



Assessment of Environmental Effects Seven-Year Capital Improvement Program 2016-2022

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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 2016 to 2022 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 replacement and maintenance/upgrades of existing facilities, Information Technology, and rehabilitation/upgrades of existing airport tenant 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 (2016 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 2016 through 2022. An Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) has been prepared for all projects scheduled to be implemented in 2016 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
2016 - 2022 Capital Improvement Program**

MSP End of Life/Replacement Projects		2016	2017	2018	2019	2020	2021	2022
Notes								
	Terminal 1-Lindbergh							
(4)	Food Court Service Elevator Replacement	\$2,000,000						
(4)	Passenger Boarding Bridge Replacements	\$2,000,000		\$3,000,000			\$5,000,000	
(4)	Tram Systems Retrofit and Equipment	\$2,000,000	\$2,700,000	\$1,500,000	\$1,500,000			
(5)	Recarpeting Program	\$100,000		\$6,830,000	\$6,830,000	\$6,830,000		
(4)	Mezzanine HVAC/AHU Replacements & Penthouses	\$16,700,000						
(4)	Replace Terminal 1 Tug Doors				\$600,000			
(4)	Concourse A/B PCAir Upgrades		\$2,500,000					
	Field and Runway							
(2)	Runway Planing/Regrooving	\$1,700,000						
(2)	Taxiway S Reconstruction		\$7,500,000					
(2)	Taxiway D Reconstruction			\$9,500,000				
(2)	Sanitary Sewer Replacement 34th Avenue			\$1,700,000				
(4)	Snow Melter Upgrades/Modifications			\$1,000,000				
(2)	Sanitary Sewer Replacement Taxiway R				\$2,500,000			
	Terminal Roads/Landside							
(2)	Lower Level Roadway Rehabilitation		\$200,000			\$300,000		
(2)	Upper Level Roadway Rehabilitation			\$2,000,000				
(2)	Upper Level Roadway Electrical System Rehabilitation			\$650,000				
	Parking							
(4)	Parking Ramp Intercom System Replacement		\$1,000,000					
	Terminal 2-Humphrey							
(5)	Public Walk Aisle Terrazzo Floor Installation		\$1,700,000					
(5)	Recarpeting Program			\$475,000	\$475,000	\$475,000	\$475,000	
	Fire							
(3)	MSP Campus Fire Alarm System Upgrade/Transition	\$850,000	\$1,000,000	\$2,500,000	\$1,000,000	\$1,000,000		
(6)	ARFF #2			\$250,000	\$10,500,000			
MSP End of Life/Replacement Subtotal		\$25,350,000	\$16,600,000	\$29,405,000	\$23,405,000	\$8,605,000	\$5,475,000	\$0

Table 1-1 (Cont'd)

MSP IT Projects		2016	2017	2018	2019	2020	2021	2022
Terminal 1-Lindbergh								
(4)	MAC Public Address System	\$1,200,000	\$1,100,000	\$1,100,000	\$850,000			
(4)	Telecom Relocation & Decommissioning	\$1,500,000	\$1,500,000	\$1,500,000				
(4)	Commission Chambers Telecoil Installation & A/V upgrades	\$350,000						
(4)	Intelligent Monitoring and Control Systems (IMACS)	\$1,500,000	\$1,500,000	\$1,800,000	\$1,800,000	\$1,500,000	\$1,500,000	
(4)	Fiber Optic Cable Infrastructure Upgrade/Expansion	\$1,700,000	\$1,000,000	\$900,000	\$900,000			
(3)	Wireless Network Connectivity or Communication	\$1,000,000	\$1,000,000					
(4)	MACNet Program	\$1,000,000	\$2,000,000	\$2,000,000	\$3,000,000			
(3)	Automated External Defibrillator Notification System		\$550,000					
Parking								
(4)	T1-Lindbergh Intelligent Parking Guidance System					\$500,000		
Police								
(4)	iViSN Program	\$4,000,000	\$4,500,000	\$3,700,000	\$3,500,000	\$2,000,000	\$2,000,000	\$2,000,000
(5)	Card Access Modifications		\$850,000					
(5)	Passenger Boarding Bridge Card Access Additions		\$3,500,000			\$3,500,000		
MSP IT Subtotal		\$12,250,000	\$17,500,000	\$11,000,000	\$10,050,000	\$7,500,000	\$3,500,000	\$2,000,000

MSP Long Term Comprehensive Plan Projects		Table 1-1 (Cont'd)						
		2016	2017	2018	2019	2020	2021	2022
Terminal 1-Lindbergh								
(1)	D-Pod Outbound Baggage System		\$15,200,000					
(1)	FIS Recheck Operational Improvements				\$8,400,000			
(7)	MSP Long Term Comp Plan				\$1,500,000			
(1)	Concourse E Remodeling/Expansion							\$41,500,000
(1)	Baggage Claim Expansion		\$33,400,000		\$23,700,000	\$41,400,000		
(1)	Vertical Circulation Improvements	\$34,200,000		\$25,200,000				
(5)	South Security Exit			\$4,300,000				
(1)	Ticket Lobby Operational Improvements		\$15,700,000	\$20,000,000	\$19,400,000	\$16,500,000		
(2)	Checkpoint Expansion						\$10,500,000	\$25,100,000
(1)	Concourse A/G Connector Bridge Phase 1		\$20,000,000	⁽¹⁾				
(1)	East Curbside Upper Level Check-in				\$14,800,000			
(1)	Lower Level Curbside Expansion			\$12,100,000				
(2)	Armed Forces Service Center Relocation				\$1,100,000			
Field and Runway								
(1)	Taxiway C1 Construction				\$5,500,000			
Parking								
(1)	T1 Parking Ramp - Northwest Drive Grade Separation	\$15,500,000						
(6)	T1 Parking Ramp - Cargo and Stores Building	\$10,500,000						
(1)	T1 Parking - Roadway and Plaza Relocation	\$100,000,000						
(1)	T1 Parking Ramp - Parking Management Building and Revenue Control Systems	\$24,000,000						
(1)	T1 Parking Ramp - Parking Structure and RAC Facility		\$293,000,000					
(6)	Orange Ramp Additional Elevators				\$2,000,000			
Terminal 2-Humphrey								
(2)	T2 FIS Baggage Claim Improvements					\$1,000,000		
(7)	T2 North Gate Expansion Design Fees						\$5,000,000	
MSP LTCP Projects Subtotal		\$184,200,000	\$377,300,000	\$61,600,000	\$76,400,000	\$58,900,000	\$15,500,000	\$66,600,000

⁽¹⁾ Environmental review for this project is ongoing. Once the environmental review is complete, the project will be scheduled for 2016.

Table 1-1 (Cont'd)

MSP Maintenance/Facility Upgrade Projects		2016	2017	2018	2019	2020	2021	2022
Terminal 1-Lindbergh								
(2)	Restroom Upgrade Program	\$4,300,000	\$4,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000
(4)	Way-Finding Sign Backlighting Replacement		\$1,600,000	\$1,600,000	\$1,600,000			
(2)	Folded Plate Repairs	\$1,100,000			\$8,900,000	\$8,900,000	\$8,900,000	\$8,900,000
(2)	C-G Connector Improvements	\$4,500,000						
(4)	G Concourse Moving Walks			\$2,500,000	\$2,500,000	\$2,500,000		
(4)	Lighting Infrastructure Technology and Equipment (LITE)			\$1,500,000	\$1,500,000	\$1,500,000	\$2,250,000	\$2,500,000
(5)	T1 Public Walk Aisle Terrazzo Floor Installation				\$4,400,000	\$4,400,000	\$4,400,000	\$4,500,000
(4)	Art Display Areas	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
(5)	Terminal Seating Improvements	\$800,000						
(2)	Ticket Counter Upgrades to ADA	\$800,000						
(5)	Concourse Service Center Upgrades	\$500,000						
(2)	Observation Deck Improvements				\$1,600,000			
(4)	EVIDs / MUFIDs Digital Signs		\$750,000					
(5)	Landside Operations Offices Reconfiguration		\$150,000					
(5)	Airside Operations Center			\$1,250,000				
Energy Management Center								
(4)	Energy Savings Program	\$2,000,000		\$2,000,000		\$2,000,000		\$2,000,000
Field and Runway								
(2)	Runway 12R-30L Tunnel Drainage Improvements - Phase 2		\$400,000					
(6)	Baggage Quarantine Building					\$1,300,000		
(5)	AOA Gate Improvements					\$3,000,000		
(5)	Perimeter Gate Security Improvements - Gates 222 & 269	\$1,200,000						
(2)	Establish Taxiway J				\$150,000			
(4)	Runway LED Lighting Upgrade				\$2,800,000	\$3,500,000	\$2,100,000	\$2,650,000
(4)	Runway 4-22 In-Pavement Guard Lights	\$500,000						
(4)	Runway 4 Glide Slope Installation		\$1,000,000					
Parking								
(2)	Parking Ramp Railing Refinishing		\$1,000,000		\$1,000,000		\$1,000,000	
Terminal 2-Humphrey								
(5)	T2 Skyway to LRT Flooring Installation				\$800,000			
(2)	T2 Lobby Restrooms	\$1,800,000						
(6)	Curbside Check-in Expansion	\$300,000						
Hangars and Other Buildings								
(5)	Drivers Training Facility Rehabilitation	\$550,000						

MSP Maintenance/Facility Upgrade Projects continue on the next page.

