

**ACTION TRANSMITTAL 2018-54**

**DATE:** Nov. 30, 2018  
**TO:** Technical Advisory Committee  
**FROM:** TAC Planning  
**PREPARED BY:** Russell Owen (651) 602-1724  
**SUBJECT:** Review of Metropolitan Airports Commission 2019-2025 CIP  
Capital Improvement Program (CIP)  
**REQUESTED ACTION:** MAC requests that the Metropolitan Council review the 2019-2025  
MAC CIP as required by MN Statutes 473.181 and 473.621  
**RECOMMENDED MOTION:** Recommend acceptance of the staff analysis of the MAC 2019-  
2025 Capital Improvement Program (CIP) and forward these  
comments to the Metropolitan Council for its consideration.

**BACKGROUND AND PURPOSE OF ACTION:**

The MAC annually prepares a CIP for projects at MSP International Airport and their six General Aviation reliever airports. Under state statutes 473.181 and 473.621 the Council must:

- Determine adequacy of public participation in the CIP process,
- Approve CIP projects meeting certain dollar thresholds, \$5 Million at MSP and \$2 Million at all reliever airports and “significant effects” criteria (referenced in Table 4, A-H),
- Review and comment on all projects for consistency with the Transportation Policy Plan (TPP), including planning and environmental concerns.

In order to allow letting of projects early enough for construction to start in the spring, the Council has agreed to utilize the draft CIP document released in September to expedite the review. The MAC 2019-2025 CIP will be finalized on December 3<sup>rd</sup> at the Planning, Development and Environment Committee meeting of the MAC with final action taken at the December 17<sup>th</sup> MAC Commission meeting. Any changes identified after the MAC Commission action will be reported to TAB. Any changes from the final CIP will be incorporated into the 2019 CIP review report that goes forward to the Met Council in January. All comments provided by TAC/TAB will be included for consideration with the final review report submitted by staff for Council action. MAC staff has reported that there were a few projects that moved in the final draft between 2019 and the out years. This happened after TAC-Planning reviewed the CIP. In the Staff Analysis section, there is an explanation of the number of projects that have shifted.

## **RELATIONSHIP TO REGIONAL POLICY:**

The Metropolitan Council is required by state law to annually review the MAC CIP to ensure consistency of proposed projects with regional plans. Although state law doesn't require TAC/TAB to review the MAC CIP, staff traditionally has sought TAC/TAB comments in the review process.

## **STAFF ANALYSIS:**

Analysis confirms that an Assessment of Environmental Effects (AOEE) has been prepared for 2019 projects with potential environmental effects, and MAC has in place an adequate public participation process for development and review of its AOEE and CIP. MAC will hold a public hearing on the AOEE on November 5th, at 10:30 AM at the Planning, Development and Environment Committee meeting at the MSP Conference Room.

The following 2019 projects meet the dollar threshold levels but do not meet the other "significant effects" criteria to trigger project approval:

- MSP – Terminal 1, Passenger Boarding Bridge Replacements – \$ 7M
- MSP – Terminal 1, IT Miscellaneous Modifications – \$ 8.4M
- MSP – Terminal 1, Baggage Claim/Ticket Lobby Improvements - \$ 98M
- MSP – Terminal 1, Terminal 1 Parking Ramp Modifications - \$17M
- MSP – Terminal 1, Restroom Upgrade Program - \$5M
- MSP – Terminal 1, Concourse G Moving Walks - \$5M
- MSP – Terminal 1, Concourse G, Air Handling Unit Replacement Program \$6.4M
- MSP – Noise Mitigation - \$13.5M
- STP – MAC Building Improvements - \$2.3M

Federal, state and MAC funding has been identified by the MAC for most projects in the 2019 CIP.

All projects in the 2019 CIP appear consistent with the Transportation Policy Plan (TPP). All of the 2019 MSP projects were evaluated in the 2020 EA for MSP that received a Finding of No Significant Impact (FONSI) in March of 2013 from the Federal Aviation Administration. Initial analysis of the future years (2020-2025) of the CIP shows that many projects will meet the dollar threshold of review but do not appear to meet the significant effects criteria. These projects will be re-evaluated on an annual basis.

There were 21 projects that have been moved throughout the years in the updating of the draft CIP to the final CIP. Many of these projects have been moved to the years 2022-2025, while there were 3 projects that got moved into the 2020-2021 time frame. These projects include updating the Concourse G Delta Skyclub, Air Handling Units and Lake Elmo Airfield modifications.

The following 2019 project does meet the dollar threshold level and the "significant effects" criteria to trigger project approval by the Metropolitan Council:

- 21D (Lake Elmo Airport) – Runway Replacement - \$ 3M (total cost is approximately \$7-10M)

The runway replacement project at Lake Elmo Airport (21D) is a project that meets the financial threshold and significant effects criteria to where the Metropolitan Council will need to approve the project. The updated long term comprehensive plan for Lake Elmo Airport proposes relocating and extending the primary runway northeast of its current alignment. The first phase of construction for this project, which primarily focuses on roadway realignment to make way for runway construction. This project includes all wetland mitigation, earthwork grading, subgrade improvements, electrical lighting system and bituminous pavement installation. The project has undergone environmental documentation and received a determination of no significant impact by the FAA in August of 2018. The project is consistent with the TPP.

**COMMITTEE COMMENTS AND ACTION:** TAC Planning committee members asked questions regarding projects at minor and reliever airports. All answers were satisfactory. The committee moved to recommend, and the motion passed unanimously.

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**ROUTING**

<b>TO</b>	<b>ACTION REQUESTED</b>	<b>DATE COMPLETED</b>
TAC - Planning	Review and Recommend	11-8-18
Technical Advisory Committee	Review and Recommend	
Transportation Advisory Board	Review and Recommend	
Metropolitan Council	Review and Approve	

## MAC 2019 – 2025 CAPITAL IMPROVEMENT PROGRAM

The MAC 2019 – 2025 Capital Improvement Program material included in this memorandum reflects the actions of the Commission's PD&E Committee on Sep. 10, 2018. Final action by the Commission is expected at their December 17, 2018 meeting. Any changes made on December 3<sup>rd</sup> PDE Committee Meeting that may affect the CIP review would be reported at the December 19<sup>th</sup> Transportation Advisory Board.

The overall review schedule for the CIP is listed below. Materials for the TAC - Planning review are included in the following summaries:

- **MAC 2019 CIP Public Review Schedule**  
(See Attachment 1)
  
- **2019 Projects Requiring an Assessment of Environmental Effects (AOEE)**  
(See Attachment 2)  
No projects meet criteria for environmental review.
  
- **Projects Meeting \$5M and \$2M Thresholds 2019-2025**  
(See Attachment 3)  
A number of projects potentially meet the threshold dollar levels.
  
- **Projects Meeting Statutory Review Criteria & Requiring Approval**  
(See Attachment 4)  
One project meets the criteria and requires approval from the Met Council. The project is the Lake Elmo Runway Replacement. A few projects other projects in 2019 meet the dollar threshold levels, but do not meet the criteria requiring project "approval".

**Transportation Advisory Board**  
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**1) MAC PUBLIC PARTICIPATION PROCESS:**

**MAC - 2019 CAPITAL IMPROVEMENT PROGRAM IMPLEMENTATION SCHEDULE**

<b>CAPITAL IMPROVEMENT PROGRAM</b>	<b>RESPONSIBILITY</b>	<b>SCHEDULE</b>
<b>PROJECTS DEFINITION</b>		January 2018
Initial CIP Discussions -----	MAC Airport Development	January 1 <sup>st</sup> - June 1 <sup>st</sup>
Requests for CIP Projects to Airport Development -----	MAC Departments	January 1 <sup>st</sup> – May 1 <sup>st</sup>
Develop Projects Scopes, Costs, and Prioritization -----	MAC Dept’s & Airport Dev.	Feb. 1 <sup>st</sup> - July 31 <sup>st</sup>
Develop Draft Preliminary CIP -----	Airport Development	Feb. 1 <sup>st</sup> - July 31 <sup>st</sup>
<b>PROJECTS ENVIRONMENTAL REVIEW</b>		
Prepare AOEEs and EAWs as required-----	Environment	July 31 – Oct. 7 <sup>th</sup>
Notice of September PD&E Meeting mailed to Affected Municipalities -----	Airport Development	August 31 <sup>st</sup>
Recommendation by PD&E Committee to Commission of Preliminary CIP for Environmental		
Review/Authorization to Hold Public Hearing on AOEEs and EAWs -----	Airport Development	September 5 <sup>th</sup>
Minutes of September PD&E Committee Meeting and Notice of September Commission Meeting		
mailed to Affected Communities -----	Airport Development	September 26 <sup>th</sup>
Approval of Preliminary CIP by Commission for Environmental Review/Authorization to Hold		
Public Hearing on AOEEs and EAWs -----	Airport Development	September 25 <sup>h</sup>
Preliminary CIP Mailed to Affected Communities -----	Airport Development	September 17 <sup>th</sup>
AOEEs and EAWs to EQB -----	Environment	October 1 <sup>st</sup>
Public Hearing Notice Published in EQB Monitor, starting the 30-Day Comment Period-----	Environment	October 9 <sup>th</sup>
Minutes of September Commission Meeting mailed to Affected Communities -----	Airport Development	October 31 <sup>st</sup>
Public Hearing on AOEEs and EAWs at November FD&E Committee Meeting -----	Environment	November 5 <sup>th</sup>
Thirty-Day Comment Period on AOEEs and EAWs ends -----	Environment	November 8 <sup>th</sup>
Final Date for Affected Municipalities Comments on Preliminary CIP to MAC -----	Affected Communities	November 8 <sup>th</sup>
Metro Council TAC Planning Review	TAC-Planning	November 8 <sup>th</sup>
Metro Council – TAC -----	TAC	December 5 <sup>th</sup>
Notice of December PD&E Committee Meeting mailed to Affected Communities -----	Airport Development	November 30 <sup>th</sup>
Recommendation by PD&E Committee to Commission of Final CIP -----	Airport Development	December 3 <sup>rd</sup>
Minutes of December PD&E Committee Meeting and Notice of December Commission Meeting		
mailed to Affected Communities -----	Airport Development	December 14 <sup>th</sup>
Metro Council – Transportation Advisory Board -----	TAB	December 19 <sup>th</sup>

PROJECTS PLANNING and FINANCIAL REVIEW		
Approval of Final CIP by Commission-----	Airport Development	December 17 <sup>th</sup>
Notification of Commission action to EQB-----	Airport Development	December 20 <sup>th</sup>
CIP Distributed to MAC Departments, Met Council, State Historical Society and Affected Municipalities -----	Airport Development	December 20 <sup>th</sup>
Metro Council – Committee Action-----	Transportation Committee	January 14 <sup>th</sup>
Metro Council – Council Action-----	Metro Council	January 28 <sup>th</sup>
Minutes of December Commission Meeting mailed to Affected Communities -----	Airport Development	

**Note:** 1) All dates are tentative and subject to change. 2) Shaded items represent actions/dates which pertain to the Affected Communities as defined in Minnesota Statutes § 473.621, Subd. 6, as amended. 3) MAC = Metropolitan Airports Commission 4) PD&E = MAC Planning, Development and Environment Committee 5) AOEE = Assessment Of Environmental Effects 6) EAW = Environmental Assessment Work Sheet 7) EQB = [MN] Environmental Quality Board

**2) PROJECTS REQUIRING AN ASSESSMENT OF ENVIRONMENTAL EFFECTS (AOEE's):**

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 Wild-life and Plants	Flood-plains and Flood-ways	Hazardous Materials, Pollution Prevention and Solid Waste	Historical, Architectural, Archaeological and Cultural Resources	Light Emissions and Visual Effects	Parks & Rec. Areas and Trails	Noise	Water Quality (Storm, Waste and Ground Water)	Wet lands	Infra-structure and Public Services	Farm land
<b>MSP AIRPORT PROJECTS</b>														
No EA or EIS Required for 2018 projects	MSP 2020 Environmental Assessment findings.	No Effects												
<b>RELIEVER PROJECTS</b>														
No Projects	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A			

**3) MAC PROJECTS ANTICIPATED TO MEET THE \$5M AND \$2M THRESHOLDS FROM 2019 – 2025:**

Airport	2019	2020	2021	2022	2023	2024	2025
<b>MSP Environmental</b>	Noise Mitigation	Noise Mitigation	Noise Mitigation	Noise Mitigation	Noise Mitigation	Noise Mitigation	Noise Mitigation
<b>MSP Terminal 1 Lindbergh</b>	-Passenger Boarding Bridge Replacements - \$ 7M  -IT Miscellaneous Modifications - \$8.4M  Mezzanine HVAC/AHU Replacements - \$6.4 M  -Baggage Claim/Ticket Lobby Improvements \$ 98M  -Terminal 1 Parking Ramp Mods - \$17M  Concourse G Moving Walks -\$5M  -Restroom Upgrade Program - \$5M	IT Modifications - \$5.5M  -Baggage Claim/Ticket Lobby Operational Improvements - \$61.9M  -Baggage Handling System - \$ 32M  -Checkpoint Expansion - \$5.8M  -FIS Operational Improvements -\$8.4 M  -Folded Plate Repairs -\$8.9M  -ARFF #2 Facility - \$10.5M  -Air Handling Unit Replacement - \$6.4M  -Concourse G, Delta Skyclub - \$45M  -Safety Ops/Center - \$77.5M	-Passenger Boarding Bridge Replacements - \$ 8M  -IT Modifications - \$9 M  -Lower Level Curbside Check-In expansion- \$12.0M  -Baggage Claim/Ticket Lobby Operational Improvements - \$32.5M  -Folded Plate Repairs -\$8.9M  -Air Handling Unit Replacement - \$6.5M  -Police, Safety and Ops Center -\$35M	-IT Modifications - \$10.5M  -Baggage Claim/Ticket Lobby Operational Improvements - \$28 M  -Folded Plate Repairs - \$8.9M  -Mechanical Room Upgrade -\$5.5M  -Parking Guidance System - \$6.5M  -Air Handling Unit Replacement - \$6.5M  -Concourse G Rehabilitation - \$5M  -34 <sup>th</sup> Avenue Reconstruction - \$7M  -MAC Storage Facility \$10M	-IT Modifications - \$10M  -Recarpeting Program - \$7M  -Concourse G Rehabilitation \$5M  -D Pod Outbound Baggage System - \$ 5.0 M  -Air Handling Unit Replacement - \$6.5M  -34 <sup>th</sup> Avenue Reconstruction - \$6M	-IT Modifications - \$10M  -Checkpoint Expansion - \$11M  -Recarpeting Program - \$7M  -Concourse G Rehabilitation \$5M  --Folded Plate Repairs - \$8.9M  -Perimeter Gate Security Improvements - \$6.5M  -Air Handling Unit Replacement - \$6.5M	-IT Modifications - \$10M  -Checkpoint Expansion - \$11M  -Recarpeting Program - \$7M  -Concourse G Rehabilitation \$5M  -Air Handling Unit Replacement - \$6.5M
<b>MSP Airfield</b>	-Taxiway B/Q Centerline lights - \$6.8M	-Taxiway D Reconstruction - \$10 M	-Runway 12L/30R – Shoulder Reconstruction – \$5M  -Terminal 1 Apron Reconstruction - \$10.5M	-Runway 12L/30R – Shoulder Reconstruction – \$7M  -Terminal 1 Apron Reconstruction - \$10.5M	-Terminal 1 Apron Reconstruction - \$10.5M	-Terminal 1 Apron Reconstruction - \$10.5M	-Terminal 1 Apron Reconstruction - \$10.5M  -Taxiway A/B Pavement Reconstruction - \$6M
<b>MSP</b>							



<b>Terminal 2 Humphrey</b>							
<b>Lake Elmo Airport</b>	Runway 14/32 Replacement- \$3M	Runway 14/32 Replacement- \$2M  Airfield Modifications - \$3M	Runway 14/32 Replacement- \$2M				
<b>Airlake Airport</b>				Runway 12/30 Improvements \$ 3.5M			
<b>Flying Cloud Airport</b>							
<b>Anoka County- Blaine Airport</b>							
<b>St. Paul Downtown Airport</b>	MAC Building Improvements - \$2.3 M					Runway 14/32 Reconstruction - \$5M	Runway 14/32 Reconstruction - \$5M
<b>Crystal Airport*</b>		Runway 14R/32L & Taxiway "E" Mods - \$ 3.8 M					

\*Crystal Airport Runway 14R/32L project moved to 2020, in the Final CIP.

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**4) 2019 PROJECTS MEETING STATUTORY REVIEW CRITERIA AND REQUIRING APPROVAL:**

2019 CIP PROJECTS	Prior Reviews/Actions		Capital		Review			Criteria *		
	LTCP	AOEE***	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)**
AIRPORT / PROJECT	<ul style="list-style-type: none"> <li>Review Action</li> </ul>	<ul style="list-style-type: none"> <li>EA-EAW Prepared</li> <li>EIS Reviewed</li> <li>NPDES Approved</li> <li>Legislative Requirement</li> <li>Regulatory Requirement</li> <li>Legal Requirement</li> </ul>	Project meets Dollar threshold at:  MSP = \$5M Relievers = \$2M	Loc. of a New Airport	New Runway at an Existing Airport	A Runway Extension at an Existing Airport	Runway Strengthening other than routine Maintenance.	New or Expanded Passenger Handling or Parking Facilities for 25% or more capacity Increase.	Land Acquisition associated with the other criteria, or that would cause relocation of residential or business Activities.	Project information made available by the MAC to affected cities for review.
<b>MSP International Airport 2019 Program:</b>	<ul style="list-style-type: none"> <li>2030 LTCP Update Approved in 2010</li> </ul>	.	<ul style="list-style-type: none"> <li>Passenger Boarding Bridge Replacements</li> <li>Baggage Handling System</li> <li>Vertical Circulation Improvements</li> <li>Concourse G Rehabilitation</li> <li>Taxiway Centerline Lights</li> </ul>	N/A	N/A	N/A	N/A	N/A	N/A	N/A

<i>ST. PAUL DOWNTOWN</i>	<ul style="list-style-type: none"> <li>• 2025 LTCP Approved in 2010</li> </ul>		None							
<i>FLYING CLOUD</i>	<ul style="list-style-type: none"> <li>• 2025 LTCP Approved in 2010</li> </ul>	MAC-City Agreement concluded; FAA review of Agreement & R.O.D. on FEIS completed as part of MAC/Airline Agreement. 2010 Plan being implemented.		N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>CRYSTAL</i>	<ul style="list-style-type: none"> <li>• 2035 LTCP Approved in 2017</li> </ul>	(EA will begin in 2018).	None							
<i>ANOKA CO. -BLAINE</i>	<ul style="list-style-type: none"> <li>• 2025 LTCP Approved in 2010</li> </ul>		None							
<i>LAKE ELMO</i>	<ul style="list-style-type: none"> <li>• 2035 LTCP Approved 2016</li> </ul>	(EA issues Finding of No Significant Impact in Aug 2018)	Runway 14/32 Replacement – Estimated Cost \$3M		X					X
<i>AIRLAKE</i>	<ul style="list-style-type: none"> <li>• 2035 LTCP Approval expected in 2018</li> </ul>	(negotiations on sewer & water service).	None							X

\* Criteria as defined under MS 473.

\*\* Requirements defined under MS 473.

\*\*\* Per AOEE 2019-2025 Summary Environmental Assessment

2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval	2019	2020	2021	2022	2023	2024	2025
<b>MSP End of Life/Replacement Projects</b>							
10 - Terminal 1-Lindbergh							
Passenger Boarding Bridge Replacements	\$ 7,000,000	\$ 4,000,000	\$ 8,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000
Recarpeting Program					\$ 7,000,000	\$ 7,000,000	\$ 7,000,000
Terminal 1-Lindbergh Tug Doors Replacement	\$ 600,000						
Tram Systems Retrofit and Equipment	\$ 1,500,000	\$ 1,750,000					
TSA Recapitalization	\$ 12,000,000						
13 - Energy Management Center							
Variable Air Volume (VAV) Box Replacement			\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	
21 - Field and Runway							
Runway 12L-30R Bituminous Shoulder Reconstruction				\$ 7,000,000			
Runway 12R-30L Bituminous Shoulder Reconstruction			\$ 5,000,000				
Runway 12R-30L Tunnel Storm Sewer Reconstruction		\$ 900,000					
Sanitary Sewer Replacement Taxiway R		\$ 3,300,000					
Snow Melter Upgrades/Modifications	\$ 750,000						
Taxiway A/B Pavement Reconstruction							\$ 6,000,000
Taxiway D Reconstruction		\$ 12,000,000					
Terminal 1-Lindbergh Apron Pavement Reconstruction				\$ 10,500,000		\$ 10,500,000	
26 - Terminal Roads/Landside							
Lower Level Roadway Rehabilitation			\$ 1,100,000				
Upper Level Roadway Electrical System Rehabilitation			\$ 1,000,000				
Upper Level Roadway Rehabilitation			\$ 2,000,000				
UPS Loop Pavement Reconstruction		\$ 1,600,000					
Variable Message Signs Replacement, Phase 3		\$ 1,600,000					
36 - Terminal 2-Humphrey							
Public Walk Aisle Terrazzo Floor Installation	\$ 1,700,000						
Terminal 2 Recarpeting Program			\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	
39 - Public Areas/Roads							
28th Avenue South Reconstruction							\$ 2,270,000
28th Avenue Watermain Replacement	\$ 1,300,000						
East 62nd Street Reconstruction					\$ 2,400,000		
66 - Fire							
MSP Campus Fire Alarm System Transition	\$ 1,000,000	\$ 1,000,000					
<b>MSP End of Life/Replacement Projects Subtotals</b>	<b>\$ 25,850,000</b>	<b>\$ 26,150,000</b>	<b>\$ 18,350,000</b>	<b>\$ 22,750,000</b>	<b>\$ 14,650,000</b>	<b>\$ 22,750,000</b>	<b>\$ 19,270,000</b>

<b>2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval</b>	2019	2020	2021	2022	2023	2024	2025
<b>MSP IT Projects</b>							
10 - Terminal 1-Lindbergh							
Intelligent Monitoring and Control Systems (IMACS)	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000				
Interactive Digital Directory Upgrade	\$ 150,000						
IT Miscellaneous Modifications	\$ 8,400,000	\$ 5,500,000	\$ 9,000,000	\$ 10,500,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000
Telecom Room Equipment Continuity (TREC)	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000			
63 - Police							
Card Access Modifications	\$ 2,000,000	\$ 3,500,000					
<b>MSP IT Projects Subtotals</b>	<b>\$ 13,550,000</b>	<b>\$ 12,000,000</b>	<b>\$ 12,000,000</b>	<b>\$ 12,000,000</b>	<b>\$ 10,000,000</b>	<b>\$ 10,000,000</b>	<b>\$ 10,000,000</b>

2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval	2019	2020	2021	2022	2023	2024	2025
<b>MSP Long Term Comprehensive Plan Projects</b>							
10 - Terminal 1-Lindbergh							
Armed Forces Service Center Relocation	\$ 1,700,000						
Baggage Claim/Ticket Lobby Operational Improvements	\$ 98,000,000	\$ 61,900,000	\$ 32,500,000				
Baggage Handling System		\$ 32,000,000					
Checkpoint Expansion		\$ 5,800,000					\$ 11,000,000
D-Pod Outbound Baggage System					\$ 5,000,000		
FIS Recheck Operational Improvements		\$ 8,400,000					
MSP Long Term Comp Plan	\$ 2,200,000						
Terminal 1-Lindbergh Security Checkpoint Improvements	\$ 2,000,000						
Unstaffed Exit Lanes						\$ 1,000,000	
Valet Parking Lobby and Restroom Upgrade	\$ 5,000,000						
21 - Field and Runway							
Taxiway C1 Construction	\$ 4,000,000						
31 - Parking							
Terminal 1-Lindbergh Parking Ramp - Parking Ramp Modifications	\$ 17,000,000						
36 - Terminal 2-Humphrey							
Terminal 2-Humphrey North Gate Expansion Design Fees					\$ 2,000,000		
Terminal 2-Humphrey Security Checkpoint Improvements	\$ 1,500,000						
<b>MSP Long Term Comprehensive Plan Projects Subtotals</b>	<b>\$ 131,400,000</b>	<b>\$ 108,100,000</b>	<b>\$ 32,500,000</b>	<b>\$ -</b>	<b>\$ 7,000,000</b>	<b>\$ 1,000,000</b>	<b>\$ 11,000,000</b>

2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval	2019	2020	2021	2022	2023	2024	2025
<b>MSP Maintenance/Facility Upgrade Projects</b>							
10 - Terminal 1-Lindbergh							
ADO Office Expansion			\$ 500,000				
Art Display Areas	\$ 500,000	\$ 250,000	\$ 250,000	\$ 250,000			
Arts Master Plan	\$ 808,000	\$ 1,155,000	\$ 155,000	\$ 760,000	\$ 665,000		
Concourse D HVAC Upgrade	\$ 1,800,000						
Concourse G Moving Walks		\$ 2,500,000		\$ 2,500,000			
Folded Plate Repairs				\$ 8,900,000		\$ 8,900,000	
Lighting Infrastructure Technology and Equipment (LITE)	\$ 1,500,000			\$ 2,250,000		\$ 2,500,000	
Restroom Upgrade Program	\$ 500,000		\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000
Terminal 1-Lindbergh Employee Breakroom	\$ 250,000						
Terminal 1-Lindbergh Mechanical Room C-1043				\$ 5,500,000			
Terminal 1-Lindbergh Public Walk Aisle Terrazzo Floor Installation					\$ 4,400,000	\$ 4,400,000	\$ 4,500,000
Way-Finding Sign Backlighting Replacement		\$ 1,600,000			\$ 1,600,000		
13 - Energy Management Center							
Air Handling Unit Safety Upgrades		\$ 550,000					
Concourse G Energy Efficiency Projects		\$ 2,000,000					
Energy Savings Program				\$ 2,000,000		\$ 2,000,000	
Indoor Air Quality Monitoring System		\$ 660,000					
LED Lighting Conversion in Valet		\$ 500,000					
Victaulic Piping Replacement		\$ 1,000,000	\$ 1,000,000		\$ 2,000,000		\$ 2,000,000
21 - Field and Runway							
Perimeter Gate Security Improvements		\$ 3,000,000				\$ 6,500,000	
Runway 4-22 Taxiway Lighting System	\$ 3,500,000						
Runway LED Lighting Upgrade		\$ 1,000,000		\$ 1,500,000	\$ 1,700,000	\$ 2,650,000	
Taxiway T Centerline Lights			\$ 600,000				
Taxiways Bravo & Quebec Centerline Lights	\$ 6,800,000						
Terminal 2-Humphrey Glycol Lift Station/forcemain					\$ 1,100,000		
31 - Parking							
Parking Ramp Railing Refinishing		\$ 1,000,000	\$ 1,000,000				
Parking Guidance System				\$ 6,500,000			
36 - Terminal 2-Humphrey							
Terminal 2-Humphrey Employee Breakroom		\$ 200,000					
Terminal 2-Humphrey Shuttle Waiting Area Expansion			\$ 200,000				
Terminal 2-Humphrey Skyway to LRT Flooring Installation				\$ 800,000			
39 - Public Areas/Roads							
Diverging Diamond Intersection Rehabilitation		\$ 340,000					
46 - Hangars and Other Buildings							
MAC Storage Facility				\$ 10,000,000			
Safety and Security Center		\$ 77,500,000					
56 - Trades/Maintenance Buildings							
South Field Maintenance Building Wash Bay		\$ 1,300,000					
63 - Police							
Badging Office Relocation		\$ 2,700,000					
Perimeter Fence Intrusion Detection System					\$ 1,000,000		
66 - Fire							
Campus Fire Protection	\$ 500,000		\$ 500,000		\$ 500,000	\$ 500,000	
70 - General Office/Administration							
GO Building Improvements		\$ 500,000					
76 - Environment							
Ground Service Equipment (GSE) Electrical Charging Stations	\$ 2,700,000				\$ 3,000,000		
Lift Station at Ponds 1 and 2		\$ 850,000					
Runway 12R-30L Glycol Forcemain Environmental Improvements		\$ 1,500,000					
Storm Sewer Rehabilitation	\$ 2,600,000						
Terminal 2-Humphrey Remote Ramp Lot/Drainage Improvements				\$ 2,000,000			
<b>MSP Maintenance/Facility Upgrade Projects Subtotals</b>	<b>\$ 21,458,000</b>	<b>\$ 100,105,000</b>	<b>\$ 6,205,000</b>	<b>\$ 44,960,000</b>	<b>\$ 17,965,000</b>	<b>\$ 29,450,000</b>	<b>\$ 8,500,000</b>

**2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval**

	2019	2020	2021	2022	2023	2024	2025
<b>Noise Mitigation Consent Decree Amendment</b>	<b>\$ 13,500,000</b>	<b>\$ 7,500,000</b>	<b>\$ 2,000,000</b>	<b>\$ 1,000,000</b>	<b>\$ 1,000,000</b>	<b>\$ 1,000,000</b>	
<b>MSP Ongoing Maintenance Programs</b>							
10 - Terminal 1-Lindbergh							
Air Handling Unit Replacement	\$ 2,500,000	\$ 6,400,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000
Baggage System Upgrades	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
Concourse G Rehabilitation	\$ 4,000,000	\$ 4,000,000	\$ 4,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000	\$ 5,000,000
Conveyance System Upgrades			\$ 3,000,000			\$ 3,000,000	
Electrical Infrastructure Program (EIP)	\$ 1,500,000	\$ 2,000,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000		\$ 2,500,000
Electrical Substation Replacement			\$ 1,400,000	\$ 1,400,000	\$ 1,400,000	\$ 1,400,000	\$ 1,200,000
Emergency Power Upgrades	\$ 1,500,000	\$ 2,000,000	\$ 2,000,000	\$ 2,500,000	\$ 2,500,000		\$ 2,500,000
Plumbing Infrastructure Upgrade Program	\$ 500,000	\$ 500,000	\$ 600,000	\$ 600,000	\$ 600,000	\$ 700,000	
Terminal Building Remediation Program	\$ 2,000,000	\$ 2,000,000	\$ 2,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	
Terminal Miscellaneous Modifications	\$ 2,400,000	\$ 2,400,000	\$ 2,400,000	\$ 2,500,000	\$ 2,500,000	\$ 2,500,000	
13 - Energy Management Center							
EMC Plant Upgrades (T1 & T2)	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,300,000			\$ 1,500,000
21 - Field and Runway							
Airside Bituminous Rehabilitation/Electrical Construction		\$ 1,100,000		\$ 4,000,000	\$ 2,300,000	\$ 2,500,000	
Glycol Tank Repairs		\$ 500,000					
Miscellaneous Airfield Construction	\$ 3,800,000		\$ 900,000			\$ 1,000,000	
Pavement Joint Sealing/Repair	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	\$ 650,000	
26 - Terminal Roads/Landside							
Glumack Drive Reconstruction					\$ 9,300,000		
Tunnel Approaches Reconstruction				\$ 2,370,000			
Tunnel/Bridge Rehabilitation	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	
31 - Parking							
Parking Structure Rehabilitation	\$ 2,500,000	\$ 2,500,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	
39 - Public Areas/Roads							
34th Ave Sanitary Sewer Replacement				\$ 2,200,000			
34th Avenue Bus Area Reconstruction					\$ 700,000		
34th Avenue Reconstruction				\$ 7,000,000	\$ 6,000,000		
Concrete Joint Repair			\$ 400,000	\$ 900,000	\$ 2,200,000	\$ 300,000	\$ 400,000
Landside Pavement Rehabilitation	\$ 400,000	\$ 400,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000	
Landside Utility Rehabilitation			\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000
Roadway Fixture Refurbishment	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000		
46 - Hangars and Other Buildings							
Campus Building Rehab Program		\$ 500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	
Campus Parking Lot Reconstructions				\$ 650,000	\$ 650,000		
End of Life Campus Building Demolition				\$ 400,000	\$ 400,000		
MSP Campus Building Roof Replacements	\$ 600,000	\$ 1,000,000	\$ 1,300,000	\$ 2,900,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000
<b>MSP Ongoing Maintenance Programs Subtotals</b>	<b>\$ 24,600,000</b>	<b>\$ 28,200,000</b>	<b>\$ 35,150,000</b>	<b>\$ 52,870,000</b>	<b>\$ 53,700,000</b>	<b>\$ 33,900,000</b>	<b>\$ 21,350,000</b>



<b>2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval</b>	2019	2020	2021	2022	2023	2024	2025
<b>MSP Tenant Projects</b>							
10 - Terminal 1-Lindbergh							
Concessions Rebids	\$ 3,200,000						
Concessions Upgrades/Revenue Development	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000
Concourse G Delta SkyClub		\$ 45,000,000					
RAC Terminal 2 QTA Security Enhancements	\$ 500,000						
<b>MSP Tenant Projects Subtotals</b>	<b>\$ 3,900,000</b>	<b>\$ 45,200,000</b>	<b>\$ 200,000</b>	<b>\$ 200,000</b>	<b>\$ 200,000</b>	<b>\$ 200,000</b>	<b>\$ 200,000</b>

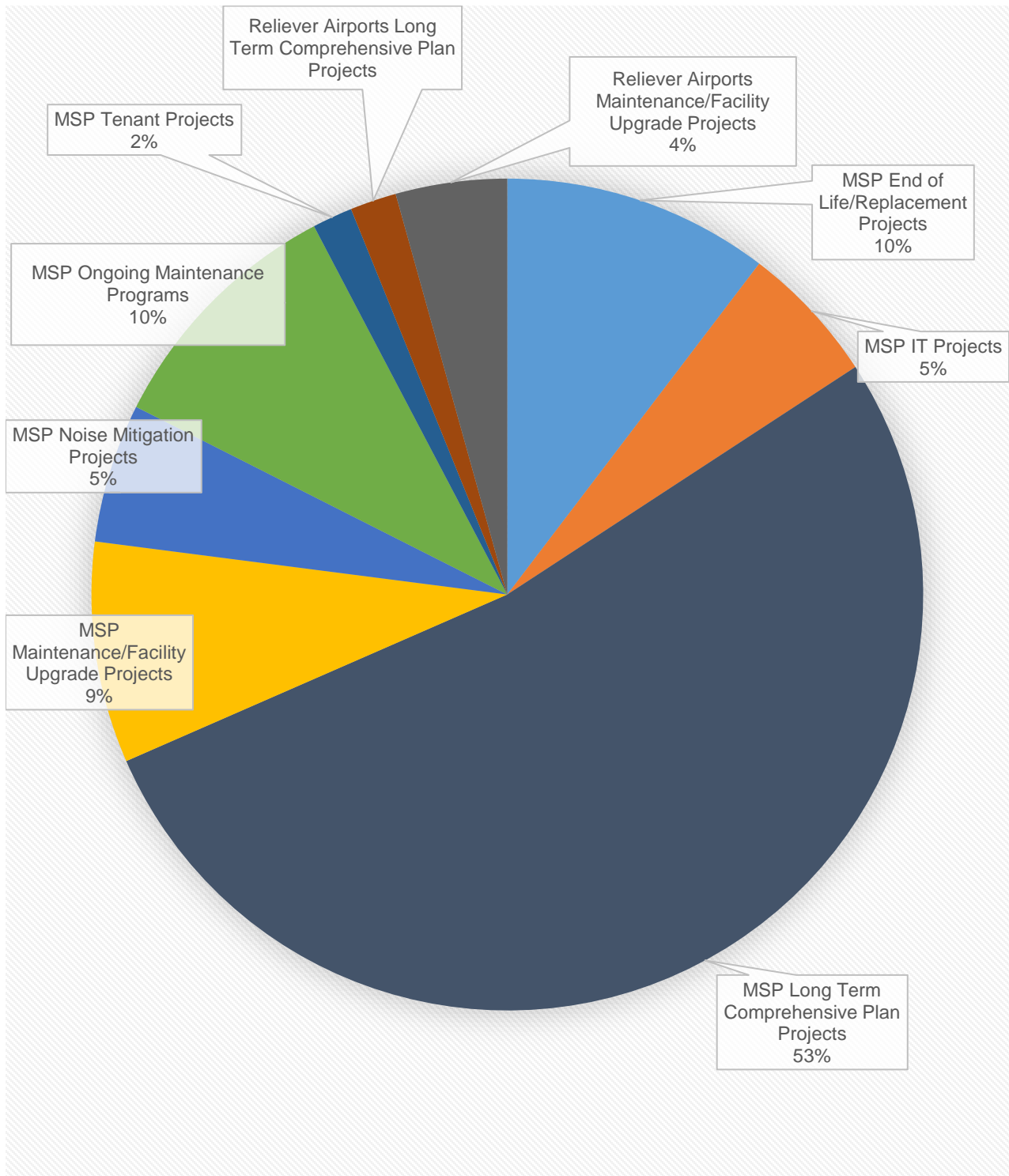
2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval	2019	2020	2021	2022	2023	2024	2025
<b>Reliever Airports Long Term Comprehensive Plan Projects</b>							
81 - St. Paul							
STP AGIS and ALP				\$ 300,000			
82 - Lake Elmo							
21D Airfield Modifications		\$ 3,000,000					
21D Long Term Comp Plan						\$ 100,000	
21D Runway 14-32 Replacement	\$ 3,000,000	\$ 2,000,000	\$ 2,000,000				
83 - Airlake							
LVN Long Term Comp Plan						\$ 100,000	
LVN Runway 12-30 Improvements				\$ 3,500,000			
LVN South Building Area Development - Phase 1	\$ 1,500,000						
84 - Flying Cloud							
FCM AGIS and ALP			\$ 300,000				
FCM South Building Area Utilities							\$ 600,000
85 - Crystal							
MIC Long Term Comp Plan						\$ 100,000	
MIC Runway 14R-32L & Taxiway E Modifications		\$ 3,800,000					
86 - Anoka County - Blaine							
ANE AGIS and ALP			\$ 300,000				
ANE Building Area Development - Xylite St. Relocation						\$ 1,000,000	
<b>Reliever Airports Long Term Comprehensive Plan Projects Subtotals</b>	<b>\$ 4,500,000</b>	<b>\$ 8,800,000</b>	<b>\$ 2,600,000</b>	<b>\$ 3,800,000</b>	<b>\$ -</b>	<b>\$ 1,300,000</b>	<b>\$ 600,000</b>

