selected in 2013, including power, at locations such as Concourse C, ticket lobby, baggage claim, east mezzanine, vertical circulation towers, tram level, GTC atrium, GTC ground level, rental car locations, etc. The improved seating standard will continue to replace Terminal 1-Lindbergh bucket seating as well as relocated Terminal 2-Humphrey seating throughout these areas.

Ticket Counter Upgrades to ADA \$800,000

This project replaces the ground transportation center atrium counters. Ticket counters throughout the airport are being or have been upgraded to meet Minnesota's building code and the federal ADA standard. These are expected to be the last ticket counters required to be upgraded.

Commission Chambers Telecoil Installation \$200,000

This project will provide for equal access to amplified audio during Committee and Commission meetings, without identification/request for physical aids, for users of Telecoil-equipped hearing aids. This meets the spirit and the letter of federal ADA for equal access, and enhances the guest experience.

Concourse Service Center Upgrades \$1,000,000

This project will create new prototypical service centers, enhancing the C3 installation, and look at additional and innovative ways to provide business users and others work environments (not airline club environments) to accomplish work outside of crowded gate-hold areas. Current service centers are comprised of cubicles with power that had telephones prior to mainstream cellular telephone popularity. Power, privacy, work surfaces, seating, and conversational arrangement varieties will provide for multi-generational work environments, enhancing the business traveler's experience.

Operational Improvements

Intelligent Monitoring and Control Systems (IMACS formerly OABA) \$1,500,000

This is a continuation of a multi-year program to upgrade all MAC building automation systems to an open architecture protocol so that the MAC can bid maintenance and construction contracts more competitively. This project will replace sole-source controllers such as Siemens and Legacy Honeywell with controllers from Honeywell, Circon, Distech, and TAC systems that are LonMark certified products. (This project was formerly known as OABA, which is a component of IMACS.)

Fiber Optic Cable Infrastructure Upgrade/Expansion \$1,700,000

This project provides for the upgrade/installation of air-blown fiber optic cable at various airport locations, and installation of manhole/duct bank with tube and fiber optic cable. The project also includes fiber modifications, repairs and upgrades as necessary to maintain and improve the

fiber infrastructure at MSP. Fiber optic cable infrastructure is the basic vehicle that allows for broader use of both new and existing communications and computer-based technologies. The cable infrastructure requires ongoing upgrade, replacement, and expansion. This multi-year project will provide for the expansion of cabling infrastructure including replacing materials that don't meet current MAC standards and adding capacity between locations where existing capacity has been consumed.

Wireless Network Control System \$1,000,000

This program provides for a campus-wide wireless network to be implemented in phases. This system will allow remote wireless access to the MAC Facilities Intelligent Monitoring and Control System (IMACS). The system will also allow access to data and drawings from the MAC network as well as from remote vehicles on the airfield.

MACNet Upgrade – Connectivity Elements \$1,000,000

The MACNet provides the critical and required infrastructure to support all of the current and future MAC voice, data, and video systems. This includes systems supporting mission-critical applications and systems that are used by Airside and Landside Operations, Public Safety, Airport Planning and Development, Environment, Finance, Human Resources Departments, and overall MAC administration. This system has been modified over time to support the current systems in place as well as new systems, business, and operational requirements as they have been identified. The current version of MACNet, however, has reached its operational capacity and is not capable of supporting future growth. The upgraded MACNet will be implemented over a number of years to provide the necessary infrastructure to support all next generation systems and applications to be implemented in upcoming years.

Concourse G Improvements

Exterior Panel/Sealant Replacement \$1,000,000

The exterior wall system of porcelain or metal wall panels over studs and gypsum wall board will be replaced because of failure of sealants and panel discoloration due to age. The curtain wall system was deemed in fairly good condition, with insulated glass, in 2010, but some of the gaskets are in need of replacement. Additional study to assess the current condition of both systems is in order.