Table 1-1 (Cont'd)

MSP Maintenance/Facility Upgrade Projects (Cont'd)		2016	2017	2018	2019	2020	2021	2022
Trades/Maintenance Buildings								
(6)	South Field Maintenance Building Wash Bay				\$1,300,000			
(3)	Trades Bldg Pneumatic Controls Retrofit	\$400,000						
Police								
(6)	Safety and Operations Center			\$250,000	\$35,000,000			
(5)	Perimeter Fence Intrusion Detection System				\$1,000,000	\$1,000,000	\$1,000,000	
Fire								
(5)	Campus Fire Protection		\$500,000	\$500,000	\$500,000	\$500,000		\$500,000
General Office/Administration								
(5)	GO Security Enhancements	\$500,000						
(5)	GO Building Improvements	\$500,000	\$500,000	\$500,000				
Environment								
(4)	Mother Lake Stormwater Improvements	\$100,000						
(4)	Runway 12R-30L Glycol Forcemain Environmental Improvements					\$1,100,000		
(6)	Concourses C and G Compactor Canopies		\$450,000					
(4)	Runway 30R Deicing Pad Improvements			\$800,000				
(2)	T2 Remote Ramp Lot/Drainage Improvements							\$2,000,000
(4)	Ground Service Equipment (GSE) Electrical Charging Stations	\$1,000,000			\$2,700,000	\$2,700,000		
(6)	E85 Tank and Dispenser Modifications	\$700,000						
(4)	Lift Station at Ponds 1 and 2				\$800,000			
MSP Maintenance/Facility Upgrades Subtotal		\$21,800,000	\$10,600,000	\$13,150,000	\$68,800,000	\$34,650,000	\$21,900,000	\$25,300,000

Table 1-1 (Cont'd)

MSP Ongoing Maintenance Programs	2016	2017	2018	2019	2020	2021	2022
Terminal 1-Lindbergh							
(5) Telecom Room Equipment Continuity (TREC)	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
(4) Electrical Infrastructure Program (EIP)	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$2,500,000	\$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	\$2,500,000
(4) Emergency Power Upgrades	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$2,500,000	\$2,500,000
(2) Lower Level Roadway/GTC Water Infiltration Mitigation	\$1,000,000						
(4) Air Handling Unit Replacement		\$2,000,000		\$2,500,000	\$2,500,000	\$3,000,000	\$3,000,000
(4) Conveyance System Upgrades		\$3,000,000		\$2,000,000		\$3,000,000	
(4) Plumbing Infrastructure Upgrade Program	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$600,000	\$600,000
(5) Terminal Building Remediation Program	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,600,000	\$2,600,000	\$2,600,000
(4) Concourse G Rehabilitation	\$2,000,000	\$6,500,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
Energy Management Center							
(4) EMC Plant Upgrades (T1 & T2)		\$500,000	\$500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,300,000
Field and Runway							
(2) Airside Bituminous Rehabilitation/Electrical Construction		\$2,150,000	\$1,000,000		\$1,100,000		
(2) Pavement Joint Sealing/Repair	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000
(2) Miscellaneous Airfield Construction		\$800,000		\$800,000		\$900,000	
Terminal Roads/Landside							
(2) Tunnel/Bridge Rehabilitation	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Parking							
(2) T1/T2 Parking Structure Rehabilitation	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$3,000,000	\$3,000,000
Public Areas/Roads							
(2) Landside Pavement Rehabilitation	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$450,000	\$450,000
(2) Roadway Fixture Refurbishment	\$125,000	\$125,000	\$150,000	\$150,000	\$150,000	\$150,000	
Hangars and Other Buildings							
(2) MSP Campus Building Roof Replacements	\$1,000,000	\$1,000,000	\$1,000,000		\$1,000,000		
(5) Campus Building Rehab Program	\$2,000,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000
(2) Campus Parking Lot Reconstructions	\$650,000	\$1,600,000	\$1,100,000	\$650,000	\$650,000	\$650,000	
MSP Ongoing Maintenance Subtotal	\$20,325,000	\$32,725,000	\$23,800,000	\$27,650,000	\$27,050,000	\$32,000,000	\$27,200,000

Table 1-1 (Cont'd)

MSP Noise Mitigation Projects		2016	2017	2018	2019	2020	2021	2022
(8)	Noise Mitigation Consent Decree Amendment		\$3,200,000	\$7,500,000	\$7,500,000	\$4,300,000		
	MSP Other Subtotal	\$0	\$3,200,000	\$7,500,000	\$7,500,000	\$4,300,000	\$0	\$0
MSP Tenant Projects		2016	2017	2018	2019	2020	2021	2022
Terminal 1-Lindbergh								
(2)	Concessions Rebids	\$2,000,000	\$2,000,000	\$2,000,000				
(2)	Concessions Upgrades /Revenue Development	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
Hangars and Other Buildings								
(1)	Freight Building Remodel for DHL		\$5,000,000 ⁽²⁾					
	MSP Tenant Subtotal	\$2,200,000	\$7,200,000	\$2,200,000	\$200,000	\$200,000	\$200,000	\$200,000

⁽²⁾ Once the environmental review is complete, the project will be scheduled for 2016.

Table 1-1 (Cont'd)

Reliever Airports Long Term Comprehensive Plan Projects		2016	2017	2018	2019	2020	2021	2022
St. Paul								
(7)	Long Term Comp Plan						\$100,000	
Lake Elmo								
(7)	Long Term Comp Plan							\$100,000
(1)	Runway 14-32 Replacement		\$500,000		\$7,000,000			
(1)	Airfield Modifications				\$3,000,000			
Airlake								
(7)	Long Term Comp Plan			\$100,000				
(1)	South Building Area Development - Phase 1				\$3,200,000			
Flying Cloud								
(7)	Long Term Comp Plan						\$100,000	
(6)	South Building Area Development					\$600,000		
(6)	Runway 18-36 Extension			\$1,500,000				
(2)	Electrical Vault Modifications					\$500,000		
Crystal								
(7)	Long Term Comp Plan							\$100,000
(1)	Runway 14R-32L & Taxiway E Modifications			\$2,000,000				
Anoka County - Blaine								
(7)	Long Term Comp Plan						\$100,000	
(1)	Building Area Development - Xylite St. Relocation						\$1,000,000	
Reliever LTCP Projects Subtotal		\$0	\$500,000	\$3,600,000	\$13,200,000	\$1,100,000	\$1,300,000	\$200,000

Table 1-1 (Cont'd)

Reliever Airports Maintenance/Facility Upgrade Projects

	2016	2017	2018	2019	2020	2021	2022
St. Paul							
(2) Joint and Crack Repairs	\$100,000		\$100,000		\$100,000		\$100,000
(5) MAC Building Improvements	\$200,000		\$200,000	\$2,000,000	\$200,000		\$200,000
(2) Runway 14-32 Pavement Rehabilitation	\$4,000,000						
(2) St. Paul Runway 13-31 Safety Area Improvement				\$4,500,000			
(2) Parking Lot / Bayfield Pavement Rehabilitation				\$500,000			
(2) Admin Building Apron Pavement Rehabilitation							\$1,400,000
(4) Airfield Signage/Wind Cone Upgrade	\$400,000						
(5) Roof Repairs / Replacement		\$200,000					
(2) Storm Sewer Improvements Phase 2		\$1,500,000					
(5) Maintenance Building Improvements			\$200,000				
(2) Runway 14-32 Reconstruction						\$5,000,000	\$5,000,000
(5) MAC Security Gate Upgrades	\$250,000						
(6) Holman Terminal Sub drain				\$600,000			
(6) Cold Equipment Storage Building			\$750,000				
(4) LED Edge Lighting Upgrades					\$1,500,000		\$1,000,000
Lake Elmo							
(2) Parallel Taxiways Reconstruction	\$600,000			\$600,000			\$600,000
(2) Runway 04-22 Pavement Rehabilitation		\$4,000,000					
(2) Alleyways - South Building Area Pavement Rehab			\$900,000				
(6) Materials Storage Building			\$200,000				
Airlake							
(2) Pavement Rehabilitation - Taxiway A Mill / Overlay	\$400,000						
(1) Runway 12-30 Extension							\$8,000,000
(2) Existing Runway 12-30 Reconstruction							\$3,500,000
(6) Public Restroom Facility				\$300,000			
(6) Plane Wash Pad				\$150,000			
(6) Materials Storage Building			\$200,000				
(4) LED Edge Lighting					\$500,000		\$200,000
Flying Cloud							
(2) Taxiway A - Phase 2 Pavement Rehabilitation	\$1,000,000						
(2) Taxiway D Pavement Rehabilitation			\$600,000				
(2) Taxiway E Pavement Rehabilitation				\$600,000			
(2) Alleyways - SE, SW & NE Building Area Pavement Rehabilitation		\$700,000					

Reliever Airports Maintenance/Facility Upgrade Projects continue on the next page.

Table 1-1 (Cont'd)

Reliever Airports Maintenance/Facility Upgrade Projects (Cont'd)		2016	2017	2018	2019	2020	2021	2022
(2)	Runway 10L-28R Reclaim/Overlay Pavement Rehabilitation							\$2,000,000
(2)	Runway 10R-28L Pavement Rehabilitation						\$1,300,000	
(6)	Equipment Storage Building		\$2,500,000					
(5)	Roof Repairs / Replacement			\$100,000				
Crystal								
(5)	Obstructions Removal	\$300,000						
(2)	Alleyways Pavement Rehabilitation			\$550,000		\$550,000		
(2)	Taxiways Pavement Rehabilitation				\$700,000			
(6)	Materials Storage Building		\$200,000					
(4)	LED Edge Lighting Upgrade						\$400,000	\$400,000
Anoka County - Blaine								
(5)	Roof Repairs / Replacement	\$250,000						
(5)	Maintenance Building Improvements	\$200,000						
(2)	Taxiway Pavement Reconstruction		\$500,000	\$600,000				
(2)	Alleyways Pavement Reconstruction				\$750,000	\$750,000	\$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		\$200,000					
(5)	Obstructions Removal				\$100,000			
(5)	Air Traffic Control Tower Equipment Upgrades					\$100,000		
(6)	Materials Storage Building		\$200,000					
(4)	LED Edge Lighting Upgrade					\$800,000		\$1,700,000
Reliever Maintenance/Facility Upgrade Subtotal		\$7,700,000	\$10,000,000	\$5,400,000	\$10,800,000	\$4,500,000	\$7,450,000	\$24,100,000
MSP Subtotal		\$266,125,000	\$465,125,000	\$148,655,000	\$214,005,000	\$141,205,000	\$78,575,000	\$121,300,000
Reliever Subtotal		\$7,700,000	\$10,500,000	\$9,000,000	\$24,000,000	\$5,600,000	\$8,750,000	\$24,300,000
Total 2016-2022 CIP		\$273,825,000	\$475,625,000	\$157,655,000	\$238,005,000	\$146,805,000	\$87,325,000	\$145,600,000

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.