2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval	2019	2020	2021	2022	2023	2024	2025
<b>Reliever Airports Maintenance/Facility Upgrade Projects</b>							
81 - St. Paul							
STP Airport Perimeter Roads		\$ 400,000				\$ 500,000	
STP Cold Equipment Storage Building					\$ 750,000		
STP Joint and Crack Repairs		\$ 100,000		\$ 100,000		\$ 100,000	
STP LED Edge Lighting Upgrades				\$ 1,000,000	\$ 1,500,000		
STP MAC Building Improvements	\$ 2,300,000		\$ 1,000,000	\$ 200,000		\$ 200,000	
STP Pavement Rehabilitation-Taxilanes/Tower Road							\$ 500,000
STP Runway 14-32 Reconstruction						\$ 5,000,000	\$ 5,000,000
STP Storm Sewer Improvements	\$ 1,500,000				\$ 1,500,000		
STP Taxiway B Rehabilitation						\$ 800,000	
STP Underground Fuel Storage Tank Replacment	\$ 100,000						
82 - Lake Elmo							
21D MAC Building Improvements	\$ 400,000						\$ 400,000
21D North Building Area Pavement Rehabilitation					\$ 900,000		
21D Parallel Taxiways Reconstruction	\$ 600,000			\$ 600,000			
21D Runway 04-22 Pavement Rehabilitation					\$ 4,000,000		
21D Taxilanes - South Building Area Pavement Rehab	\$ 900,000						
21D Underground Fuel Storage Tank Replacement	\$ 100,000						
83 - Airlake							
LVN Existing Runway 12-30 Reconstruction				\$ 3,500,000			
LVN Joint and Crack Repairs			\$ 150,000				
LVN LED Edge Lighting		\$ 500,000		\$ 200,000			
LVN MAC Building Improvements	\$ 400,000						\$ 550,000
LVN Plane Wash Pad	\$ 150,000						
LVN Public Restroom Facility	\$ 300,000						
LVN Underground Fuel Storage Tank Replacement		\$ 100,000					
84 - Flying Cloud							
FCM Airport Access Roads and Tango Lane							\$ 500,000
FCM Electrical Vault Modifications							\$ 500,000
FCM Executive Aviation Building Improvements	\$ 200,000						
FCM MAC Building Improvements			\$ 520,000				\$ 200,000
FCM Runway 10R-28L Pavement Rehabilitation					\$ 1,500,000		
FCM Taxiway D Pavement Rehabilitation	\$ 600,000						
FCM Taxiway E Pavement Rehabilitation	\$ 600,000						
FCM Taxiways A1, A3, F Pavement Rehabilitation		\$ 300,000					
FCM Underground Fuel Storage Tank Replacement		\$ 100,000					
85 - Crystal							
MIC Building Demo - Flight Simulator Building		\$ 150,000					
MIC LED Edge Lighting Upgrade			\$ 400,000	\$ 400,000			
MIC MAC Building Improvements		\$ 500,000			\$ 500,000		
MIC Taxilanes Pavement Rehabilitation				\$ 550,000		\$ 600,000	
MIC Taxiways Pavement Rehabilitation	\$ 700,000						
MIC Underground Fuel Storage Tank Replacement		\$ 100,000					
86 - Anoka County - Blaine							
ANE Air Traffic Control Tower Equipment Upgrades		\$ 100,000					
ANE Electrical Vault Improvements						\$ 750,000	
ANE LED Edge Lighting Upgrade		\$ 800,000		\$ 1,700,000			
ANE MAC Building Improvements				\$ 700,000			
ANE Obstructions Removal	\$ 100,000						
ANE South Service Road & East Landside Road Pavement Reconstruction	\$ 1,000,000						
ANE Taxilanes Pavement Reconstruction	\$ 750,000		\$ 750,000		\$ 750,000		
ANE Underground Fuel Storage Tank Replacement	\$ 100,000						
ANE West Perimeter Road					\$ 700,000		
<b>Reliever Airports Maintenance/Facility Upgrade Projects</b>	<b>\$ 10,800,000</b>	<b>\$ 3,150,000</b>	<b>\$ 2,820,000</b>	<b>\$ 8,950,000</b>	<b>\$ 12,100,000</b>	<b>\$ 7,950,000</b>	<b>\$ 7,650,000</b>

<b>2019 - 2025 Capital Improvement Program - Final Draft for Commission Approval</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
<b>MSP Totals</b>	\$ 234,258,000	\$ 327,255,000	\$ 106,405,000	\$ 133,780,000	\$ 104,515,000	\$ 98,300,000	\$ 70,320,000
<b>Reliever Totals</b>	\$ 15,300,000	\$ 11,950,000	\$ 5,420,000	\$ 12,750,000	\$ 12,100,000	\$ 9,250,000	\$ 8,250,000
<b>Grand Totals</b>	<b>\$ 249,558,000</b>	<b>\$ 339,205,000</b>	<b>\$ 111,825,000</b>	<b>\$ 146,530,000</b>	<b>\$ 116,615,000</b>	<b>\$ 107,550,000</b>	<b>\$ 78,570,000</b>

# 2019 CIP

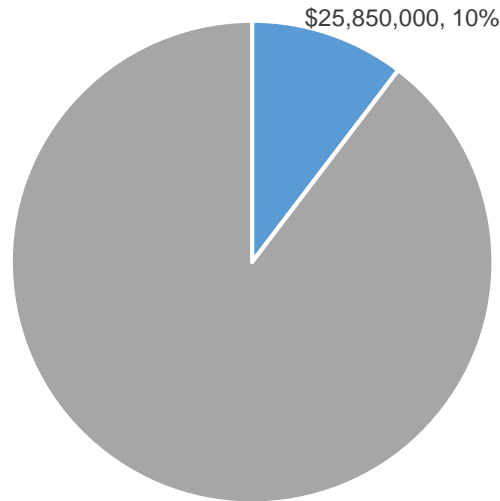
\$249,558,000



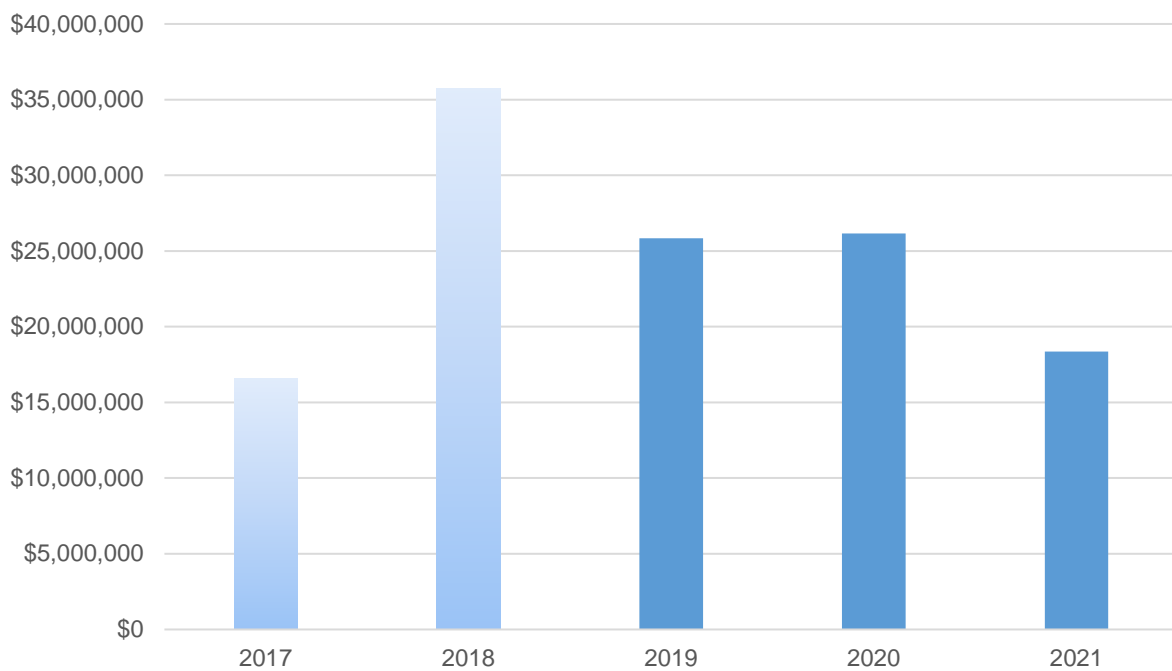
## MSP END OF LIFE/REPLACEMENT PROJECTS

End of Life/Replacement projects include systems, components, and pavements that can no longer be economically or feasibly maintained and must be replaced.

### 2019 End Of Life/Replacement Projects



### MSP End of Life/Replacement Projects



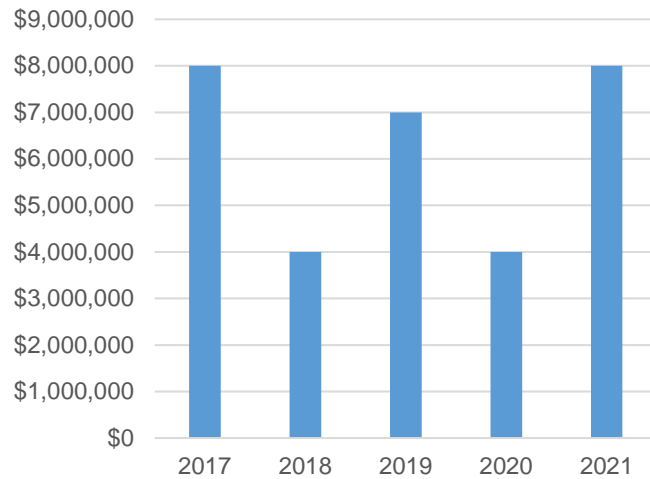
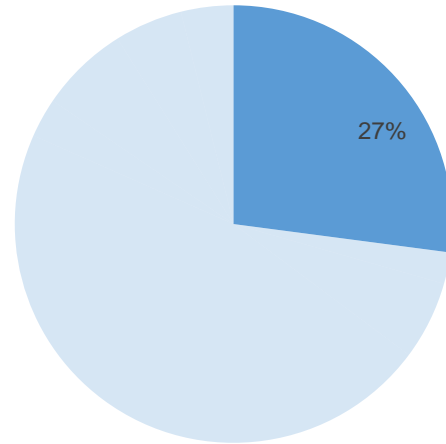
## 10 – Terminal 1-Lindbergh

### PASSENGER BOARDING BRIDGE REPLACEMENTS

\$7,000,000

Anticipated funding source: PFCs

This project provides for the replacement of jet bridges at Terminal 1. 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.

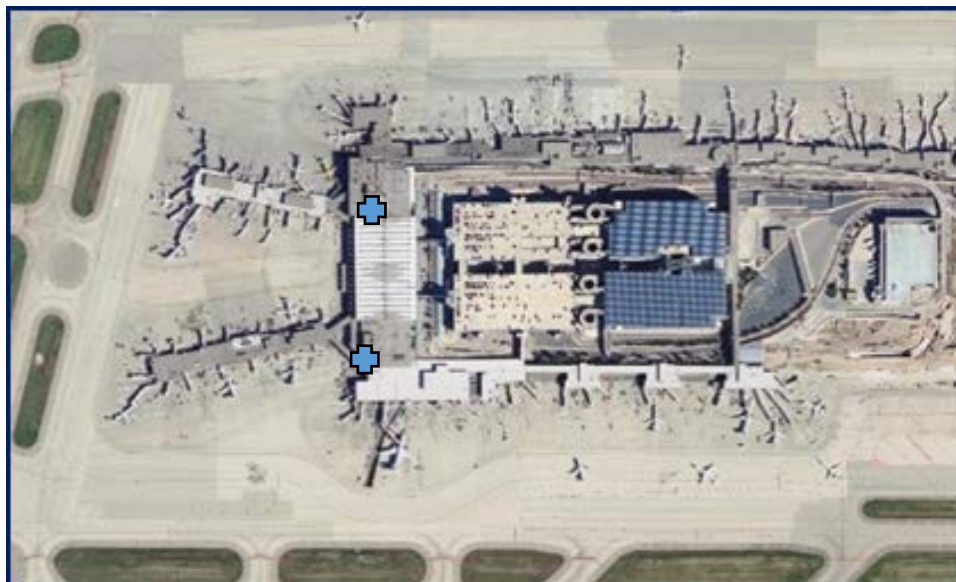
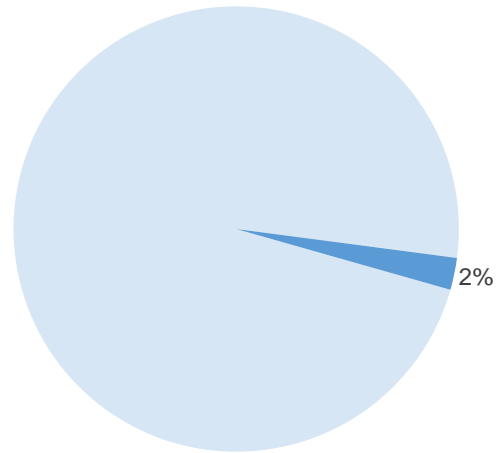


## TERMINAL 1-LINDBERGH TUG DOORS REPLACEMENT

\$600,000

Anticipated funding source: Airline Repair and Replacement Fund

This project will replace the tug doors at Terminal 1-Lindbergh as they have reached the end of their useful life.



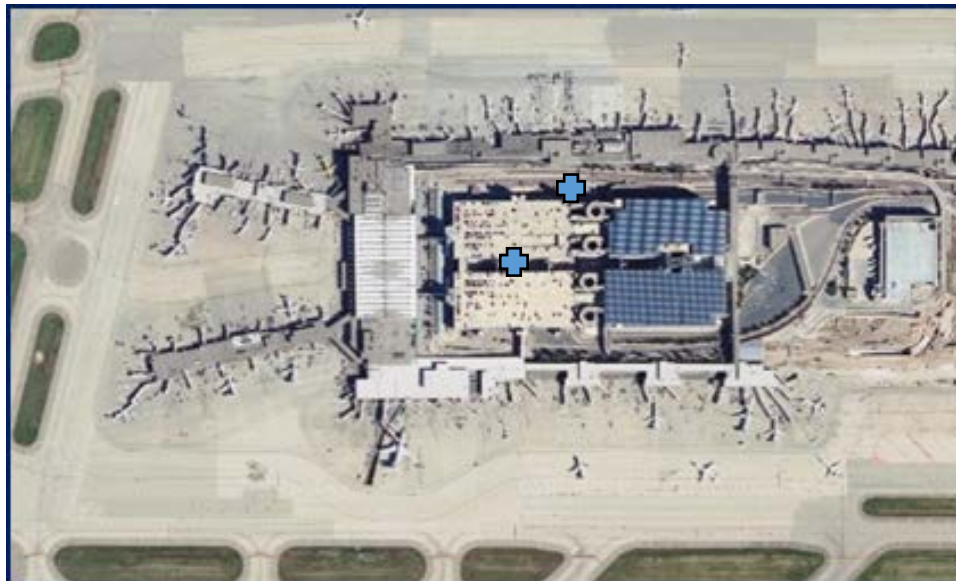
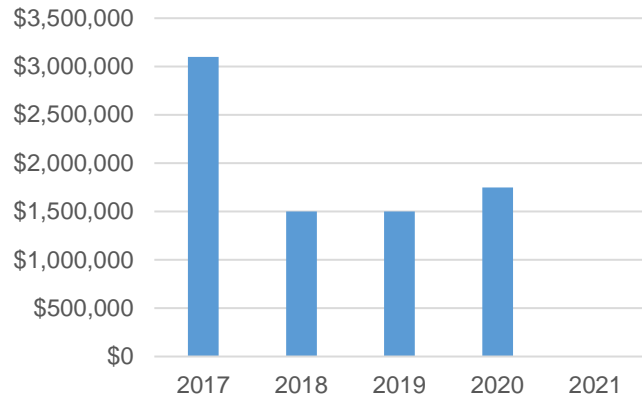
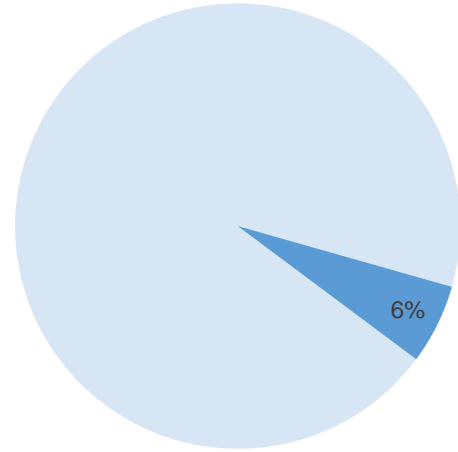


**TERMINAL 1-LINBERGH TRAM SYSTEMS RETROFIT AND EQUIPMENT**

**\$1,500,000**

Anticipated funding source: Airline Repair and Replacement Fund

This project is a phase of the multi-year program that extends the life of the C Concourse and Hub Trams by updating the electrical, mechanical, and structural components.

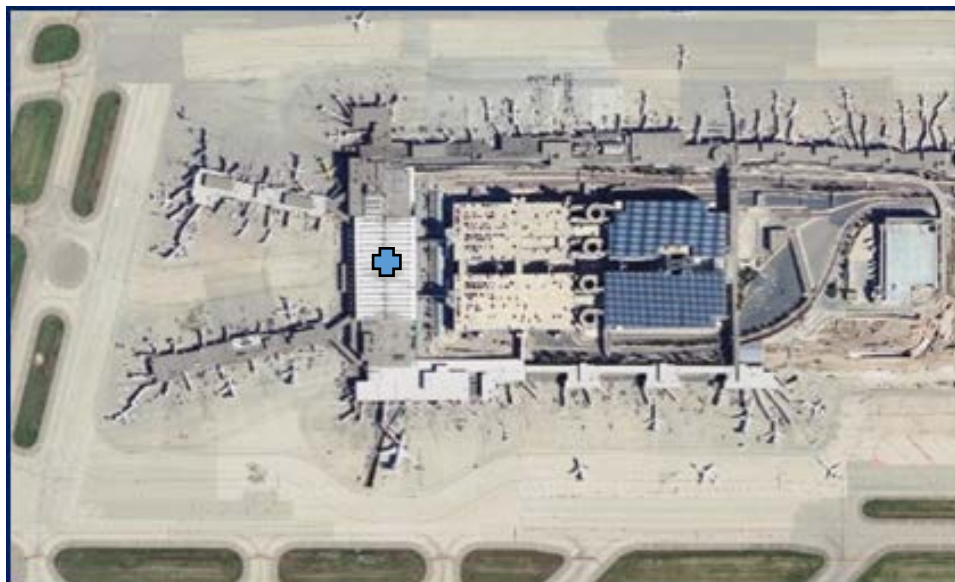
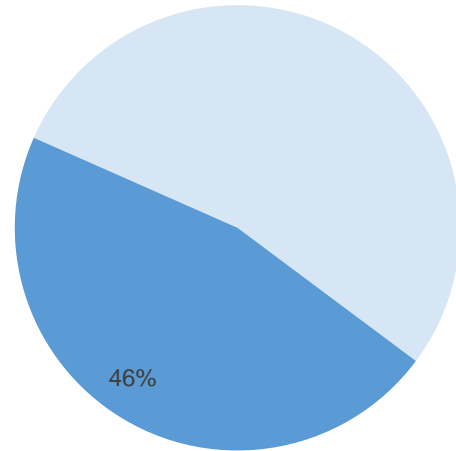


## TSA RECAPITALIZATION

\$12,000,000

Anticipated funding source: TSA Other Transaction Agreement

In 2005 the Commission approved construction of the West Checked Baggage Inspection System (CBIS), which included a TSA contribution of seven CTX devices, supporting technologies and equipment, and staff. Subsequently, the CTX devices have begun to approach end-of-life status based on current required maintenance cost, as determined by the TSA. The TSA has offered for negotiation a 100% funded (no MAC cost) "Other Transaction Agreement" (OTA) for design and construction services for device replacement and other required upgrades to accommodate the new technology. There will be two OTAs, one for the design phase and a second OTA for the construction phase will be negotiated in 2019. This project will provide for the design and installation of TSA furnished devices and other required equipment at no cost to the MAC.



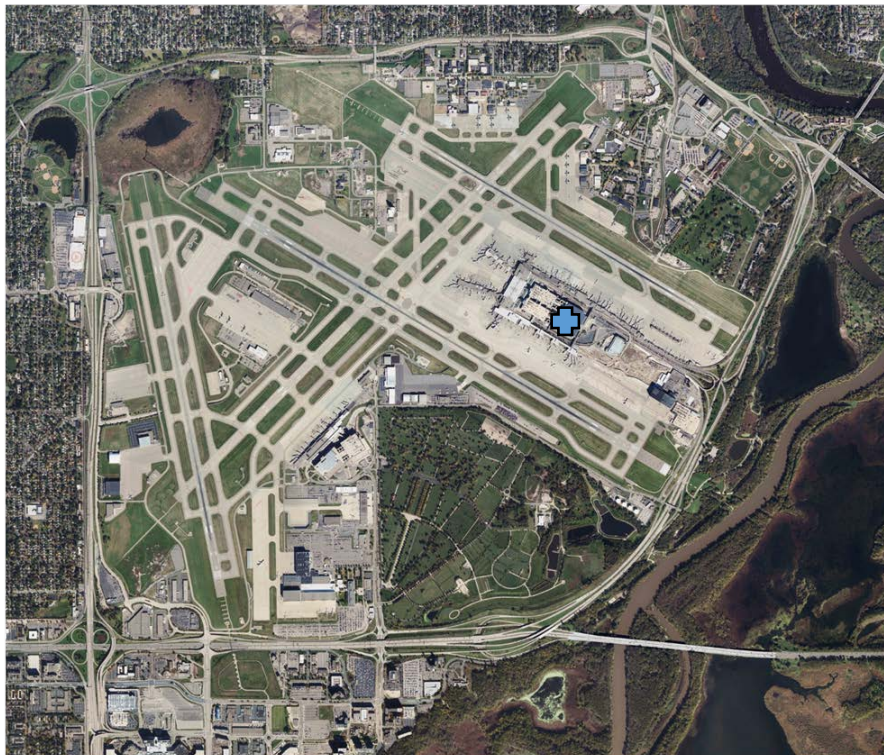
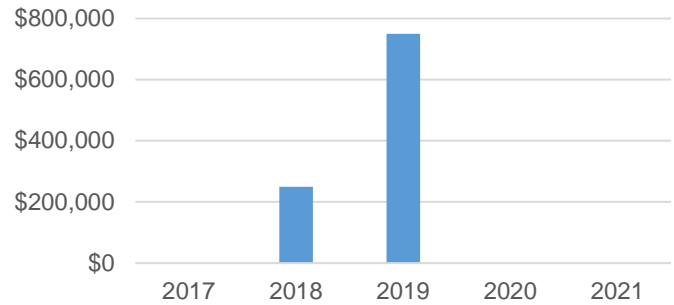
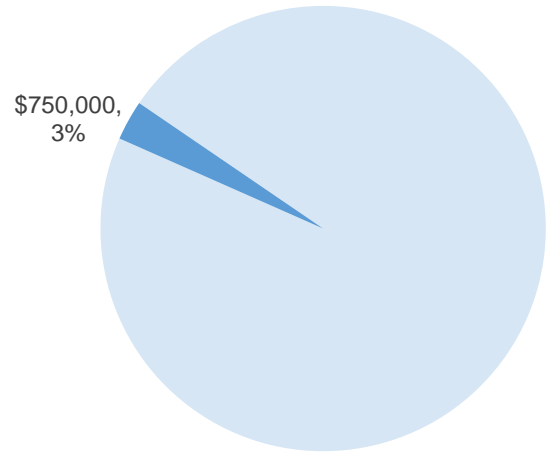
## 21 – Field and Runway

### SNOW MELTER UPGRADES/MODIFICATIONS

**\$750,000**

Anticipated funding source: General Airport Revenue Bonds - 2016

This project is the second of a two-year program that provides for the evaluation, maintenance, miscellaneous modifications, and replacement of existing airfield snow melters located around the MSP campus.



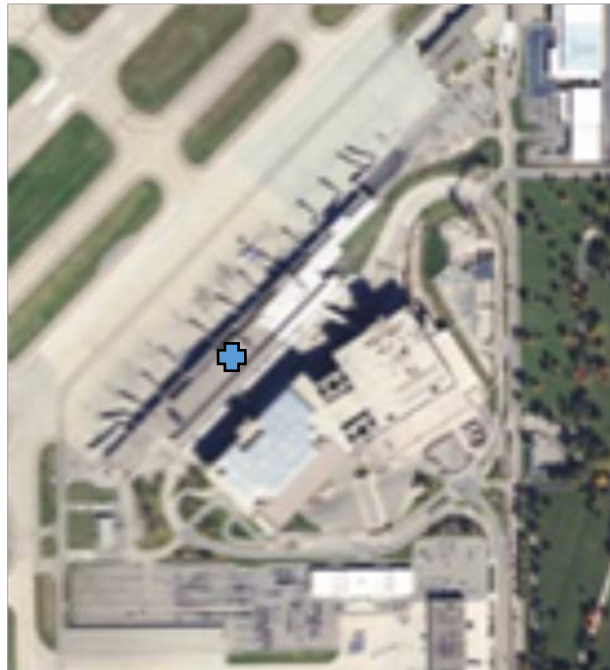
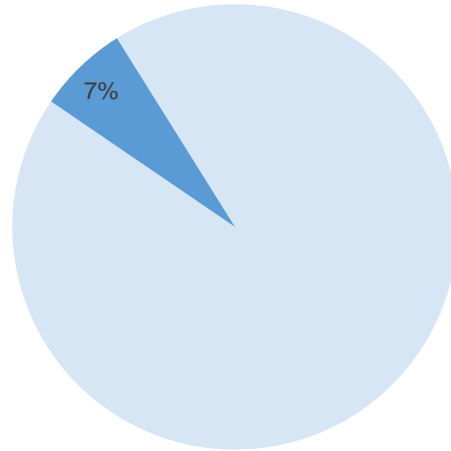
### 36 – Terminal 2-Humphrey

#### PUBLIC WALK AISLE TERRAZZO FLOOR INSTALLATION

\$1,700,000

Anticipated funding source: Airline Repair and Replacement Fund

This project will remove carpet and install terrazzo in the baggage claim area and the walk aisle at Gates H1-H7 to match the terrazzo installed in the Gate Expansion that opened in 2016 as well as install terrazzo between the ticket lobby and Checkpoint 1.



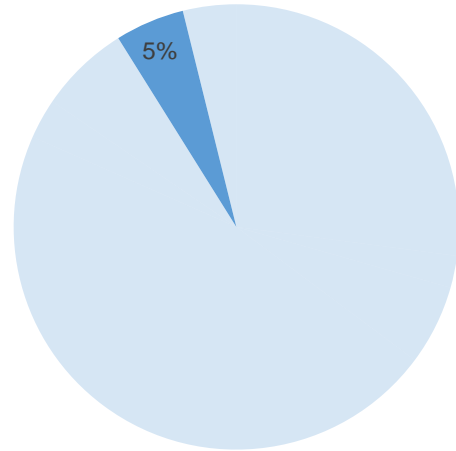
### 39 – Public Areas/Roads

#### 28<sup>th</sup> AVENUE WATERMAIN REPLACEMENT

\$1,300,000

Anticipated funding source: MAC Funds

This project provides for reconstruction of approximately 2,600 linear feet of 18-inch watermain along 28th Avenue. Major items of work include miscellaneous removals, removal and reconstruction of ductile iron watermain, valves, hydrants, aggregate base, bituminous pavement, curb, concrete walk, fencing, and restoration of turf and landscaping.



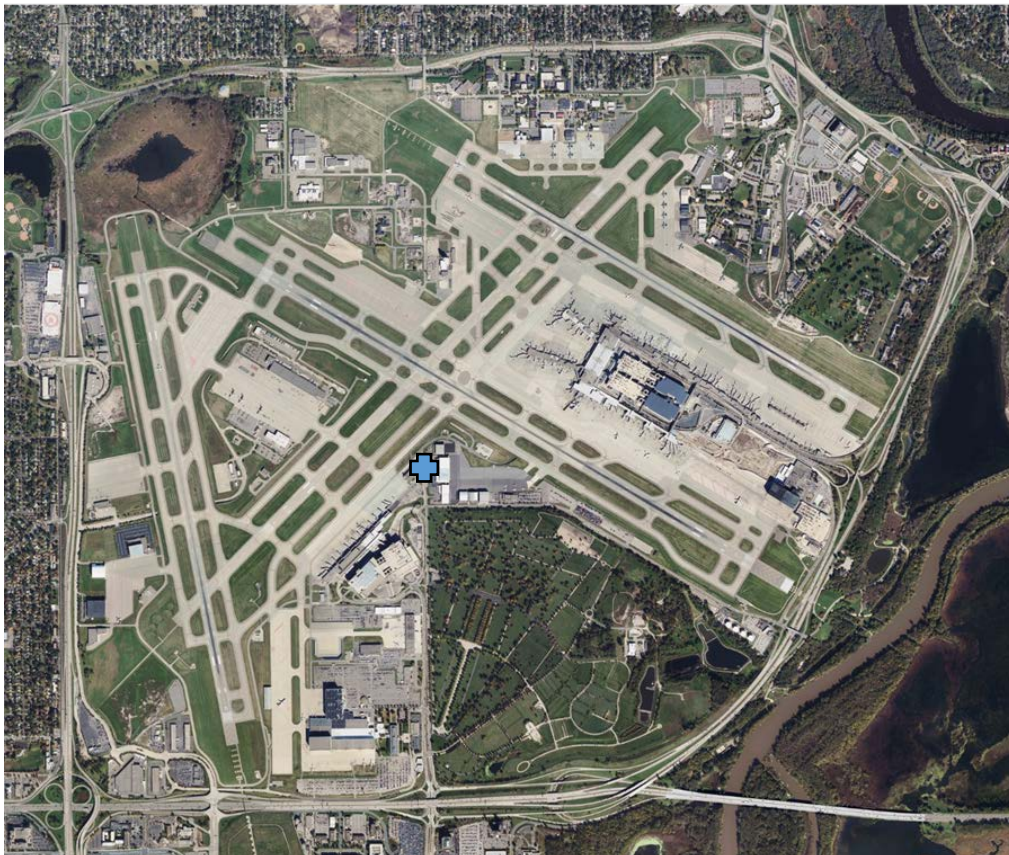
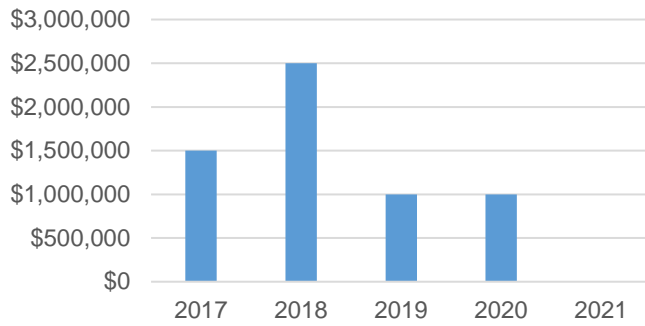
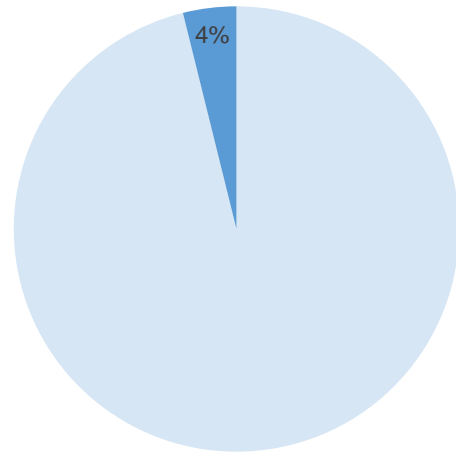
## 66 – Fire

### MSP CAMPUS FIRE ALARM SYSTEM TRANSITION

\$1,000,000

Anticipated funding source: Airline Repair and Replacement Fund

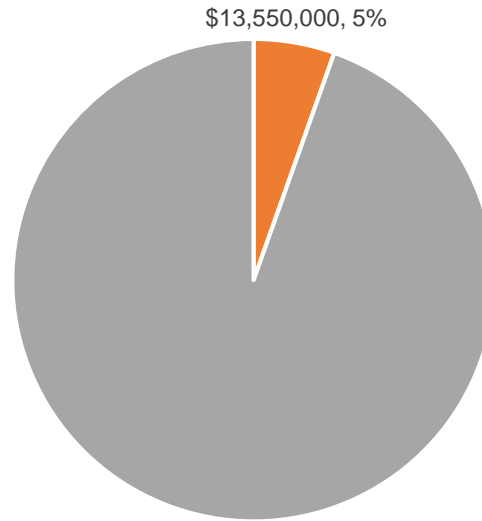
In an effort to improve monitoring reliability and eliminate the existing single point of failure configuration, this multi-year project will include database redundant systems, device controller upgrades and the decentralization of the fire alarm master control equipment.



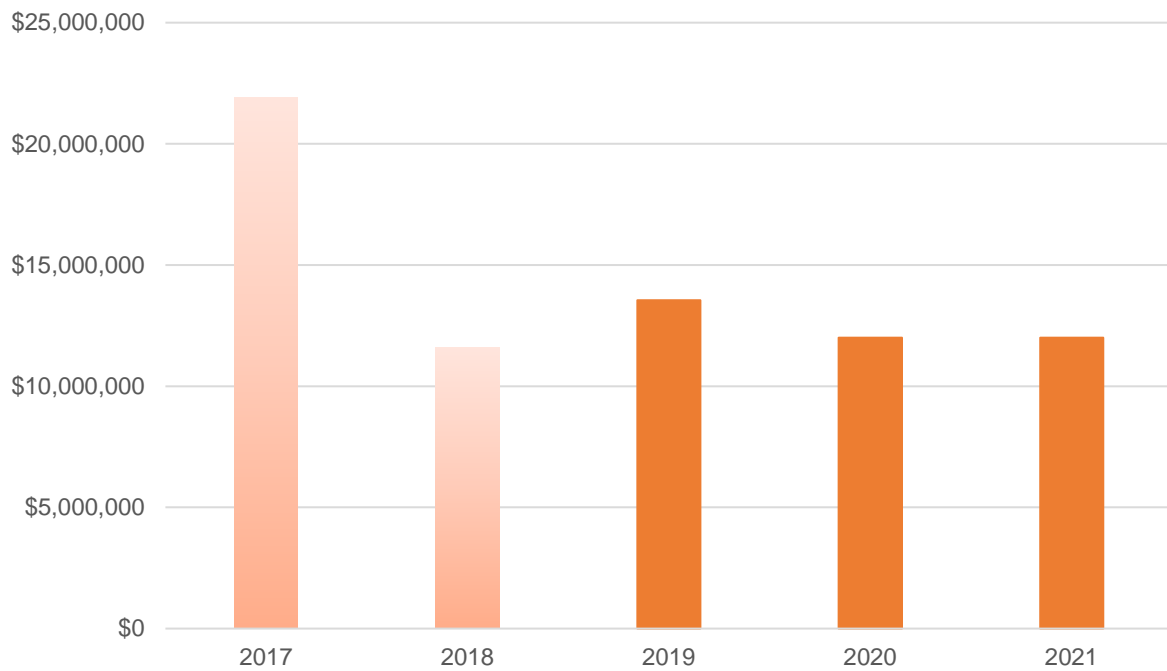
## MSP IT PROJECTS

MSP IT Projects include those that have a significant amount, if not all, technology-related enhancements, maintenance or restructuring.

### 2019 MSP IT PROJECTS



### MSP IT Projects



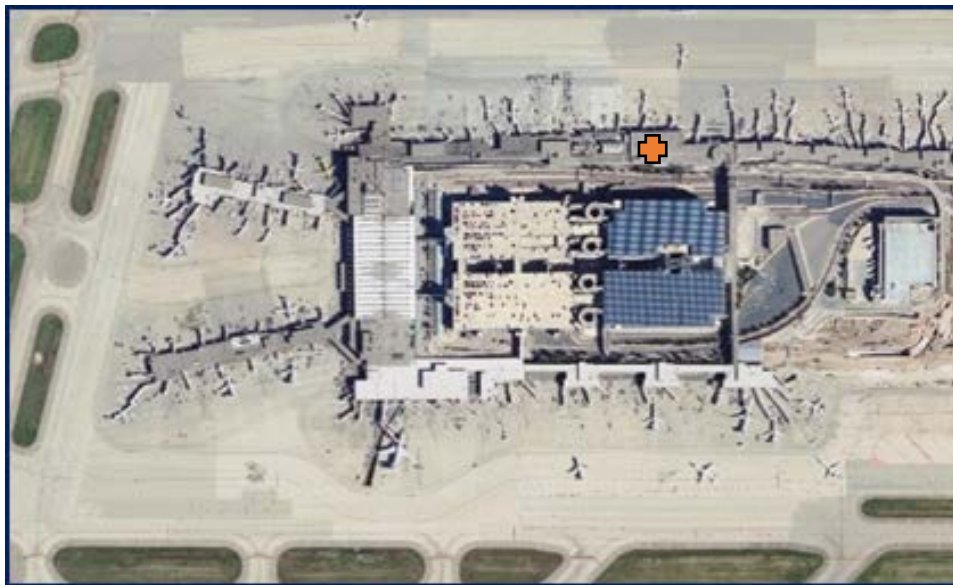
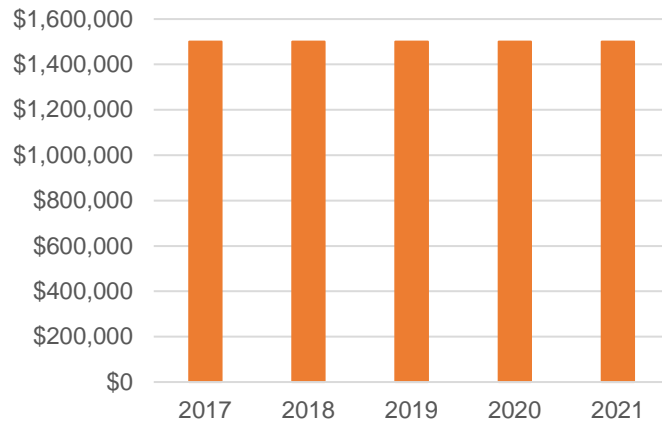
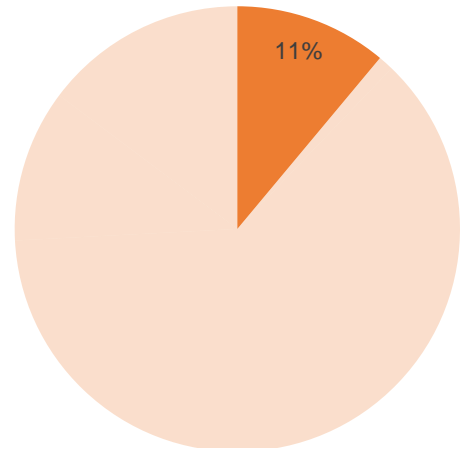
## 10 – Terminal 1-Lindbergh

### INTELLIGENT MONITORING AND CONTROL SYSTEMS (IMACS)

**\$1,500,000**

Anticipated funding source: MAC Funds and Airline Repair and Replacement Fund

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.