Concourse G Rehabilitation \$2,000,000

This multi-year program will provide operational improvements to the existing concourse over time, including expanding gate lobbies to meet seating standards, replacing elevators (which will be replaced with freight elevators), modifying structural systems, and making other changes that will be identified through master planning efforts beginning in 2016.

T1-Lindbergh Expansion/Remodeling

Baggage Claim Expansion \$34,075,000

This four-year program will provide new baggage claim devices (carousels) to meet the level of service requirements for short- and medium-term growth of the O&D passengers, including: walkways that meet required codes (mall code width); public seating areas; centralized meet and greet space; left baggage storage; baggage service offices; concessions (food & beverage and retail); improved lighting; fire protection throughout the space; structural enhancements; improved baggage information flags and sight lines; curbside lighting and access; and other operational

improvements. This year's project addresses about half of the north end and center of the Baggage Claim level, in concert with North End Vertical Circulation and Ticket Lobby Operational Improvements projects.

Vertical Circulation Improvements \$13,100,000

This two-year program will remove the existing 12 scissors escalators and original elevators and add new high-speed, smart elevators. It will also provide control enhancements for the existing central elevators to remain. Additional circulation will be provided with other operational improvement projects. This year's project will complete the work at the north end of the Ticket Lobby, while the south end is scheduled for 2018.

Ticket Lobby Operational Improvements \$11,250,000

This five-year program addresses, with the Vertical Circulation Improvements Program, issues of congestion and functionality in the Terminal 1-Lindbergh Ticket Lobby. It will include: walkways that meet required codes (mall code width); ticket counter consolidations (due to abandoned checkpoints and checkpoint consolidation); clear sight lines to the checkpoints and checkpoint wait time information; airline ticket offices; centralized meet and greet areas; improved vestibules and access; east mezzanine removal/reduction; structural enhancements; curtain wall replacement; and other operational improvements. This year's project will complete modifications north of the Lobby center.

Hotel Skyway or other Connections \$9,500,000

The development of the hotel at Terminal 1-Lindbergh will require connections to the terminal and potential site improvements for connections to the facility, differing based on where the hotel is developed. A skyway connection will allow the hotel to be connected to the terminal complex over existing roadway systems and expedite the travelers' journey to and from the terminal and hotel. A skyway at the east site will extend over the inbound and outbound roadway to the Concourse A/C rotunda's upper-most levels. A west site will require similar connections to the existing hub core building as well as site improvements for vehicular and pedestrian access.

Energy Management Center

Energy Savings Projects \$2,000,000

This ongoing program provides for the implementation of projects that would save the MAC energy costs in its operating budget. Discussions with both Xcel and Centerpoint have identified additional projects that are eligible for energy saving rebates and will save the MAC additional energy costs. In order to qualify, projects must provide at least a 10-year payback.

Field and Runway

Airside Bituminous Rehabilitation/Electrical Construction \$1,000,000

This is an ongoing program to construct or reconstruct bituminous pavements within the Air Operations Area (AOA) and repair or replace airfield electrical circuitry, lighting and signage. Inspection of bituminous pavements, lighting, and electrical circuits determines what areas are to be prioritized for rehabilitation under each year's project.

Pavement Joint Sealing/Repair \$650,000

This is an ongoing program to provide for the resealing of joints, sealing of cracks, and limited surface repairs on existing concrete pavements. The areas scheduled for sealing will be as defined in the overall joint sealing program or as identified by staff inspection in the early spring of each year.

Perimeter Gate Security Improvements (Gates 222 & 269) \$1,200,000

Gate 222 is located near Terminal 2-Humphrey at the end of 34<sup>th</sup> Avenue. In 2007, a new type of security gate was installed to test the effectiveness of this system. The hardened security gate has not been reliable. This project will install the standard security gate for entrance into the AOA.

Gate 269 is located in the southwest corner of MSP and needs some minor upgrades to the equipment and alignment of the keypad.