**Table 1-2
Summary Environmental Assessment of 2016 Projects in the MAC 2016-2022 Capital Improvement Program that Require an EAW or EIS**

Project Description	Are the Effects of the Project Addressed in an Approved EAW, EA or EIS?	Environmental Categories Affected by the Project													
		Air Quality	Compatible Land Use	Fish, Wildlife and Plants	Floodplains and Floodways	Hazardous Materials, Pollution Prevention and Solid Waste	Historical, Architectural, Archaeological and Cultural Resources	Light Emissions and Visual Effects	Parks, Recreation Areas and Trails	Noise	Water Quality (Storm, Waste and Ground Water)	Wetlands	Infrastructure and Public Services	Farmland	Erosion and Sedimentation
Vertical Circulation Improvements	YES 2020 Improvements Final Environmental Assessment/ Environmental Assessment Worksheet Jan-13	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects
T1 Parking Ramp - Northwest Drive Grade Separation	YES 2020 Improvements Final Environmental Assessment/ Environmental Assessment Worksheet Jan-13	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects
T1 Parking Ramp - Roadway and Plaza Relocation	YES 2020 Improvements Final Environmental Assessment/ Environmental Assessment Worksheet Jan-13	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects
T1 Parking Ramp - Parking Management Building and Revenue Control Systems	YES 2020 Improvements Final Environmental Assessment/ Environmental Assessment Worksheet Jan-13	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects	No potential significant environmental effects

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 four Capital Improvement Program (CIP) projects scheduled in 2016 that have already been evaluated in the MSP 2020 Improvements Final Environmental Assessment/Environmental Assessment Worksheet (2020 Improvements EA/EAW). Three of the projects are components of the phase one parking expansion at Terminal 1-Lindbergh.

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, replacement of existing facilities and IT projects). 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 2016 and 2017, as well as those projects currently scheduled to be implemented in 2018 through 2022 that may have potential substantive environmental effects. The descriptions of projects scheduled to be implemented in 2018 through 2022 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.

Noise Mitigation

The 2016-2022 CIP includes a number of projects from the 2020 Improvements EA/EAW, as well as 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 in 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 2023 and does not require completion of an EAW or EIS.

Minneapolis-St. Paul International Airport Projects

The Capital Improvement Program (CIP) includes projects focusing on infrastructure replacement and maintenance/upgrades, information technology (IT), and tenant improvements at Minneapolis-St. Paul International Airport (MSP) and the MAC's system of reliever airports. Additionally, the CIP includes projects consistent with the Long-Term Comprehensive Plans (LTCPs) for the respective airports. In the case of MSP, 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 the 2020 Improvements EA/EAW, a joint document satisfying both MEPA and the National Environmental Policy Act (NEPA) requirements 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 2020 Improvements EA/EAW. In April 2013, the MAC determined that the 2020 Improvements 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 Concourse A/G Connector Bridge Phase 1 project, which will connect the MSP hotel with Concourse A, is currently in the Draft 2016-2022 CIP for 2017. An EAW for this project is ongoing. Once the EAW is complete, the project will be scheduled for 2016.

At the September 8, 2015, MAC Planning, Development and Environment Committee meeting an adjustment was made to the Draft 2016-2022 CIP moving the Freight Building Remodel for DHL project to 2017. An EAW will be completed for this project prior to construction.

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 STP LTCP update in 2016. The 2010 plan does not propose any substantive expansion or enhancement of the facilities at STP. MAC anticipates the 2016 STP LTCP update will endorse these same recommendations.

Projects in 2016 at STP include joint and crack repairs (also planned for 2018, 2020 and 2022), MAC building improvements (also planned for 2018, 2019, 2020 and 2022), pavement rehabilitation for Runway 14-32, airfield signage/wind cone upgrades and MAC security gate upgrades. No additional environmental review is required. This is because the proposed projects are repair, rehabilitation, or reconstruction projects that do not physically alter the original size of any structures or are projects consisting of safety or security enhancements, facility maintenance or upgrades. Because the projects will not have substantive environmental effects, an EAW or EIS is not required.

Future CIP projects at STP include roof repairs/replacement (planned for 2017), storm sewer improvements (planned for 2017); maintenance building improvements and construction of a cold equipment storage building (planned for 2018); safety area improvement for Runway 13-31 (planned for 2019), parking lot/Bayfield Street pavement rehabilitation and Holman Terminal sub drain (planned for 2019); LED edge lighting upgrades (planned for 2020 and 2022); Runway 14-32 reconstruction (planned for 2021 and 2022); and administrative building apron pavement rehabilitation (planned for 2022). None of these projects meets the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are projects to enhance safety and security. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at STP.

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 2008 21D LTCP originally envisioned an extension would occur on the crosswind Runway 4-22. However, in the Draft 2035 LTCP, the MAC is now considering the extended runway length as part of a Runway 14-32 replacement project to bring the runway into Federal Aviation Administration (FAA) Runway Protection Zone (RPZ) compliance. 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 including the rerouting of 30th Street North located south of 21D. These projects are currently planned for 2019. An environmental review will be completed prior to construction of a relocated and extended runway and the associated taxiway. All of these potential projects would involve grading, paving, storm sewer management, lighting and pavement marking. Since there are wetlands on airport property, any environmental review of the projects will consider wetland impacts. MAC currently plans to conduct environmental review for the projects in 2017.

The only 2016 CIP project at 21D is for parallel taxiways reconstruction. 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 21D include Runway 4-22 pavement rehabilitation (planned for 2017); pavement rehabilitation for the alleyways in the south building area and construction of a materials storage building (planned for 2018). None of these projects meets the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are projects to enhance safety and security. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at 21D.

Airlake Airport Projects (Reliever)

The MAC plans to prepare an update to the Long-Term Comprehensive Plan (LTCP) for Airlake Airport (LVN) in 2016. 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 Department of Natural Resources (DNR) as part of the project. The first phase of the south building area development is planned for 2019 with the final phase of construction beyond this seven-year CIP. 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 2022. 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.

The only 2016 CIP project at LVN is pavement rehabilitation for Taxiway A. 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 LVN include construction of a new materials storage building; construction of a public restroom facility and a plane wash pad (planned for 2019); LED edge lighting (planned for 2020 and 2022); and reconstruction of the existing portion of Runway 12-30 (planned for 2022). None of these projects meets the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are small in scale, such as the new materials storage building and the public restroom facility and plane wash pad. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at LVN.

Flying Cloud Airport Projects (Reliever)

The MAC updated the Flying Cloud Airport (FCM) Long-Term Comprehensive Plan (LTCP) in October 2010 and has begun 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 this same recommendation.

The only 2016 project at FCM is the second phase of pavement rehabilitation for Taxiway A. 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, southwest and northeast alleyways in the building areas and construction of an equipment storage building (planned for 2017); Taxiway D pavement rehabilitation and roof repairs/replacement (planned for 2018); Taxiway E pavement rehabilitation (planned for 2019); development of the south building area and electrical vault modifications (planned for 2020); Runway 10R-28L pavement rehabilitation (planned for 2021); and Runway 10L-28R pavement rehabilitation reclaim and overlay (planned for 2022). None of these projects meet the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are small in scale, such as construction of the new equipment storage building. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at FCM.

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 2016-2022 CIP includes the Runway 14R-32L and Taxiway E modifications project, scheduled for 2018. 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.

The only 2016 CIP project at MIC is to remove obstructions. No additional environmental review is required because the proposed project is a safety enhancement that does not have the potential for substantive environmental effects.

Other future CIP projects for MIC include construction of a new materials storage building (planned for 2017); pavement rehabilitation for the alleyways (planned for 2018 and 2020); pavement rehabilitation for the taxiways (planned for 2019); and LED edge lighting upgrade (planned for 2021 and 2022). None of these projects meet the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are small in scale, such as construction of the new materials storage building. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at MIC.

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 2021. 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 has begun updating the ANE Long Term Comprehensive Plan (LTCP) in 2015. Upon finalization of the ANE LTCP update, environmental documentation, if needed, will be completed as part of the planning and related CIP processes.

The 2016 projects at ANE include roof repairs and replacement and maintenance building improvements. No additional environmental review is required for these activities 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 include construction of a new materials storage building, taxiway pavement reconstruction and Runways 9-27 and 18-36 joint and crack repairs (planned for 2017); pavement reconstruction for the south service road, east landside road and remaining taxiways (planned for 2018); alleyway pavement reconstruction (planned for 2019, 2020, and 2021); obstruction removal (planned for 2019); Air Traffic Control Tower equipment upgrades and LED edge lighting upgrades (planned for 2020); and additional LED edge lighting upgrades (planned for 2022). None of these projects meet the threshold in Minn. Stat. 473.614 for an EAW, so none will require additional environmental review. In addition, as discussed above, the proposed projects are for maintenance, repair, rehabilitation, or reconstruction, or are small in scale, such as construction of the new materials storage building. Other than temporary construction effects, none of the projects constitute long-term cumulative potential effects when combined with other projects at ANE.

Appendix A – Description of Projects in the
2016-2022 Capital Improvement Program



Figure A-1
Capital Improvement Projects with Potential Environmental Effects

Minneapolis - St. Paul International Airport
 2016-2022

Proposed Project Schedule	
2016	Vertical Circulation Improvements T1 Parking Ramp - Northwest Drive Grade Separation T1 Parking Ramp - Roadway and Plaza Relocation T1 Parking Ramp - Parking Management Building and Revenue Control Systems
2017	D-Pod Outbound Baggage System Baggage Claim Expansion Ticket Lobby Operational Improvements Concourse A/G Connector Bridge Phase 1 T1 Parking Ramp - Parking Structure and RAC Facility Freight Building Remodel for DHL
2018	Vertical Circulation Improvements Ticket Lobby Operational Improvements Lower Level Curbside Expansion
2019	FIS Recheck Operational Improvements Baggage Claim Expansion Ticket Lobby Operational Improvements East Curbside Upper Level Check-In Taxiway C1 Construction
2020	Baggage Claim Expansion Ticket Lobby Operational Improvements
2021	
2022	Concourse E Remodeling/Expansion

2016 Capital Improvement Program

MSP End of Life/Replacement Projects

Terminal 1-Lindbergh

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 and are nearing the end of their standard service life. The elevators will be removed, one at a time, in their entirety including cabs, hoist systems, and associated equipment and replaced with all new equipment and cabs that are designed to freight standards.