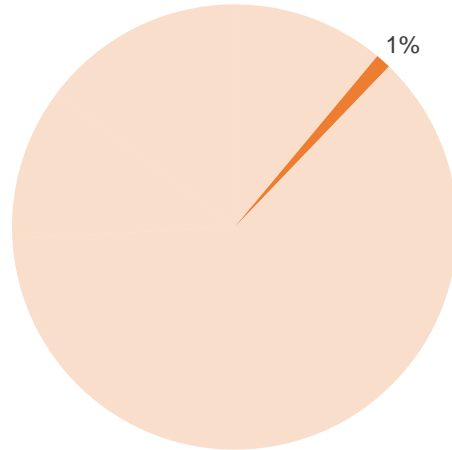


**INTERACTIVE DIGITAL DIRECTORY UPGRADE**

**\$150,000**

Anticipated funding source: MAC Funds

Replace all 55" digital and print directories at Terminal 1-Lindbergh with a new digital kiosk design.



*Locations throughout Terminal 1-Lindbergh*

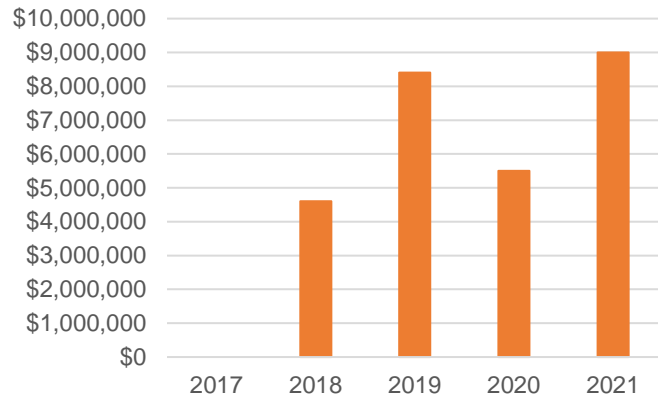
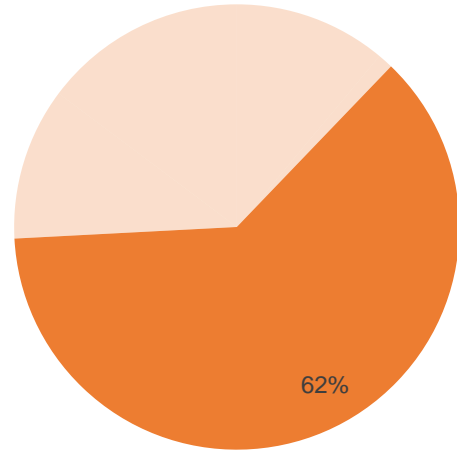


## IT MISCELLANEOUS MODIFICATIONS

\$8,400,000

Anticipated funding source: MAC Funds and Airline Repair and Replacement Fund

Each year, there are a number of IT projects that are beyond the resources of MAC's staff and operating budget to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. Work may include Fiber Optic Cable Upgrades, MACNet maintenance and upgrades, EVIDs/MUFIDs digital signs, Wireless System enhancements, and MAC Public Address System maintenance and upgrades. The list of potential projects will be compiled and prioritized in early 2019.

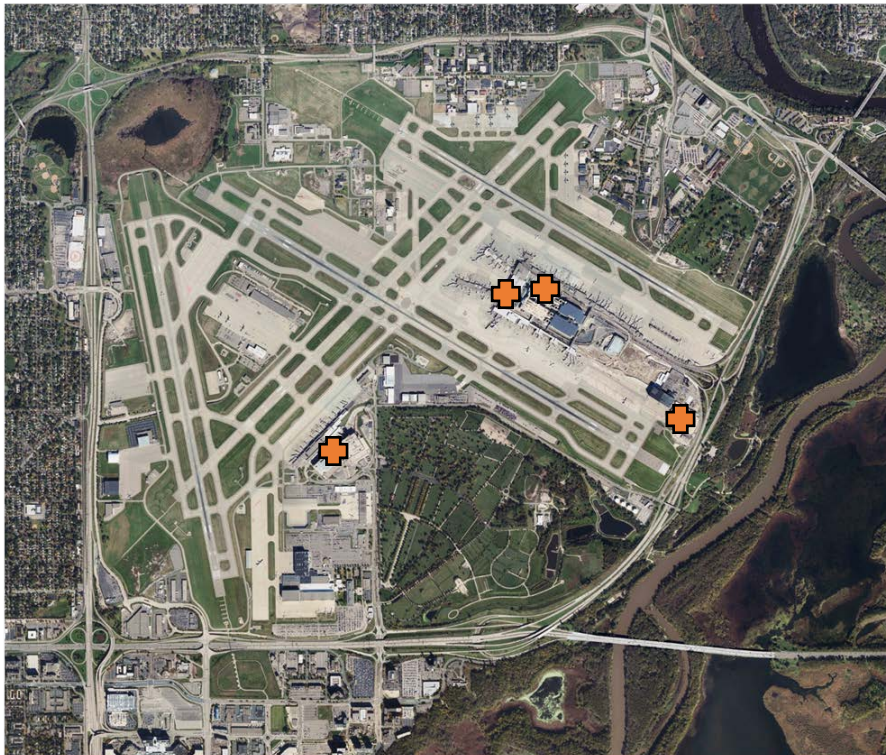
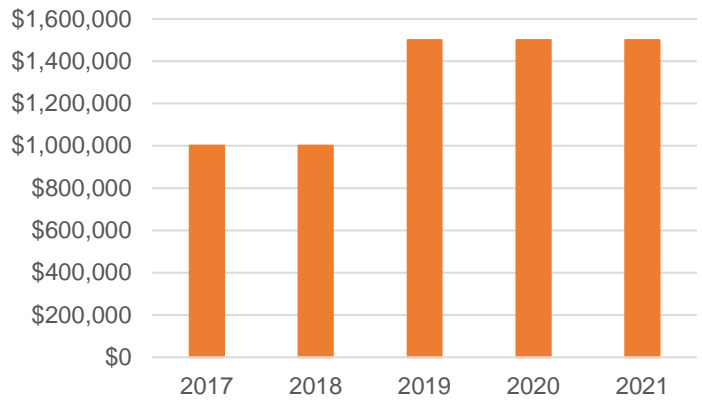
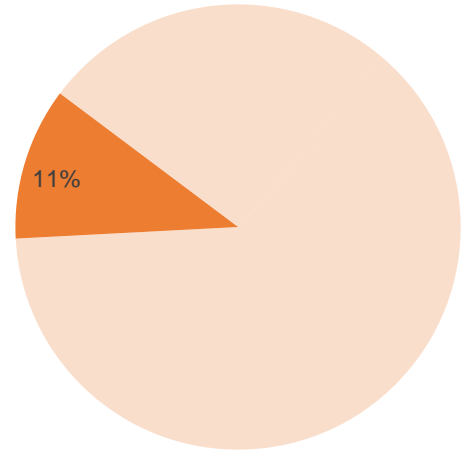


### TELECOM ROOM EQUIPMENT CONTINUITY (TREC)

\$1,500,000

Anticipated funding source: Airline Repair and Replacement Fund

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.



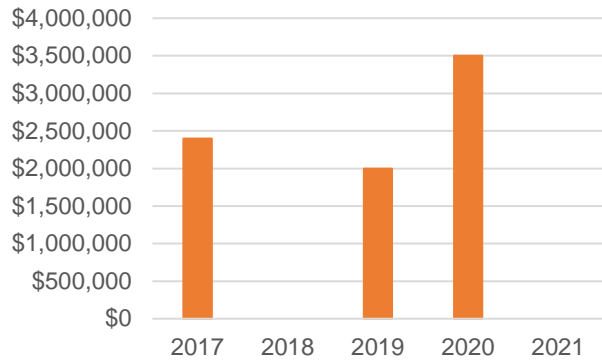
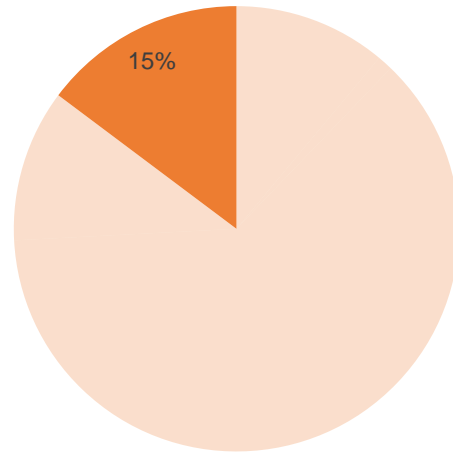
**63 – Police**

**CARD ACCESS MODIFICATIONS**

**\$2,000,000**

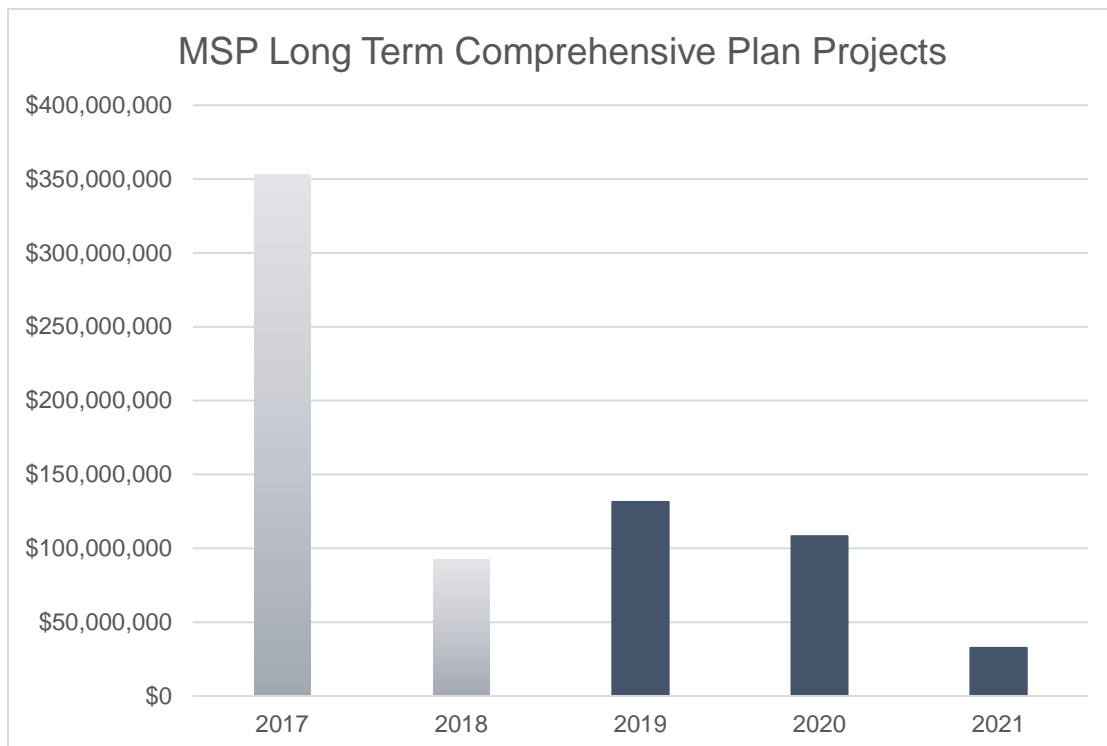
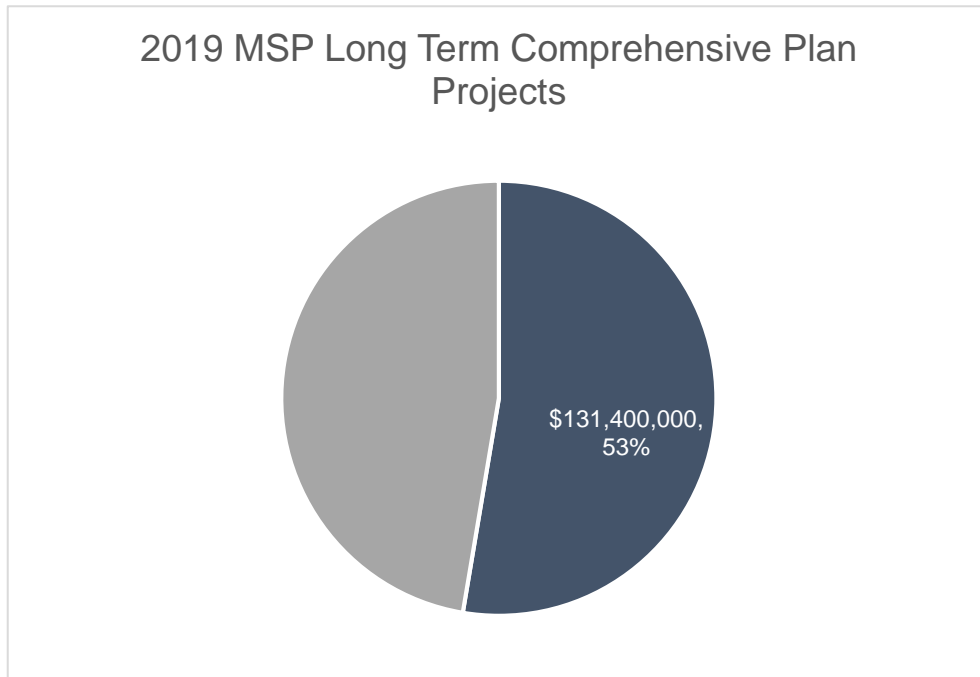
Anticipated funding source: PFCs

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

MSP Long Term Comp Plan projects include projects that enhance or expand the airport facilities in order to meet existing or forecasted passenger needs.

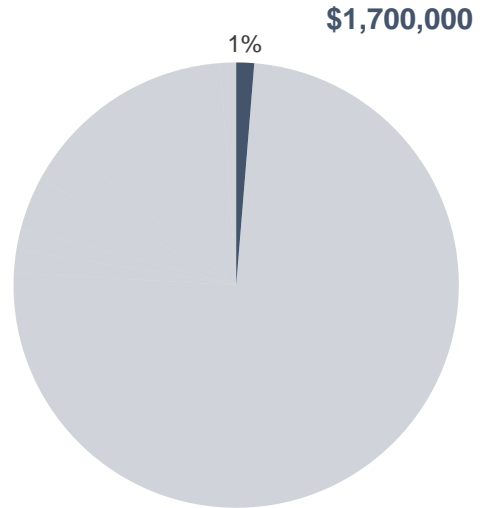


## 10 – Terminal 1-Lindbergh

### ARMED FORCES SERVICE CENTER RELOCATION

Anticipated funding source: PFCs, State Grants, and MAC Funds

The Armed Forces Service Center location is being displaced by the Operational Improvements program. This project will relocate the center to a desired location behind the security line in the terminal.

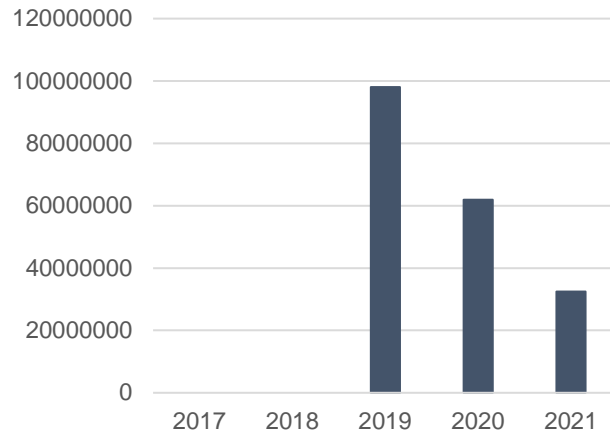
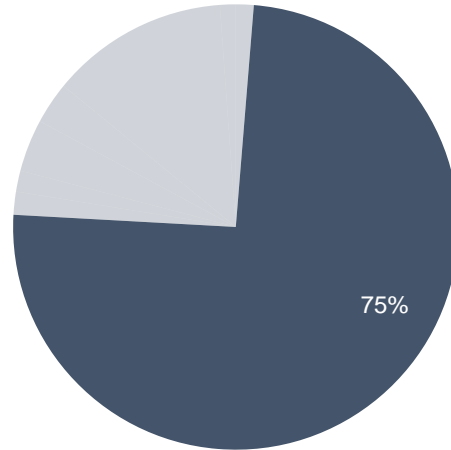


## BAGGAGE CLAIM/TICKET LOBBY OPERATIONAL IMPROVEMENTS

\$98,000,000

Anticipated funding source: PFCs, General Airport Revenue Bonds-2019, and Airline Repair and Replacement Fund

This is the first of three projects in a program that will provide 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 in the Arrivals Hall. In the Departures Hall, 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. On both levels, the 2019 project constructs new restrooms in order to allow future phases to demolish the existing old and outdated restrooms.

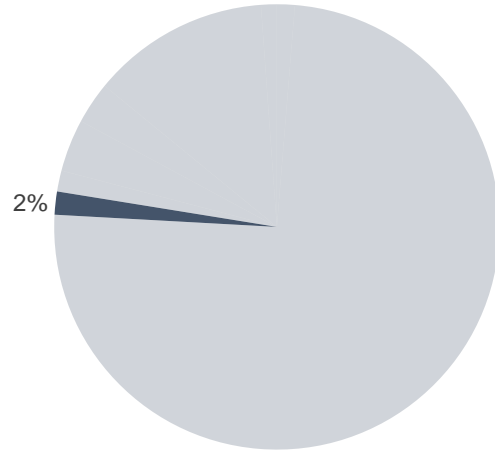


## MSP LONG TERM COMP PLAN

\$2,200,000

Anticipated funding source: MAC Funds

The MSP 2030 Long Term Comprehensive Plan (LTCP), previously completed in April 2010, is scheduled to be updated in 2020. While some efforts have already started with checkpoint modeling and parking analyses, the work in 2019 will continue the forecasting efforts and include preparation of the LTCP document for public review and Commission approval.





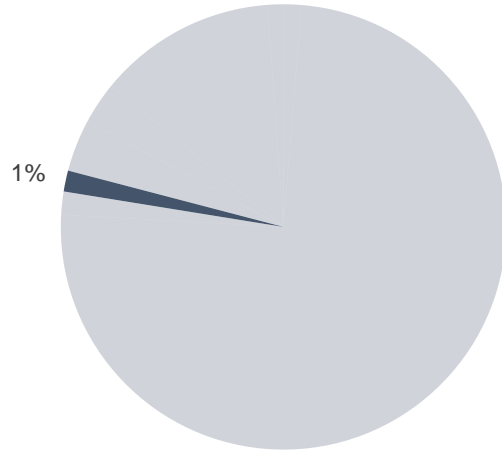
**TERMINAL 1-LINDBERGH SECURITY CHECKPOINT IMPROVEMENTS**

**\$2,000,000**

*renamed from Automated Security Lanes (ASLs)*

Anticipated funding source: PFCs

This project supports upgrades to or replacement of the existing security lane equipment to enhance security and improve through-put where possible. Additional work required to support installation will include power and data additions for new and replacement equipment and for equipment network requirements.

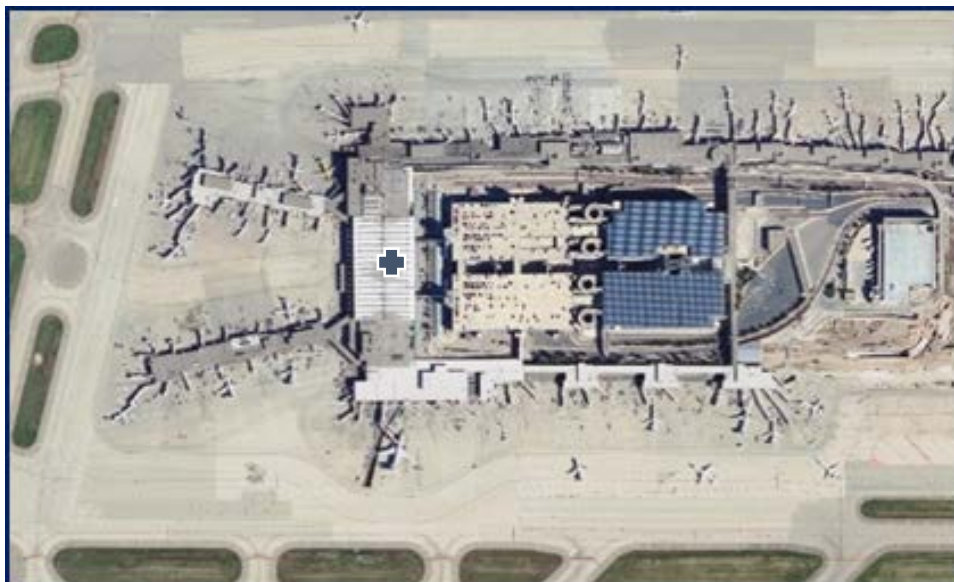
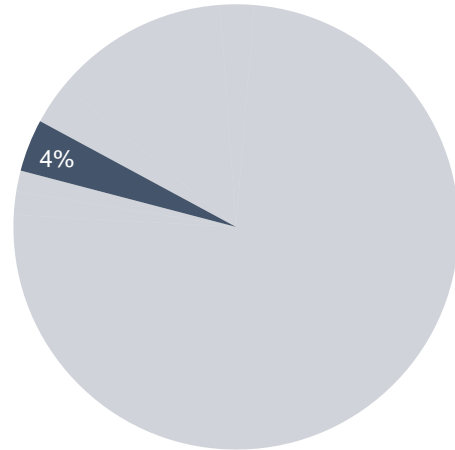


## VALET PARKING LOBBY AND RESTROOM UPGRADE

**\$5,000,000**

Anticipated funding source: PFCs and MAC Funds

This project includes a relocation and expansion of the MAC Lost and Found, consolidation of the Valet Parking Lobby and support spaces, and Restroom Upgrades to current standards. The work is to be completed in two major phases, and includes a centralization of the drop-off and pick-up of the valet parking product, centered on the new Operational Improvements elevator lobby, with finishes to match the product being provided. There is also a mosaic art component for the restrooms and the space that is funded through the percent for arts program.



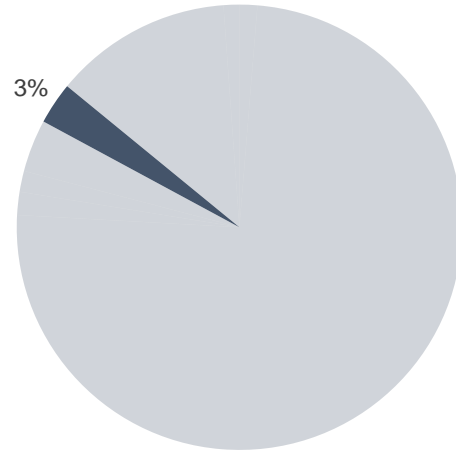
## 21 – Field and Runway

### TAXIWAY C1 CONSTRUCTION

**\$4,000,000**

Anticipated funding source: PFCs and Federal Grants

Project provides for the construction of Taxiway C1 located abeam to Gates H5/H6 between Taxiway C and Taxiway D as well as the replacement of a portion of Taxiway D which has reached the end of its useful life. Major items of work include excavation and backfill, concrete taxiway pavement, bituminous shoulder pavement, pavement markings, and airfield lighting and signing.

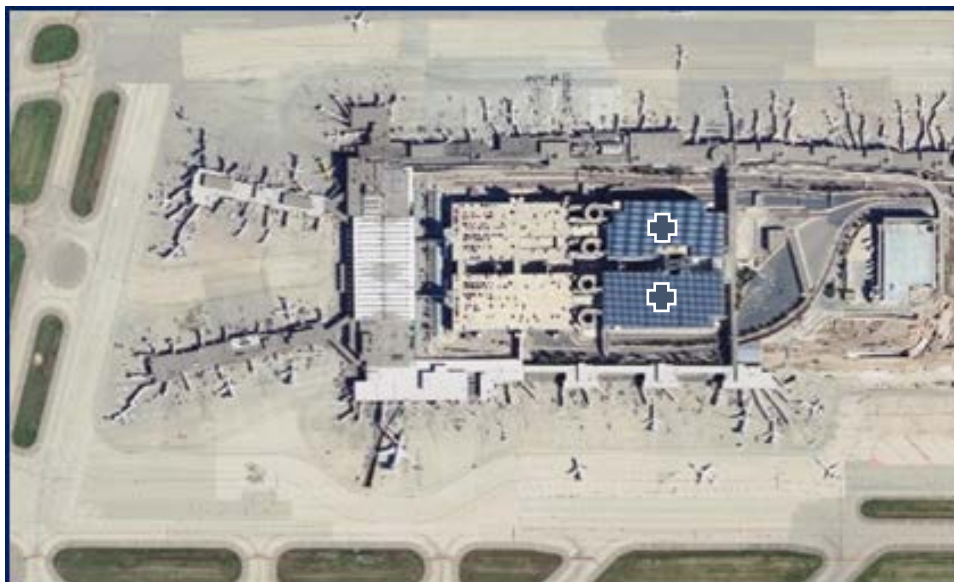
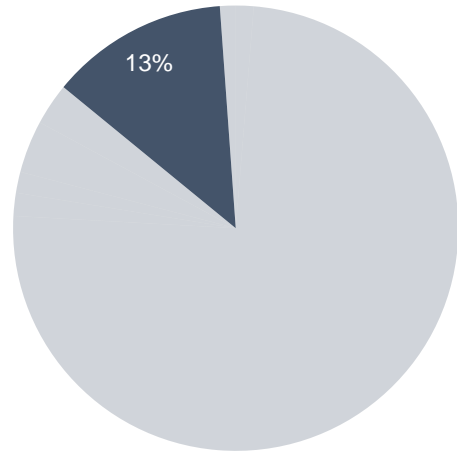


### 31 – Parking

**TERMINAL 1-LINDBERGH PARKING RAMP – PARKING RAMP  
MODIFICATIONS \$17,000,000**

Anticipated funding source: General Airport Revenue Bonds-2016

This project will modify the Red and Blue parking levels vacated by Rental Car agencies when they move to the new parking ramp. This project will prepare the areas to accommodate public parking.



### 36 – Terminal 2-Humphrey

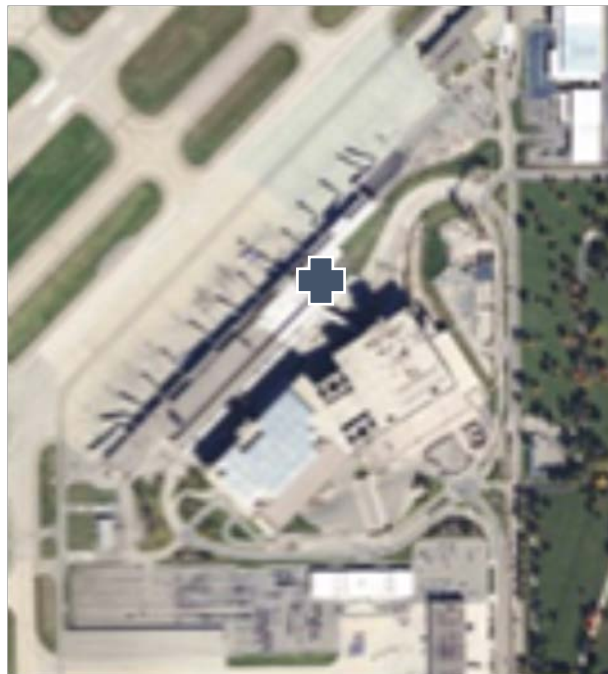
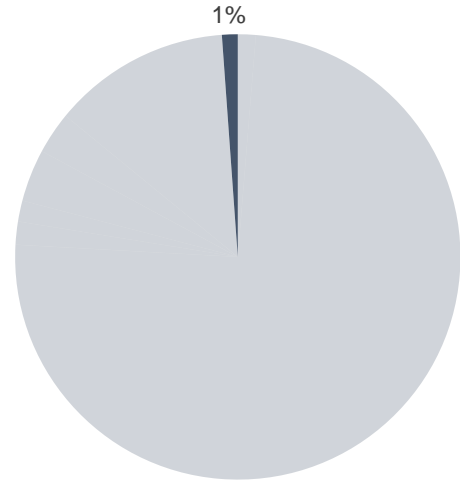
#### TERMINAL 2-HUMPHREY SECURITY CHECKPOINT IMPROVEMENTS

\$1,500,000

*renamed from Automated Security Lanes (ASLs)*

Anticipated funding source: PFCs

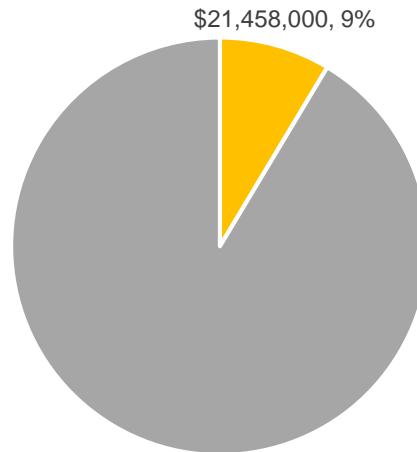
This project supports upgrades to or replacement of the existing security lane equipment to enhance security and improve through-put where possible. Additional work required to support installation will include power and data additions for new and replacement equipment and for equipment network requirements.



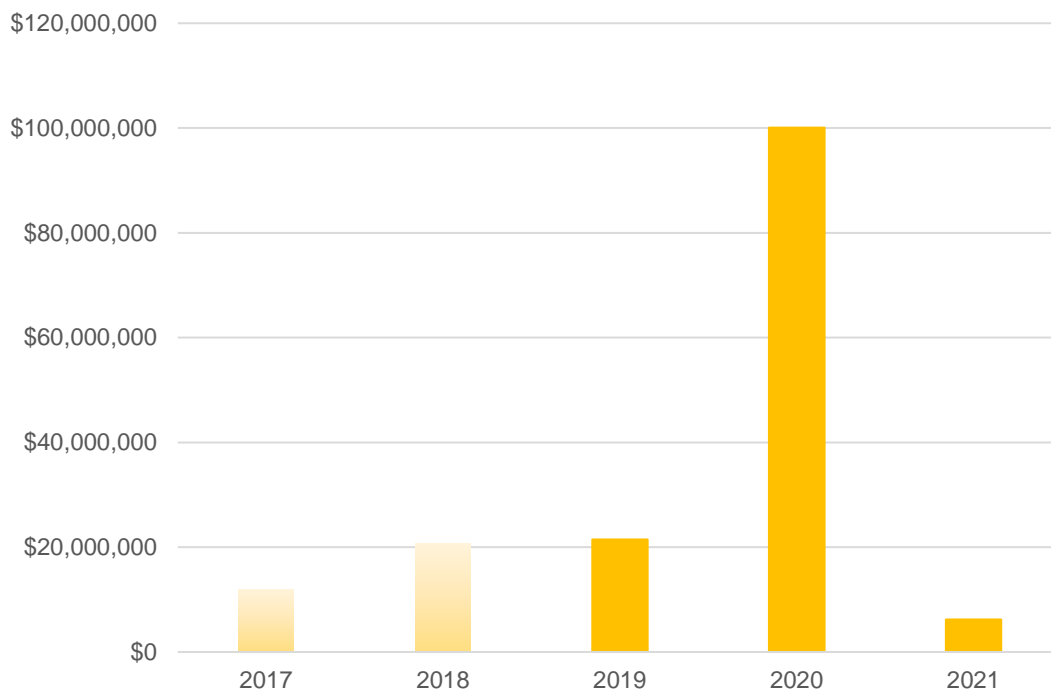
## MSP MAINTENANCE/FACILITY UPGRADE PROJECTS

MSP Maintenance / Facility Upgrade projects include those that provide improvements to individual buildings or systems across the campus on a one-time or short-term basis.

### 2019 MSP Maintenance/Facility Upgrade Projects



### MSP Maintenance/Facility Upgrade Projects

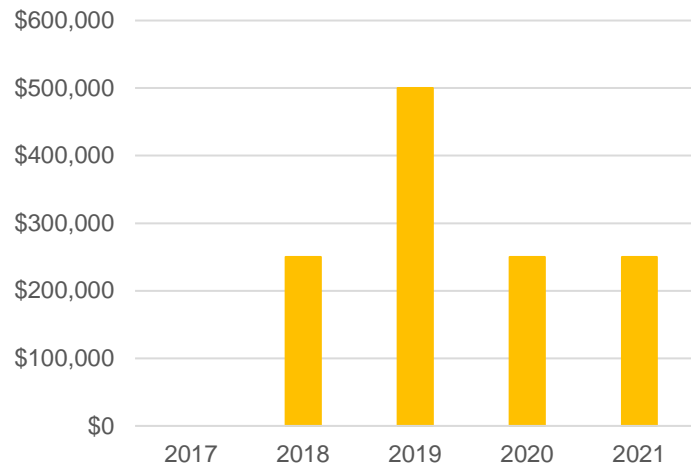
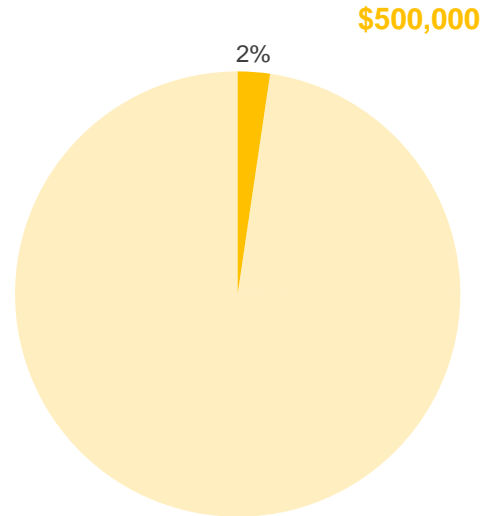


## 10 – Terminal 1-Lindbergh

### ART DISPLAY AREAS

Anticipated funding source: MAC Funds

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 support an outdoor Art Park adjacent to the Hotel for permanent and rotating exhibits with public access for travelers and hotel guests.

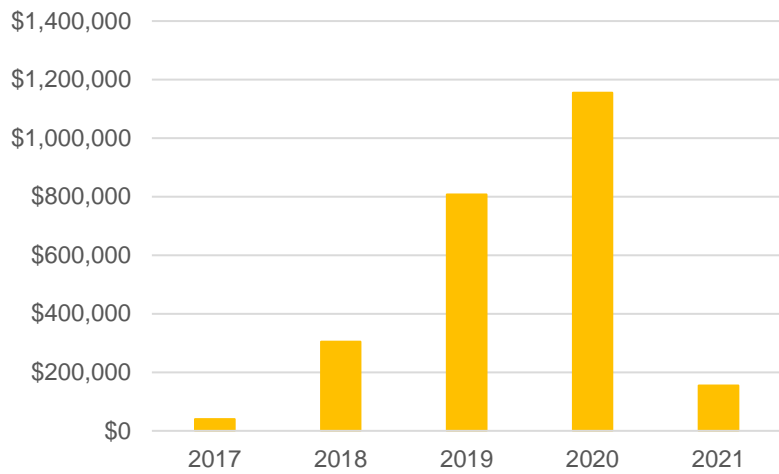
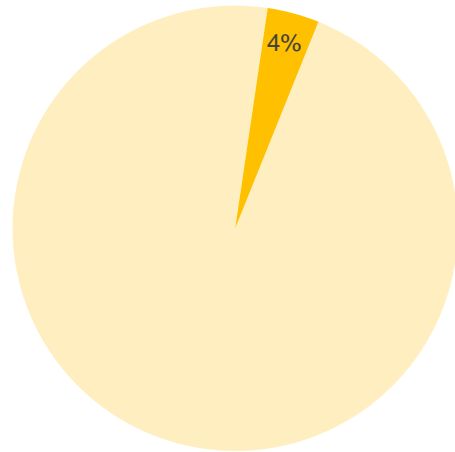


## ARTS MASTER PLAN

\$808,000

Anticipated funding source: MAC Funds

This program supports procurement of commissioned art and rotating exhibits as part of the Percent for Arts program.



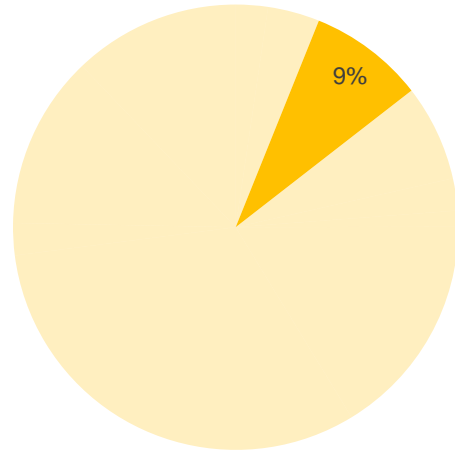


## CONCOURSE D HVAC UPGRADE

\$1,800,000

Anticipated funding source: MAC Funds and Airline Repair and Replacement Fund

The ground level of the D Concourse was originally designed as a tug drive system. It has been abandoned and underutilized for many years in this function. As a result the systems in this area are no longer functioning. The space is being utilized as part office, part vehicle bay and part storage area. The mechanical systems need to be upgraded to meet the needs of the space.