Runway 04-22 In-Pavement Guard Lights \$500,000

The FAA has requested to have in-pavement guard lights installed in Runway 04-22 to warn aircraft and vehicles when they are approaching Runway 12R-30L. Runway 04-22 is frequently used to taxi aircraft for operational purposes. Aircraft taxiing on Runway 04-22 would need to stop at the intersection of Runway 12R-30L. These guard lights would provide another visual safety enhancement for aircraft to stop before entering the runway safety area. Guard lights are provided at other entrances into the runway safety area.

Runway 04-22 Glide Slope Restoration \$1,500,000

This project would install new glide slope systems at both ends of Runway 04-22. Without glide slopes on the runway, the approach surface becomes very large. This approach surface impacts the ability to develop properties outside of the MSP campus, and in particular the Bloomington property near the Mall Of America.

Terminal Roads/Landside

Tunnel/Bridge Rehabilitation \$100,000

The MSP campus has MAC-owned bridges and tunnels. Bridge and tunnel inspections are conducted each year and maintenance repairs are then implemented in a timely fashion.

Parking

T1/T2 Parking Structure Rehabilitation \$2,500,000

This is an annual program to maintain the integrity of the airport's multi-level parking structures. Projects typically include concrete repair, joint sealant replacement, expansion joint repairs, concrete sealing and lighting improvements.

Parking Ramp Railing Refinishing Project \$1,000,000

This multi-year project will address the parking ramp metal railings that have weathered and degraded over time. The paint has chipped and peeled away, which caused the exposed metal rail to rust and erode. The rust from the degrading metal railings has stained the concrete walls and concrete slabs creating an unsightly appearance for airport customers and resulting in concrete

repair work in the surrounding areas. More critically, the degraded metal railings are at risk of detachment.

T1 Parking Ramp Roadway Modifications \$17,000,000

This project will include work to relocate a portion of the T1 outbound roadway to accommodate the parking expansion at T1. The roadway modifications will begin near the C-G connector bridge and will end on the east side of the Post Office processing facility. The work in this project includes demolition of the existing roadway and related above-grade features, and the construction of the new roadway, lighting, and landscaping.

T1 Parking Ramp Site Preparation and Utilities \$114,000,000

This project will prepare the site for the new parking ramp and outbound roadway, focusing on major utilities that will need to be relocated before foundations for the parking ramp can be constructed and before the roadway can be relocated. Included in this project is the relocation of two trunk storm sewers, relocating fuel tanks for the Terminal 1-Lindbergh RAC facility, and relocation of trunk sanitary, water main, gas main, and primary electrical and communication ductbank feeders.

## Terminal 2-Humphrey

### Operational Improvements

T2 Lobby Restrooms \$1,500,000

This project will add restrooms in accordance with the MAC's design standards on the first floor of Terminal 2-Humphrey, near Door 1. This will provide appropriate facilities at this end of the terminal and support future build-out of this area.

FIS Baggage Claim Improvements \$1,000,000

This project will include the construction of a drop-down divider wall to segregate the FIS operations from domestic operations in the baggage claim area. This will improve flexibility, efficiencies and operations within the baggage claim space without increasing the building size.

### Terminal 2-Humphrey North Expansion

Gates 14-16 Design Fees \$5,000,000

This project will finalize scope and provide design through construction documents for the final expansion of the north end of Terminal 2-Humphrey.

## Public Areas/Roads

Landside Pavement Rehabilitation \$400,000

This is an ongoing program to construct or reconstruct bituminous pavements outside of the Air Operations Area (AOA). Inspection of pavements and appurtenances determines what areas are to be prioritized for rehabilitation under each year's project.

Roadway Fixture Refurbishment \$125,000

Many of the light poles, clearance restriction bars, sign units, fence sections, and canopies on the airport roadways are in need of repainting and maintenance. This project provides for refurbishment of these fixtures utilizing seasonal staff as available when bid.