Passenger Boarding Bridge Replacements \$2,000,000

Project provides for the replacement of jet bridges at Terminal 1-Lindbergh. Bridges to be replaced will be determined based on a condition assessment and input from the airlines. Aircraft parking positions will be optimized at the impacted gates and fuel pits adjusted as necessary. Podiums and door openings may also be adjusted to optimize gate hold area. It is assumed fixed walkways may need to be replaced or added to meet ADA slope requirements and all gate hold areas will be upgraded with security doors, card readers, and cameras.

T1 Tram Systems Retrofit and Equipment \$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 they 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 over the course of a three-year program from 2015 to 2017.

Recarpeting Program \$1,000,000

Starting in 2018, a three-year program will replace the end-of-life carpeting in gate hold areas of Terminal 1-Lindbergh. This year's 2016 work will only replace carpet in select areas of heaviest use and damage.

Mezzanine HVAC/AHU Replacement & Penthouses \$16,700,000

The existing air handling equipment in the East and Center Mezzanine mechanical rooms have reached end of life and are overdue for replacement. In order to meet the goals of the Operational Improvements program, this project will replace the equipment in relocated penthouses to be constructed on the north and south ends of the Terminal 1-Lindbergh center mezzanine.

Field and Runway

Runway Planing and Regrooving \$1,700,000

This project provides for planing and re-grooving runway pavement at the Runway 12L-30R / Runway 4- 22 intersection to improve surface drainage. In addition, rubber removal will be completed on segments of Runways 12L-30R and 12R-30L.

Fire

MSP Campus Fire Alarm System Upgrade/Transition \$850,000

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

MSP IT Projects

Terminal 1-Lindbergh

MAC Public Address System **\$1,200,000**

The MAC Public Address System (MACpas) project involves a multi-year overhaul to the system to eliminate discontinued components and replace them to maintain the operation and reliability of this critical 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.

Telecom Relocation & Decommissioning **\$1,500,000**

This program involves vacating the current major MAC telecommunications area, constructing a new space and consolidating, relocating and/or replacing equipment (e.g. critical fiber and copper connections) as needed to the new, larger telecommunications room.

Commission Chambers Telecoil Installation & A/V Upgrades **\$350,000**

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. In addition, MAC IT will be upgrading the audio and video equipment in the Commission Chambers. The existing equipment, monitors, and cabling will be replaced with new high definition video switches, display monitors, transmitters, distribution amplifiers and receiver/room controllers. These upgrades will allow the Commission Chambers to integrate with newer models of laptops, mobile devices, and microphones in addition, provide better & more stable picture and sound throughout the chambers.

Intelligent Monitoring and Control Systems (IMACS) **\$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 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.

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 Connectivity or Communication **\$1,000,000**

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

MACNet Program **\$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 and noise, finance and accounting, human resources, 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.

Police

iViSN Program**\$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 2016 project costs.

MSP Long Term Comprehensive Plan Projects

Terminal 1- Lindbergh

Vertical Circulation Improvements**\$34,200,000**

As the first project in the overall Terminal 1-Lindbergh Operational Improvements program, this project will remove existing scissors escalators (12 in total) and the original elevators and add new high-speed, smart elevators. Escalators that have reached their end of life will be replaced with new escalators in new locations to enhance passenger flows. This year's project will complete the work at the North end of the Ticket Lobby, while the South end is scheduled for 2018. (See Figure A-2).

Parking

T1 Parking Ramp – Northwest Drive Grade Separation**\$15,500,000**

The proposed relocation of Outbound Roadway to the east side of the Post Office to accommodate parking ramp expansion will require a Northwest Drive/Outbound Roadway grade separation. Work in this project includes bridge, retaining wall, storm water lift station, utilities, lighting, roadways, and landscape construction. This project also includes widening Northwest Drive adjacent to Building B to allow for two-way traffic along Northwest Drive. (See Figure A-3).

T1 Parking Ramp – Cargo and Stores Building**\$10,500,000**

The existing Delta Cargo and Stores Building, located on the east end of the G Concourse, will be demolished to provide space to relocate the Outbound Roadway and expand the parking ramp. This project will construct a new 25,000 square foot Cargo & Stores Building on the west side of Building B. Delta's cargo and stores operations will be relocated from the existing building to the new facility. The scope of this project will include construction of the new building, utilities, loading dock, and other building appurtenances. This project will also demolish the existing Delta Cargo and Stores Building.

T1 Parking Ramp – Roadway and Plaza Relocation**\$100,000,000**

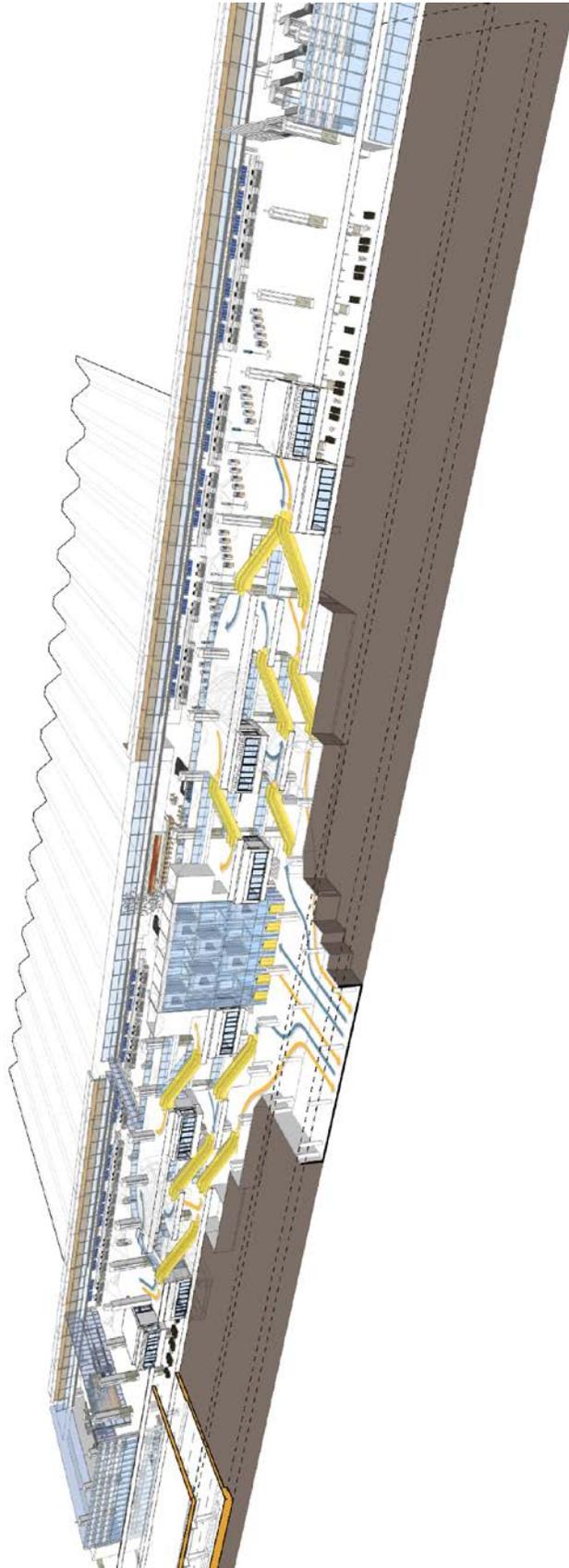
This project includes relocating a portion of the Outbound Roadway and associated utilities, modifying the existing public parking entrance, and constructing a new exit plaza to accommodate the parking expansion at Terminal 1-Lindbergh. The scope of this project will include existing roadways and facilities demolition, and storm sewer, sanitary piping, electrical, lighting, roadways, retaining walls, new bridge, tunnel, security fencing, blast walls, and landscape construction. (See Figures A-4 and A-5).

T1 Parking Ramp – Parking Management Building and Revenue Control Systems**\$24,000,000**

The parking expansion program will provide a new exit plaza just west of Delta Building B. The new exit plaza will include a Parking Management Building, revenue control system, exits booths with associated canopy, electrical and mechanical systems, fiber optic cabling, and landscaping. (See Figure A-6).