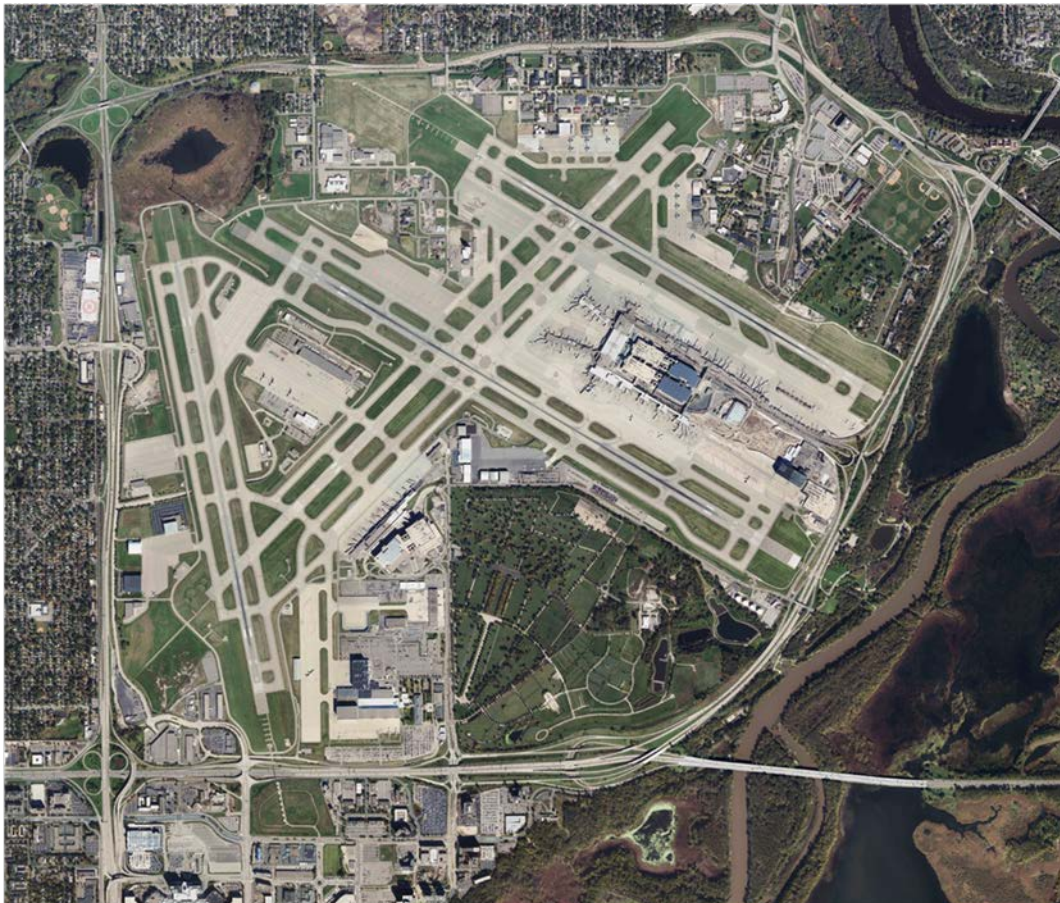
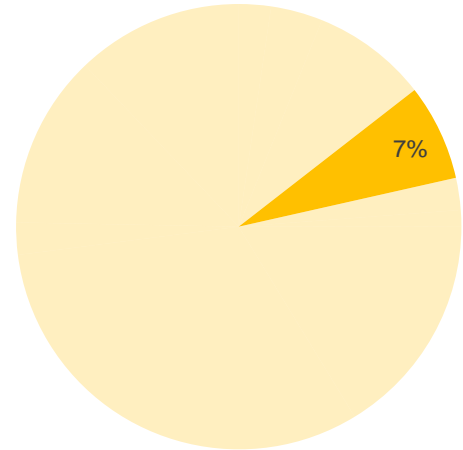


**LIGHTING INFRASTRUCTURE TECHNOLOGY AND EQUIPMENT (LITE)**

**\$1,500,000**

Anticipated funding source: Airline Repair and Replacement Fund

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

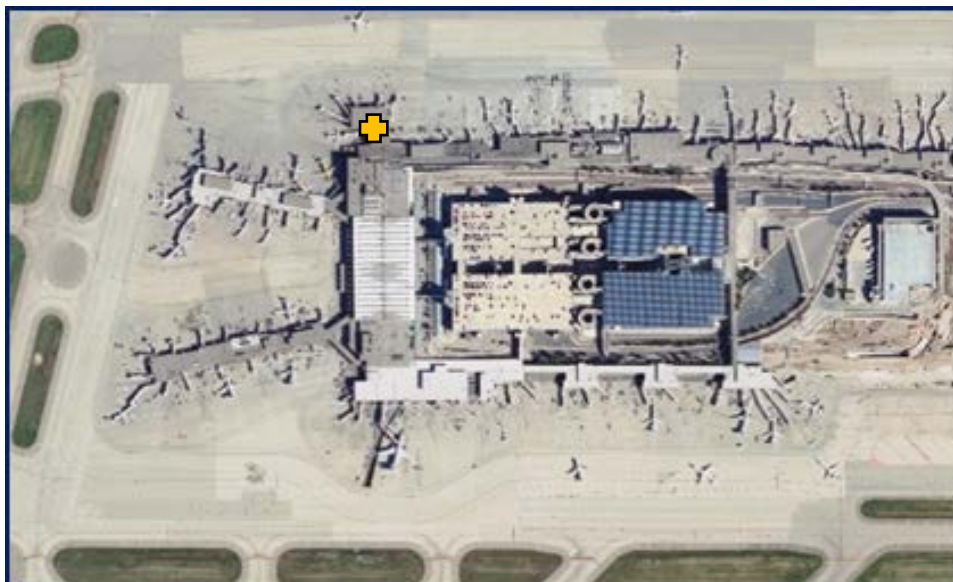
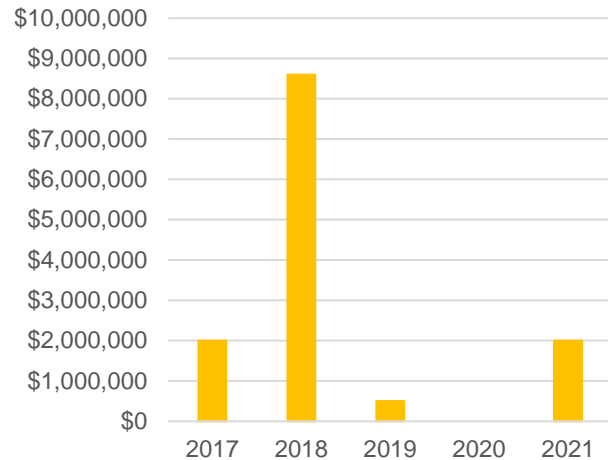
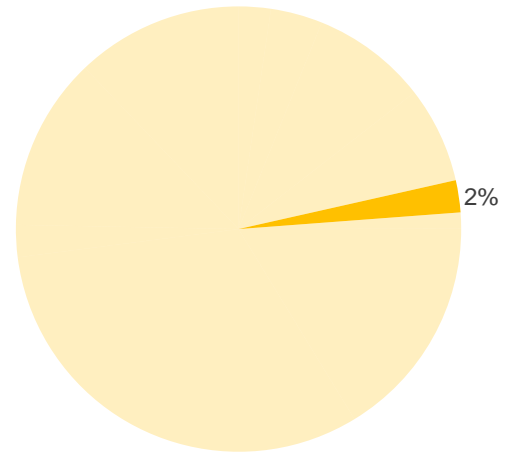


## RESTROOM UPGRADE PROGRAM

\$500,000

Anticipated funding source: PFCs

Located near Travelers Assistance Central near Concourse D, the 2019 project will expand an existing 'companion-care/family' restroom into a restroom with an adult changing table and emergency notification system. With changing demographics and the need for facilities to change people of larger stature and weight than a young child, the proposed height-changing electrically-powered changing table will allow side transfer for guests in a wheelchair, and low access for others, allowing safe access, and the correct ergonomic height for changing. The Operational Improvements program will also include changing tables in the arrivals hall program.

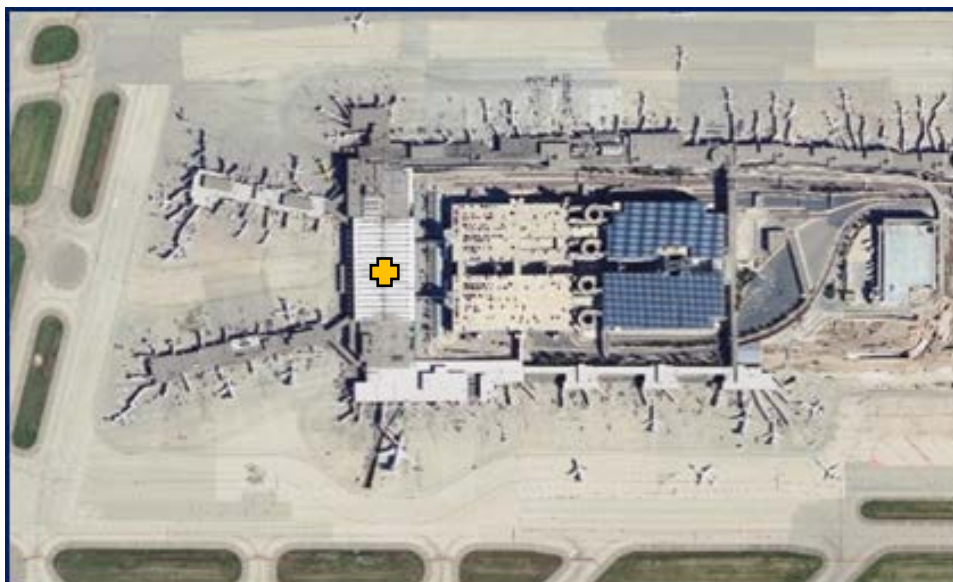
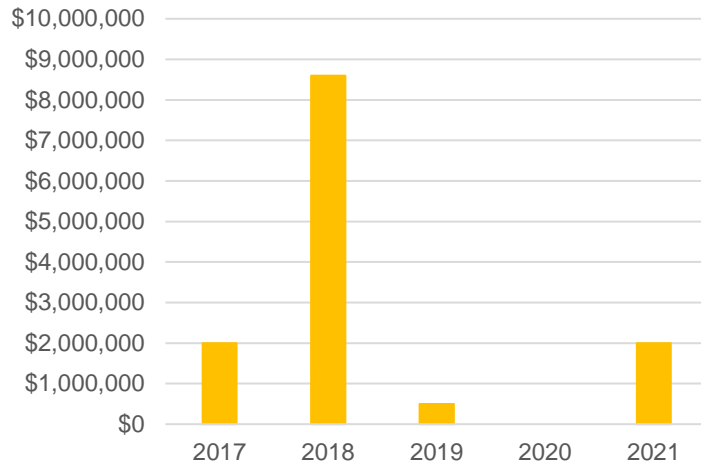
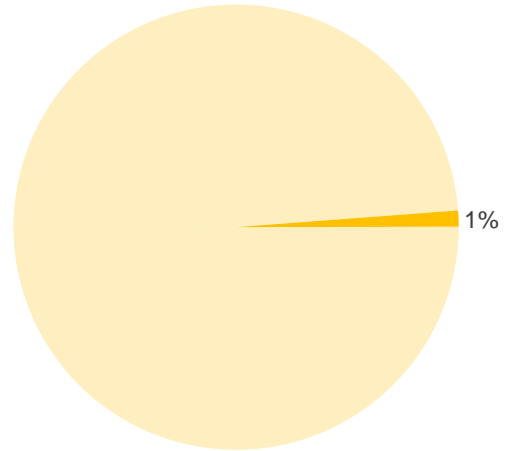


### TERMINAL 1-LINDBERGH EMPLOYEE BREAKROOM

\$250,000

Anticipated funding source: MAC Funds

This project will provide a MSP employee break room that will have a quiet area for employees who work multiple shifts on the campus to eat, read, etc. By providing this quality work support area, front line and other employees will be able to rest and eat out of view of the public.



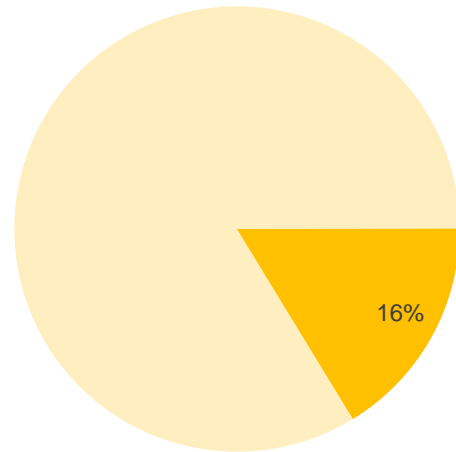
## 21 – Field and Runway

### RUNWAY 4-22 TAXIWAY LIGHTING SYSTEM

**\$3,500,000**

Anticipated funding source: Federal Grants and General Airport Revenue Bonds-2016

This project provides for the construction of taxiway lighting systems for runway 4-22 between runway 12L-30R and runway 17-35 with lead-in/off centerline lighting on the end connector taxiways. Work includes installation of taxiway edge and centerline lights, cabling, and modifications at the ALEC south building. This will provide the FAA aircraft control tower the ability to convert runway 4-22 into a fully functional taxiway and back to a runway configuration as required. The lighting system will allow for the safe aircraft taxi operations on runway 4-22 during peak operational periods without the risk of a possible pilot caused runway incursion due to confusion of current lighting systems. This will bring this unique operation conversion to be fully compliant with the FAA design requirements for a taxiway operation.

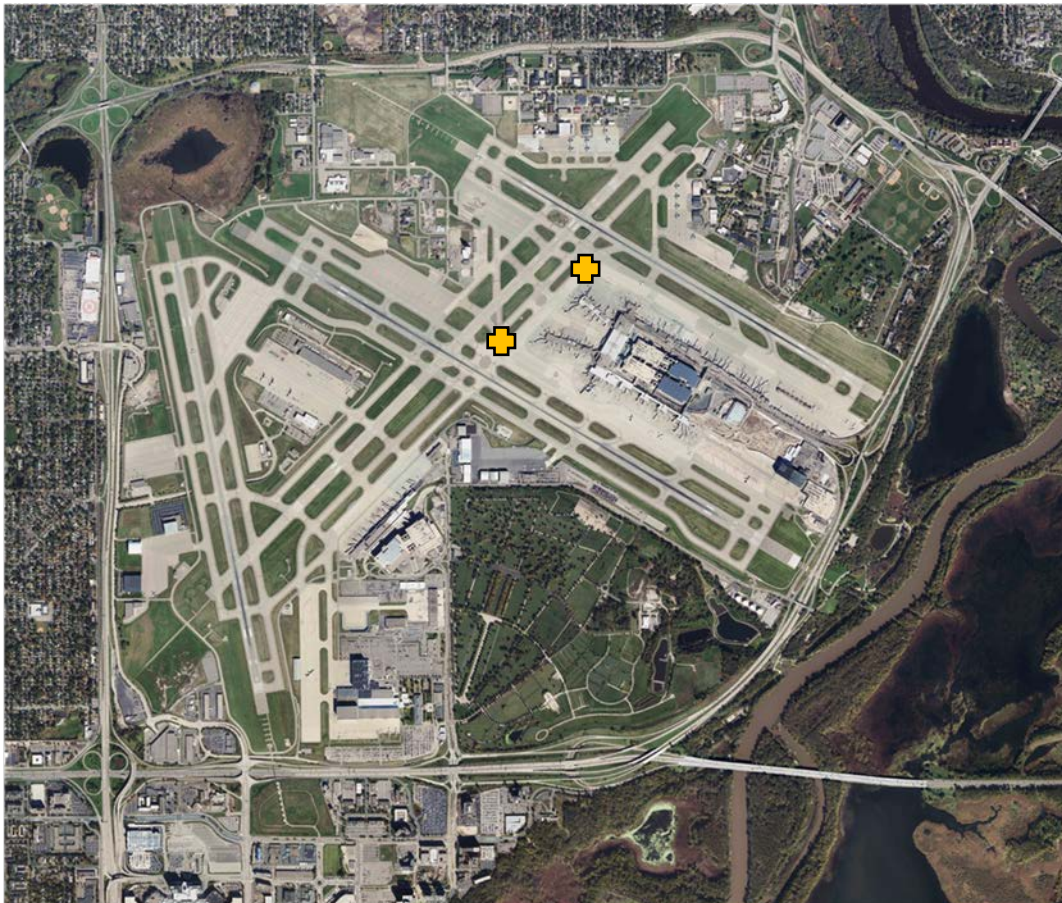
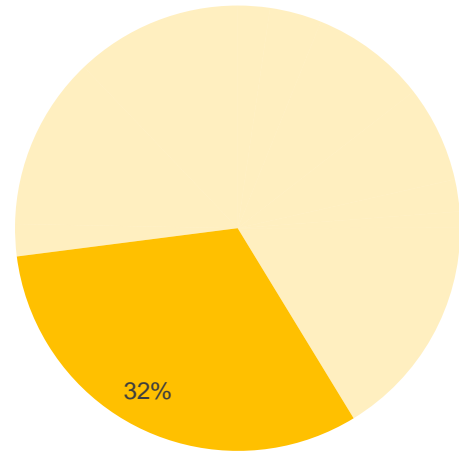


## TAXIWAYS BRAVO & QUEBEC CENTERLINE LIGHTS

\$6,800,000

Anticipated funding source: PFCs and Federal Grants

This project provides for the construction of taxiway centerline lighting systems for taxiways Bravo and Quebec, located adjacent to the Terminal 1-Lindbergh aprons through the intersections with taxiway Delta. Work includes removal of existing taxiway centerline reflectors, installation of taxiway centerline lights and conductors, and modifications at the airfield lighting control building.



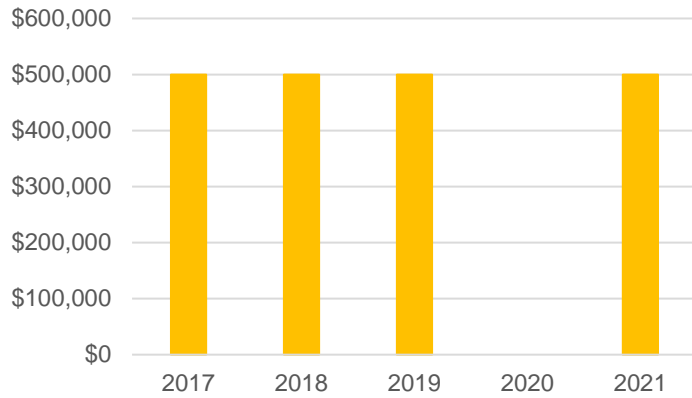
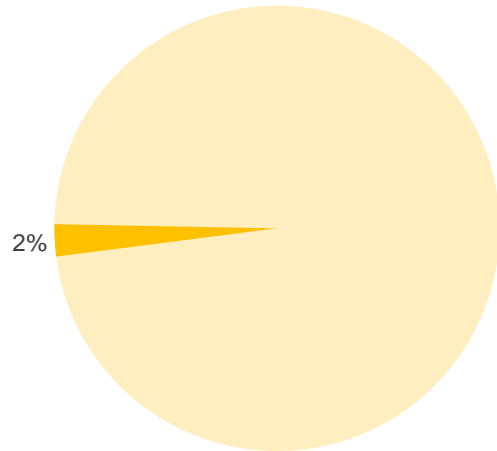
## 66 – Fire

### CAMPUS FIRE PROTECTION

**\$500,000**

Anticipated funding source: Airline Repair and Replacement Fund

This project is part of a multi-year program to upgrade fire protection systems in various MAC-owned buildings on the MSP campus to meet MAC standards for improved compatibility with current and planned firefighting equipment.



*locations to be determined*

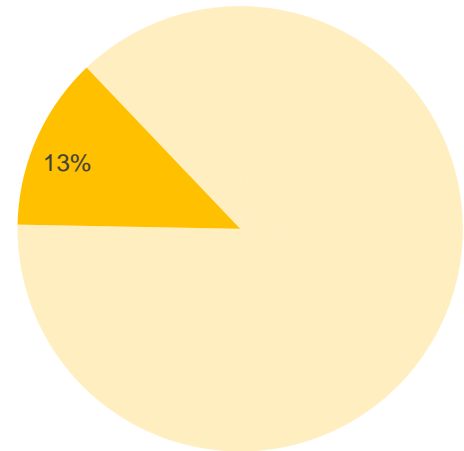


## 76 – Environment

### GROUND SERVICE EQUIPMENT (GSE) ELECTRICAL CHARGING STATIONS \$2,700,000

Anticipated funding source: MAC Funds

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.



*locations to be determined*



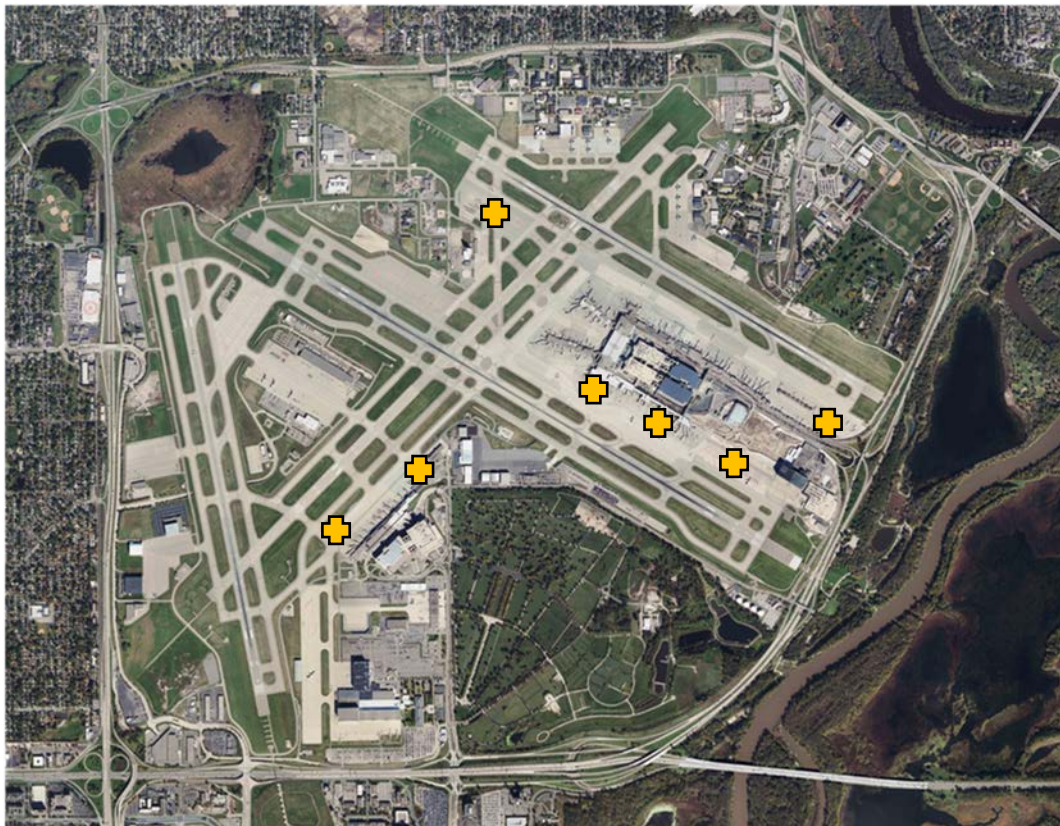
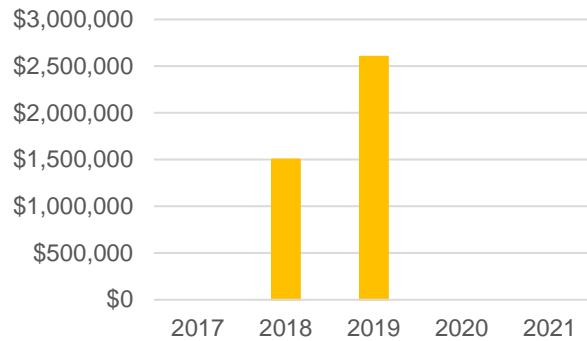
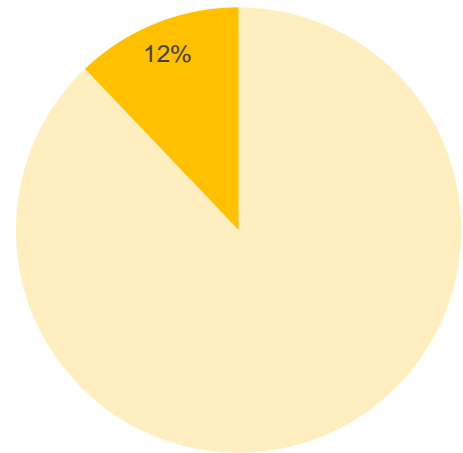


## STORM SEWER REHABILITATION

**\$2,600,000**

Anticipated funding source: General Airport Revenue Bonds-2016

This is the second of a two-year program that supports and complies with the 2017 MAC/MPCA Memorandum of Understanding concerning the MSP Glycol Collection Program. This project provides for cleaning, inspection, and rehabilitation of storm sewers and glycol sewers at various locations where aircraft deicing occurs, to enhance collection and storage of glycol-impacted stormwater resulting from deicing operations.

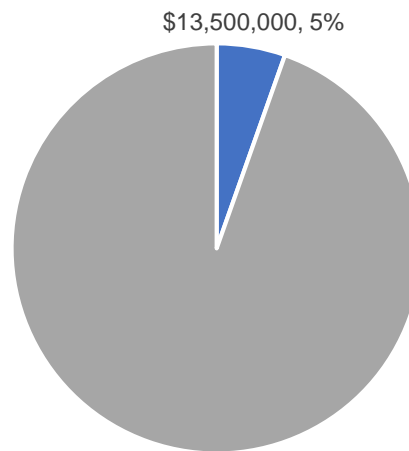


## NOISE MITIGATION CONSENT DECREE AMENDMENT

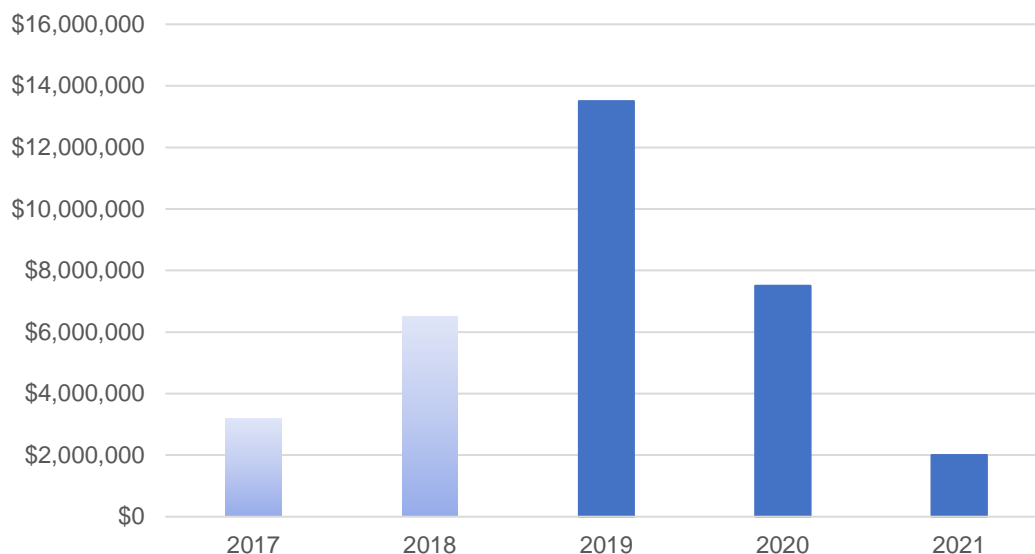
Noise Mitigation Projects are completed in compliance with the Consent Decree First Amendment. It is a residential noise mitigation program that began in March 2014 under the terms of an amended legal agreement (Consent Decree) between the Metropolitan Airports Commission (MAC) and the cities of Richfield, 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.

Anticipated funding source: Direct Loan-Short Term Program

### 2019 Noise Mitigation Project



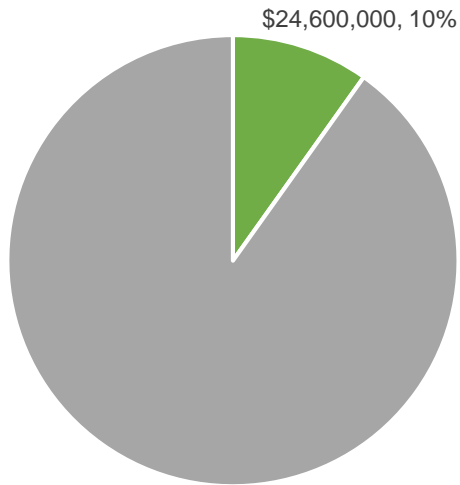
### MSP Noise Mitigation Projects



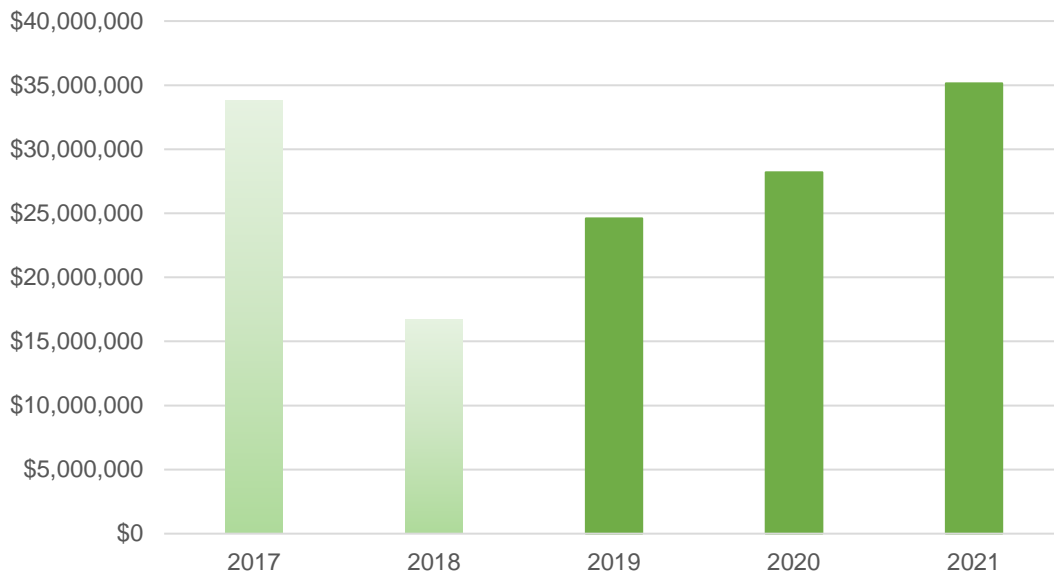
## MSP ONGOING MAINTENANCE PROGRAMS

MSP On-Going Maintenance projects include buildings, systems, pavements and other infrastructure that require improvements on an annual basis in order to maintain the facilities and manage MAC assets.

### 2019 MSP Ongoing Maintenance Programs



### MSP Ongoing Maintenance Programs



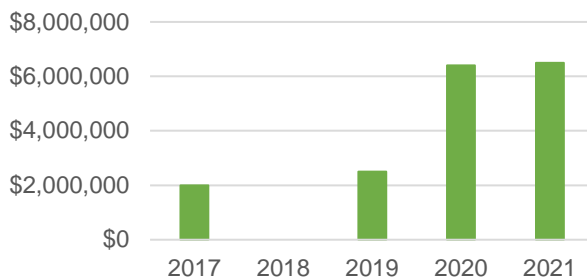
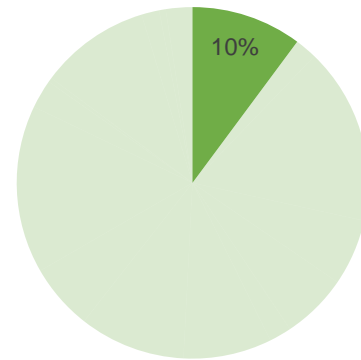
## 10 – Terminal 1-Lindbergh

### AIR HANDLING UNIT REPLACEMENT

Anticipated funding source: General Airport Revenue Bonds-2016

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.

\$2,500,000

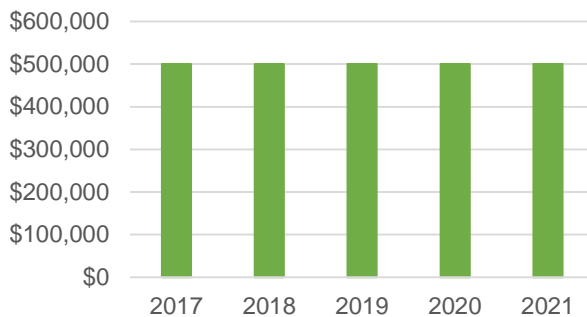
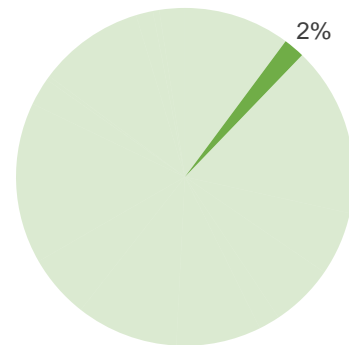


### BAGGAGE SYSTEM UPGRADES

Anticipated funding source: Airline Repair and Replacement Fund

This multi-year program will provide necessary upgrades to the inbound and outbound baggage system not covered by general system maintenance.

\$2,500,000

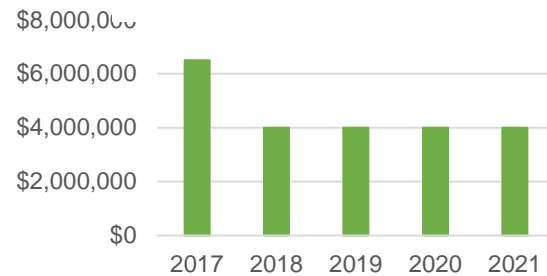
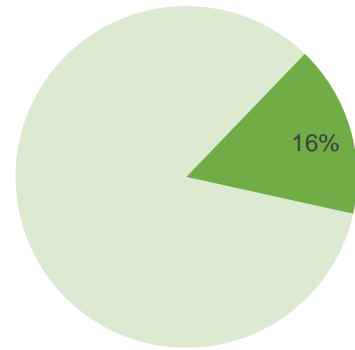


### CONCOURSE G REHABILITATION

\$4,000,000

Anticipated funding source: General Airport Revenue Bonds-2016

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.

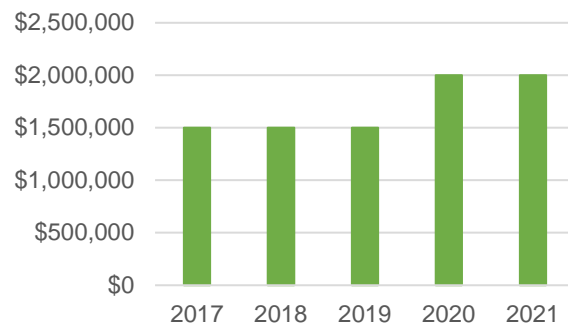
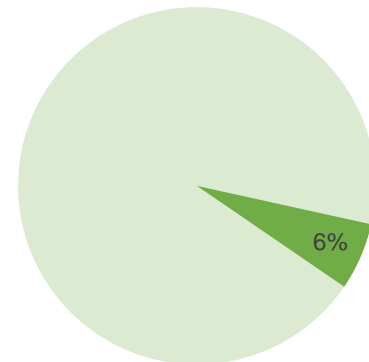


### ELECTRICAL INFRASTRUCTURE PROGRAM (EIP)

\$1,500,000

Anticipated funding source: Airline Repair and Replacement Fund

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.

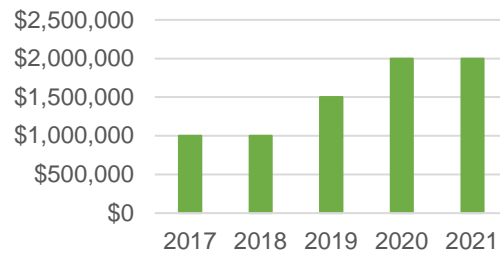
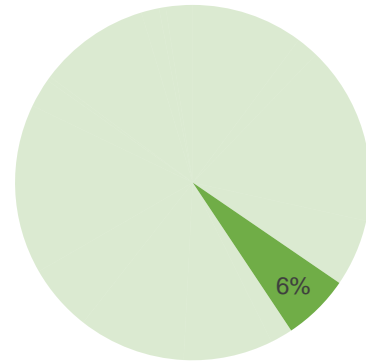


### EMERGENCY POWER UPGRADES

\$1,500,000

Anticipated funding source: Airline Repair and Replacement Fund

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.

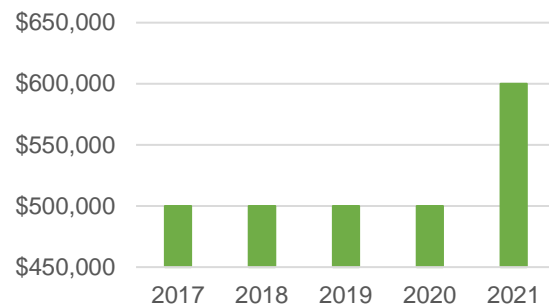
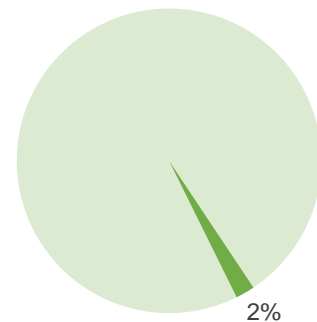


### PLUMBING INFRASTRUCTURE UPGRADE PROGRAM

\$500,000

Anticipated funding source: Airline Repair and Replacement Fund

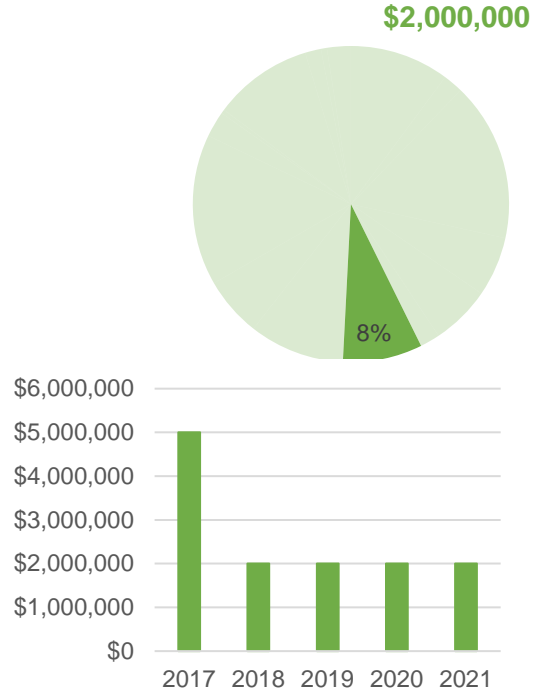
In 2010, MAC staff prepared a preliminary study of the reliability and maintainability of the existing plumbing infrastructure. Portions of the existing plumbing infrastructure serving Terminal 1-Lindbergh are over 40 years old, have systems that are undersized for today's demands, contain isolation 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 2019 project is to continue the replacement of aging plumbing systems.



### TERMINAL BUILDING REMEDIATION

Anticipated funding source: General Airport Revenue Bonds-2016

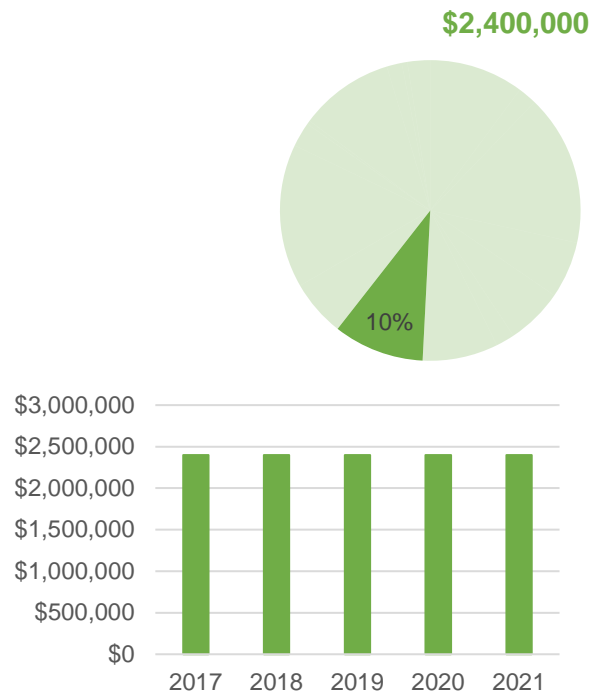
Continual maintenance of the terminal buildings is imperative to passenger comfort and safety as well as sustainability of the MAC asset. Age and weather contribute to building deterioration, mold and other health issues. Building and concourse envelope issues include curtain wall systems, glazing, sealant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



### TERMINAL MISCELLANEOUS MODIFICATIONS

Anticipated funding source: MAC Funds

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 2019.