Hangars and other Buildings

Roof Replacements \$1,000,000

A report has been developed within the MAC that evaluates one-half of the roofs every other year. This ongoing program allows those roofs that have been evaluated to be prioritized and programmed for repair. Emergency repairs may also be needed on some roofs; this program will provide dollars for such instances.

Drivers Training Facility Rehabilitation \$550,000

Building H is a one-story concrete block structure that was built in 1985. The MAC Drivers Training Center (DTC) is located in this building. This facility is currently planned to remain in Building H for the next 8-10 years and the building therefore requires upgrades to improve the current level of customer service and security. This project will add card access security to exterior doors as well as add a security system to exterior windows and doors. The driver's administration/check-in/licensing area would be remodeled including repair of roof-top equipment, replacement of exterior doors and windows, enlargement of classroom and offices within existing warehouse space, remodel of existing restrooms to be code compliant and ADA accessible, and construction of a new computer room. The remodel would continue to meet the goals of the MAC's sustainability effort while maintaining the building as an asset within the MAC infrastructure.

Campus Parking Lot Reconstructions \$650,000

This ongoing program will replace, rehabilitate, and/or reconstruct bituminous and concrete parking lots that belong to the MAC. There are over 85.3 acres of parking lots on the MSP campus that need to be replaced or reconstructed over the next several years. This program will make improvements systematically to the parking lots on the campus.

Campus Building Rehabilitation Program \$2,000,000

Continual maintenance of the MAC's non-terminal buildings is imperative to providing a stable infrastructure and meeting the MAC's sustainability goals. Age and weather contribute to building deterioration, mold and other health issues. Building envelope issues include curtain wall systems, glazing, sealant repair/replacement, louver repair/replacement, metal panel replacement and/or painting/tuck-pointing, structural repair and insulation systems. Recent weather events including high winds, rain deluges, and the extreme heat and cold seasons have contributed to the need for this on-going program. This project would also include repair/replacement related to interior issues. This will be the first year of an annual program to maintain MAC buildings as assets.

Trades/Maintenance Buildings

Trades Building Pneumatic Controls Retrofit \$400,000

This project upgrades the outdated pneumatic temperature controls at the Trades Building to the MAC's Open Architecture Building Automation (OABA) system. In the process, it integrates the existing OABA controls at Trades (including the domestic water meters, the solar heating system

and the new cooling equipment) with this new building-wide OABA system. This project will improve the Trades Building's performance as the MAC's Energy Conservation Development Center, integrate the building with the rest of IMACS for better performance and reliability, and reduce the building's energy consumption to achieve a simple payback in fewer than 10 years.

## Police

iVISN Improvements \$4,000,000

This project is the continuation of the program to systematically replace and integrate the approximately 1800 existing cameras into the new iVISN system and to expand the camera coverage within the terminals. A grant application has been approved by the TSA for 100% of the project costs.

## Fire

MSP Campus Fire Alarm System Upgrade \$850,000

In an effort to improve monitoring reliability and eliminate the existing single point of failure configuration, this two-year project will include database redundant systems, device controller upgrades and the decentralization of the fire alarm master control equipment.

## General Office/Administration

G.O. Security Enhancements \$500,000

Airport security enhancement discussions now include other buildings, including the MAC General Office Administration Building. The use of this building by both MAC personnel and the public has brought to the forefront issues related to security. This project would begin to address those issues to secure and provide a line of defense.

G.O. Building Improvements \$500,000

Continual maintenance of the MAC's buildings is necessary for employee comfort and safety, the comfort and safety of visitors to those buildings, and sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. The General Office Building, designed in the 1960s, has had a number of remodels and recently has experienced a number of window and building issues that need to be corrected. Recent weather events including high winds, rain deluges, and the extreme heat and cold seasons have further contributed to the need for this program.

## Environment

Mother Lake Stormwater Diversion \$850,000

This project provides for construction of a lift station and forcemain near the west end of Runway 12R-30L to capture storm water that currently flows to Mother Lake, and divert it to storm sewers flowing to MSP Pond No. 1 and the Minnesota River.