Figure A-2

2015 Operational Improvements
Metropolitan Airports Commission



Vertical Circulation Diagram
Comm. No. 20150-40 3 September 2015



Figure A-3

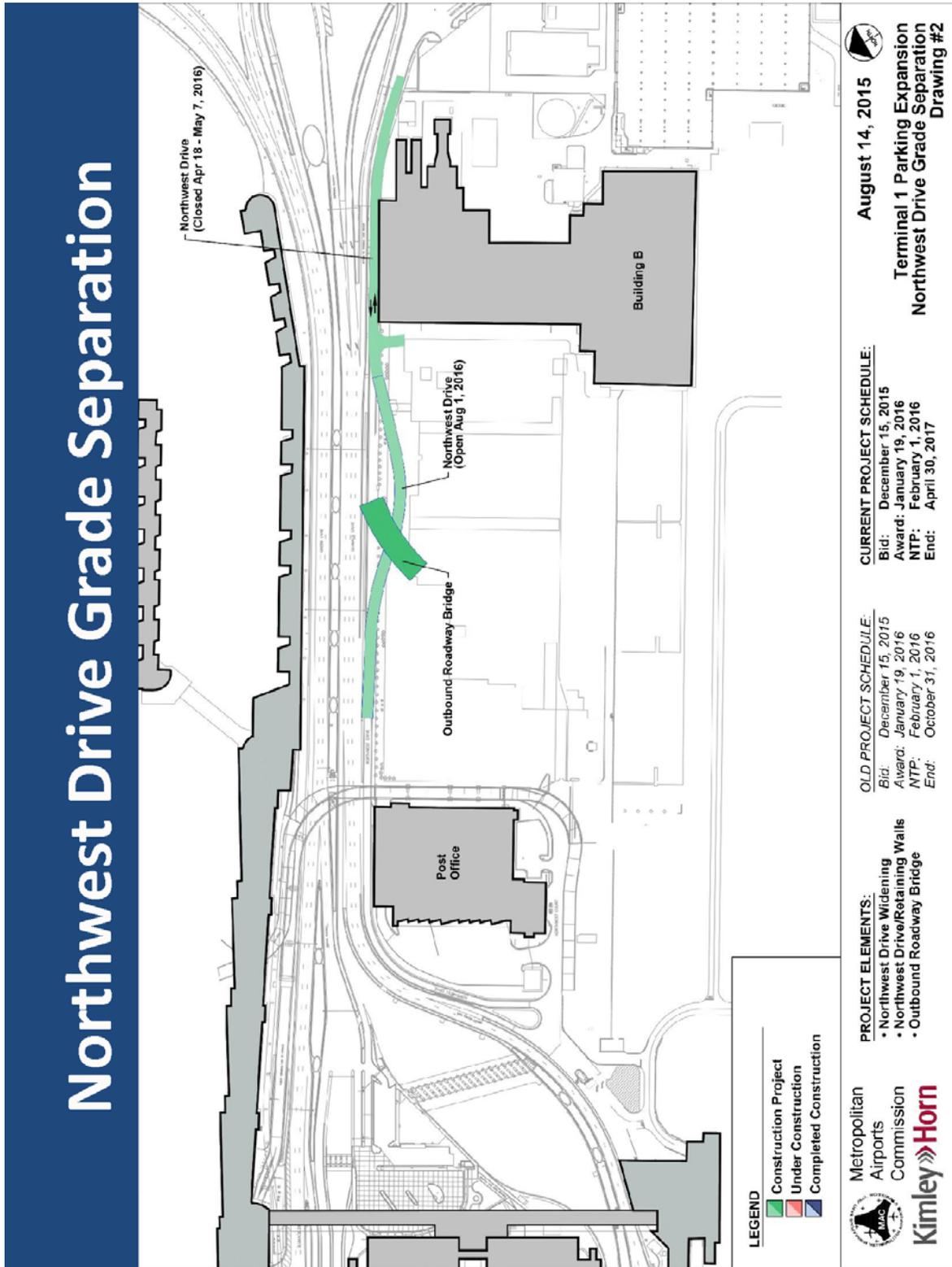


Figure A-4

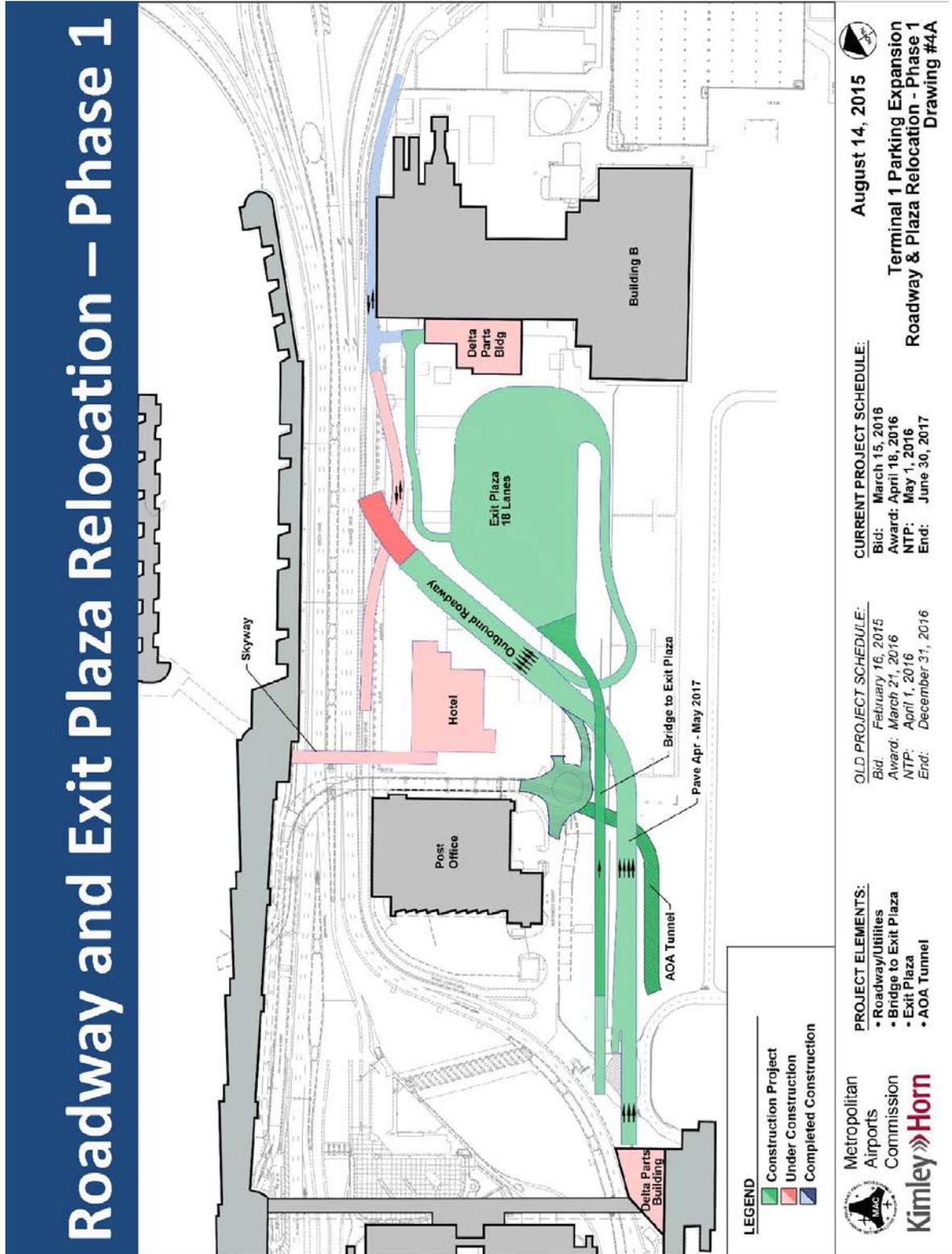


Figure A-5

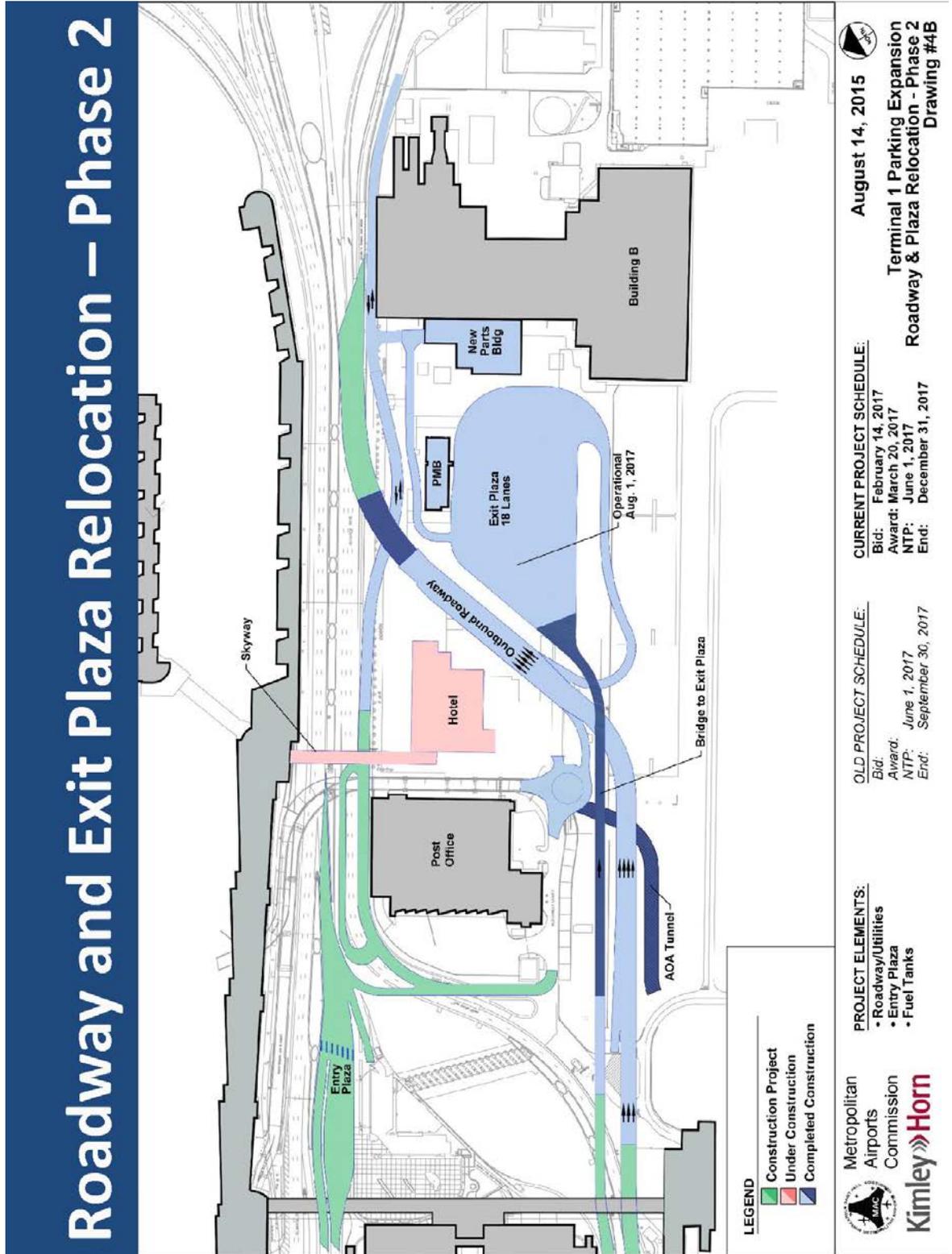
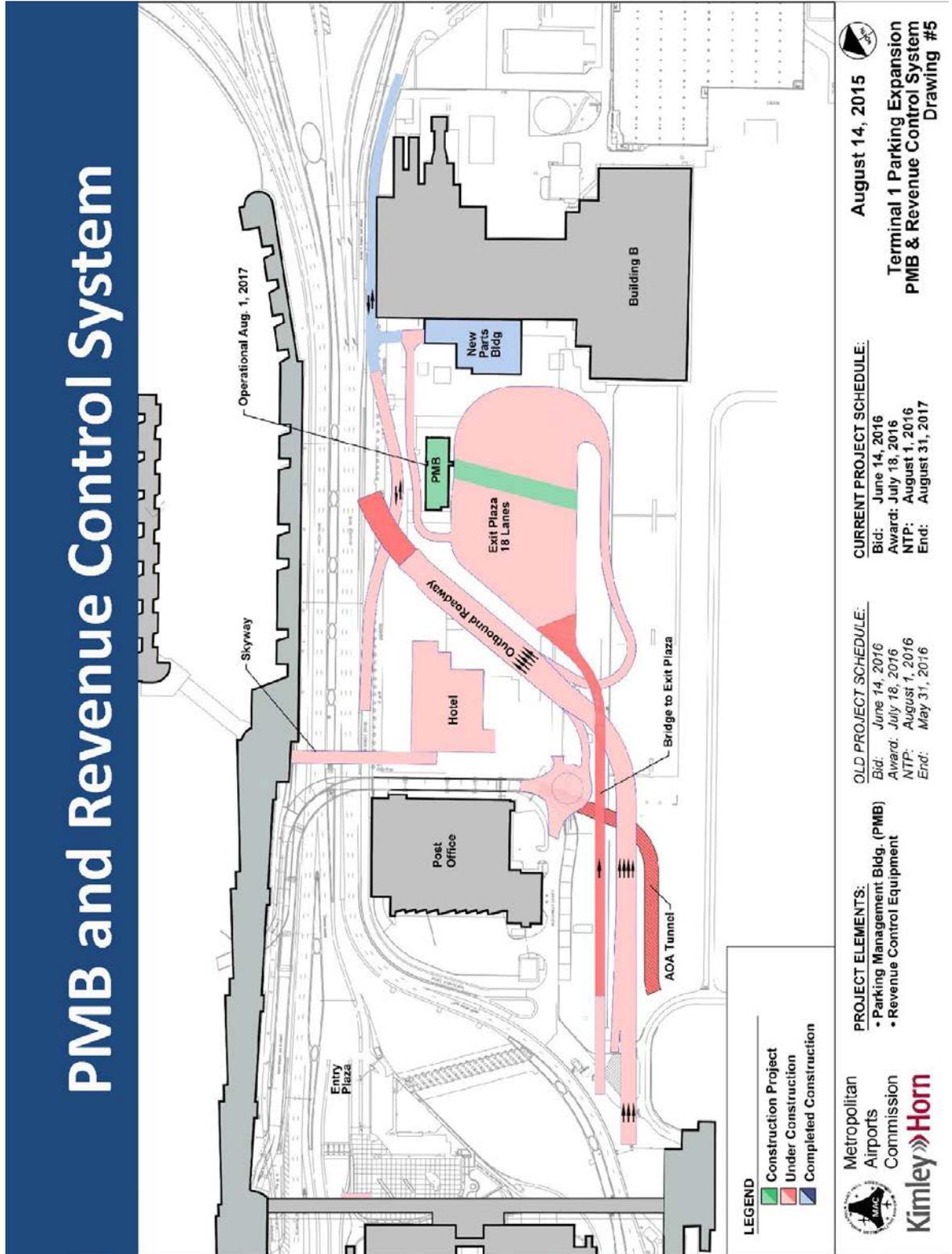