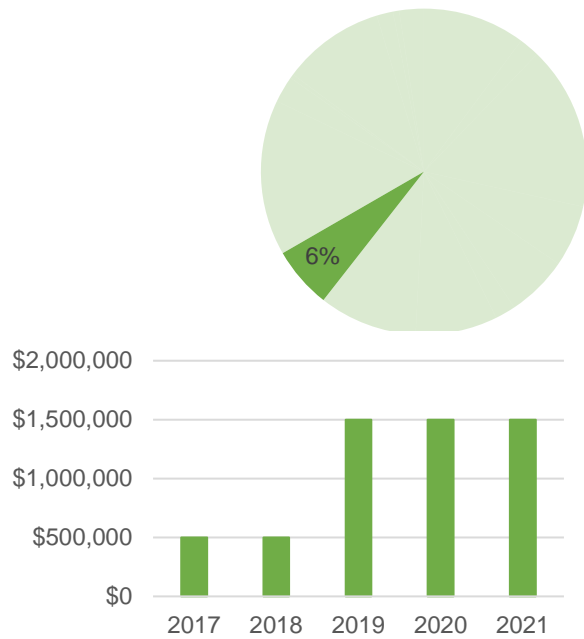
### 13 – Energy Management Center

#### EMC PLANT UPGRADES (T1 & T2)

Anticipated funding source: General Airport Revenue Bonds-2016

This multi-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 regular maintenance.

**\$1,500,000**





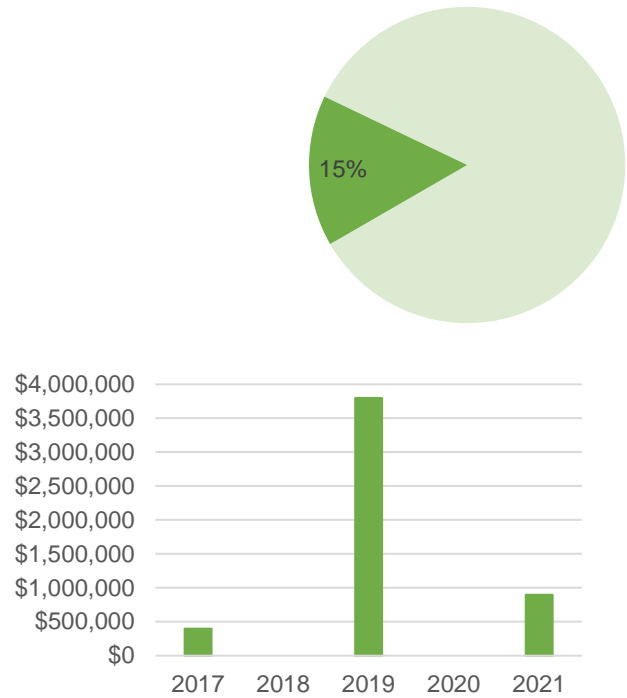
## 21 – Field and Runway

### MISCELLANEOUS AIRFIELD CONSTRUCTION

**\$3,800,000**

Anticipated funding source: Federal Grants and General Airport Revenue Bonds-2016

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. This year's program will also address repairs and maintenance required by the most recent Part 139 inspection.

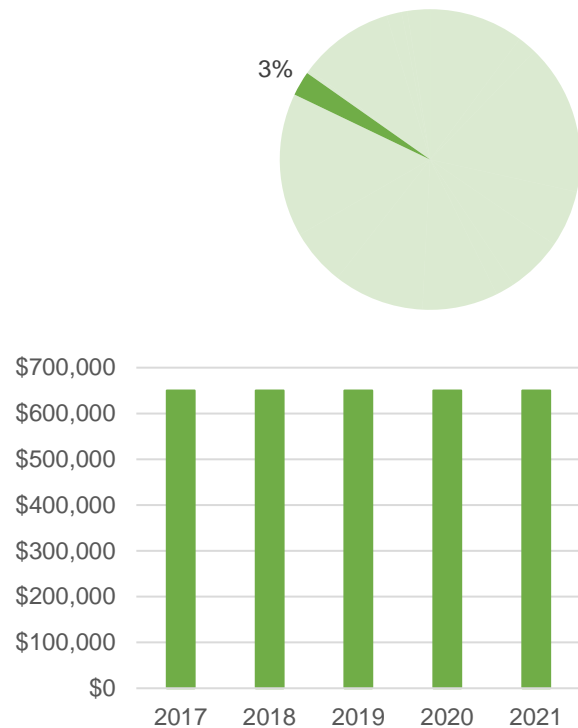


### PAVEMENT JOINT SEALING/REPAIR

**\$650,000**

Anticipated funding source: Airline Repair and Replacement Fund

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.

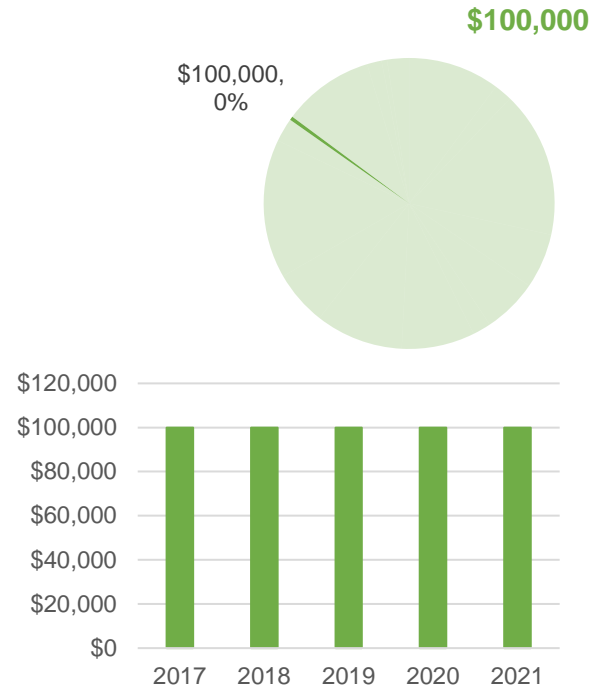


## 26 – Terminal Roads/Landside

### TUNNEL/BRIDGE REHABILITATION

Anticipated funding source: MAC Funds

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.

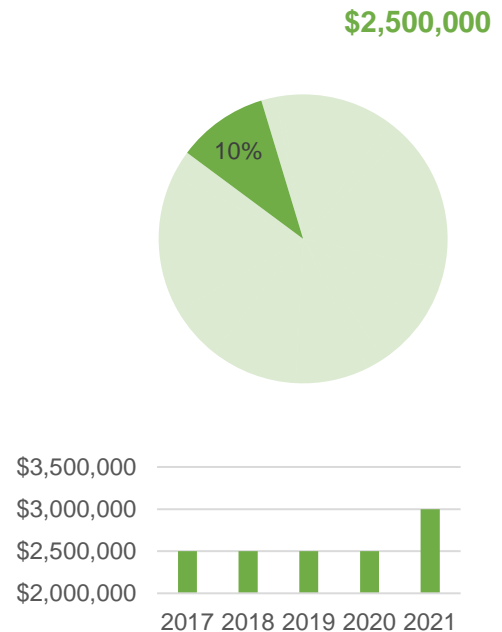


## 31 – Parking

### PARKING STRUCTURE REHABILITATION

Anticipated funding source: MAC Funds

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.

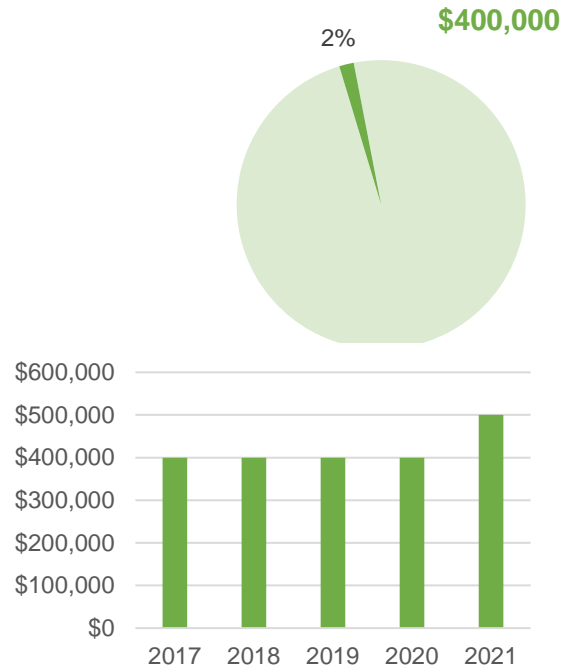


### 39 – Public Areas/Roads

#### LANDSIDE PAVEMENT REHABILITATION

Anticipated funding source: MAC Funds

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.

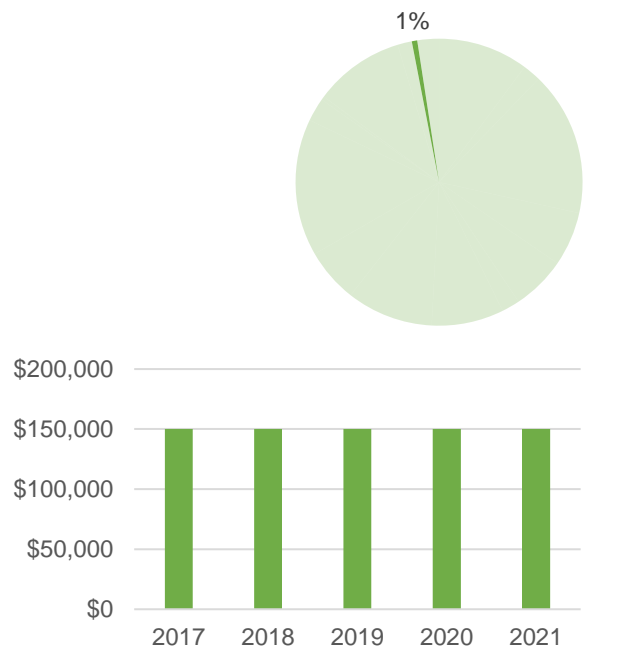


#### ROADWAY FIXTURE REFURBISHMENT

\$150,000

Anticipated funding source: MAC Funds

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.

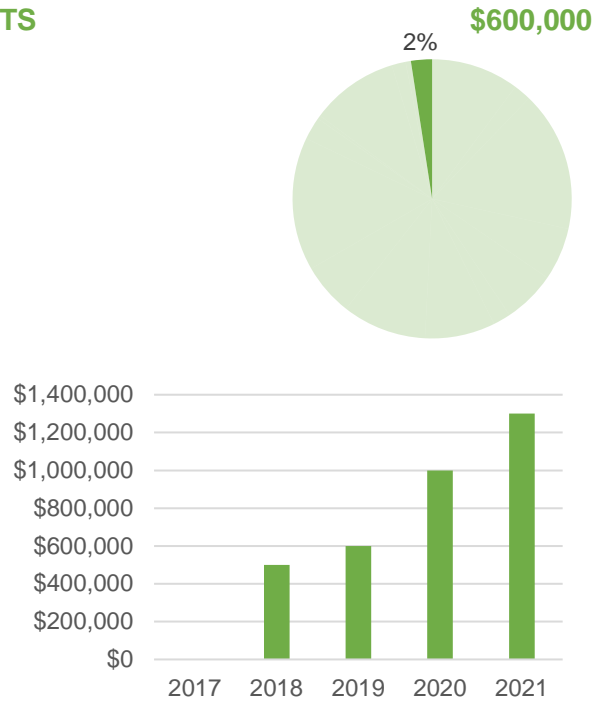


## 46 – Hangars and Other Buildings

### MSP CAMPUS BUILDING ROOF REPLACEMENTS

Anticipated funding source: MAC Funds

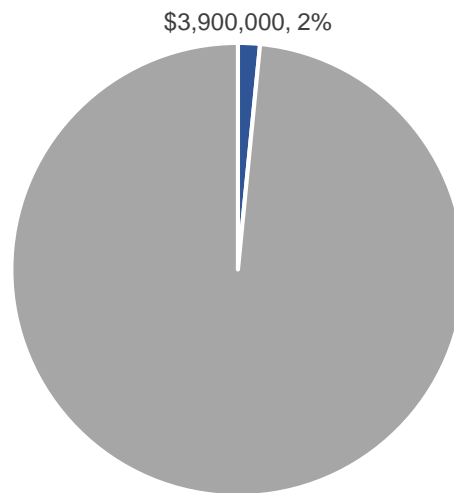
A report has been developed within the MAC that evaluates one-half of the roofs every other year. This on-going program allows these roofs that have been evaluated to be prioritized and programmed for repair. In 2019, the roof of the ALEC North building will be replaced. Emergency repairs may also be needed on some other roofs; this program will provide dollars for such instances.



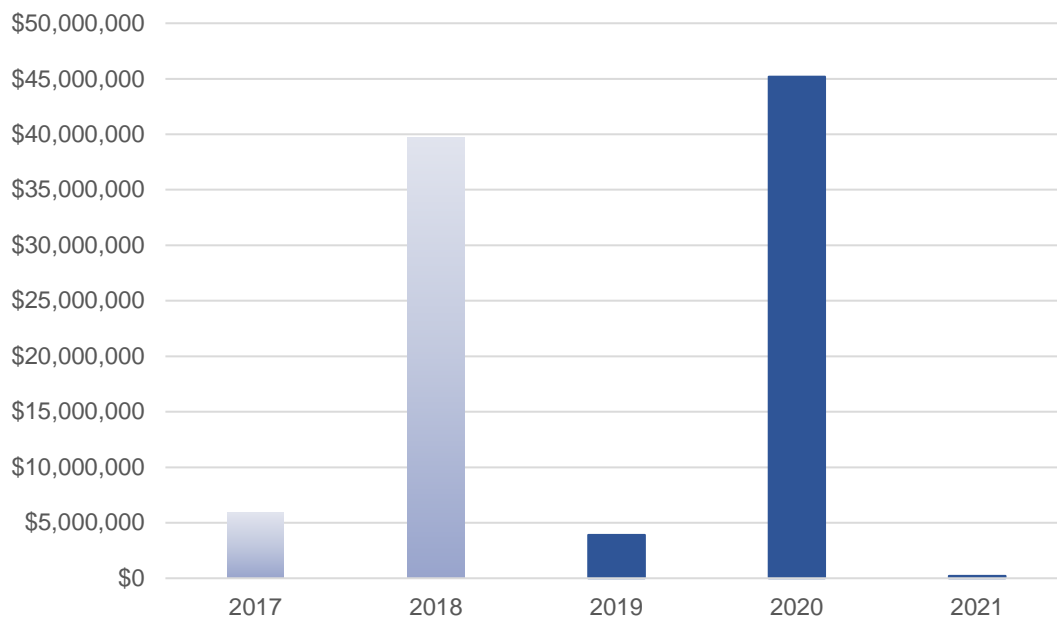
## MSP TENANT PROJECTS

MSP Tenant projects include those that enhance or expand tenant or leasehold facilities that MAC supports, with the tenants reimbursing the costs to MAC for work within leasehold spaces.

### 2019 MSP Tenant Projects



### MSP Tenant Projects



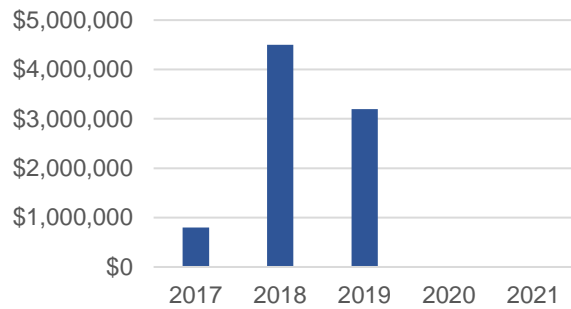
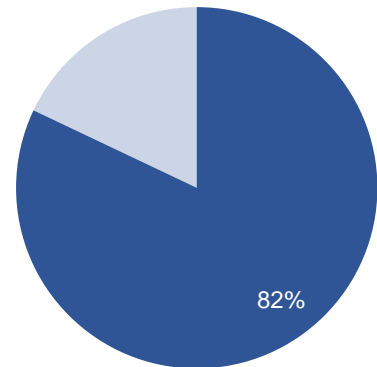
## 10 – Terminal 1-Lindbergh

### CONCESSIONS REBIDS

Anticipated funding source: MAC Funds

This program provides 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.

**\$3,200,000**

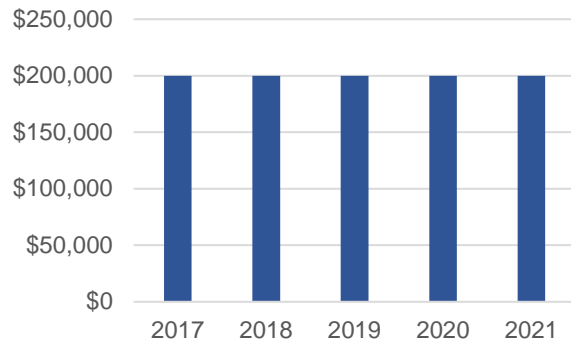
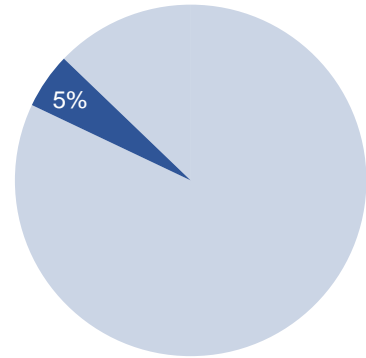


### CONCESSIONS UPGRADES/REVENUE DEVELOPMENT

\$200,000

Anticipated funding source: MAC Funds

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.

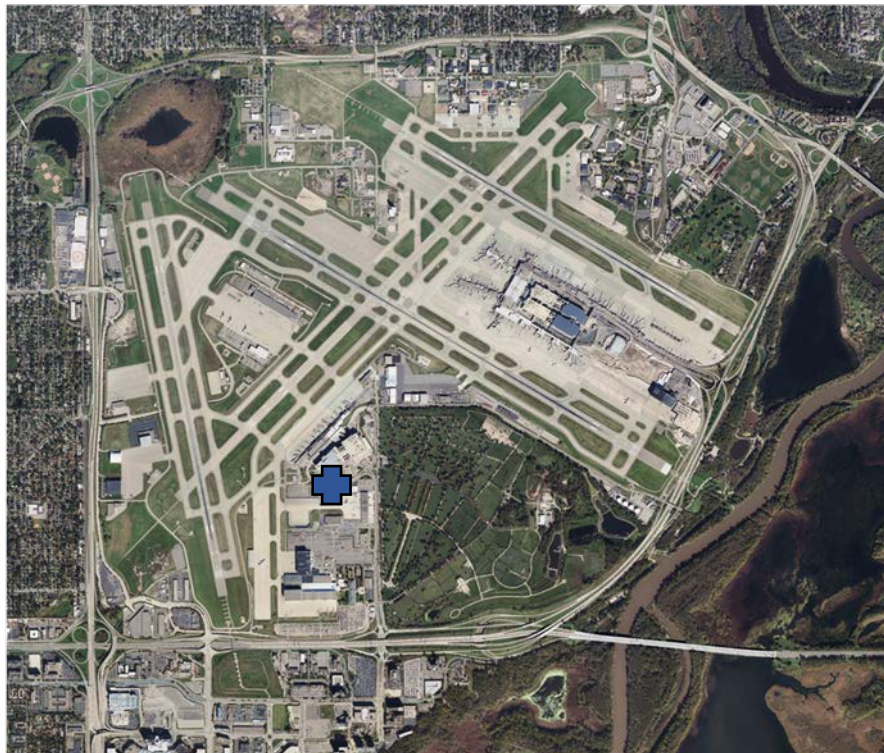
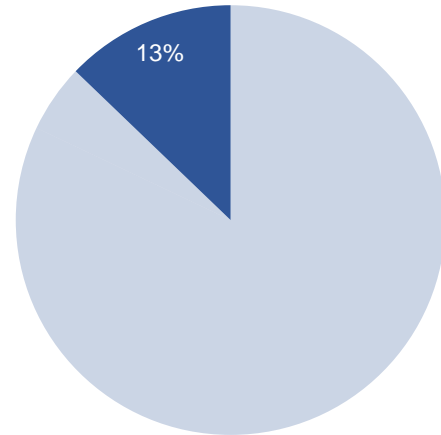


### RAC Terminal 2-Humphrey QTA SECURITY ENHANCEMENTS

\$500,000

Anticipated funding source: MAC Funds

Airport Police and the rental auto companies requested increased security measures be taken to reduce increasing auto thefts. This project will install additional fencing and of metal stop plates in the Terminal 2-Humphrey Quick Turn Around Facility.

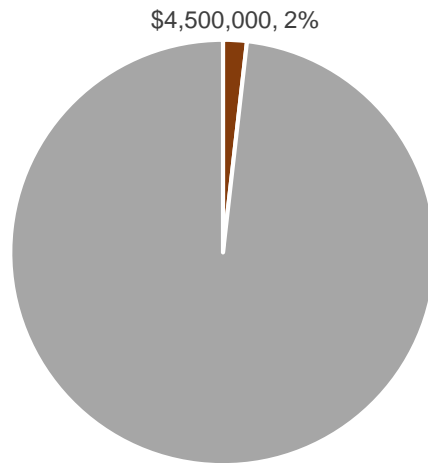




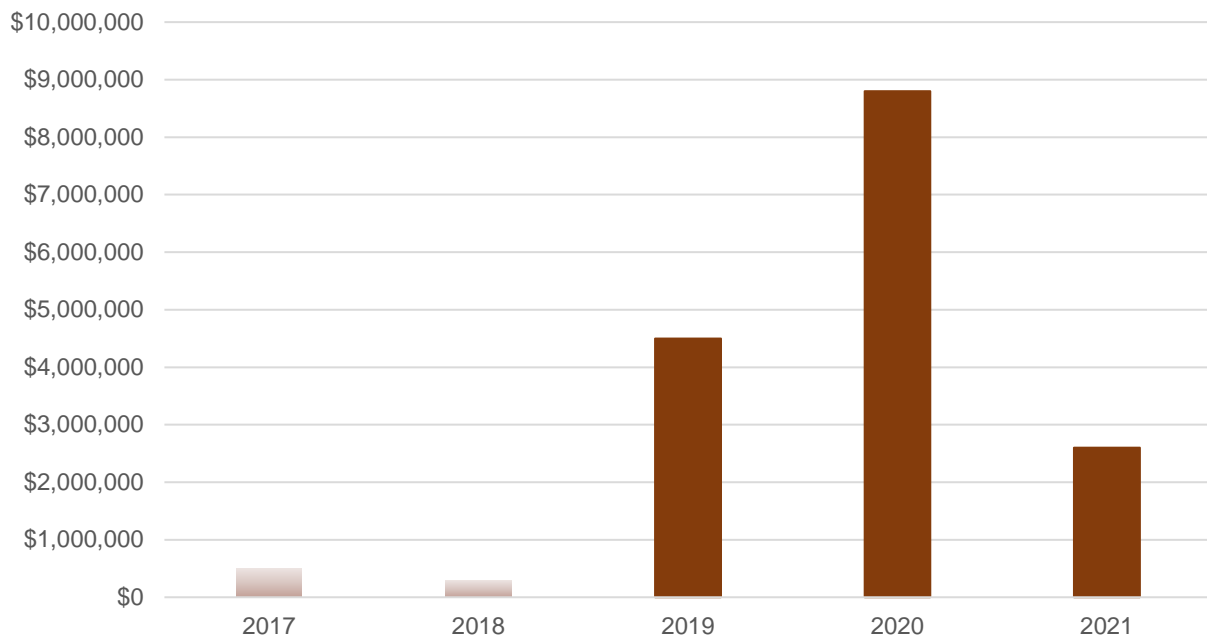
## RELIEVER AIRPORTS LONG TERM COMPREHENSIVE PLAN PROJECTS

Reliever Airport Long Term Comp Plan projects include projects that enhance or expand the airport facilities in order to meet existing or forecasted operational needs.

### 2019 Reliever Airports Long Term Comprehensive Plan Projects



### Reliever Airports Long Term Comprehensive Plan Projects



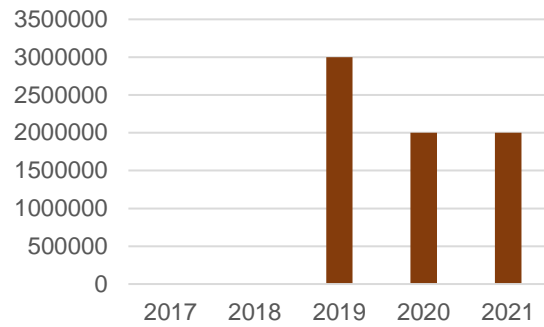
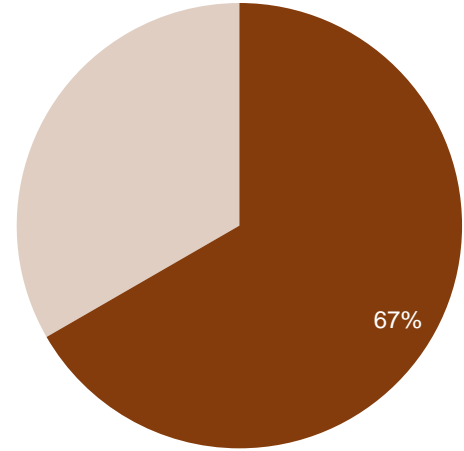
## 82 – Lake Elmo

### 21D RUNWAY 14-32 REPLACEMENT

Anticipated funding source: Federal Grants and MAC Funds

The updated long term comprehensive plan for this airport proposes relocating and extending the primary runway northeast of its current alignment. This year's scope includes the first phase of construction for this project, which primarily focuses on roadway realignment to make way for runway construction. This project includes all wetland mitigation, earthwork grading, subgrade improvements, electrical lighting system and bituminous pavement installation.

**\$3,000,000**



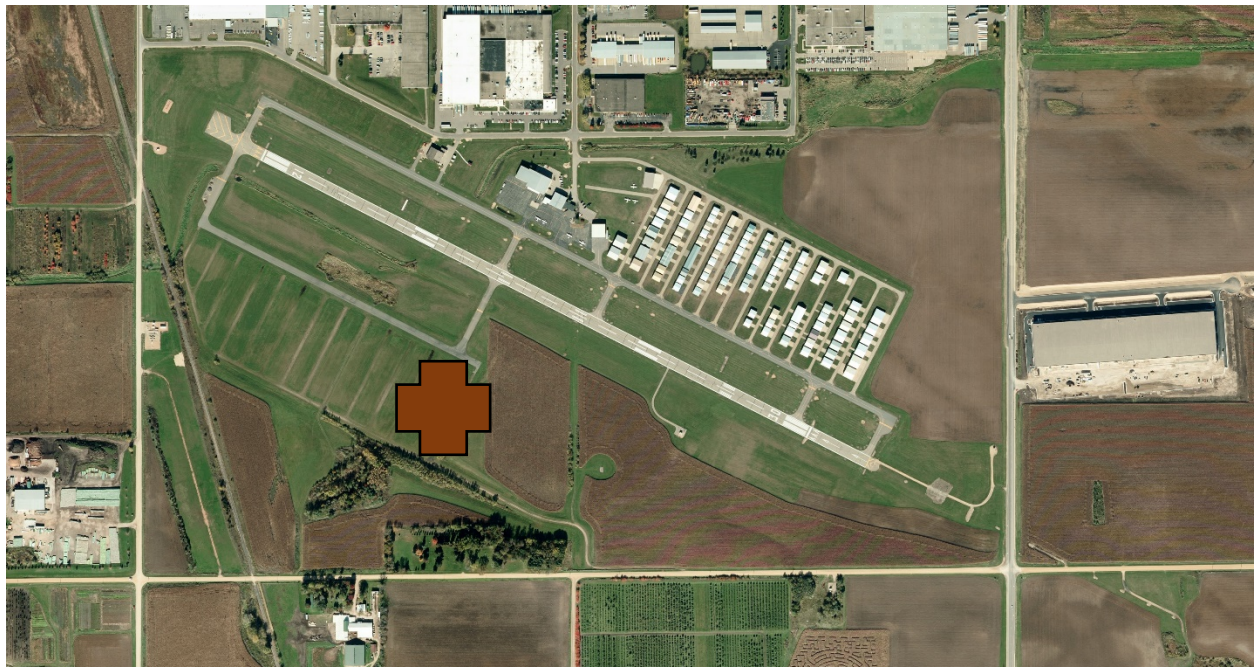
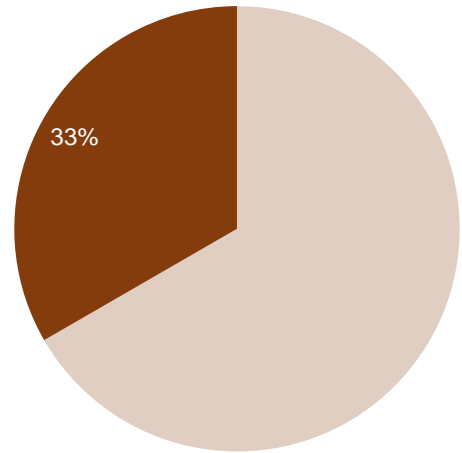
**83 – Airlake**

**LVN SOUTH BUILDING AREA DEVELOPMENT – PHASE 1**

**\$1,500,000**

Anticipated funding source: MAC Funds

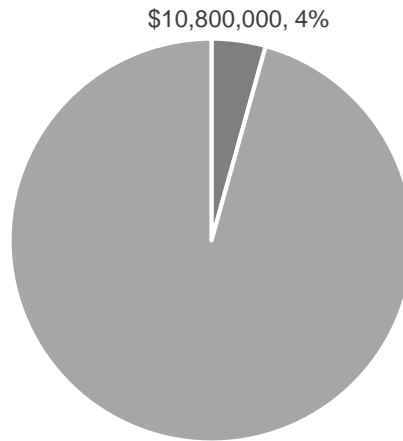
This project includes phase 1 construction of sanitary sewer and water mains and lot services to the south building area. Phase 1 also includes construction of associated taxilanes and the south entrance road.



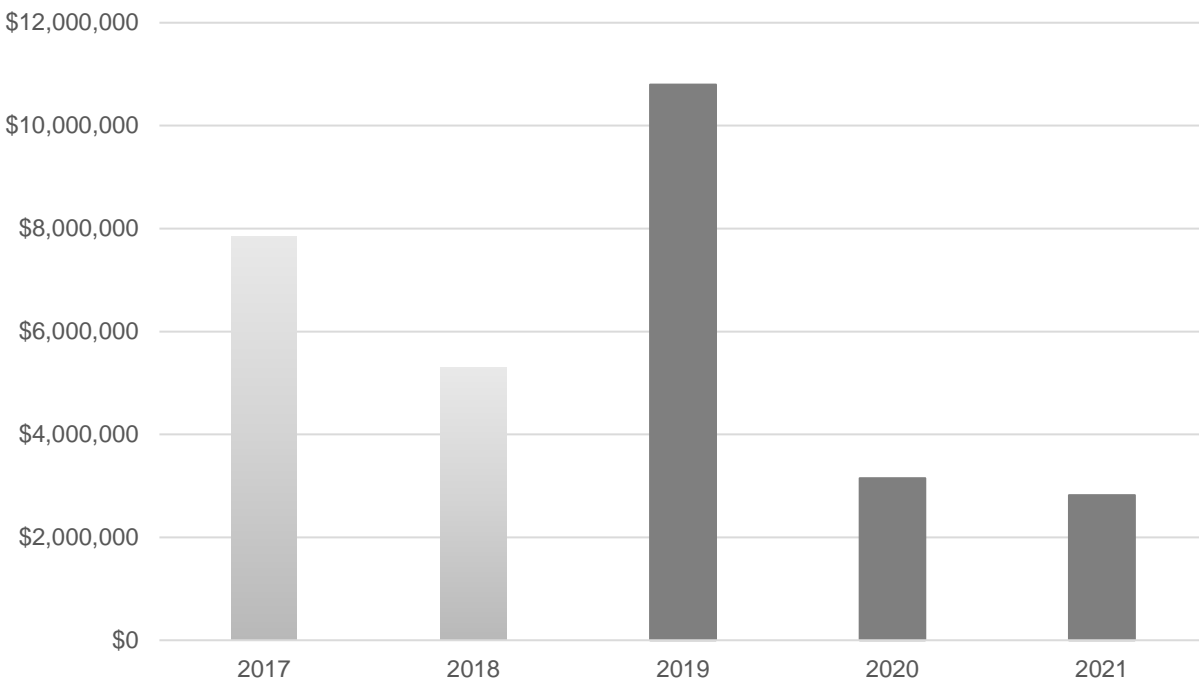
## RELIEVER AIRPORTS MAINTENANCE/FACILITY UPGRADE PROJECTS

Reliever Airport Maintenance / Facility Upgrade projects include improvements to buildings, systems, pavements and other infrastructure across the Reliever Airport system on a one-time or short-term basis.

### 2019 Reliever Airports Maintenance/Facility Upgrade Projects



### Reliever Airports Maintenance/Facility Upgrade Projects



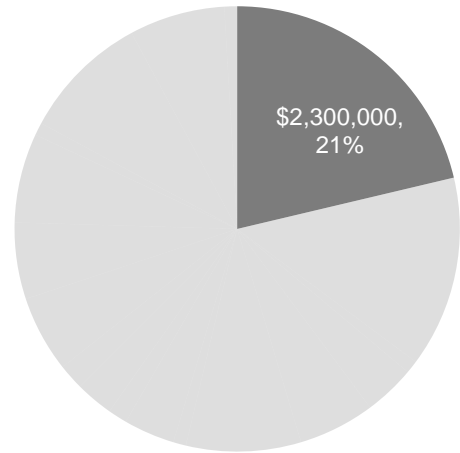
81 – St. Paul

**STP MAC BUILDING IMPROVEMENTS**

**\$2,300,000**

Anticipated funding source: MAC Funds

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. This year's project will include improvements to the Administration Building, Equipment Storage Building, Maintenance Building, and both Cold Storage Buildings.

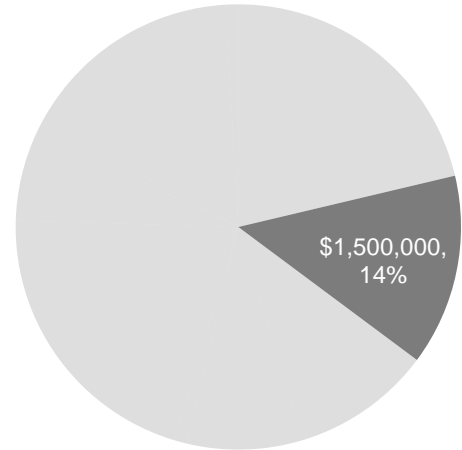


### STP STORM SEWER IMPROVEMENTS (PHASE 2)

\$1,500,000

Anticipated funding source: State Grants and MAC Funds

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.

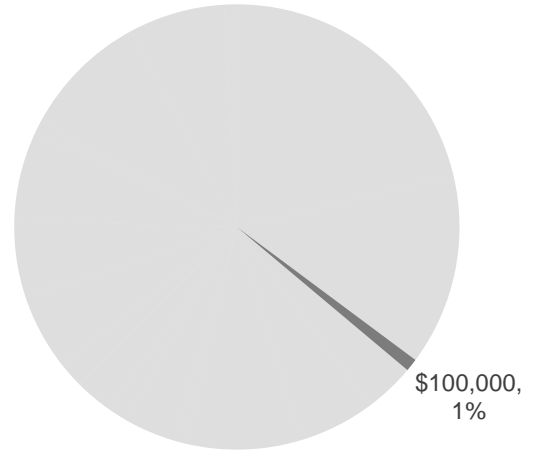


### STP UNDERGROUND FUEL STORAGE TANK REPLACEMENT

\$100,000

Anticipated funding source: MAC Funds

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.



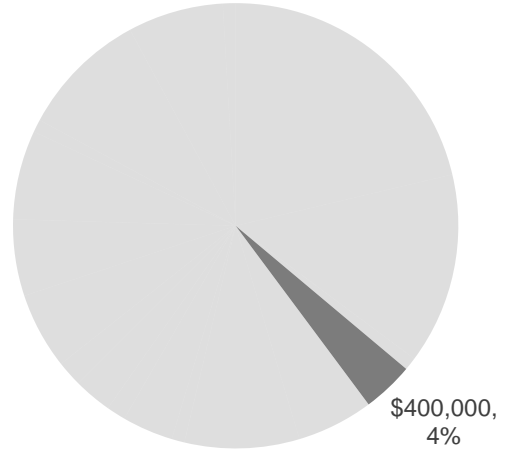
82 – Lake Elmo

21D MAC BUILDING IMPROVEMENTS

\$400,000

Anticipated funding source: MAC Funds

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings. This year's project will include improvements to the MAC Maintenance Building.



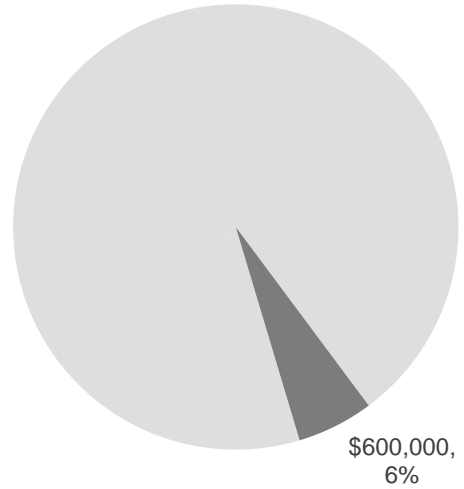


## 21D PARALLEL TAXIWAYS RECONSTRUCTION

\$600,000

Anticipated funding source: Federal Grants and MAC Funds

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 and Bravo not included in previous projects.