E85 Tank and Dispenser Modifications \$550,000

This project provides for the installation of a 6,000-gallon above-ground E85 fuel storage tank and dispenser at the North Fuel Island. Sensors will be integrated into the existing monitoring system. This project also provides for the relocation of the existing E85 dispenser at the South Fuel Island to comply with the fire code. The project assumes the existing above-ground storage tank and dispenser will be reused in the new system layout.

St. Paul

Joint and Crack Repairs \$100,000

Given the extremely poor subgrade materials at STP, the need for crack repair and joint sealing is critical to maintain pavement strength and pavement life. An inspection of the pavement will be completed to determine the areas most in need of repair.

MAC Building Improvements \$200,000

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings or modifications necessary to meet the requirements of the tenants.

Pavement Rehabilitation (Taxiway E) \$1,500,000

This is an ongoing program to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or, in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This year's project includes reconstruction of the oldest portion of the Taxiway Echo pavement, from Runway 14-32 to Runway 13-31.

Airfield Signage/Wind Cone Upgrade \$500,000

The existing airfield signage system and wind cone are in need of replacement to eliminate old equipment and to stay current with FAA standards.

MAC Security Gate Upgrades \$250,000

Several of the existing airport security gates are aging and in need of upgrades – total gate system replacement in some cases, specific component replacement in other cases. The gates currently identified for total replacement include the Eaton Street and MAC Equipment Maintenance Building locations. The identification of specific component replacements will be based on system inspection and maintenance records current at the time of the project design, as well as taking into account the age and anticipated service life of the existing gate components.

Lake Elmo

Runway 14-32 Replacement \$500,000

This project includes the full-depth reconstruction of Runway 14-32 relocated to the northeast of its current location. This project will begin the engineering/environmental effort involved prior to construction.

Parallel Taxiways Reconstruction \$600,000

This project is part of an ongoing effort to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or, in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes the full-depth reconstruction of the oldest portions of Taxiway Alpha parallel to Runway 14-32.

Airlake

Pavement Rehabilitation (Taxiway A Mill/Overlay) \$400,000

This project is part of an ongoing effort to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes rehabilitation of portions of Taxiway Alpha.

South Building Area Alleyway Development \$1,200,000

This project will include installation of service road and alleyway pavements to access a portion of the South Building Area, including providing sewer and water services to enable availability of buildable hangar lots.

Flying Cloud

Pavement Rehabilitation (Taxiway A –Phase 2) \$1,000,000

This is an ongoing program to rehabilitate aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes the full-depth reconstruction of the portion of Taxiway Alpha which lies west of Runway 18-36, and will include taxiway lighting systems installation.

Crystal

Obstruction Removals \$300,000

This project will address identification and removal of obstructions to the runway approaches.

Runway 14R-32L & Taxiway E Modifications \$500,000

Runway 14R-32L will be removed as part of the Long Term Comprehensive Plan for Crystal. As part of the runway removal, modifications/improvements will be needed for the parallel Taxiway E. Removal of the runway will include pavement, signage, electrical circuits, and regrading of the area. This project will begin the engineering/environmental effort involved prior to construction.

Hangar Demolition (HFI) \$150,000

The HFI hangars were inherited by the MAC when the tenant failed to pay the lease. The southern portion of the facility was not maintained and now has structural and mold issues. The cost to rehabilitate and repair this portion of the facility is not justified. This project will demolish the southern portion of the facility, while maintaining the northern two hangars that are useable.

Anoka County – Blaine

Roof Repairs/Replacement \$250,000

This project provides for a response to deficiencies in some of the roof structures on MAC buildings. This project accounts for identification of the exact type of roof deficiencies as well as completion of the most cost-effective repairs or replacements.

Maintenance Building Improvements \$200,000

This project provides for facility maintenance to ensure continued efficient operation of MAC buildings, specifically the exterior façade of the MAC Maintenance Building.