Figure A-6



MSP Maintenance/Facility Upgrade Projects

Terminal 1- Lindbergh

Restroom Upgrade Program**\$4,300,000**

A study of all restrooms in Terminal 1-Lindbergh was completed in 2010 and a program developed to upgrade/modernize the restrooms at Terminal 1-Lindbergh. From this study, each restroom was prioritized based on 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. This year's project will construct a new restroom in the north end of the main mall area.

T1 Folded Plate Repairs**\$1,100,000**

This five-year program to rehabilitate the existing structure is the next step now that the previously constructed drainage improvements are complete. This year's project will apply the finish/film on the underside of the east and west cantilevers to provide a moisture barrier for the system, whilst allowing vapor to escape from the concrete system. Future projects will remove the existing roof layers, including asbestos material and wood structural pieces, and construct a new roof.

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

This project will correct two potential safety issues. In the past, high winds have caused the soffit panels to fall from the underside of the C-G Connector. The panels were temporarily secured and a study was undertaken to review the situation. The study revealed that the soffit panel system is in need of structural enhancements and, in some locations, full replacement. In addition, there is a high pressure steam pipe located 30 feet underground which follows the alignment of this connector. The high pressure steam pipe is leaking and needs to be replaced. As a part of the previously discussed study, a route that will allow better access for inspection and long-term maintenance was found through the C-G connector structure for the replacement of the high pressure steam pipe.

Art Display Areas**\$250,000**

This program is a continuation of the existing program, in partnership with the MSP Foundation, to provide opportunities and space build out for the display of permanent and temporary/rotating art exhibits. This year's project supports vitrines and concourse art displays at Terminal 2-Humphrey and may include digital gallery monitors at both terminals.

Terminal Seating Improvements**\$800,000**

This project represents the final phase of seating replacement in Terminal 1-Lindbergh to change out of public seating to the new standards selected in 2013, including power. Locations in this program have included areas such as Concourse C, ticket lobby, baggage claim, east mezzanine, vertical circulation towers, tram level, GTC atrium, GTC ground level, rental car locations, and common use gate hold areas.

Ticket Counter Upgrades to ADA**\$800,000**

This project replaces select ticket lobby and 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.

Concourse Service Center Upgrades**\$500,000**

This project will create new prototypical service centers, enhancing the Concourse C (adjacent Gate C3) installation, and looking at additional and innovative ways to provide business users and others work environments to accomplish work outside of crowded gate hold areas. Power, privacy, work surfaces, seating, and conversational arrangement varieties will provide for multi-generational work environments, enhancing the business traveler's experience.

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 ten-year pay back.

Field and Runway

Perimeter Gate Security Improvements - Gates 222 & 269**\$1,200,000**

Gate 222 is located near Terminal 2-Humphrey at the end of 34th 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 and creates a significant amount of effort from MAC Trades to keep it in working order. This project will install the standard security gate for entrance into the AOA, albeit upgraded with redundant protection. This gate services one of the primary access and highest-used points into and out of the airfield. Gate 269, located in the SW corner of MSP, also requires some minor upgrades to the equipment and alignment of the keypad, which is also included in this project.

Runway 4-22 In-Pavement Guard Lights**\$500,000**

This project provides for the installation of in-pavement runway guard lights on Runway 4-22 at the intersections with both Runway 12R-30L and Runway 12L-30R.

Terminal 2-Humphrey

T2 Lobby Restrooms**\$1,800,000**

This project will add restrooms in accordance with 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.

Curbside Check-in Expansion**\$300,000**

This project will increase the curbside check-in facilities at Terminal 2-Humphrey to accommodate a second airline and connect to existing baggage conveyance systems.

Hangars and Other Buildings

Drivers Training Facility Rehabilitation**\$550,000**

The MAC Drivers Training Center (DTC) is located in Building H. This facility is currently planned to remain in Building H for the foreseeable future, and the building 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.

Trades/Maintenance Buildings

Trades Building Pneumatic Controls Retrofit**\$400,000**

This project upgrades the outdated pneumatic temperature controls at the Trades Building to the IMACS system (Intelligent Monitoring and Control Systems). In the process, it integrates the existing IMACS controls at Trades (including the domestic water meters, the solar heating system and the new cooling equipment) with this new building-wide IMACS 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 less than 10 years.

General Office/Administration

GO Security Enhancements

\$500,000

As a follow up project to the new lobby security upgrades, this project will provide for cameras at other GO building entries.

G.O. Building Improvements

\$500,000

Continual maintenance of MAC buildings is necessary for comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. The General Office Building, built in the 1960's, has recently experienced a number of window and building issues that need to be corrected including: window sealing and replacements, curtain wall sealing, roof repairs, and valve replacements. This program will also address replacement of end-of-life finishes as required.

Environment

Mother Lake Stormwater Improvements

\$100,000

This project provides for construction of a settling basin to treat the stormwater before it reaches Mother Lake.

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. The charging stations are to be installed at Terminal 1-Lindbergh for use by Delta GSE. This project fits into 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.

E85 Tank and Dispenser Modifications

\$700,000

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. The 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.

MSP Ongoing Maintenance Projects

Terminal 1- Lindbergh

Telecommunications Room Equipment Continuity (TREC)

\$1,500,000

The MAC network (MACNet) carries, along with other information, credit card data collected from the landside parking revenue control system. Merchants like the MAC are required to meet credit card security standards created 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 multi-year program addresses these standards by providing security equipment and relevant network hardware for the 150 telecommunications rooms on the MAC campus.

Electrical Infrastructure 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 resources of MAC's maintenance and trades staff to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. Typical work includes door replacements, emergency upgrades to mechanical, electrical, plumbing or HVAC systems, loading dock work, etc. The list of potential projects will be compiled and prioritized in early 2016.

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 is part of a multi-year program that 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 address infiltration and complete repairs.

Plumbing Infrastructure Upgrades**\$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 replacement of aging plumbing systems.

Terminal Building Remediation**\$2,500,000**

Continual maintenance of the terminal buildings is imperative to passenger comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. Building and concourse envelope issues include: curtain wall systems, glazing, sealant repair/replacement, louver repair/replacement, metal panel repair/replacement, and soffit repair/replacement and insulation systems.

Concourse G Rehabilitation**\$2,000,000**

This multi-year program will provide operational improvements to the existing concourse over time, including replacing elevators, modifying and replacing structural, electrical and mechanical systems, and making other changes that will be identified through specific master planning efforts beginning in 2016.

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.

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.

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.

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 boards, 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.

Hangars and Other Buildings

MSP Campus Building Roof Replacements**\$1,000,000**

A report has been developed within the MAC that evaluates one-half of the roofs every other year. This on-going program allows these 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.

Campus Building Rehabilitation Program**\$2,000,000**

Continual maintenance of MAC non-terminal buildings is imperative in 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. This program will also include repair/replacement related to interior issues. This will be the first year of an annual program to maintain MAC buildings as assets.