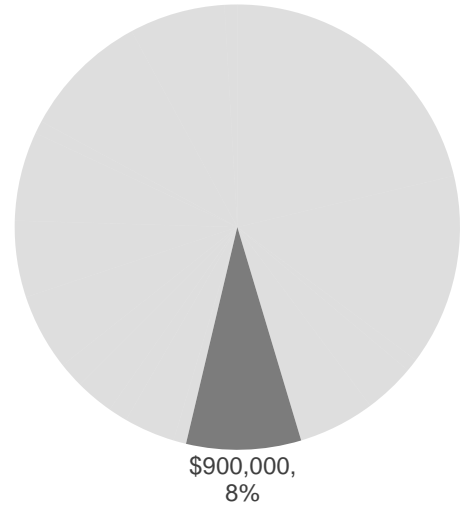
**21D TAXILANES – SOUTH BUILDING AREA PAVEMENT REHAB**

**\$900,000**

*Renamed from Alleyways – South Building Area Pavement Rehab*

Anticipated funding source: MAC Funds

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 taxilanes in the South Building Area.

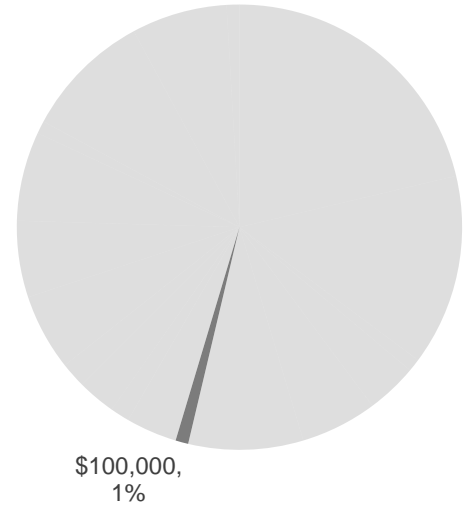


### 21D UNDERGROUND FUEL STORAGE TANK REPLACEMENT

\$100,000

Anticipated funding source: MAC Funds

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.



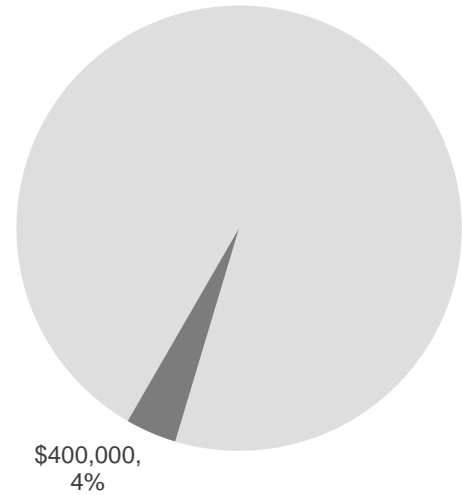
**83 – Airlake**

**LVN MAC BUILDING IMPROVEMENTS**

**\$400,000**

Anticipated funding source: MAC Funds

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings. This year's project will include improvements to the MAC Maintenance Building.



### LVN PLANE WASH PAD

\$150,000

Anticipated funding source: MAC Funds

This project includes the construction of a designated airplane wash pad.

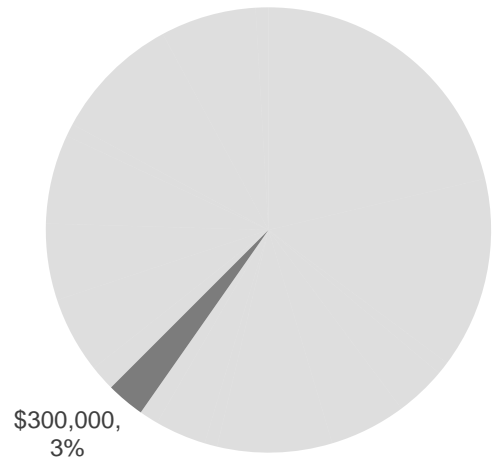


### LVN PUBLIC RESTROOM FACILITY

**\$300,000**

Anticipated funding source: MAC Funds

This project includes the construction of a tenant-use restroom facility on the north side of the airport.



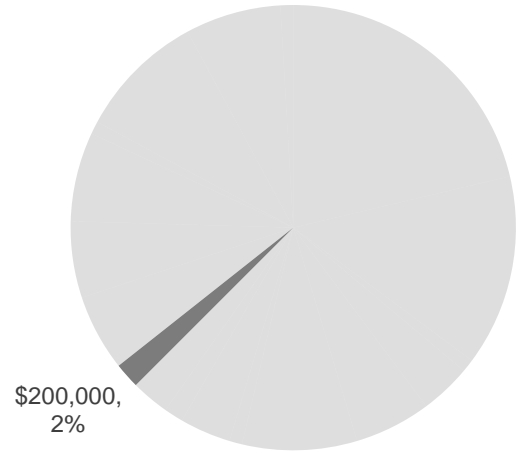
## 84 – Flying Cloud

### FCM EXECUTIVE AVIATION BUILDING IMPROVEMENTS

\$200,000

Anticipated funding source: MAC Funds

This project is to complete the work associated with repurposing the Executive Aviation building for MAC use. Work to be completed includes creating meeting space, equipment access to/from the building and airfield and other miscellaneous work items.

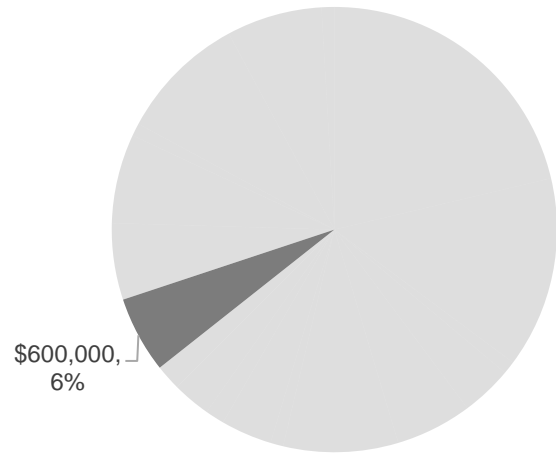


### FCM TAXIWAY D PAVEMENT REHABILITATION

\$600,000

Anticipated funding source: Federal Grants and MAC Funds

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 Taxiway Delta.



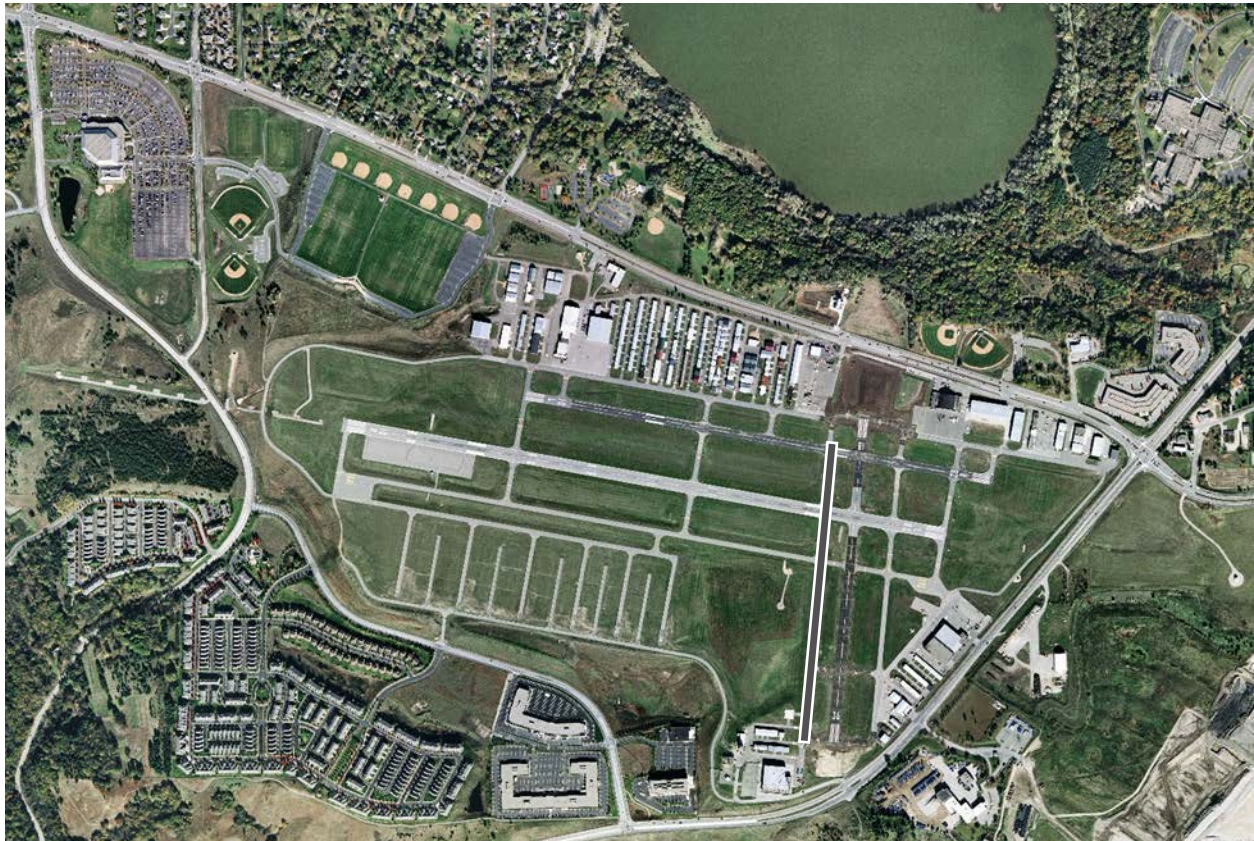
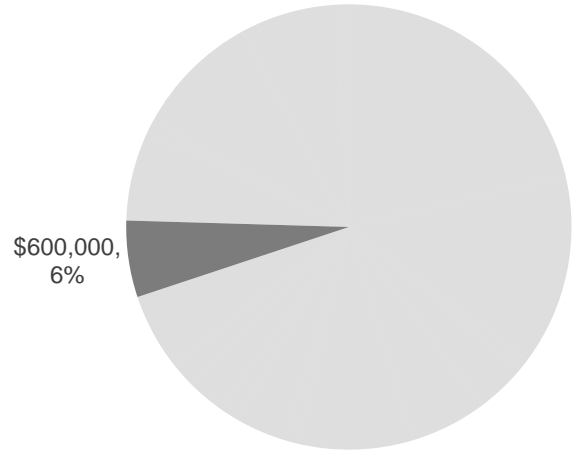


### FCM TAXIWAY E PAVEMENT REHABILITATION

\$600,000

Anticipated funding source: Federal Grants and MAC Funds

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 Taxiway Echo.



## 85 – Crystal

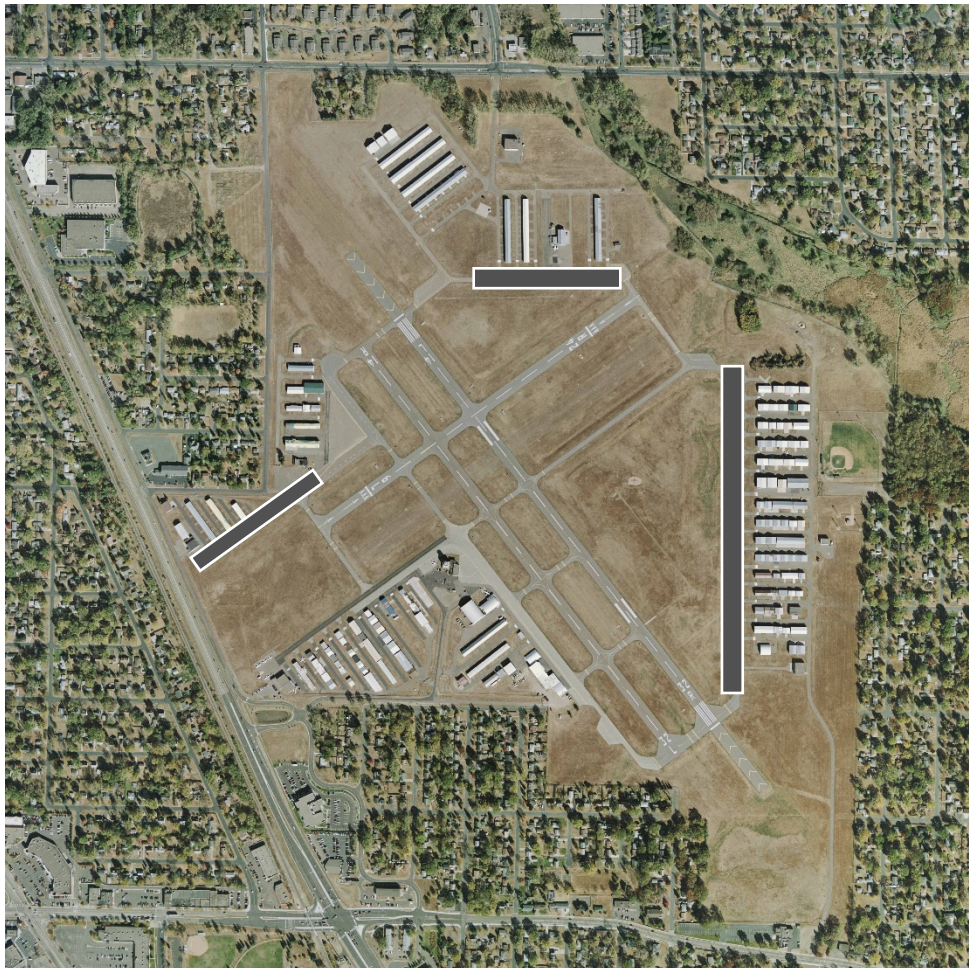
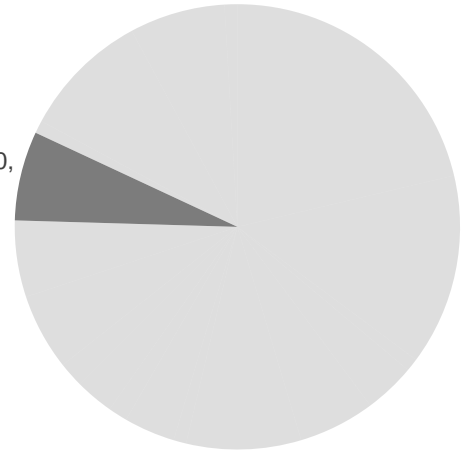
### MIC TAXIWAYS PAVEMENT REHABILITATION

**\$700,000**

Anticipated funding source: Federal Grants and MAC Funds

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 rehabilitation of the taxiway or portions of taxiways in most need of repair. The pavement condition index report as well as an inspection of the pavement will be completed to determine the area most in need of repair.

\$700,000,  
6%



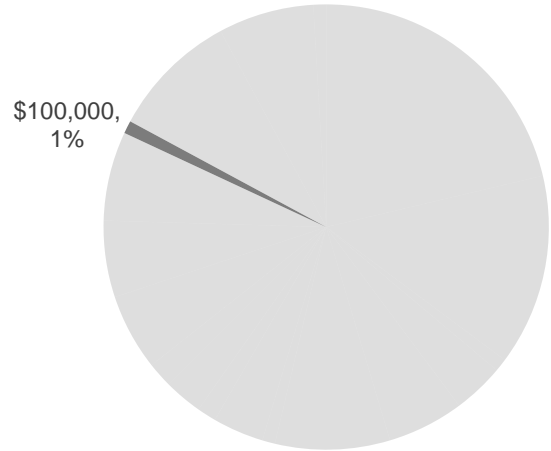
**86 – Anoka County - Blaine**

**ANE OBSTRUCTIONS REMOVAL**

**\$100,000**

Anticipated funding source: MAC Funds

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



*Locations to be determined following a survey of all four runway ends.*

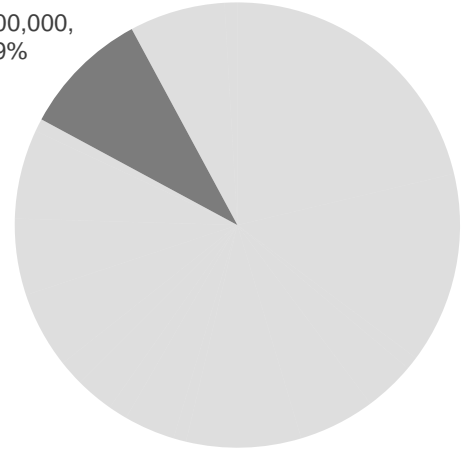


**ANE SOUTH SERVICE ROAD & EAST LANDSIDE ROAD PAVEMENT RECONSTRUCTION \$1,000,000**

Anticipated funding source: Federal Grants and MAC Funds

This is an ongoing effort to rehabilitate airport pavements 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 rehabilitation of the airport service road connecting the east and west building areas.

\$1,000,000,  
9%



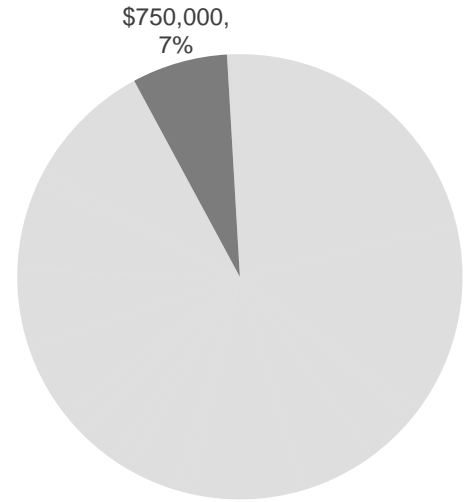
## ANE TAXILANES PAVEMENT RECONSTRUCTION

\$750,000

*Renamed from Alleyways Pavement Reconstruction*

Anticipated funding source: MAC Funds

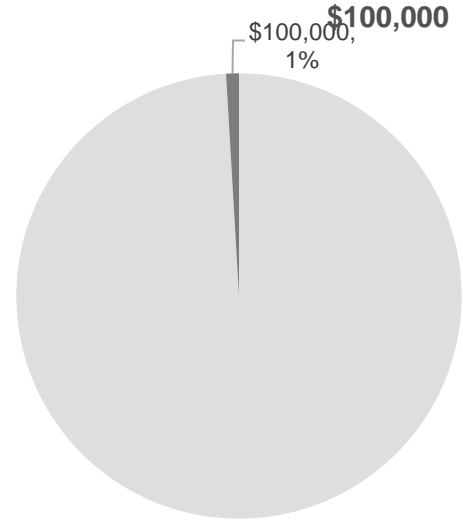
This is an ongoing program to reconstruct aircraft operational areas (runways, taxiways, aprons) through bituminous overlays, seal coats, or in some instances, reconstruction, to restore the surfaces to a smooth, even condition and improve overall operating conditions. This project includes rehabilitation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



### ANE UNDERGROUND STORAGE TANK REPLACEMENT

Anticipated funding source: MAC Funds

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.



# MEMORANDUM

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

**FROM:** Bridget M. Rief – Vice President, Planning and Development (725.8371)

**SUBJECT: 2019-2025 CAPITAL IMPROVEMENT PROGRAM PUBLIC HEARING -  
ASSESSMENT OF ENVIRONMENTAL EFFECTS**

**DATE:** October 28, 2018

At the September 2018 Commission meeting, a public hearing related to the Assessment of Environmental Effects (AOEE) for the 2019-2025 MAC Capital Improvement Program (CIP) was authorized and the members of the Planning, Development and Environment Committee were appointed as the hearing officers. This hearing will take place at the November 5, 2018, Planning, Development and Environment Committee meeting.

The AOEE evaluates the cumulative environmental effects of the projects included in the 7-year CIP at each of the Commission's airports. The document has been available on MAC's website for public review since October 8, 2018. The website page where it is located is:

<http://www.metroairports.org/Airport-Authority/Metropolitan-Airports-Commission/Administration/Publications.aspx>

A copy of the AOEE document is also included with the Committee package.

# Metropolitan Airports Commission



## 2019–2025 Capital Improvement Program Assessment of Environmental Effects (AOEE)

Date: Published October 8, 2018





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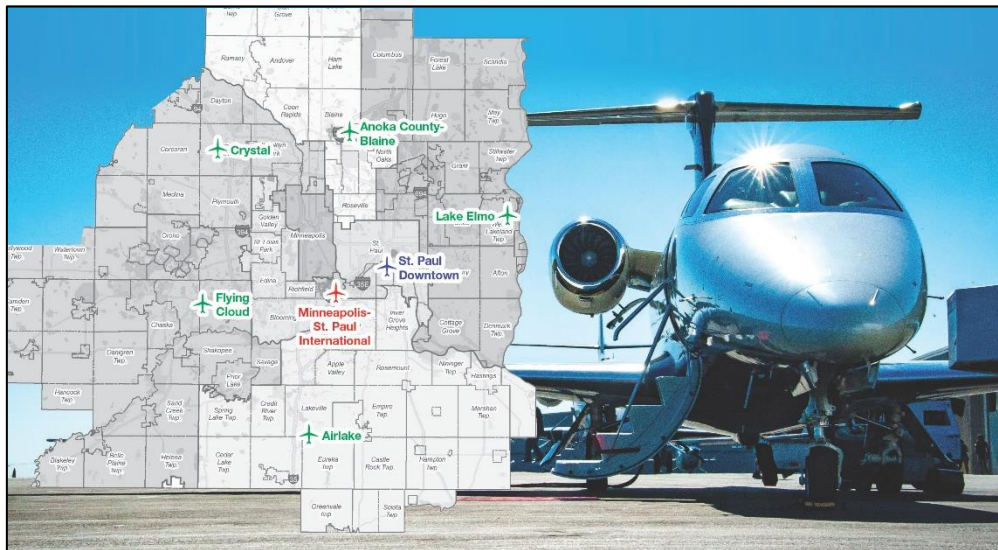
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## 1.0 INTRODUCTION

The Metropolitan Airports Commission (MAC) is a public corporation founded by the Minnesota Legislature in 1943 to promote aviation in Minnesota. The MAC oversees coordinated air service throughout the Twin Cities Metro Area through its system of seven airports, including the Minneapolis-St. Paul International Airport (MSP) and six reliever airports. MSP is a public use large hub international airport owned and operated by the MAC. MSP is located south of downtown Minneapolis near the confluence of the Minnesota and Mississippi Rivers and covers approximately 3,400 acres. MSP is served by two terminals: Terminal 1-Lindbergh (Terminal 1) and Terminal 2-Humphrey (Terminal 2). Terminal 1 is the larger of the two terminals and accounts for nearly 88% of passenger enplanements. In 2017 over 38 million passengers traveled through MSP, the highest total in the airport's history. This included approximately 1,100 operations (take-offs and landings) daily.

The MAC's six reliever airports play a vital role in both providing easy access to business and communities throughout the metropolitan area and offering an attractive alternative to MSP for private pilots.



The MAC System of Airports

For 75 years, the MAC has worked to promote safe, efficient, environmentally responsible air transportation services for the Minneapolis – St. Paul metropolitan area. In the process, our airports have been key economic drivers for the area economy, generating nearly \$16 billion in total economic output and supporting approximately 87,000 jobs.

Each year, the MAC prepares a seven-year Capital Improvement Program (CIP). A preliminary version of the CIP is adopted by the Commission in September. The purpose for providing the Commission with a preview of the CIP is twofold. First, it gives the Commission an opportunity to consider the projects proposed by MAC staff in the upcoming years. Second, it provides a list of projects that may be reviewed by the public as a part of this Assessment of Environmental Effects (AOEE) process.

Upon completion of this AOEE process, which includes a public hearing, the Commission will adopt a final version of the CIP in December.

On September 17, 2018, the MAC Commission adopted the Preliminary 2019–2025 CIP (shown in Appendix A). This AOEE report is prepared in accordance with the requirements of Minnesota Statutes 1986, Section 473.614, as amended in 1988 and 1996. It presents an assessment of the potential environmental effects of projects in the MAC preliminary seven-year CIP from 2019 to 2025 for each MAC-owned airport. Under Minnesota law, the MAC is required to “examine the cumulative environmental effects at each airport of projects at that airport (in the seven-year CIP), considered collectively.”



St. Paul Downtown Airport

Most of the projects in the CIP involve replacement and maintenance/upgrades of existing facilities and assets. Some projects involve primarily information technology (IT) upgrades, and others include rehabilitation and/or upgrades to tenant facilities. These projects will not affect use of the facilities and therefore, will not add to or subtract from, cumulative environmental effects.

Minnesota Statutes Section 473.614 also requires the preparation of an Environmental Assessment Worksheet (EAW) 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 first CIP calendar year (2019 for this AOEE);
2. The project is located at MSP and is anticipated to cost \$5 million or more, or the project is located at one of the Reliever Airports and estimated to cost \$2 million or more;
3. The project involves the construction of:
  - a. A new or expanded structure for handling passengers, cargo, vehicles or aircraft; or
  - b. A new runway or taxiway, or the extension of an existing runway or taxiway.

An Environmental Assessment Worksheet (EAW) or Environmental Impact Statement (EIS) has been prepared for all projects scheduled to be implemented in 2019 that meet the above three conditions in Minnesota Statutes Section 473.614 for a mandatory EAW.

This AOEE report analyzes each airport in the order in which the projects are presented in the CIP. Appendix A lists all of the projects included in the preliminary seven-year CIP (2019–2025). The notes in the table explain the type of work for each proposed project and why the work may or may not have a potential effect on the environment. Appendix B provides a description for each project included in the first two years (2019 and 2020) of the preliminary CIP. Appendix C includes a draft description for projects in years 2021 through 2025 that meet the above three conditions in Minnesota Statutes Section 473.614 for a mandatory EAW.

## 2.0 MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT (MSP)

New air service, larger planes and higher demand pushed passenger levels to a record high in 2017, with 38,034,341 total travelers flying to or from MSP, which is 1.4 percent more than in 2016. In 2017, airlines offered non-stop service to nearly 160 destinations from MSP: 131 domestic and 28 international.

MSP is situated approximately seven miles south of downtown Minneapolis, Minnesota and seven miles southwest of downtown St. Paul, Minnesota. MSP is not part of any city but is surrounded by Minneapolis, St. Paul and the suburban cities of Bloomington, Eagan, Mendota Heights, and Richfield.

The MSP airfield consists of four runways. Runway 12L-30R and Runway 17-35 are both 8,000 feet long. Runway 12R-30L is 10,000 feet long. And the crosswind Runway 4-22 is 11,000 feet long. There are multiple instrument approaches and an air traffic control tower.



MSP Concourse C Tram

### 2.1 MSP LONG-TERM COMPREHENSIVE PLAN STATUS

In July 2010, the MAC adopted the 2010-2030 Long Term Comprehensive Plan (LTCP) for MSP. The plan reviewed two alternatives: airlines remain at the terminals as they were currently operating; and airlines relocate, in which all non-Delta Sky Team airlines would eventually move to Terminal 2-Humphrey. The MSP 2030 LTCP concluded that landside and terminal improvements were needed to adequately serve the forecasted number of passengers over the course of the plan, including significant improvements to curbside, bag claim, gates, parking facilities and security. No major airfield improvements were identified based on operations forecasts or peak hour demand.

As expected, MSP has operated in the “Airlines Remain” scenario since 2010. MAC has been proceeding with the improvements needed to parking, bag claim, and other terminal upgrades. Since the completion of that plan in July 2010, continued up-gauging of aircraft and higher load factors have reduced the number of aircraft operations, which continues to support a determination that no major airfield improvements are required.

While Terminal 2 has expanded in recent years from 10 gates to 14, modifications to existing terminal space to accommodate aircraft up-gauging at Terminal 1 have reduced the number of gates at that facility from 117 to 104. Therefore, MSP is operating with fewer total aircraft gates than it has had at any time since 2005.

In 2010, at the request of the Metropolitan Council and the communities surrounding the airport, the MAC agreed to complete updates to the MSP LTCP every five years. In mid-2014, the MAC began the 2035 LTCP Update process with development of aircraft operations forecasts. The associated planning activities continued through much of 2015, with anticipated delivery of the updated LTCP to the Metropolitan Council in early 2016 for its Metropolitan Development Guide (Thrive 2040) and the Transportation Policy Plan (TPP) consistency review.

In 2015, the MAC and the Metropolitan Council, in conjunction with the MSP Noise Oversight Committee, agreed to defer completion of the update to the MSP LTCP based on communications between the MAC and the Federal Aviation Administration (FAA) regarding the FAA's non-intersecting Converging Runway Operations (CRO) mitigation activities. MSP air traffic control operates in compliance with FAA CRO requirements. The FAA continues to make progress on developing a more efficient long-term CRO solution for MSP, with anticipated resolution by the end of 2018. While many factors influence runway use and/or hourly operations, any modifications prompted by CRO solutions will be taken into account in the MSP LTCP 2020-2040 document.

In October 2017, the MAC, the Met Council, and the Noise Oversight Committee reaffirmed the 2015 agreement that the MAC should delay its update to the MSP LTCP until the FAA could finalize procedures for addressing CRO. The decision was made in an effort to be responsive to community stakeholders. In addition, the delayed update would allow for a LTCP with projected runway use assumptions and aircraft noise contours that reflect as close as possible final air traffic control procedures related to CRO requirements. The Met Council and the MAC also agreed that the 20-year planning horizon for the updated LTCP will be 2020-2040. The MAC is finalizing its timeline, but the majority of MSP LTCP work for the 2020-2040 (2040 LTCP) plan is anticipated to occur during 2019.

MAC will conduct an updated airfield capacity study as part of the 2040 LTCP to gain a fresh perspective on airfield performance using the latest operational procedures and modeling tools.

## **2.2 MSP ENVIRONMENTAL STUDIES**

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 a consequence on the environment that could result from the incremental potential effect from projects 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.

In September 2010, the MAC and the Federal Aviation Administration (FAA) began preparation of the MSP 2020 Improvements EA/EAW, which was a joint document satisfying both MEPA and NEPA requirements for the projects the MAC may implement at MSP through the year 2020 as outlined in the 2010 LTCP.

In March 2013, the FAA determined that the MSP 2020 Improvements EA/EAW was adequate under NEPA and issued a Finding of No Significant Impact (FONSI) and Record of Decision (ROD) for the projects analyzed in the document. In April 2013, the MAC concluded that the MSP 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 analyzed in the document.

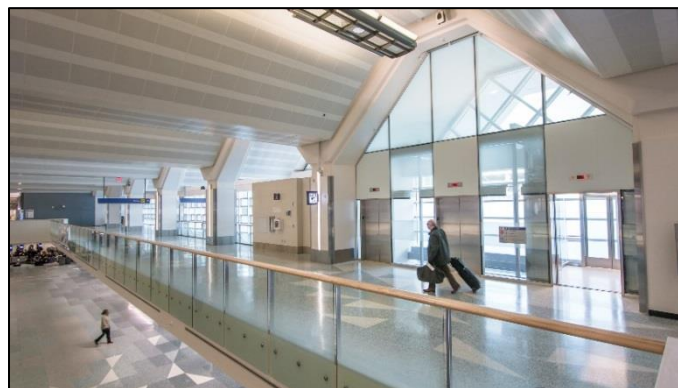
Projects listed in the year 2019 that require the preparation of an EAW that were included in the MSP 2020 Improvements EA/EAW review are shown in Table 2-1 on Page 6.

### **2.3 MSP PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET**

Of all the projects listed for the year 2019 at MSP, there are two that meet the criteria in Minnesota Statutes Section 473.614 for the preparation of a mandatory EAW. That is, the projects are scheduled for 2019, exceed \$5 million, and involve a new or expanded structure for handling passengers, cargo, vehicles or aircraft. See Table 2-1. The MSP 2020 Improvements EA/EAW, which the MAC completed in 2013, analyzes both projects.

#### Baggage Claim/Ticket Lobby Operational Improvements

The Terminal 1-Lindbergh Operational Improvements program, which began in 2016, continues in 2019 with ticket counter consolidations, airline ticket offices, centralized meet and greet areas, improved vestibules and access, new elevators and escalators, east mezzanine removal/reduction, curtain wall replacement, unclaimed baggage storage, baggage service offices, concessions (food & beverage and retail), improved lighting and sight lines, curbside lighting, and construction of new restrooms in order to allow future phases to demolish the existing old and outdated restrooms.



MSP Operational Improvements – New Elevators

#### Terminal 1-Lindbergh Parking Ramp - Parking Ramp Modifications

This project will modify parking levels in the red/blue parking ramps vacated by rental car agencies when they move to the new Terminal 1 silver parking ramp. This project will prepare the areas to accommodate public parking.





MSP Terminal 1 Silver Parking Ramp Rendering

Table 2-1  
 MSP Projects in the CIP that Require a Mandatory EAW

Project (All located at Terminal 1)	CIP Year Proposed	Approved EAW
<b>Baggage Claim/Ticket Lobby Operational Improvements</b>	<b>2019</b>	MSP 2020 Improvements EA/EAW
<b>T1-Lindbergh Parking Ramp Modifications</b>	<b>2019</b>	MSP 2020 Improvements EA/EAW
<b>Baggage Claim/Ticket Lobby Operational Improvements</b>	2020	MSP 2020 Improvements EA/EAW
<b>Baggage Handling System</b>	2020	MSP 2020 Improvements EA/EAW
<b>FIS Recheck Operational Improvements</b>	2020	MSP 2020 Improvements EA/EAW
<b>Concourse G Expansion and Delta Sky Club</b>	2020	To be completed in 2019
<b>Baggage Claim/Ticket Lobby Operational Improvements</b>	2021	MSP 2020 Improvements EA/EAW
<b>Lower Level Curbside Expansion</b>	2021	MSP 2020 Improvements EA/EAW
<b>D-Pod Outbound Baggage System</b>	2022	MSP 2020 Improvements EA/EAW

With one exception, all MSP projects in the 2019-2025 CIP that meet the requirements in Minnesota Statutes Section 473.614 for preparation of a mandatory EAW were analyzed in the MSP 2020 Improvements EA/EAW, which MAC completed in 2013. The exception is the newly proposed Concourse G Expansion and Delta Sky Club project, shown in the CIP in 2020. The MAC will prepare an EAW on the project in 2019 so that construction of the project may proceed in 2020.

One project proposed for 2019 has changed scope since the 2018-2024 version of the CIP. Last year's AOEE identified the "Taxiway C1 Construction" project as a project requiring environmental review because its estimated cost was listed at \$6 million and involved construction of a new taxiway connector extending from Taxiway D to Taxiway M. As it is now listed in the 2019-2025 CIP, the scope of the project has changed.

Based on updated information from the MSP air traffic controllers, the “Taxiway C1 Construction” project now involves the construction of only one short connector extending from Taxiway D to Taxiway C along with reconstruction of a portion of existing Taxiway D. The cost for the project is now \$4 million. Based on the modified scope and cost, the project no longer meets the criteria for a mandatory EAW.



Table 2-1 Project Locations at Terminal 1

## 2.4 MSP CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS

Under Minnesota Statutes Section 473.614, the MAC must examine the cumulative environmental effects of projects at each airport in the proposed CIP, considered collectively. Aside from those listed in Table 2-1, all other MSP projects listed in the CIP involve end-of-life replacement and maintenance/upgrades of existing MAC facilities and assets, information technology (IT) upgrades, residential home noise mitigation, or rehabilitation of tenant facilities. Many MSP projects in the capital program exceed the \$5 million threshold, but those listed in Table 2-1 meet the criteria for preparation of a mandatory EAW under Minnesota Statutes Section 473.614.

Although some of the MSP projects may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at MSP.

### 3.0 ST. PAUL DOWNTOWN AIRPORT (STP)

In the mid-20<sup>th</sup> century, St. Paul Downtown Airport (Holman Field) vied with Minneapolis' airport to become the area's primary air transportation center. Ultimately, the Minneapolis airport became what is now - the Minneapolis-St. Paul International Airport, and St. Paul Downtown became the metro area's primary facility for private business aviation.

St. Paul Downtown Airport is the only reliever airport in the MAC system with a runway longer than 5,000'. In fact, the airport has three runways: Runway 14-32 (6,491 feet long); Runway 13-31 (4,004 feet long), and Runway 9-27 (3,642 feet long). The airport has precision instrument approaches to Runways 14 and 32, non-precision instrument approaches to Runways 14, 31 and 32, and a published precision instrument approach procedure for helicopters.

Recent improvements at STP include modifications to the conjoined ends of Runway 14 and Runway 13 to physically separate pavements and enhance airfield safety. The MAC has also been making changes to the terminal building to support the development of a new full-service restaurant and an outdoor public airfield viewing space. The parking lot has been modernized to provide enough space for operations and to accommodate visitors to the facility.



St. Paul Downtown Airport

#### 3.1 STP LONG-TERM COMPREHENSIVE PLAN STATUS

In June 2010, the MAC adopted the 2030 Long-Term Comprehensive Plan for STP. Recommendations in the LTCP Update include:

- On-going pavement reconstruction and rehabilitation/maintenance;
- Continued discussions and planning for the on-going maintenance, training, personnel/resources, compensatory excavation monitoring, and permit requirements for the floodwall;
- Continued research for and development of parcels for revenue generation;
- Continued cooperation with the cities of St. Paul, South St. Paul and West St. Paul through the existing Downtown Airport Advisory Commission and on-going MAC/city staff interaction.

No major projects or improvements have been planned for STP aside from pavement reconstruction and upgrades to existing MAC-owned buildings.

The MAC is currently in the early stages of preparing a visioning study for the three largest Reliever Airports – St. Paul Downtown, Flying Cloud and Anoka County-Blaine Airport. The study is intended to review the airports as a system to define facility needs and gaps. Upon completion of that visioning study, the MAC will proceed with an update to the STP LTCP. It is anticipated the 20-year planning period will extend to 2040.

### 3.2 STP ENVIRONMENTAL STUDIES

No environmental reviews have been completed for projects at the St. Paul Downtown Airport since 2005 when the federal Environmental Assessment was completed for the airfield subdrain project that preceded the construction of the floodwall. Prior to that, in 2003, an EAW was completed for the floodwall.

### 3.3 STP PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET

No STP projects in the 2019-2025 Preliminary CIP meet the criteria defined in Minnesota Statutes Section 473.614 for preparation of an EAW.

### 3.4 STP CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS

Projects identified at STP in the preliminary 2019-2025 CIP include on-going improvements to the MAC-owned terminal building. The 2019 MAC Building Improvements project is intended to address exterior upgrades to building façade, along with renovations to an existing equipment storage building, an equipment maintenance building, and cold storage buildings.

The proposed STP Storm Sewer Improvements – Phase 2 project is intended to rehabilitate pavement and soils in the west building area along with replacement of end-of-life storm sewer pipe. Another 2019 project is planned to replace aging underground fuel storage tanks.

In 2020, preliminary projects include rehabilitation of portions of public airport service roads and annual airfield joint sealing/crack repairs. Looking longer term, the projects listed in the later years of the Preliminary CIP (2021-2025) include more rehabilitation projects, primarily for runways, taxiways, roadways and the terminal building. Proposed airfield lighting upgrades to LED fixtures are also contemplated.