## 2017 – 2021 Capital Improvement Program

Description of projects expected to be implemented in 2017 – 2021 are preliminary, and only those that have potential substantive environmental effects are included in this section.

### Terminal 1-Lindbergh

#### Passenger Amenities

FIS Recheck Operational Improvements \$8,400,000

This project would include an expansion on the top of the existing Federal Inspection Services (FIS), with an additional baggage claim device, relocated Customs and Border Patrol (CBP) offices, and a relocated and enlarged primary processing area. Other technology changes are expected in CBP with a baggage screening technology that would not require transferring passengers to claim their baggage, and a bag match that would allow Originating Departing MSP passengers to claim their baggage on a baggage claim device in baggage claim, rather than in FIS.

#### T1-Lindbergh Expansion/Remodeling

Concourse E Remodeling/Expansion \$37,000,000

This project provides for more flexible utilization of the Concourse E gates, larger gate lobbies to accommodate larger aircraft, wider public walkways coupled with moving walks. The expansion is planned on the north side of the concourse with infill on the south and includes new curtain walls.

Baggage Claim Expansion \$60,425,000 (2017-2019 cumulative)

This four-year program will provide new baggage claim devices (carousels) to meet the level of service requirements for short- and medium-term growth of the O&D passengers. The estimated cost for this program is \$20,275,000 per year from 2017 through 2019. It will include: walkways that meet required codes (mall code width); public seating areas; centralized meet and greet space; left baggage storage; baggage service offices; concessions (food & beverage and retail); improved lighting; fire protection throughout the space; structural enhancements; improved baggage information flags and sight lines; curbside lighting and access; and other operational improvements. From 2017 through 2019, this program will address the south end of the Baggage Claim level, in concert with the Vertical Circulation Improvements and Ticket Lobby Operational Improvements projects.

Vertical Circulation Improvements \$13,100,000

This two-year program will remove the existing 12 scissors escalators and original elevators and add new high-speed, smart elevators. It will also provide control enhancements for the existing central elevators to remain. Additional circulation will be provided with other operational improvement projects. The 2018 project is to complete work at the south end of the Ticket Lobby.

Ticket Lobby Operational Improvements \$39,750,000 (2017-2020 cumulative)

This five-year program, addresses, with the Vertical Circulation Improvements Program, issues of congestion and functionality in the Terminal 1-Lindbergh Ticket Lobby. The estimated cost for this program is \$11,250,000 per year from 2016 through 2019 and \$6,000,000 in 2020. It will include: walkways that meet required codes (mall code width); ticket counter consolidations (due to abandoned checkpoints and checkpoint consolidation); clear sight lines to the checkpoints and checkpoint wait time information; airline ticket offices; centralized meet and greet areas; improved vestibules and access; east mezzanine removal/reduction; structural enhancements; curtain wall replacement; and other operational improvements.

Concourse G Expansion

CBP Primary Relocation Gates G8-G9 Infill & Penthouse \$51,000,000

This project will relocate the Customs Border Patrol (CBP) primary checking from the gate level to the penthouse level. There will be a two-level infill between gates G8 and G9 that would reclaim the gate G8-G10 lobby. The two existing claim devices would be lengthened and two additional claim devices would be installed.

Roadway Expansion

East Curbside Upper Level Check-in \$19,000,000

This project includes the reconfiguration of the outer departure curb to ease the departures drop-off and ticket lobby congestion by encouraging even distribution of cars between the inner and outer curb.

Lower Level Curbside Expansion \$10,000,000

This project includes the reconfiguration of the arrivals curb at Terminal 1-Lindbergh to address future requirements based on a volume/capacity ratio of 0.7.

Field and Runway

Taxiway C1 Construction \$5,000,000

This project proposes to add a taxiway connector between Taxiway S and Taxiway C2 from Taxiway D to M (crossing Runway 4-22) to improve aircraft maneuvering at Terminal 2-Humphrey.