Campus Parking Lot Reconstructions**\$650,000**

This ongoing program will replace, rehabilitate, and/or reconstruct bituminous and concrete parking lots that belong to 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 systematically make improvements to the parking lots on the campus.

MSP Tenant Projects

Terminal 1-Lindbergh

Concessions Rebids**\$2,000,000**

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

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 or other revenue generating programs at the airport.

Hangars and Other Buildings

Freight Building Remodel for DHL**\$5,000,000**

This project includes remodel and expansion of the DHL air freight facility located on Cargo Road to accommodate a package processing facility. The air freight facility sits adjacent to the West Cargo Ramp where DHL currently has airside access for their daily aircraft arrivals. The cost of remodel and expansion will be paid through a lease agreement with DHL.

Reliever Airports Maintenance/Facility Upgrade Projects

St. Paul

Joint and Crack Repairs**\$100,000**

Given the extremely poor sub grade materials at this airport, 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.

Runway 14-32 Pavement Rehabilitation**\$4,000,000**

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 year's project is anticipated to include reconstruction of the north end overlapping portions of Runway 14 and Runway 13. The runway lighting systems will also be upgraded and repaired as required. This project will also include safety-related geometric modifications to Taxiway Foxtrot and Taxiway November. The result will be the removal of Taxiway November and re-alignment of Taxiway Foxtrot to reduce risk associated with potential runway incursions and improve overall safety of taxiing aircraft from Runway 13 and Runway 14.

Airfield Signage/Wind Cone Upgrade**\$400,000**

Portions of the existing airfield signage system are in need of replacement to eliminate old equipment, increase reliability, safety (RSAT), and to stay current with FAA standards. This project will focus on replacing aging signs along Taxiway Delta as well as signs associated with the new designations of the Taxiway Alpha Stub Connectors. The existing Wind Cone circuit is in poor condition and will be replaced. This project will also address the replacement of the end of life Runway 14/32 PAPI system.

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

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. The Lake Elmo Airport suffers from poor subgrade materials, which contribute to the overall deterioration of pavements. 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.

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 located off of airport property. Typically, the obstructions consist of privately owned trees which must be acquired via individual negotiations with compensation to homeowners.

Anoka County – Blaine

Roof Repairs/Replacement**\$250,000**

This project provides for repair, and in some cases replacement, the roof structures on MAC-owned 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 Capital Improvement Program

MSP End of Life/Replacement Projects

Terminal 1-Lindbergh

T1 Tram Systems Retrofit and Equipment **\$2,700,000**

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 they 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 over the course of a three-year program from 2015 to 2017.

Concourse A/B PC Air Upgrades **\$2,500,000**

The existing PC Air units on the Concourse A and B gates are nearing their end of life and are undersized for the larger aircraft planned for the area. These units provide heating and cooling for an aircraft while parked at the gate in lieu of using power from the aircraft itself. This project will provide new and upsized PC Air units for the 19 gates that will remain in use for the Delta CRJ-900 aircraft.

Field and Runway

Taxiway S Reconstruction **\$7,500,000**

Project provides for reconstruction of a 2,500-foot length of Taxiway S between Taxiway D and Delta Airlines Hangar. Existing concrete pavement was constructed in 1967. Major items of work include pavement removals, excavation and backfill, concrete taxiway pavement, bituminous shoulder pavement, and airfield lighting and signing.

Terminal Roads/Landside

Lower Level Roadway Rehabilitation **\$200,000**

Project provides for reconditioning of the steel bridge members for the Elevated Roadway Bridge, adjacent to the T1-Lindbergh.

Parking

Parking Ramp Intercom System Replacement **\$1,000,000**

This project would replace the existing intercom equipment at the Terminals 1 and 2 that are associated with the parking and MAVIS revenue control system entrance and exit plazas, in locations where they will not be replaced/relocated in 2016-2017 as part of the Terminal 1 Parking Ramp program. The new intercoms will extend the life of our entrance and exit plazas because they offer a foundation that will allow us to add customer service features in the future.

Terminal 2-Humphrey

T2 Public Walk Aisle Terrazzo Floor Installation **\$1,700,000**

This project will replace end-of-life carpeting in the public walk aisles of Gates H1-H7 and baggage claim with terrazzo to match that being installed in the 2015 Gate Expansion project.

Fire

MSP Campus Fire Alarm System Upgrade/Transition **\$1,000,000**

In an effort to improve monitoring reliability and eliminate the existing single point of failure configuration,

this multi-year project will include database redundant systems, device controller upgrades and the decentralization of the fire alarm master control equipment.

MSP IT Projects

Terminal 1-Lindbergh

MAC Public Address System **\$1,100,000**

The MAC Public Address System (MACpas) project involves a multi-year overhaul to the system to eliminate discontinued components and replace them to maintain the operation and reliability of this critical 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.

Telecom Relocation & Decommissioning **\$1,500,000**

This program involves vacating the current major MAC telecommunications area, constructing a new space and consolidating, relocating and/or replacing equipment (e.g. critical fiber and copper connections) as needed to the new, larger telecommunications room.

Intelligent Monitoring and Control Systems (IMACS) **\$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 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.

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

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 Connectivity or Communication **\$1,000,000**

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

MACNet Program **\$2,000,000**

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 and noise, finance and accounting, human resources, 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.

Automated External Defibrillator Notification System **\$550,000**

This project will provide a wireless location notification system for the existing Automated External Defibrillators (AEDs) currently installed throughout the Lindbergh and Humphrey Terminals. The system will tie into the existing facilities monitoring system and to the Emergency Communications Center (ECC). If a door to an AED is opened, ECC will be immediately notified, and will be able to dispatch Fire to the general location. If a 911 call is made, the nearest AED's notification lights can be alarmed/flushed, and overhead announcements can be made for the AED location and the response location.

Police

iViSN Program**\$4,500,000**

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.

Card Access Modifications**\$850,000**

This project will revise hardware to provide card access to doors leading to the lower level of Concourse E and F to prevent public access except in the case of emergency.

Passenger Boarding Bridge Card Access Additions**\$3,500,000**

This program will add card access controls at passenger boarding bridge doors for improved security at a pace faster than only adding the controls as bridges are replaced.

MSP Long Term Comprehensive Plan Projects

Terminal 1-Lindbergh

D-Pod Outbound Baggage System**\$15,200,000**

This project will provide an expansion of the existing outbound baggage handling system in the lower level of the Concourse D-Pod area.

Baggage Claim Expansion**\$33,400,000**

This 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, public seating areas, centralized meet and greet space, unclaimed baggage storage, baggage service offices, concessions (food & beverage and retail), improved lighting, fire protection throughout the space, structural enhancements, improved 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 coordination with the Ticket Lobby Operational Improvements.

Ticket Lobby Operational Improvements**\$15,700,000**

This program addresses, with the Vertical Circulation Improvements Program, issues of congestion and functionality in the Terminal 1-Lindbergh Ticket Lobby. It will provide walkways that meet required codes, ticket counter consolidations, 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.

Concourse A/G Connector Bridge Phase 1**\$20,000,000**

This project provides for the first phase of a passenger connector bridge between Concourse A and a future extension of Concourse G. This first segment will extend to the new hotel, proposed to be under construction in 2016. It will be designed for an ultimate connection to an extended Concourse G, with space for moving walks to be installed at a later date. The concourse 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. The project also includes vertical circulation, wayfinding, and mechanical and electrical systems in the existing A Rotunda area to provide access to the skyway. The Environmental review for the skyway project is ongoing. Once the environmental review is complete, the project will be moved into from 2017 into the 2016 CIP.

Parking

T1 Parking Ramp – Parking Structure and RAC Facility**\$293,000,000**

This project will construct a new, 11-level, parking ramp east of the existing Blue and Red Parking

Ramps. The ramp will provide public parking and rental car parking facilities. Work includes relocating the rental car ready/return areas from the red and blue ramps and then converting this area to public parking. This project also includes extending the underground tram corridor (not the tram), constructing a new transit center, rental car customer service building, vertical circulation building, entrance ramp, exit ramp, and all associated utilities, lighting, landscaping, signage, roadways, and security features.

MSP Maintenance/Facility Upgrade Projects

Terminal 1-Lindbergh

Restroom Upgrade Program

\$4,000,000

A study of all restrooms in Terminal 1-Lindbergh was completed in 2010 and a program developed to upgrade/modernize the restrooms at Terminal 1-Lindbergh. From this study, each restroom was prioritized based on 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. This year's project will construct the second of two new restrooms on Concourse F that was delayed to better coincide with the 2017 Concessions Rebid program.

Way-Finding Sign Backlighting Replacement

\$1,600,000

LED lighting will replace the existing cold-cathode lamps in the lighted sign boxes at both terminals. Many lamps from the 2008 retrofit have failed and the long-term energy costs recovery from the LEDs matches MAC's energy reduction model.

Art Display Areas

\$250,000

This program is a continuation of the existing program, in partnership with the MSP Foundation, to provide opportunities and space build out for the display of permanent and temporary/rotating art exhibits. This year's project will be a continuation of the work started in 2016, providing additional vitrines and concourse art displays at Terminal 2-Humphrey and digital gallery monitors at both terminals.

EVIDSs/MUFIDs Digital Signs

\$750,000

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

Landside Offices Reconfiguration

\$150,000

This project will reorganize offices and meeting space to improve efficiencies in the Landside department.

Field and Runway

Runway 12R-30L Tunnel Drainage Improvements – Phase 2

\$400,000

Project provides for storm sewer and subsurface drainage improvements at the Runway 12R-30L vehicular tunnel, including: cleaning and repair of storm sewers, rehabilitation of subdrains, and sealing of tunnel roof joints.

Runway 4 Glide Slope Installation

\$1,000,000

This project would install new glide slope systems at the end of Runway 4. With glide slope equipment installed on the runway, pilots can execute precision approaches, which reduces the size of some approach surfaces.

Parking

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 corrode. If not repaired, the degraded metal railings could become at risk for detachment. The rust 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.

Fire

Campus Fire Protection

\$500,000

This project is part of a new multi-year program to upgrade fire protection systems in various MAC-owned buildings on the MSP campus.