The proposed projects mentioned in this section do not meet the threshold in Minnesota Statutes Section 473.614 for an EAW. Although some of the STP projects may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at STP.



St. Paul Downtown Airport Administration/Terminal Building

## 4.0 LAKE ELMO AIRPORT (21D)

An easy drive to the St. Paul business district or to scenic destinations along the St. Croix River, such as Stillwater, Minnesota and Hudson, Wisconsin, Lake Elmo Airport is conveniently located for both business and leisure travelers. The airport is served by a fixed base operator and an aircraft maintenance provider. Lake Elmo Airport has two runways. Runway 14-32 is 2,849 feet long, while Runway 4-22 measures 2,497 feet in length. There are two non-precision instrument approaches to the airport, which has no air traffic control tower.

Recent projects at the airport have included pavement rehabilitation and joint repairs. The underlying soils drain very poorly, so pavement may be subjected to significant freeze-thaw damage each year.



Images from Lake Elmo Airport

### 4.1 21D LONG-TERM COMPREHENSIVE PLAN STATUS

In September 2016, the MAC adopted the 2035 LTCP. Similar to previous plans, the LTCP objectives include improving safety in compliance with FAA guidelines, providing appropriate facilities for the aircraft types currently utilizing the airport, and delineating the future footprint of the airport.

### 4.2 21D ENVIRONMENTAL STUDIES

The MAC is currently in the process of finalizing a federal Environmental Assessment (EA)/state Environmental Assessment Worksheet (EAW) document for a proposed project at the airport. As outlined in the 2035 LTCP, the proposed project components include construction of a new 3,500-foot primary runway that will be parallel to the existing Runway 14-32. The existing runway will then become part of a parallel taxiway. Other airfield modifications will be made for connection to the new runway, along with an extension of crosswind Runway 4-22 to 2,750 feet. Realignment of 30<sup>th</sup> Street North is also a part of the proposed project.

The EA/EAW is a joint document prepared in accordance with the Federal Aviation Administration (FAA) policies and procedures detailed in FAA Order 1050.1F under the National Environmental Policy Act

(NEPA). In addition to addressing federal environmental review requirements, the document addresses state requirements under the Minnesota Environmental Policy Act (MEPA). The FAA issued a Finding of No Significant Impact (FONSI) and Record of Decision (ROD) for the project on August 31, 2018, finding the federal EA satisfies NEPA. As the Responsible Government Unit (RGU) for the project under MEPA, the MAC is scheduled to consider the EAW at its full Commission meeting on October 22, 2018.

The EA/EAW and related documents may be found on the MAC website:

<https://metroairports.org/General-Aviation/Lake-Elmo-Environmental-Assessment/Documents-and-Links.aspx>.

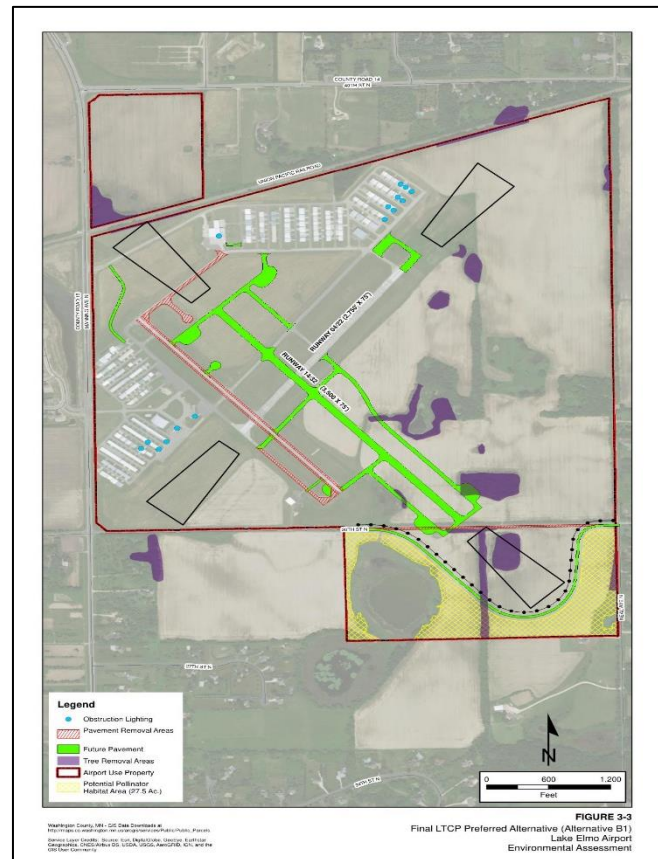
#### 4.3 21D PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET

The MAC plans to move forward with construction of the Runway 14-32 Relocation/Extension and Associated Improvements project immediately upon approval of the state EAW. The first phase of the program is scheduled for 2019, and is planned to be phased over three years. Components of the proposed project are outlined in Table 4-1 on Page 12.

If for any reason the MAC action on the state EAW for the proposed project is deferred beyond October 2018, MAC staff will describe any schedule changes for the proposed project at the November 4, 2018 public hearing for this AOEE document (more information is located in the Next Steps chapter).

For the Runway 14-32 Relocation/Extension and Associated Improvements project, the EA/EAW process noted several environmental categories where *de minimis*, or “insignificant”, impacts may occur. Therefore, the EA/EAW concludes, and the FAA has found, that no significant impacts are anticipated from the proposed project. The environmental categories with *de minimis* effects include: air quality; biological resources (fish, wildlife and plants); farmlands; land use; construction equipment noise; visual effects; and water resources (wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers).

Based on the EA/EAW analysis, the FAA determined that no single impact, even when considered with past or future actions, represents a substantial impact that cannot be mitigated. The EA/EAW also finds, and the FAA concluded, that there are no significant or cumulative potential effects associated with the Runway 14-32 Relocation/Extension and Associated Improvements project.



Runway 14-32 Relocation/Extension and Associated Improvements

Table 4-1  
 21D Projects in the CIP that Require a Mandatory EAW

Project	CIP Year Proposed	Pending EAW
<b>Runway 14-32 Replacement</b>	<b>2019</b>	Lake Elmo Runway 14-32 Relocation/Extension and Associated Projects (pending MAC action on 10/22/18)
<b>Runway 14-32 Replacement</b>	2020	Lake Elmo Runway 14-32 Relocation/Extension and Associated Projects (pending MAC action on 10/22/18)
<b>Airfield Modifications</b>	2020	Lake Elmo Runway 14-32 Relocation/Extension and Associated Projects (pending MAC action on 10/22/18)
<b>Runway 14-32 Replacement</b>	2021	Lake Elmo Runway 14-32 Relocation/Extension and Associated Projects (pending MAC action on 10/22/18)
<b>Runway 4-22 Rehabilitation</b>	2021	Lake Elmo Runway 14-32 Relocation/Extension and Associated Projects (pending MAC action on 10/22/18)

#### 4.4 21D CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS

Under Minnesota Statutes Section 473.614, the MAC must examine the cumulative environmental effects of projects at each airport in the proposed CIP, considered collectively. Aside from those project components listed in Table 4-1, for which a completed EA/EAW is pending final consideration by the full MAC Commission on October 22, 2018, all other Lake Elmo projects listed in the CIP involve end-of-life replacement and maintenance/upgrades of existing MAC facilities and assets which do not meet all three criteria for preparation of a mandatory EAW under Minnesota Statutes Section 473.614.

Although some of the Lake Elmo projects may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at Lake Elmo.

## 5.0 AIRLAKE AIRPORT (LVN)

Located south of the Twin Cities near Lakeville and Farmington, Minnesota, Airlake Airport has a single 4,098-foot long Runway 12-30 and full length parallel taxiway. The airport offers a precision instrument approach to Runway 30 and a non-precision approach to Runway 12. The airport has no air traffic control tower.

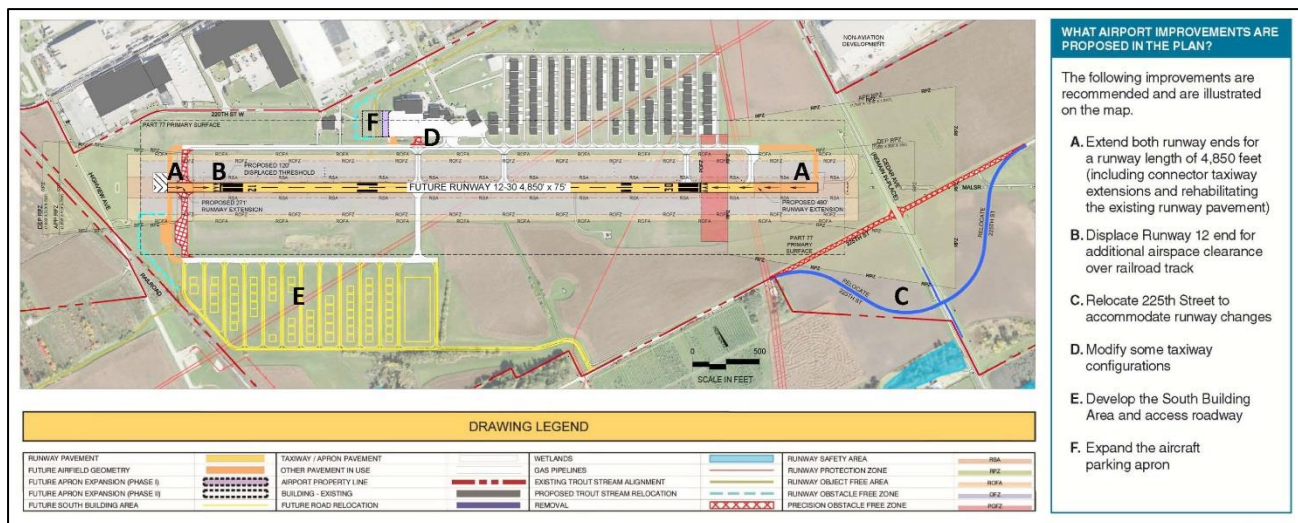
Airlake Airport is located near one of Minnesota's largest industrial parks, making it ideally suited for business-related aviation needs as well as recreational use.



Images from Airlake Airport

### 5.1 LVN LONG-TERM COMPREHENSIVE PLAN STATUS

In April 2018, the MAC adopted the Airlake Airport 2035 Long-Term Comprehensive Plan (LTCP). The goals of the plan include better accommodating business aircraft need by maximizing the airfield's operational capabilities and existing property footprint; maintaining or improving the Runway Protection Zone (RPZ) land use compatibility; mitigating existing issues with airspace penetrations to the extent practical; and updating the taxiway layout to reflect current industry best practices and enhance safety.



Airlake Airport LTCP Preferred Alternative



## 5.2 LVN ENVIRONMENTAL STUDIES

The Airlake 2035 LTCP proposes completion of the final phase of the south building area alleyways, access road and associated utilities (in 2019), as well as an extension to Runway 12-30 (currently envisioned in 2022). The MAC prepared an EAW for the south hangar area in January 1999. The EAW addressed storm water runoff and designated trout stream tributary impacts. In 2001, the MAC completed initial grading for the building area (including subgrade placement for a partial parallel taxiway, all alleyways and the access road), with construction of a storm water detention pond to capture runoff before it enters the designated trout stream. The MAC also relocated a portion of the trout stream under a permit issued by the Minnesota Department of Natural Resources (DNR) as part of the project. In 2003, the MAC paved the partial parallel taxiway on the south side of Runway 12-30 and two connectors to provide respite areas for pilots prior to takeoff. The work did not include paving any other portions of the hangar area. The next phase planned for 2019 includes construction of sanitary sewer and water mains and utility services to the south building area, including paving of associated taxilanes and the south entrance road.

The proposed extension of Runway 12-30 and any rehabilitation needed for the existing portion of the runway pavement is currently programmed for 2022. The MAC will have to identify funding sources for implementation of these proposed improvements and will not proceed with work until the necessary environmental review is completed. The MAC anticipates preparing a joint federal EA/state EAW before the FAA approves and the MAC undertakes the project.



Airlake Airport

### 5.3 LVN PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET

There are currently no 2019 projects at Airlake shown in the MAC 2019-2025 Preliminary CIP that meet the criteria defined in Minnesota Statutes Section 473.614. There are projects currently shown in 2022 that may meet the criteria. See Table 5-1. The MAC and the FAA will jointly determine the scope of environmental review necessary before approving the project. The MAC anticipates preparing a joint federal EA/state EAW for the projects meeting the criteria in Minnesota Statutes Section 473.614.

Table 5-1  
 Airlake Projects in the CIP that Require a Mandatory EAW

Project	CIP Year Proposed	EAW
<b>Runway 12-30 Improvements</b>	2022	To be determined
<b>Existing Runway 14-32 Reconstruction</b>	2022	To be determined

### 5.4 LVN CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS

The largest project scheduled for 2019 at the Airlake Airport includes the construction of sanitary sewer and water mains and utility services to the south building area, including paving of associated taxilanes and the south entrance road. This building area was prepped and graded nearly twenty years ago, but the MAC never began construction because hangar demand has not dictated a need for it. Now, there is interest in building new hangars at the airport in the south building area, and therefore, the MAC is proceeding with a project in 2019.

Other projects included in the CIP for 2019 include improvements to the existing MAC maintenance building, construction of an airplane wash pad, and construction of a tenant-use restroom facility on the north side of the airport.

Additional future projects envisioned for the Airlake Airport include installation of LED airfield lighting fixtures and continuation of the on-going joint and crack repair program. In addition, the MAC may replace underground fuel storage tanks.

The proposed projects mentioned in this section do not meet the threshold in Minnesota Statutes Section 473.614 for an EAW. Although some of the projects may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at Airlake Airport.

## 6.0 FLYING CLOUD AIRPORT (FCM)

The Flying Cloud Airport is situated in the southwestern corner of the Twin Cities metropolitan area, in the community of Eden Prairie. Popular as a home base for corporate business jets and turbo-props, Flying Cloud has a strong reputation for serving the needs of busy corporate executives and their flight crews.

Airport improvements include the 2008 extension of Runway 10L-28R to 3,900 feet and the 2009 extension of Runway 10R-28L to 5,000 feet. Other improvements include lengthening the taxiway system and developing a new hangar area on the south side of the facility. The north-south runway, 18-36, is 2,691 feet long.

One of the busiest airports in the MAC reliever system, Flying Cloud has a FAA-operated control tower and an instrument landing system. A precision instrument approach is available to Runway 10R and non-precision instrument approaches are available to runways 10R, 28L, 28R and 36. The airport also has a published precision instrument approach procedure for helicopters.

### 6.1 FCM LONG-TERM COMPREHENSIVE PLAN STATUS

In October 2010, the MAC adopted the Flying Cloud Airport Long-Term Comprehensive Plan Update. Based on the forecasts and existing airfield configuration, no airside or landside expansions were proposed in the LTCP Update. Recommendations in the LTCP Update include:

- That Runway 18-36 be shifted north and lengthened to 2,800 feet to create a compliant runway safety and object free areas, and better serve aircraft using the runway especially during critical cross-wind operations;
- Constructing a north perimeter road as a part of the Runway 18-36 improvements;
- Continuing on-going pavement reconstruction, rehabilitation, and maintenance, including reconstruction of the south end of Runway 18-36;
- Removing obstructions in the approach area to Runway 18 (trees in the runway protection zone);
- Continue efforts to achieve Taxiway Alpha object free area clearance;
- Continue discussions with the FAA relative to the ultimate relocation of the Air Traffic Control Tower to a location in the new south hangar area;
- Continue research for and development of parcels for revenue generation; and
- Continue cooperative efforts with the City of Eden Prairie through the existing MAC/city agreements, the Flying Cloud Airport Advisory Commission and on-going MAC/city staff interaction.



Flying Cloud Airport

Many of these LTCP projects were implemented, and efforts related to clearing the Taxiway A object free area continue. In addition, MAC and the City of Eden Prairie have worked jointly to zone airport parcels for non-aeronautical revenue generation/development and maintain on-going communication by using the airport advisory group, joint airport zoning board meetings, and other informal discussions.

When MAC shifted Runway 18-36 north to create compliant runway safety areas, the length was not extended to 2,800 feet as recommended in the LTCP due to existing obstructions north of Pioneer Trail. MAC did construct the north perimeter road, and completed the required trees removals.

No major projects or improvements have been planned for FCM aside from pavement reconstruction and upgrades to existing MAC-owned buildings or assets.

The MAC is currently in the early stages of preparing a visioning study for the three largest Reliever Airports – St. Paul Downtown, Flying Cloud and Anoka County-Blaine Airport. The study is intended to review the airports as a system to define facility needs and gaps. Upon completion of that visioning study, the MAC will proceed with an update to the FCM LTCP. It is anticipated the 20-year planning period will extend to 2040.

## 6.2 FCM ENVIRONMENTAL STUDIES

The most recent environmental review for FCM was completed for the extension to the south parallel runway from 3,900 feet to 5,000, extension of the north parallel runway from 3,600 feet to 3,900 feet, and construction of a new south building area. The MAC and the FAA completed the Final Environmental Impact Statement (FEIS) for the proposed improvements at the Flying Cloud Airport in 2004. The FEIS was a joint state and federal document that included a Section 4(f) federal review. As the Responsible Governmental Unit (RGU) for the project under MEPA, MAC was responsible for the State EIS. However, at MAC's request, the Environmental Quality Board (EQB) agreed to be the RGU for the Determination of Adequacy of the Final EIS for the State of Minnesota. The EQB issued its Determination of Adequacy for the FEIS in February 2006. The FAA, responsible for the Federal EIS under NEPA, issued a Record of Decision in May 2008 for the document and Section 4(f) review.



Images from Flying Cloud Airport

### **6.3 FCM PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET**

No projects in the 2019-2025 Preliminary CIP at FCM meet the criteria defined in Minnesota Statutes Section 473.614.

### **6.4 FCM CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS**

Projects proposed at Flying Cloud do not include any major improvements. In 2019, taxiway pavement rehabilitation is planned along with improvements to an existing hangar/office building that MAC recently acquired from an airfield tenant. Future projects include more pavement reconstruction, underground fuel storage tank replacement, upgrades to other existing MAC-owned buildings, access road improvements and electrical vault modifications. Although some of the projects at FCM may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at FCM.

## 7.0 CRYSTAL AIRPORT (MIC)

Named after one of the cities in which it is located, Crystal Airport also overlaps boundaries with Brooklyn Park and Brooklyn Center. The airport currently has three paved and one turf runway and two non-precision instrument approaches. Runway 14L-32R is 3,267 feet long; Runway 14R-32L is 3,266 feet long; and Runway 6L-24R is 2,500 feet long. Closed during the winter months, turf Runway 6R-24L is 2,123 feet long. The airport also has a FAA-operated air traffic control tower.

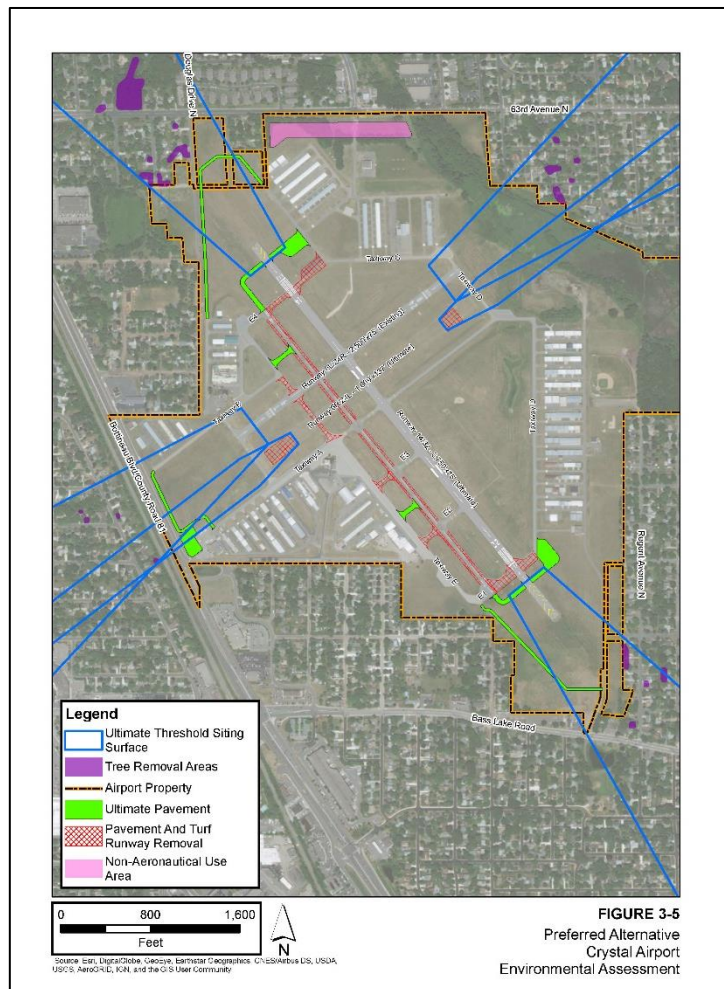
### 7.1 MIC LONG-TERM COMPREHENSIVE PLAN STATUS

In October 2017, the MAC adopted the 2035 Crystal Airport Long-Term Comprehensive Plan (LTCP). The proposed project includes converting a portion of existing blast pad pavement on each end of Runway 14L-32R to usable runway length, bringing the total length from 3,267 feet to 3,750 feet. The parallel Runway 14R-32L will be decommissioned and reconstructed as a taxiway. All associated electrical runway and taxiway lighting work will be included along with taxiway reconfiguration to simplify airfield geometry. Also proposed is shortening of the existing turf runway to reduce the number of runway crossings.

### 7.2 MIC ENVIRONMENTAL STUDIES

Based on the recommendations in the 2035 LTCP, the MAC has embarked on a federal Environmental Assessment (EA)/ state Environmental Assessment Worksheet (EAW) for the proposed improvements. The EA/EAW is a joint document prepared in accordance with the FAA policies and procedures detailed in FAA Order 1050.1F for compliance with NEPA. In addition to addressing federal environmental review requirements, the document addresses state review requirements in compliance with MEPA.

The EA/EAW process is anticipated to continue into 2019. In the 2019-2025 Preliminary CIP, the Runway 14R-32L and Taxiway E Modifications (converting that runway into a taxiway) was shown as a 2019 project. Because the environmental work will continue into 2019, this project will be moved to a 2020 project in the December 2018 final version of the 2019-2025 CIP.



Crystal Airport Runway 14R-32L and Taxiway E Modifications

### 7.3 MIC PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET

Once the Runway 14-32 Modifications project shifts to 2020 in the December 2018 version of the CIP, there will be no 2019 projects shown in the MAC 2019-2025 Preliminary CIP that meet the criteria defined in Minnesota Statutes Section 473.614. Table 7-1 lists the single MIC project in the preliminary CIP that meets the criteria. Construction will not begin on the runway and taxiway improvements project until the environmental review process under NEPA and MEPA is completed.

Table 7-1  
 Crystal Projects in the CIP that Require a Mandatory EAW

Project	CIP Year Proposed	EAW
<b>Runway 14R-32L and Taxiway E Modifications</b>	2020 (after project year shifts from 2019)	Underway

### 7.4 MIC CUMULATIVE POTENTIAL FOR ENVIRONMENTAL EFFECTS

Projects at the Crystal Airport do not include any major improvements aside from the one listed in Table 7-1 above. In 2019, taxiway pavement rehabilitation is planned, along with 2020 improvements to existing MAC-owned buildings, pavement rehabilitation and lighting upgrades. Future projects include more pavement reconstruction and underground fuel storage tank replacement. Although some of the projects at MIC may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at MIC.



Images from Crystal Airport

## 8.0 ANOKA COUNTY–BLAINE AIRPORT (ANE)

Situated in the north metro near the National Sports Center, Anoka County-Blaine Airport (ANE) is a 1,800-acre airport that serves the most diverse aircraft mix in the MAC reliever system. Runway 9-27 is 5,000 feet long, and Runway 18-36 is 4,855 feet long. It has an instrument landing system (ILS), and multiple hangar areas. The airport has a MAC-owned, non-federal air traffic control tower.

### 8.1 ANE LONG-TERM COMPREHENSIVE PLAN STATUS

In June 2010, the Commission adopted the Anoka County-Blaine Airport Long-Term Comprehensive Plan Update. Based on the forecasts and existing airfield configuration, the MAC did not propose any airside or landside expansions in the LTCP Update. Recommendations in the LTCP Update include:

- The Xylite Street relocation;
- Improvements to the existing security gate system;
- An extension to Taxiway Charlie to the south;
- On-going pavement reconstruction and rehabilitation/maintenance;
- Continued research for and development of parcels for revenue generation;
- Continued cooperation with the cities surrounding the airport through the existing Anoka County Airport Advisory Commission and on-going MAC/City staff interaction.



Anoka County-Blaine Airport

No major projects or improvements have been planned for ANE aside from pavement reconstruction and upgrades to existing MAC-owned buildings or assets.

The MAC is currently in the early stages of preparing a visioning study for the three largest Reliever Airports – St. Paul Downtown, Flying Cloud and Anoka County-Blaine Airport. The study is intended to review the airports as a system to define facility needs and gaps. Upon completion of that visioning study, the MAC will proceed with an update to the ANE LTCP. It is anticipated the 20-year planning period will extend to 2040.

### 8.2 ANE ENVIRONMENTAL STUDIES

Prior to the 2006 extension of Runway 9-27 to 5,000 feet, MAC and the FAA completed a joint environmental review document combining a federal environmental assessment (EA) and a state environmental impact statement (EIS). The EA/EIS included review for the extension of Runway 9-27 and its corresponding taxiway from 4,000 to 5,000 feet, installation of an instrument approach system, construction of two building areas (northwest and east expansion), relocation of Xylite Street, and construction of the National Youth Golf Center. All of these improvements are complete except for the Xylite Street relocation and the east building area expansion.

### 8.3 ANE PROJECTS REQUIRING PREPARATION OF AN ENVIRONMENTAL ASSESSMENT WORKSHEET

No projects in the 2019-2025 Preliminary CIP at ANE meet the criteria defined in Minnesota Statutes Section 473.614.



#### 8.4 ANE CUMULATIVE POTENTIAL ENVIRONMENTAL EFFECTS

Projects included for 2019 include reconstruction of an interior airport service road, replacement of existing underground fuel tanks, and obstruction removals. Other future projects in the 2019-2025 CIP include additional pavement rehabilitation, equipment upgrades for the MAC-owned air traffic control tower facility, and miscellaneous upgrades to MAC-owned buildings and assets. Although some of the projects at ANE may have temporary impacts during construction, the MAC will use mitigation measures during construction to minimize potential adverse effects such as noise, dust, and erosion. The environmental effects of construction are temporary, will be minimized using typical mitigation measures and best management practices, and do not constitute long-term cumulative potential effects when combined with other projects at ANE.



Images from Anoka County-Blaine Airport

## 9.0 NEXT STEPS

This report is being made available to the public for review and comment. The comment period will run from October 8, 2018 through November 7, 2018. Comments may be submitted in writing addressed to:

Ms. Jenn Felger  
Planning and Environment Coordinator  
Metropolitan Airports Commission  
6040 28<sup>th</sup> Avenue South  
Minneapolis, MN 55450  
Jenn.felger@mspmac.org

A public hearing is scheduled as part of the regular meeting on the MAC Planning Development and Environment (PD&E) Committee on November 5, 2018 at 10:30 a.m. Commission board and committee meetings are held on the secure side of Minneapolis-St. Paul International Airport's Terminal 1-Lindbergh. Be sure to give yourself time to park and be screened prior to the meeting.

Follow these instructions to attend the MAC Public Hearing:

- Park in Daily Parking at Terminal 1. Please pull a ticket and bring it with you to have it validated at the meeting to avoid parking fees.
- Present a government-issued photo ID (driver's license) to the personnel at the Information Booth on Level T. They will prepare a security pass for you and direct you to the Ticketing Level.
- Use the south security checkpoint to pass through security. You will be asked to show your ID and security pass at that time.
- Once through security, proceed to your right. Once inside the airport mall, look for the staircase/elevator to the left of the entrance to Concourse F.

The board meetings take place at the MSP Airport Conference Center on the Mezzanine Level above the Delta Air Lines Sky Club. Use the stairs or elevator to go up one level. For more information, call **612-726-5555**.

Upon completion of the AOEE process, MAC staff will finalize the 2019-2025 Capital Improvement Program (CIP) and present it to the full Commission for adoption during the month of December, 2018. The December PD&E Committee meeting, scheduled for December 3, 2018, 10:30 a.m., will include a hearing officer's report and responses to any comments received during the AOEE public comment period.

## **10.0 APPENDICES**

**10.1 APPENDIX A – MAC PRELIMINARY 2019-2025 CIP LISTING**

**10.2 APPENDIX B – DESCRIPTIONS FOR 2019 AND 2020 PROPOSED PROJECTS**

**10.3 APPENDIX C – DRAFT DESCRIPTIONS FOR 2021-2025 PROJECTS THAT MEET CRITERIA DEFINED IN MINNESOTA STATUTE SECTION 473.614**

**10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing**

NOTES		2019	2020	2021	2022	2023	2024	2025
	<b>MSP END OF LIFE/REPLACEMENT PROJECTS</b>							
	<b>10 - Terminal 1-Lindbergh</b>							
4	Passenger Boarding Bridge Replacements	\$7,000,000	\$7,000,000	\$5,000,000	\$4,000,000	\$4,000,000	\$4,000,000	\$4,000,000
5	Recarpeting Program					\$7,000,000	\$7,000,000	\$7,000,000
4	Terminal 1-Lindbergh Tug Doors Replacement	\$600,000						
2	Tram Systems Retrofit and Equipment	\$1,500,000	\$1,750,000					
5	TSA Recapitalization	\$12,000,000						
	<b>13 - Energy Management Center</b>							
3	Variable Air Volume (VAV) Box Replacement			\$750,000	\$750,000	\$750,000	\$750,000	
	<b>21 - Field and Runway</b>							
2	Runway 12L-30R Bituminous Shoulder Reconstruction				\$7,000,000			
2	Runway 12R-30L Bituminous Shoulder Reconstruction			\$5,000,000				
2	Runway 12R-30L Tunnel Storm Sewer Reconstruction		\$900,000					
2	Sanitary Sewer Replacement Taxiway R		\$3,300,000					
4	Snow Melter Upgrades/Modifications	\$750,000						
2	Taxiway A/B Pavement Reconstruction							\$6,000,000
2	Taxiway D Reconstruction		\$12,000,000					
2	Terminal 1-Lindbergh Apron Pavement Reconstruction			\$10,500,000	\$10,500,000	\$10,500,000	\$10,500,000	\$10,000,000
	<b>26 - Terminal Roads/Landside</b>							
2	Lower Level Roadway Rehabilitation			\$1,100,000				
2	Upper Level Roadway Electrical System Rehabilitation			\$1,000,000				
2	Upper Level Roadway Rehabilitation			\$2,000,000				
2	UPS Loop Pavement Reconstruction		\$1,600,000					
4	Variable Message Signs Replacement, Phase 3		\$1,600,000					
	<b>36 - Terminal 2-Humphrey</b>							
5	Public Walk Aisle Terrazzo Floor Installation	\$1,700,000						
5	Terminal 2 Recarpeting Program			\$500,000	\$500,000	\$500,000	\$500,000	
	<b>39 - Public Areas/Roads</b>							
2	28th Avenue South Reconstruction							\$2,270,000
2	28th Avenue Watermain Replacement	\$1,300,000						
2	East 62nd Street Reconstruction					\$2,400,000		
	<b>66 - Fire</b>							
6	MSP Campus Fire Alarm System Transition	\$1,000,000	\$1,000,000					
	<b>MSP End of Life/Replacement Projects Total</b>	<b>\$25,850,000</b>	<b>\$29,150,000</b>	<b>\$25,850,000</b>	<b>\$22,750,000</b>	<b>\$25,150,000</b>	<b>\$22,750,000</b>	<b>\$29,270,000</b>

- NOTES:
1. A project that has the potential for substantial environmental effects.
  2. A reconstruction, rehabilitation, repair or replacement that does not physically alter the original size (an EAW or EIS is not required).
  3. An electrical or mechanical device that monitors, indicates or controls existing conditions (an EAW or EIS is not required).
  4. An electrical, mechanical or structural device and/or modification of an existing structure that does not significantly increase size or passenger capacity (an EAW or EIS is not required).
  5. A project that consists of safety or security enhancements, facility maintenance, or facility upgrades (an EAW or EIS is not required).
  6. A new, replacement or expansion project that does not have substantial effect (an EAW or EIS is not required).
  7. Consultant fees only for planning, design, or environmental work.
  8. Residential noise mitigation efforts that are designed to alleviate the impact of aircraft noise (an EAW or EIS is not required).
  9. Projects associated with the Airport Foundation art program (an EAW or EIS is not required).
  10. Projects involving the demolition of existing buildings (an EAW or EIS is not required).

10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES		2019	2020	2021	2022	2023	2024	2025
	<b>MSP IT PROJECTS</b>							
	<b>10 - Terminal 1-Lindbergh</b>							
4	Intelligent Monitoring and Control Systems (IMACS)	\$1,500,000	\$1,500,000	\$1,500,000				
4	Interactive Digital Directory Upgrade	\$150,000						
4	IT Miscellaneous Modifications	\$8,400,000	\$5,500,000	\$9,000,000	\$10,500,000	\$10,000,000	\$10,000,000	
5	Telecom Room Equipment Continuity (TREC)	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000			
	63 - Police							
5	Card Access Modifications	\$2,000,000	\$3,500,000					
	<b>MSP IT Projects Total</b>	<b>\$13,550,000</b>	<b>\$12,000,000</b>	<b>\$12,000,000</b>	<b>\$12,000,000</b>	<b>\$10,000,000</b>	<b>\$10,000,000</b>	
	<b>MSP LONG TERM COMPREHENSIVE PLAN PROJECTS</b>							
	<b>10 - Terminal 1-Lindbergh</b>							
2	Armed Forces Service Center Relocation	\$1,100,000						
2	Automated Security Lanes (ASLs)	\$2,000,000	\$2,000,000	\$4,000,000				
1	Baggage Claim/Ticket Lobby Operational Improvements	\$98,000,000	\$61,900,000	\$32,500,000				
1	Baggage Handling System		\$32,000,000					
2	Checkpoint Expansion		\$5,800,000				\$11,000,000	
1	D-Pod Outbound Baggage System				\$5,000,000			
1	FIS Recheck Operational Improvements		\$8,400,000					
1	Lower Level Curbside Expansion			\$12,000,000				
7	MSP Long Term Comp Plan	\$2,200,000						
5	Unstaffed Exit Lanes - North Exit						\$2,500,000	
5	Valet Parking Lobby and Restroom Upgrade	\$5,000,000						
	<b>21 - Field and Runway</b>							
6	Taxiway C1 Construction	\$4,000,000						
	<b>31 - Parking</b>							
1	Terminal 1-Lindbergh Parking Ramp - Parking Ramp Modifications	\$17,000,000						
	<b>36 - Terminal 2-Humphrey</b>							
2	Terminal 2-Humphrey Automated Security Lanes (ASLs)	\$3,000,000	\$3,000,000					
4	Terminal 2-Humphrey FIS Baggage Claim Improvements		\$1,000,000					
7	Terminal 2-Humphrey North Gate Expansion Design Fees					\$5,000,000		
	<b>MSP Long Term Comprehensive Plan Projects Total</b>	<b>\$132,300,000</b>	<b>\$114,100,000</b>	<b>\$48,500,000</b>	<b>\$5,000,000</b>	<b>\$5,000,000</b>	<b>\$13,500,000</b>	

- NOTES:
1. A project that has the potential for substantial environmental effects.
  2. A reconstruction, rehabilitation, repair or replacement that does not physically alter the original size (an EAW or EIS is not required).
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  5. A project that consists of safety or security enhancements, facility maintenance, or facility upgrades (an EAW or EIS is not required).
  6. A new, replacement or expansion project that does not have substantial effect (an EAW or EIS is not required).
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  8. Residential noise mitigation efforts that are designed to alleviate the impact of aircraft noise (an EAW or EIS is not required).
  9. Projects associated with the Airport Foundation art program (an EAW or EIS is not required).
  10. Projects involving the demolition of existing buildings (an EAW or EIS is not required).

10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES		2019	2020	2021	2022	2023	2024	2025
	<b>MSP MAINTENANCE/FACILITY UPGRADE PROJECTS</b>							
	<b>10 - Terminal 1-Lindbergh</b>							
5	ADO Office Expansion	\$750,000						
9	Art Display Areas	\$500,000	\$250,000	\$250,000	\$250,000			
9	Arts Master Plan	\$808,000	\$1,155,000	\$155,000	\$760,000	\$665,000		
4	Concourse D HVAC Upgrade	\$1,800,000						
4	Concourse G Moving Walks		\$2,500,000		\$2,500,000			
2	Folded Plate Repairs		\$8,900,000	\$8,900,000	\$8,900,000	\$8,900,000		
4	Lighting Infrastructure Technology and Equipment (LITE)	\$1,500,000	\$1,500,000	\$1,500,000	\$2,250,000	\$2,500,000		
2	Observation Deck Improvements		\$1,600,000					
5	Restroom Upgrade Program	\$500,000		\$2,000,000	\$2,000,000	\$2,000,000	\$2,000,000	
6	Terminal 1-Lindbergh Employee Breakroom	\$250,000						
5	Terminal 1-Lindbergh Mechanical Room C-1043		\$5,500,000					
5	Terminal 1-Lindbergh Public Walk Aisle Terrazzo Floor Installation			\$4,400,000	\$4,400,000	\$4,500,000		
4	Way-Finding Sign Backlighting Replacement		\$1,600,000		\$1,600,000			
	<b>13 - Energy Management Center</b>							
4	Air Handling Unit Safety Upgrades		\$550,000					
4	Concourse G Energy Efficiency Projects		\$2,000,000					
4	Energy Savings Program		\$2,000,000		\$2,000,000		\$2,000,000	
4	Indoor Air Quality Monitoring		\$660,000					
4	LED Lighting Conversion in Valet		\$500,000					
4	Victaulic Piping Replacement		\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000	
	<b>21 - Field and Runway</b>							
2	Establish Taxiway J	\$200,000						
5	Perimeter Gate Security Improvements		\$3,000,000		\$5,500,000			
4	Runway 4-22 Taxiway Lighting System	\$3,500,000						
4	Runway LED Lighting Upgrade		\$1,000,000	\$1,500,000	\$1,700,000	\$2,650,000		
4	Taxiway T Centerline Lights			\$600,000				
4	Taxiways Bravo & Quebec Centerline Lights	\$6,800,000						
2	Terminal 2-Humphrey Glycol Lift Station/forcemain			\$1,100,000				

- NOTES:
1. A project that has the potential for substantial environmental effects.
  2. A reconstruction, rehabilitation, repair or replacement that does not physically alter the original size (an EAW or EIS is not required).
  3. An electrical or mechanical device that monitors, indicates or controls existing conditions (an EAW or EIS is not required).
  4. An electrical, mechanical or structural device and/or modification of an existing structure that does not significantly increase size or passenger capacity (an EAW or EIS is not required).
  5. A project that consists of safety or security enhancements, facility maintenance, or facility upgrades (an EAW or EIS is not required).
  6. A new, replacement or expansion project that does not have substantial effect (an EAW or EIS is not required).
  7. Consultant fees only for planning, design, or environmental work.
  8. Residential noise mitigation efforts that are designed to alleviate the impact of aircraft noise (an EAW or EIS is not required).
  9. Projects associated with the Airport Foundation art program (an EAW or EIS is not required).
  10. Projects involving the demolition of existing buildings (an EAW or EIS is not required).