Parking

T1 Parking Ramp Revenue Control Building Modifications \$23,000,000

This project will remove and re-build the revenue control exit plaza and Parking Management Building (PMB), with the work phased to accommodate the construction of the new parking ramp. The new PMB will be built within the footprint of the new parking ramp. Work includes demolition of the PMB, revenue control equipment, and canopies, and the construction of the new PMB, purchase and installation of revenue control equipment for the exit plaza and parking structure, and software systems.

T1 Parking Transit Center and Plaza Modifications \$15,000,000

This project will reconfigure the existing transit center and plaza adjacent to the Red Ramp. Work includes removals of site features and the transit center entry, and the construction of the new transit center, modifications to the transit center vertical circulation, and related building systems.

T1 Parking Ramp \$250,000,000

This project will construct a new parking ramp at T1. Project includes site-specific utilities supporting parking ramp functions, foundations, parking structure, two (2) helices, pedestrian vertical circulation buildings, elevators, escalators, mechanical, electrical, signage, and building finishes. Also included are connector bridges to the existing Red/Blue parking ramps.

T1 Parking Underground Walkway Extension (future Tram) \$15,000,000

This project includes the construction of a cut and cover underground walkway, connecting the new parking ramp to the existing underground tram. The walkway will include finishes, moving walkways (not a tram extension), skylights, and related mechanical and electrical systems.

Terminal 2-Humphrey

Terminal 2-Humphrey North Expansion

Gates 14-16 Construction \$65,000,000

In accordance with the LTCP, this project will add three new gates to the north end of Terminal 2-Humphrey including gate hold areas, passenger boarding bridges, and space for concessions.

Fueling Expansion Gates 14-16 \$1,500,000

This project will provide for the construction of the aircraft fueling pits to accommodate Gates 14-16.

Lake Elmo

Runway 14-32 Replacement \$5,000,000

In accordance with the long-term development goal of providing a longer primary runway, this project includes construction of a new Runway 14-32, located approximately 700 feet northeast of the existing alignment. This project includes all wetland mitigation, earthwork grading, subgrade improvements, and bituminous pavement installation to accomplish a runway length of 3,600 feet, including the installation of medium intensity runway lights, navigational aids (precision approach path indicator systems), and airfield guidance signs.

Airfield Modifications \$5,000,000

This project includes all necessary airfield modifications in conjunction with the replacement of Runway 14-32. Specifically, this project includes the construction of taxiway systems to serve the new runway, conversion of the existing Runway 14-32 to a parallel taxiway, and relocation of the North Service Road and 30th Street North (a Township Road) to accommodate the new runway construction and provide FAA-compliant Runway Protection Zones.

Airlake

South Building Area Development \$2,700,000

This project will provide for alleyway construction at Airlake Airport, including aggregate base and bituminous pavements, along with the installation of sanitary sewer and water main including a stand-alone restroom facility and fire protection hydrant line. The project also includes paving a section of 225<sup>th</sup> Street that will then connect to Cedar Avenue.

Runway 12-30 Extension \$8,000,000

This project will provide for the extension of Runway 12-30 from 4,098 feet to 5,000 feet. The runway extension would have an impact on Cedar Avenue, which lies directly east of the airfield, and a segment of the road would be rerouted around the end of the runway end safety area.

Crystal

Runway 14R-32L & Taxiway E Modifications \$1,000,000

Runway 14R-32L will be removed as part of the Long Term Comprehensive Plan for Crystal. As part of the runway removal, modifications/improvements will be needed for the parallel Taxiway E. Removal of the runway will include pavement, signage, electrical circuits, and regrading of the area. This project will also include any signage removal for Runway 6R-24L, which is the sod runway at Crystal.

Anoka County – Blaine

Building Area Development – Xylite St. Relocation \$1,000,000

This project provides for the relocation of Xylite Street including the installation of curb and gutter and construction of a berm and landscaping.