General Office/Administration

G.O. Building Improvements

\$500,000

Continual maintenance of MAC buildings is necessary for comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. The General Office Building, built in the 1960's, has recently experienced a number of window and building issues that need to be corrected, including window sealing and replacements, curtain wall sealing and roof repairs.

Environment

Concourses C and G Compactor Canopies

\$450,000

This project will construct canopies over the compactors on the C and G Concourse to improve functionality and longevity of the equipment.

MSP Ongoing Maintenance Projects

Terminal 1-Lindbergh

Telecommunications Room Equipment Continuity (TREC)

\$1,500,000

The MAC network (MACNet) carries, along with other information, credit card data collected from the landside parking revenue control system. Merchants like the MAC are required to meet credit card security standards created 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 multi-year program addresses these standards by providing security equipment and relevant network hardware for the 150 telecommunications rooms on the MAC campus.

Electrical Infrastructure 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 resources of MAC's maintenance and trades staff to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. Typical work includes door replacements, emergency upgrades to mechanical, electrical, plumbing or HVAC systems, loading dock work, etc. The list of potential projects will be compiled and prioritized in early 2016.

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 is part of a multi-year program that will continue the design and implementation of emergency power and lighting corrective work identified in this study.

Air Handling Unit Replacement**\$2,000,000**

There are existing air handling units serving Terminal 1-Lindbergh that were installed with the original terminal construction in 1958-60 and are over 50 years old. A study of these units has been completed that evaluated each unit's age, condition, and its ability to adequately heat or cool the spaces it serves. A multi-year program has been implemented to provide for the replacement of the units that have been identified as needing replacement. 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**\$3,000,000**

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 and installs new conveyance systems if needed.

Plumbing Infrastructure Upgrades**\$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 replacement of aging plumbing systems.

Terminal Building Remediation**\$2,500,000**

Continual maintenance of the terminal buildings is imperative to passenger comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. Building and concourse envelope issues include: curtain wall systems, glazing, sealant repair/replacement, louver repair/replacement, metal panel repair/replacement, and soffit repair/replacement and insulation systems.

Concourse G Rehabilitation**\$6,500,000**

This multi-year program will provide operational improvements to the existing concourse over time, including replacing elevators, modifying and replacing structural, electrical and mechanical systems.

Energy Management Center

EMC Plant Upgrades (T1 & T2)**\$500,000**

This six-year program provides upgrades to the MAC's Energy Management Center (EMC) Boiler and Chiller Plants at both Terminal 1-Lindbergh and Terminal 2-Humphrey. The work includes upgrades to the aging Chilled Water and Heating Water systems throughout both terminals. The pumping and piping systems on both the heating and cooling systems are aging and in need of repair work beyond maintenance.

Field and Runway

Airside Bituminous Rehabilitation/Electrical Construction**\$2,150,000**

This project provides for the removal and replacement of elevated and in-pavement runway guard lights along Runway 12R-30L. Work also includes general cable maintenance and upgrades to airside electrical components.

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.

Miscellaneous Airfield Construction**\$800,000**

This is an ongoing program to consolidate various items beyond the capabilities of the maintenance personnel, projects too small to be accomplished independently, or to handle airside problems requiring repair which 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.

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.

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 boards, 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.

Hangars and Other Buildings

MSP Campus Building Roof Replacements**\$1,000,000**

A report has been developed within the MAC that evaluates one-half of the roofs every other year. This on-going program allows these 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.

Campus Building Rehabilitation Program**\$1,500,000**

Continual maintenance of MAC non-terminal buildings is imperative in 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. This program will also include repair/replacement related to interior issues. This will be the first year of an annual program to maintain MAC buildings as assets.

Campus Parking Lot Reconstructions**\$1,600,000**

This ongoing program will replace, rehabilitate, and/or reconstruct bituminous and concrete parking lots

that belong to 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 systematically make improvements to the parking lots on the campus. This year's project will include reconstruction of the FAA building parking lot, along with any associated sidewalk and lighting/electrical systems improvements.

MSP Noise Mitigation Projects

Noise Mitigation Consent Decree Amendment

\$3,200,000

The Consent Decree First Amendment Program is a residential noise mitigation program that began in March 2014 under the terms of an amended legal agreement (Consent Decree) between the Metropolitan Airports Commission (MAC) and the cities of Richfield, Minneapolis, and Eagan, and approved by the Hennepin County District Court (effective until December 31, 2024). Under this program, eligibility of single-family and multi-family homes will be determined annually, based upon actual noise contours that are developed for the preceding calendar year, beginning in March 2014. This project will provide noise mitigation for those single family and multifamily homes meeting the eligibility requirements of the program beginning in 2016.

MSP Tenant Projects

Terminal 1-Lindbergh

Concessions Rebids

\$2,000,000

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

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 or other revenue generating programs at the airport.

Reliever Airports Long Term Comprehensive Plan Projects

Lake Elmo

Runway 14-32 Replacement

\$500,000

It is anticipated that, in 2015, the updated long term comprehensive plan for this airport will propose relocating and extending the primary runway northeast of its current alignment. This year's scope includes the engineering/environmental effort involved prior to starting construction, which is currently envisioned for 2019.

Reliever Airports Maintenance/Facility Upgrade Projects

St. Paul

Roof Repairs/Replacement

\$200,000

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.

Storm Sewer Improvements Phase 2

\$1,500,000

This project includes improvements to the existing storm sewer systems in the West Building Area and infield area between Taxiways Delta and Lima, to improve storm water removal and to address soil and

pavement distress in the vicinity of deficient storm sewer structures. The project will also evaluate the potential for improvements to the flood pump stations to maximize efficient removal of storm water from the airfield during flood events.

Lake Elmo

Runway 04-22 Pavement Rehabilitation

\$4,000,000

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 year's project is anticipated to include reconstruction of the existing length of Runway 04-22, and will include runway lighting systems installation.

Flying Cloud

Alleeways Pavement Rehabilitation

\$700,000

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 rehabilitation of alleyways in the Southeast Building Area.

Equipment Storage Building

\$2,500,000

This project includes the construction of a MAC storage building for the airfield maintenance equipment along with an office space and restrooms for the Airport Manager and airfield staff. The existing storage facilities do not provide adequate space to store all of the existing equipment and some pieces of equipment are too large to fit inside the existing buildings. The previously utilized office and restroom space was lost years ago when the FAA took back control of the space within their Air Traffic Control Tower structure. An appropriately-sized storage facility will provide added security and protection from the elements for the airport maintenance equipment.

Crystal

Materials Storage Building

\$200,000

This project includes the construction of a MAC storage building for the containment of airfield maintenance products such as salt, sand, and topsoil to comply with MPCA requirements.

Anoka County - Blaine

Taxiway Pavement Reconstruction

\$500,000

This is an ongoing program to reconstruct 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 A1 between Runway 36 and Taxiway C.

Runways 09-27 and 18-36 Joint and Crack Repairs

\$200,000

The need for crack repair and joint sealing is critical to maintain pavement strength and pavement life. This year's project is anticipated to include joint and crack repairs on Runways 09-27 and 18-36.

Materials Storage Building

\$200,000

This project includes the construction of a MAC storage building for the containment of airfield maintenance products such as salt, sand, and topsoil to comply with MPCA requirements.

2018 – 2022 Capital Improvement Program

Description of projects expected to be implemented in 2018–2022 are preliminary, and only those that have potential substantive environmental effects are included in this section.

MSP Long Term Comprehensive Plan Projects

Terminal 1-Lindbergh

FIS Recheck Operational Improvements **\$8,400,000**

This project would relocate existing restrooms to new buildout space adjacent to gate G1 to allow for expansion of the airline baggage recheck operations and create the required queue space and wayfinding for the checkpoint.

Concourse E Remodeling/Expansion **\$41,500,000**

This project provides for more flexible utilization of the Concourse E gates, larger gate lobbies to accommodate larger aircraft (reguaging), 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 **\$65,100,000 (2019-2020 cumulative)**

This 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, public seating areas, centralized meet and greet space, unclaimed baggage storage, baggage service offices, concessions (food & beverage and retail), improved lighting, fire protection throughout the space, structural enhancements, improved sight lines, curbside lighting and access, and other operational improvements. From 2019 through 2020, this program will address the south end of the Baggage Claim level in coordination with the Ticket Lobby Operational Improvements.

Vertical Circulation Improvements **\$25,200,000**

This two-year program will remove existing scissors escalators (12 in total) and the original elevators and add new high-speed, smart elevators. Escalators that have reached their end of life will be replaced with new escalators in new locations to enhance passenger flows. This year's project will complete the work at the south end of the Ticket Lobby.

Ticket Lobby Operational Improvements **\$55,900,000 (2018-2020 cumulative)**

This program addresses, with the Vertical Circulation Improvements Program, issues of congestion and functionality in the Terminal 1-Lindbergh Ticket Lobby. It will provide walkways that meet required codes, ticket counter consolidations, 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.

East Curbside Upper Level Check-in **\$14,800,000**

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. The project would include check-in technologies for customers and their baggage, as well as baggage handling systems to move the baggage from this location to the north and south checked baggage inspection system.

Lower Level Curbside Expansion **\$12,100,000**

This project includes the reconfiguration of the arrivals curb at Terminal 1-Lindbergh to address congestion issues. In addition to potential roadway modifications, the program would include additional seating, vestibules, restrooms, curbside waiting areas, lighting and other functions.

Field and Runway

Taxiway C1 Construction**\$5,500,000**

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.

Reliever Airports Long Term Comprehensive Plan Projects

Lake Elmo

Runway 14-32 Replacement**\$7,000,000**

It is anticipated that, in 2015, the updated long term comprehensive plan for this airport will propose relocating and extending the primary runway northeast of its current alignment. This project includes all wetland mitigation, earthwork grading, subgrade improvements, electrical lighting system and bituminous pavement installation.

Airfield Modifications**\$3,000,000**

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 – Phase 1**\$3,200,000**

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 225th Street that connects to Cedar Avenue.

Crystal

Runway 14R-32L & Taxiway E Modifications**\$2,000,000**

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.

Reliever Airports Maintenance/Facility Upgrade Projects

Airlake

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.