10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES	2019	2020	2021	2022	2023	2024	2025
<b>MSP MAINTENANCE/FACILITY UPGRADE PROJECTS, continued</b>							
<b>31 - Parking</b>							
2	Parking Ramp Railing Refinishing		\$1,000,000	\$1,000,000			
<b>36 - Terminal 2-Humphrey</b>							
6	Terminal 2-Humphrey Employee Breakroom		\$200,000				
6	Terminal 2-Humphrey Shuttle Waiting Area Expansion			\$200,000			
5	Terminal 2-Humphrey Skyway to LRT Flooring Installation				\$800,000		
<b>39 - Public Areas/Roads</b>							
2	Diverging Diamond Intersection Rehabilitation		\$340,000				
<b>46 - Hangars and Other Buildings</b>							
6	MAC Storage Facility	\$9,000,000					
6	Safety and Operations Center - AOC/EOC		\$18,000,000				
6	Safety and Operations Center - APD		\$20,000,000				
6	Safety and Operations Center - ARFF #2		\$16,700,000				
6	Safety and Operations Center - Sitework		\$14,200,000				
6	Safety and Operations Center - Technology		\$8,600,000				
6	56 - Trades/Maintenance Buildings						
6	South Field Maintenance Building Wash Bay		\$1,300,000				
<b>63 - Police</b>							
6	Badging Office Relocation		\$1				
5	Perimeter Fence Intrusion Detection System		\$1,000,000	\$1,000,000	\$1,000,000		
5	Razor Wire Perimeter Fencing	\$60,000					
<b>66 - Fire</b>							
5	Campus Fire Protection	\$500,000		\$500,000		\$500,000	\$500,000
<b>70 - General Office/Administration</b>							
5	GO Building Improvements		\$500,000				
<b>76 - Environment</b>							
4	Ground Service Equipment (GSE) Electrical Charging Stations			\$2,700,000		\$3,000,000	
4	Lift Station at Ponds 1 and 2		\$850,000				
4	Runway 12R-30L Glycol Forcemain Environmental Improvements		\$1,500,000				
2	Storm Sewer Rehabilitation	\$2,600,000					
2	Terminal 2-Humphrey Remote Ramp Lot/Drainage Improvements				\$2,000,000		
<b>MSP Maintenance/Facility Upgrade Projects Total</b>		<b>\$28,768,000</b>	<b>\$117,905,001</b>	<b>\$26,805,000</b>	<b>\$36,660,000</b>	<b>\$25,715,000</b>	<b>\$5,500,000</b>

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10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES		2019	2020	2021	2022	2023	2024	2025
	<b>MSP NOISE MITIGATION PROJECTS</b>							
8	Noise Mitigation Consent Decree Amendment	\$13,500,000	\$7,500,000	\$2,000,000	\$1,000,000	\$1,000,000	\$1,000,000	
	<b>MSP Noise Mitigation Projects Total</b>	<b>\$13,500,000</b>	<b>\$7,500,000</b>	<b>\$2,000,000</b>	<b>\$1,000,000</b>	<b>\$1,000,000</b>	<b>\$1,000,000</b>	
	<b>MSP ONGOING MAINTENANCE PROGRAMS</b>							
	<b>10 - Terminal 1-Lindbergh</b>							
4	Air Handling Unit Replacement	\$2,500,000	\$2,500,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000
4	Baggage System Upgrades	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	
4	Concourse G AHU Replacement Program	\$6,400,000	\$3,500,000	\$3,500,000	\$3,500,000	\$5,900,000	\$3,500,000	\$3,500,000
4	Concourse G Rehabilitation	\$4,000,000	\$4,000,000	\$4,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000
4	Conveyance System Upgrades	\$3,000,000		\$3,000,000			\$3,000,000	
4	Electrical Infrastructure Program (EIP)	\$1,500,000	\$2,000,000	\$2,000,000	\$2,500,000	\$2,500,000		\$2,500,000
4	Electrical Substation Replacement			\$1,400,000	\$1,400,000	\$1,400,000	\$1,400,000	\$1,200,000
4	Emergency Power Upgrades	\$1,500,000	\$2,000,000	\$2,000,000	\$2,500,000	\$2,500,000		\$2,500,000
4	Plumbing Infrastructure Upgrade Program	\$500,000	\$500,000	\$600,000	\$600,000	\$600,000	\$700,000	
5	Terminal Building Remediation Program	\$2,000,000	\$2,000,000	\$2,000,000	\$3,000,000	\$3,000,000	\$3,000,000	
4	Terminal Miscellaneous Modifications	\$2,400,000	\$2,400,000	\$2,400,000	\$2,500,000	\$2,500,000	\$2,500,000	
	<b>13 - Energy Management Center</b>							
4	EMC Plant Upgrades (T1 & T2)	\$1,500,000	\$1,500,000	\$1,500,000	\$1,300,000			\$1,500,000
	<b>21 - Field and Runway</b>							
2	Airside Bituminous Rehabilitation/Electrical Construction		\$1,100,000	\$4,000,000	\$2,300,000	\$2,500,000		
2	Glycol Tank Repairs		\$500,000					
2	Miscellaneous Airfield Construction	\$3,800,000		\$900,000			\$1,000,000	
2	Pavement Joint Sealing/Repair	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	\$650,000	
	<b>26 - Terminal Roads/Landside</b>							
2	Glumack Drive Reconstruction				\$9,250,000			
2	Tunnel Approaches Reconstruction				\$2,370,000			
2	Tunnel/Bridge Rehabilitation	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	
	<b>31 - Parking</b>							
2	Parking Structure Rehabilitation	\$2,500,000	\$2,500,000	\$3,000,000	\$3,000,000	\$3,000,000	\$3,000,000	

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10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES	2019	2020	2021	2022	2023	2024	2025
<b>MSP ONGOING MAINTENANCE PROGRAMS, continued</b>							
<b>39 - Public Areas/Roads</b>							
2				\$2,200,000			
2					\$700,000		
2		\$13,000,000					
2	\$400,000	\$900,000	\$2,200,000	\$300,000	\$400,000	\$2,300,000	\$2,900,000
2	\$400,000	\$400,000	\$500,000	\$500,000	\$500,000	\$500,000	
2	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000		
2	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000		
<b>46 - Hangars and Other Buildings</b>							
5		\$500,000	\$1,500,000	\$1,500,000	\$1,500,000	\$1,500,000	
2				\$650,000	\$650,000		
10				\$400,000	\$400,000		
2	\$600,000	\$2,900,000	\$1,300,000	\$1,000,000	\$1,000,000	\$1,000,000	\$1,000,000
	<b>\$35,150,000</b>	<b>\$44,350,000</b>	<b>\$43,150,000</b>	<b>\$48,720,000</b>	<b>\$39,200,000</b>	<b>\$32,650,000</b>	<b>\$23,100,000</b>
<b>MSP ONGOING MAINTENANCE PROGRAMS Total</b>							
<b>MSP TENANT PROJECTS</b>							
<b>10 - Terminal 1-Lindbergh</b>							
2	\$3,200,000						
2	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	
1		\$30,000,000					
	<b>\$3,400,000</b>	<b>\$30,200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	<b>\$200,000</b>	
	<b>MSP Tenant Projects Total</b>						

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10.1 APPENDIX A – MAC Preliminary 2019-2025 Capital Improvement Program (CIP) Listing

NOTES	2019	2020	2021	2022	2023	2024	2025
<b>RELIEVER AIRPORTS LONG TERM COMPREHENSIVE PLAN PROJECTS</b>							
<b>81 - St. Paul</b>							
7				\$300,000			
<b>82 - Lake Elmo</b>							
1		\$3,000,000					
7						\$100,000	
1	\$3,000,000	\$2,000,000	\$2,000,000				
<b>83 - Airlake</b>							
7						\$100,000	
1				\$3,500,000			
1	\$1,500,000						
<b>84 - Flying Cloud</b>							
7			\$300,000				
6							\$600,000
<b>85 - Crystal</b>							
7						\$100,000	
1	\$3,800,000						
<b>86 - Anoka County - Blaine</b>							
7			\$300,000				
1						\$1,000,000	
<b>Reliever Airports Long Term Comprehensive Plan Projects Total</b>							
	<b>\$8,300,000</b>	<b>\$5,000,000</b>	<b>\$2,600,000</b>	<b>\$3,800,000</b>		<b>\$1,300,000</b>	<b>\$600,000</b>

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NOTES	2019	2020	2021	2022	2023	2024	2025
<b>RELIEVER AIRPORTS MAINTENANCE/FACILITY UPGRADE PROJECTS</b>							
<b>81 - St. Paul</b>							
6		\$400,000				\$500,000	
6					\$750,000		
2		\$100,000		\$100,000		\$100,000	
4			\$1,500,000	\$1,000,000			
5	\$2,300,000		\$1,000,000	\$200,000		\$200,000	
2							\$500,000
2				\$5,000,000			
2						\$5,000,000	\$5,000,000
2	\$1,500,000				\$1,500,000		
2						\$800,000	
2	\$100,000						
<b>82 - Lake Elmo</b>							
2	\$900,000						
5	\$400,000						\$400,000
2					\$900,000		
2	\$600,000			\$600,000			
2			\$4,000,000				
2	\$100,000						
<b>83 - Airlake</b>							
2				\$3,500,000			
2			\$150,000				
4		\$500,000		\$200,000			
5	\$400,000						\$550,000
6	\$150,000						
6	\$300,000						
2		\$100,000					

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NOTES	2019	2020	2021	2022	2023	2024	2025
<b>RELIEVER AIRPORTS MAINTENANCE/FACILITY UPGRADE PROJECTS, continued</b>							
<b>84 - Flying Cloud</b>							
2							\$500,000
6							\$500,000
5	\$200,000						
5			\$520,000				\$200,000
2					\$1,500,000		
2	\$600,000						
2	\$600,000						
2		\$300,000					
2		\$100,000					
<b>85 - Crystal</b>							
2		\$550,000		\$600,000		\$500,000	
10		\$150,000					
4			\$400,000	\$400,000			
5		\$500,000			\$500,000		
2	\$700,000						
2		\$100,000					
<b>86 - Anoka County - Blaine</b>							
5		\$100,000					
2	\$750,000	\$750,000	\$750,000				
4						\$750,000	
4		\$800,000		\$1,700,000			
5				\$700,000			
4	\$100,000						
2	\$1,000,000						
2	\$100,000						
6					\$700,000		
	<b>\$10,800,000</b>	<b>\$4,450,000</b>	<b>\$8,320,000</b>	<b>\$14,000,000</b>	<b>\$5,850,000</b>	<b>\$7,850,000</b>	<b>\$7,650,000</b>
	<b>\$271,618,000</b>	<b>\$364,655,001</b>	<b>\$169,425,000</b>	<b>\$144,130,000</b>	<b>\$112,115,000</b>	<b>\$94,750,000</b>	<b>\$60,620,000</b>

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## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 2019 Capital Improvement Program Narratives

#### MSP END OF LIFE/REPLACEMENT PROJECTS

##### 10 – Terminal 1- Lindbergh

###### Passenger Boarding Bridge Replacements

**\$7,000,000**

This project provides for the replacement of jet bridges at Terminal 1. 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.

###### Terminal 1-Lindbergh Tug Doors Replacement

**\$600,000**

This project will replace the tug doors at Terminal 1-Lindbergh as they have reached the end of their useful life.

###### Terminal 1-Lindbergh Tram Systems Retrofit and Equipment

**\$1,500,000**

This project is a phase of the multi-year program that extends the life of the C Concourse and Hub Trams by updating the electrical, mechanical, and structural components.

###### TSA Recapitalization

**\$12,000,000**

In 2005 the Commission approved construction of the West Checked Baggage Inspection System (CBIS), which included a TSA contribution of seven CTX devices, supporting technologies and equipment, and staff. Subsequently, the CTX devices have begun to approach end-of-life status based on current required maintenance cost, as determined by the TSA. The TSA has offered for negotiation a 100% funded (no MAC cost) "Other Transaction Agreement" (OTA) for design and construction services for device replacement and other required upgrades to accommodate the new technology. There will be two OTAs, one for the design phase and a second OTA for the construction phase will be negotiated in 2019. This project will provide for the design and installation of TSA furnished devices and other required equipment at no cost to the MAC.

##### 21 – Field and Runway

###### Snow Melter Upgrades/Modifications

**\$750,000**

This project is the second of a two-year program that provides for the evaluation, maintenance, miscellaneous modifications, and replacement of existing airfield snow melters located around the MSP campus.

##### 36 – Terminal 2-Humphrey

###### Public Walk Aisle Terrazzo Floor Installation

**\$1,700,000**

This project will remove carpet and install terrazzo in the baggage claim area and the walk aisle at Gates H1-H7 to match the terrazzo installed in the Gate Expansion that opened in 2016 as well as install terrazzo between the ticket lobby and Checkpoint 1.

##### 39 – Public Areas/Roads

###### 28<sup>th</sup> Avenue Watermain Replacement

**\$1,300,000**

Project provides for reconstruction of approximately 2,600 linear feet of 18-inch watermain along 28th Avenue. Major items of work include miscellaneous removals, removal and reconstruction of ductile iron watermain, valves, hydrants, aggregate base, bituminous pavement, curb, concrete walk, fencing, and restoration of turf and landscaping.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 66 – Fire

#### **MSP Campus Fire Alarm System 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

#### 10 – Terminal 1- Lindbergh

#### **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.

#### **Interactive Digital Directory Upgrade** **\$150,000**

Replace all 55” digital and print directories at Terminal 1-Lindbergh with a new digital kiosk design.

#### **IT Miscellaneous Modifications** **\$8,400,000**

Each year, there are a number of IT projects that are beyond the resources of MAC’s staff and operating budget to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. Work may include Fiber Optic Cable Upgrades, MACNet maintenance and upgrades, EVIDs/MUFIDs digital signs, Wireless System enhancements, and MAC Public Address System maintenance and upgrades. The list of potential projects will be compiled and prioritized in early 2019.

#### **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.

#### **Card Access Modifications** **\$2,000,000**

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

#### 10 – Terminal 1- Lindbergh

#### **Armed Forces Service Center Relocation** **\$1,100,000**

The Armed Forces Service Center location is being displaced by the Operational Improvements program. This project will relocate the center to a desired location behind the security line in the terminal.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Automated Security Lanes (ASLs)** **\$2,000,000**

This multi-year program will provide funding for procurement and installation of additional TSA-approved Automated Security Lanes to enhance throughput by 20-40% per lane, without the loss of the existing quantity of lanes. The replacement conveyor equipment provides bin returns to the divesture area managed by TSA staff, suspect bin isolation for searches, analytics for improved reporting and training, and improved x-ray image display, storage, and monitoring. Additional work required to support the installation will include power and data additions for new and replacement equipment and for equipment network requirements.

### **Baggage Claim/Ticket Lobby Operational Improvements** **\$98,000,000**

This is the first of three projects in a program that will provide 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 in the Arrivals Hall. In the Departures Hall, 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. On both levels, the 2019 project constructs new restrooms in order to allow future phases to demolish the existing old and outdated restrooms.

### **MSP Long Term Comp Plan** **\$2,200,000**

The MSP 2030 Long Term Comprehensive Plan (LTCP), previously completed in April 2010, is scheduled to be updated in 2020. While some efforts have already started with checkpoint modeling and parking analyses, the work in 2019 will continue the forecasting efforts and include preparation of the LTCP document for public review and Commission approval.

### **Valet Parking Lobby and Restroom Upgrade** **\$5,000,000**

This project includes a relocation and expansion of the MAC Lost and Found, consolidation of the Valet Parking Lobby and support spaces, and Restroom Upgrades to current standards. The work is to be completed in two major phases, and includes a centralization of the drop-off and pick-up of the valet parking product, centered on the new Operational Improvements elevator lobby, with finishes to match the product being provided. There is also a mosaic art component for the restrooms and the space that is funded through the percent for arts program.

## **21 – Field and Runway**

### **Taxiway C1 Construction** **\$4,000,000**

Project provides for the construction of Taxiway C1 located abeam to Gates H5/H6 between Taxiway C and Taxiway D as well as the replacement of a portion of Taxiway D which has reached the end of its useful life. Major items of work include excavation and backfill, concrete taxiway pavement, bituminous shoulder pavement, pavement markings, and airfield lighting and signing.

## **31 – Parking**

### **Terminal 1-Lindbergh Parking Ramp – Parking Ramp Modifications** **\$17,000,000**

This project will modify the red/blue parking levels vacated by Rental Car agencies when they move to the new parking ramp. This project will prepare the areas to accommodate public parking.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 36 – Terminal 2- Humphrey

#### **Terminal 2-Humphrey Automated Security Lanes (ASLs)** **\$3,000,000**

This first phase of a two-year project will provide funding for procurement and installation of TSA-approved Automated Security Lanes at the Terminal 2-Humphrey's Security Checkpoint No. 1 to enhance throughput by 20-40% per lane, without the loss of the existing quantity of lanes. The replacement conveyor equipment provides bin returns to the divesture area managed by TSA staff, suspect bin isolation for searches, analytics for improved reporting and training, and improved x-ray image display, storage, and monitoring. Additional work required to support the installation will include power and data additions for new and replacement equipment and for equipment network requirements.

### **MSP MAINTENANCE/FACILITY UPGRADE PROJECTS**

#### 10 – Terminal 1- Lindbergh

#### **ADO Office Expansion** **\$750,000**

Additional office and meeting space is needed for MAC staff. Completion of the South Mechanical Penthouse and work in the southern portion of the Valet space project will provide an opportunity to repurpose a mechanical room adjacent to the Airport Director's Office suite into office space.

#### **Art Display Areas** **\$500,000**

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 support an outdoor Art Park adjacent to the Hotel for permanent and rotating exhibits with public access for travelers and hotel guests.

#### **Arts Master Plan** **\$808,000**

This program supports procurement of commissioned art and rotating exhibits as part of the Percent for Arts program.

#### **Concourse D HVAC Upgrade** **\$1,800,000**

The ground level of the D Concourse was originally designed as a tug drive system. It has been abandoned and underutilized for many years in this function. As a result the systems in this area are no longer functioning. The space is being utilized as part office, part vehicle bay and part storage area. The mechanical systems need to be upgraded to meet the needs of the space.

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

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

#### **Restroom Upgrade Program** **\$500,000**

Located near Travelers Assistance Central near Concourse D, the project will expand an existing 'companion-care/family' restroom into a restroom with an adult changing table and emergency notification system. With changing demographics and the need for facilities to change people of larger stature and weight than a young child, the proposed height-changing electrically-powered changing table will allow side transfer for guests in a wheelchair, and low access for others, allowing safe access, and the correct ergonomic height for changing. The Operational Improvements program will also include changing tables in the arrivals hall program.



## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Terminal 1-Lindbergh Employee Breakroom** **\$250,000**

This project will provide a MSP employee break room that will have a quiet area for employees who work multiple shifts on the campus to eat, read, etc. By providing this quality work support area, front line and other employees will be able to rest and eat out of view of the public.

### **21 – Field and Runway**

#### **Establish Taxiway J** **\$200,000**

Project provides for marking, lighting and signage for a 900-foot length of Taxiway J between Taxiway M and Taxiway Q.

#### **Runway 4-22 Taxiway Lighting System** **\$3,500,000**

This project provides for the construction of taxiway lighting systems for runway 4-22 between runway 12I-30r and runway 17-35 with lead-in/off centerline lighting on the end connector taxiways. Work includes installation of taxiway edge and centerline lights, cabling, and modifications at the ALEC south building. This will provide the FAA aircraft control tower the ability to convert runway 4-22 into a fully functional taxiway and back to a runway configuration as required. The lighting system will allow for the safe aircraft taxi operations on runway 4-22 during peak operational periods without the risk of a possible pilot caused runway incursion due to confusion of current lighting systems. This will bring this unique operation conversion to be fully compliant with the FAA design requirements for a taxiway operation.

#### **Taxiways Bravo & Quebec Centerline Lights** **\$6,800,000**

This project provides for the construction of taxiway centerline lighting systems for taxiways Bravo and Quebec, located adjacent to the Terminal 1-Lindbergh aprons through the intersections with taxiway Delta. Work includes removal of existing taxiway centerline reflectors, installation of taxiway centerline lights and conductors, and modifications at the airfield lighting control building.

### **46 – Hangars and Other Buildings**

#### **MAC Storage Facility** **\$9,000,000**

This project will construct a new building to provide storage and associated workspace to replace storage spread around the campus in buildings that can no longer provide adequate protection from the elements and pests.

### **63 – Police**

#### **Razor Wire Perimeter Fencing** **\$60,000**

To install razor wire perimeter fencing along the T1 & T2 airfield. This project will likely be incorporated into the Miscellaneous Airfield Construction project.

### **66 – Fire**

#### **Campus Fire Protection** **\$500,000**

This project is part of a multi-year program to upgrade fire protection systems in various MAC-owned buildings on the MSP campus to meet MAC standards for improved compatibility with current and planned firefighting equipment.

### **76 – Environment**

#### **Storm Sewer Rehabilitation** **\$2,600,000**

This is the second of a two-year program that supports and complies with the 2017 MAC/MPCA Memorandum of Understanding concerning the MSP Glycol Collection Program. This project provides for cleaning, inspection, and rehabilitation of storm sewers and glycol sewers at various locations where aircraft deicing occurs, to enhance collection and storage of glycol-impacted stormwater resulting from deicing operations.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **MSP NOISE MITIGATION PROJECTS**

#### **Noise Mitigation Consent Decree Amendment \$13,500,000**

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.

### **MSP ONGOING MAINTENANCE PROJECTS**

#### **10 – Terminal 1- Lindbergh**

#### **Air Handling Unit (AHU) Replacement \$2,500,000**

There are existing air handling units serving Terminal 1-Lindbergh that were installed with the original terminal construction in 1958-60 and are over 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.

#### **Baggage System Upgrades \$500,000**

This multi-year program will provide necessary upgrades to the inbound and outbound baggage system not covered by general system maintenance.

#### **Concourse G AHU Replacement Program \$6,400,000**

In January 2016, the MAC took ownership of the G Concourse at Terminal 1 - Lindbergh from Delta Airlines. With that came additional maintenance of all of the equipment on that concourse. Most of the equipment was original to the building, dating back more than forty years. Air handling units (AHUs) typically have a lifespan of twenty-five years. Inspections and routine maintenance revealed that these AHUs need replacement.

#### **Concourse G Rehabilitation \$4,000,000**

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.

#### **Conveyance System Upgrades \$3,000,000**

This year's project within the multi-year program will add an elevator to the Observation Deck above Concourse D, making it accessible ahead of the upgrades to that area scheduled in 2020.

#### **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.

#### **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.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **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 2019 project is to continue the replacement of aging plumbing systems.

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

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.

### **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 2019.

### **13 – Energy Management Center**

#### **EMC Plant Upgrades (T1 & T2)** **\$1,500,000**

This multi-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 regular maintenance.

### **21 – Field and Runway**

#### **Miscellaneous Airfield Construction** **\$3,800,000**

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. This year's program will also address repairs and maintenance required by the most recent Part 139 inspection.

#### **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.

### **26 – 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.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 31 – 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.

### 39 – Public Areas/Roads

#### **Concrete Joint Repair** **\$400,000**

This is the first year of a new multi-year program intended to complete landside pavement joint repair on MSP campus roadways as a preventative maintenance activity to prolong the existing pavement from reconstruction.

#### **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.

#### **Landside Utility Rehabilitation** **\$750,000**

Each year there are a number of landside utility projects that are beyond the resources of MAC’s staff and operating budget to accomplish. These projects are prioritized annually and completed with either a series of contracts or purchase orders. Electric power, sanitary sewer, storm sewer and watermain improvements will be addressed with this program. In this first year of the program, a study will be conducted as part of to identify future potential projects. The study will be updated annually reflect current priorities.

#### **Roadway Fixture Refurbishment** **\$150,000**

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.

### 46 – Hangars and Other Buildings

#### **MSP Campus Building Roof Replacements** **\$600,000**

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. In 2019, the roof of the ALEC North building will be replaced. Emergency repairs may also be needed on some other roofs; this program will provide dollars for such instances.

## MSP TENANT PROJECTS

### 10 – Terminal 1- Lindbergh

#### **Concessions Rebids** **\$3,200,000**

This program provides 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.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### RELIEVER AIRPORTS LONG TERM COMPREHENSIVE PLAN PROJECTS

#### 82 – Lake Elmo

##### 21D Runway 14-32 Replacement **\$3,000,000**

The updated long term comprehensive plan for this airport proposes relocating and extending the primary runway northeast of its current alignment. This year’s scope includes the first phase of construction for this project, which primarily focuses on roadway realignment to make way for runway construction. This project includes all wetland mitigation, earthwork grading, subgrade improvements, electrical lighting system and bituminous pavement installation.

#### 83 - Airlake

##### LVN South Building Area Development – Phase 1 **\$ 1,500,000**

This project includes phase 1 construction of sanitary sewer and water mains and lot services to the south building area. Phase 1 also includes construction of associated taxilanes and the south entrance road.

#### 85 – Crystal

##### MIC Runway 14R-32L & Taxiway E Modifications **\$3,800,000**

The updated long term comprehensive plan for this airport proposes “right-sizing” the airport infrastructure, including decommissioning Runway 14R-32L. This project includes converting Runway 14R-32L into a parallel taxiway and rehabilitating portions of Taxiway Echo. The project also includes electrical vault improvements triggered by associated runway lighting modifications. The project budget also includes the required environmental review studies.

### RELIEVER AIRPORTS MAINTENANCE/FACILITY UPGRADE PROJECTS

#### 81 – St. Paul

##### STP MAC Building Improvements **\$2,300,000**

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. This year’s project will include improvements to the Administration Building, Equipment Storage Building, Maintenance Building, and both Cold Storage Buildings.

##### STP 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.

##### STP Underground Fuel Storage Tank Replacement **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

#### 82 – Lake Elmo

##### 21D Alleyways – South Building Area Pavement Rehab **\$900,000**

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 alleyways in the South Building Area.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **21D MAC Building Improvements** **\$400,000**

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings. This year's project will include improvements to the MAC Maintenance Building.

### **21D 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 and Bravo not included in previous projects.

### **21D Underground Storage Tank Replacement** **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

### **83 – Airlake**

#### **LVN MAC Building Improvements** **\$400,000**

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings. This year's project will include improvements to the MAC Maintenance Building.

#### **LVN Plane Wash Pad** **\$150,000**

This project includes the construction of a designated airplane wash pad.

#### **LVN Public Restroom Facility** **\$300,000**

This project includes the construction of a tenant-use restroom facility on the north side of the airport.

### **84 – Flying Cloud**

#### **FCM Executive Aviation Building Improvements** **\$200,000**

This project is to complete the work associated with repurposing the Executive Aviation building for MAC use. Work to be completed includes creating meeting space, equipment access to/from the building and airfield and other miscellaneous work items.

#### **FCM Taxiway D Pavement Rehabilitation** **\$600,000**

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

#### **FCM Taxiway E Pavement Rehabilitation** **\$600,000**

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

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 85 – Crystal

#### **MIC Taxiways 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 rehabilitation of the taxiway or portions of taxiways in most need of repair. The pavement condition index report as well as an inspection of the pavement will be completed to determine the area most in need of repair.

### 86 – Anoka County - Blaine

#### **ANE Alleyways Pavement Reconstruction** **\$750,000**

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 rehabilitation of alleyways in the West Building Area.

#### **ANE Obstructions Removal** **\$100,000**

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

#### **ANE South Service Road & East Landside Road Pavement Reconstruction** **\$1,000,000**

This is an ongoing effort to rehabilitate airport pavements 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 rehabilitation of the airport service road connecting the east and west building areas.

#### **ANE Underground Storage Tank Replacement** **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 2020 Capital Improvement Program Narratives

#### MSP END OF LIFE/REPLACEMENT PROJECTS

##### 10 – Terminal 1- Lindbergh

###### Passenger Boarding Bridge Replacements

**\$7,000,000**

This project provides for the replacement of jet bridges at Terminal 1. 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.

###### Terminal 1-Lindbergh Tram Systems Retrofit and Equipment

**\$1,750,000**

This project is the final phase of the multi-year program that extends the life of the C Concourse and Hub Trams by updating all of the electrical, mechanical, and structural components. This phase also replaces the guideway lighting for both trams. This final phase brings the operation and maintenance of all tram systems to their end-of-design-life of January 1, 2026.

##### 21 – Field and Runway

###### Runway 12R-30L Tunnel Storm Sewer

**\$900,000**

Project provides for construction of a new storm sewer main inside the existing Runway 12R-30L vehicular tunnel to replace the existing storm sewer which is not functional due to deterioration and accumulated sediment.

###### Sanitary Sewer Replacement – Taxiway R

**\$3,300,000**

Project provides for reconstruction of the sanitary sewer currently located beneath the U.S. Air Force Apron. The sewer will be relocated between Taxiway R and the apron. New lateral sewers will be constructed to connect Air Force sewers to the new sewer main, and abandoned sewers will be filled with sand. The project will require removal and replacement of portions of the apron pavement and connecting taxiways.

###### Taxiway D Reconstruction

**\$12,000,000**

Project provides for reconstruction of a portion of Taxiway D between Taxiway W and Taxiway C1. Existing concrete pavement was constructed in 1972. Major items of work include pavement removals, excavation and backfill, concrete taxiway pavement, bituminous shoulder pavement, and airfield lighting and signing.

##### 26 – Terminal Roads/Landside

###### UPS Loop Pavement Reconstruction

**\$1,600,000**

This project is to reconstruct the existing UPS Loop. The existing concrete pavement has had periodic maintenance including repairs to the existing joints near the UPS gate entrance. The reconstruction work will include concrete pavement, lighting, electrical infrastructure, concrete walk, landscape and other improvements.

###### Variable Message Signs Replacement, Phase 3

**\$1,600,000**

This project replaces approximately 26 variable message signs across the MSP campus and installs five new signs to assist with parking diversions.



## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 66 – Fire

#### **MSP Campus Fire Alarm System 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**

#### **10 – Terminal 1- Lindbergh**

##### **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.

##### **IT Miscellaneous Modifications**

**\$5,500,000**

Each year, there are a number of IT projects that are beyond the resources of MAC's staff and operating budget to accomplish. These projects are prioritized and completed either as a series of contracts or as purchase orders. Work may include Fiber Optic Cable Upgrades, MACNet maintenance and upgrades, EVIDs/MUFIDs digital signs, Wireless System enhancements, and MAC Public Address System maintenance and upgrades. The list of potential projects will be compiled and prioritized in early 2020.

##### **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.

##### **Card Access Modifications**

**\$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**

#### **10 – Terminal 1- Lindbergh**

##### **Automated Security Lanes (ASLs)**

**\$2,000,000**

This multi-year program will provide funding for procurement and installation of additional TSA-approved Automated Security Lanes to enhance throughput by 20-40% per lane, without the loss of the existing quantity of lanes. The replacement conveyor equipment provides bin returns to the divesture area managed by TSA staff, suspect bin isolation for searches, analytics for improved reporting and training, and improved x-ray image display, storage, and monitoring. Additional work required to support the installation will include power and data additions for new and replacement equipment and for equipment network requirements.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Baggage Claim/Ticket Lobby Operational Improvements** **\$61,900,000**

This is the second of three projects in a program that will provide 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 in the Arrivals Hall. In the Departures Hall, 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. On both levels, the 2019 project constructs new restrooms in order to allow future phases to demolish the existing old and outdated restrooms.

### **Baggage Handling System** **\$32,000,000**

This project is part of a multiphase program supporting the Operational Improvements program. The 2020 phase of work begins the multiple phase installation of new inbound claim devices, and ticket counter changes for the north departures and arrivals halls, matching the work of the south departures and arrivals halls. The work is coordinated with the Operational Improvements multi-phase projects including the façade expansion, ticket lobby and baggage claim phased projects, and replaces ticket counter belts and other conveyors that are end-of-life and not controlled by the BHS system.

### **Checkpoint Expansion** **\$5,800,000**

The South Security Checkpoint will be expanded from six to nine lanes, including an initial employee lane, to accommodate growth of originating passenger enplanements, potential changes to employee screening, and will include structural enhancements from the Operational Improvements program, bypass doors to match the OI: north security checkpoint designs (consistent with Terminal 2-Humphrey SSCP bypass doors), and the ability to close the security checkpoint at night to the secure side, improving opening times the following day by not requiring a TSA security sweep. The project also balances the departures lobby by providing balanced security checkpoint lanes and employee screening opportunities, plus space for additional ASLs, CTs, and CATs.

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

As a part of the long term comprehensive plan, expansion to the FIS luggage recheck area will be needed to accommodate additional passengers, lengthened queue at the expanded Security Checkpoint 07, and a relocation of the existing restrooms at gate G6 to accommodate the expansion and relocation of the FIS recheck.

## **36 – Terminal 2- Humphrey**

### **Terminal 2-Humphrey Automated Security Lanes (ASLs)** **\$3,000,000**

This second phase of a two-year project will provide funding for procurement and installation of TSA-approved Automated Security Lanes at the Terminal 2-Humphrey's Security Checkpoint No. 1 to enhance throughput by 20-40% per lane, without the loss of the existing quantity of lanes. The replacement conveyor equipment provides bin returns to the divesture area managed by TSA staff, suspect bin isolation for searches, analytics for improved reporting and training, and improved x-ray image display, storage, and monitoring. Additional work required to support the installation will include power and data additions for new and replacement equipment and for equipment network requirements.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Terminal 2-Humphrey FIS Baggage Claim Improvements** **\$1,000,000**

This project will modify the inbound baggage handling system and add movable partitions to allow one of the two FIS baggage carousels to be used for domestic flights while the other remains secure for international arrivals.

### **MSP MAINTENANCE/FACILITY UPGRADE PROJECTS**

#### **10 – Terminal 1- Lindbergh**

### **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.

### **Arts Master Plan** **\$1,155,000**

This program supports procurement of commissioned art and rotating exhibits as part of the Percent for Arts program.

### **Concourse G Moving Walks** **\$2,500,000**

This is the second project of a multi-year program to replace the near end-of-life moving walks on the G Concourse. This year's project will replace the moving walks between Pods 3 and 4. The walks will also be shortened to accommodate future development of passenger amenities adjacent to the ends of the moving walks.

### **T1 Folded Plate Repairs** **\$8,900,000**

This four-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 remove the existing roof layers, including asbestos material and wood structural pieces, and construct a new roof in one quadrant of the structure.

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

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

### **Observation Deck Improvements** **\$1,600,000**

This project includes changes to the space to accommodate guests with the associated elevator access project, including heating and cooling changes, expansion as needed to meet the new elevator, railing modifications, floor finish changes, curtainwall repairs, lighting improvements, and public address connection to air traffic control tower.

### **Terminal 1-Lindbergh Mechanical Room C-1043** **\$5,500,000**

Concourse C Mechanical Room C-1043 is a mechanical room that houses a very large high pressure steam pressure reducing station, a domestic water main meter assembly, HVAC pumps, fire protection valves, and electrical conduits. The age of this equipment and limited access to maintain and repair it increases the risk of a loss of service on Concourse C. This project will expand and separate portions of the system into unused rooms and replace systems which will be safer, more efficient, meet current code requirements and be reliable.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Way-Finding Sign Backlighting Replacement** **\$1,600,000**

The third phase of the multi-year program to replace failing cold-cathode lighting with LED lighting and update signage, remove signs, relocate and combine signs, and modify verbiage and symbols on signs to be more consistent with international signage norms. Since 2008 the cold-cathode lighting has been maintained and requires staff and material costs; newer signage standards update the lighting and allow for easier/less-costly signage face changes, and has been implemented within the Operational Improvements program, Silver Ramp, and other projects.

### **13 – Energy Management Center (EMC)**

#### **Air Handling Unit Safety Upgrades** **\$550,000**

This project will verify the wiring of safety sensors on the air handling units (AHUs) at MSP and correct those that are wired incorrectly. 41 of the 97 AHUs initially tested were found to have safety sensors wired through the automation system rather than directly to the motor controller (starter or variable frequency drive).

#### **Concourse G Energy Efficiency Projects** **\$2,000,000**

This project will focus on improving the energy efficiency of mechanical and electrical systems in the G Concourse.

#### **Energy Savings Program** **\$2,000,000**

The scope of this year's project involves work at both Terminal 1-Lindbergh and Terminal 2-Humphrey and in general includes the replacement of valves, boilers, lighting controls, and motors with high efficiency models.

#### **Indoor Air Quality Monitoring** **\$660,000**

This project will install needed CO<sub>2</sub> sensors in common return air ducts, and tie all new and existing sensors into the IMACS for remote monitoring and for automatic safety ventilation. I will also provide the EMC with advanced modular indoor air quality (IAQ) sensors to install temporarily at any location that has IMACS to detect ultra-fine particles, volatile organic compounds, CO<sub>2</sub>, CO, NO<sub>2</sub> and other gasses in the area of an IAQ complaint, enabling the EMC to accurately assess the problem and solution.

#### **LED Lighting Conversion in Valet** **\$500,000**

This project replaces light fixtures in the valet parking area with LED fixtures for improved energy efficiency in support of the MAC's Carbon Management Plan.

#### **Victaulic Piping Replacement** **\$1,000,000**

This 5-year program will replace the Victaulic piping and valves in Terminal 2-Humphrey, Terminal 1-Lindbergh: Concourse E, Concourse F, Concourse C and Concourse C Tunnel. While Victaulic pipe fittings allow for the pipe to be quickly and easily disassembled when needed, it has been discovered that the joints cause leaking because the seals shrink when they cool due to shut downs and service disruptions which occur frequently at MSP and then don't hold tight when the system is restored to normal operation. 2020 is the first year of work under this program.

### **21 – Field and Runway**

#### **Perimeter Gate Security Improvements** **\$3,000,000**

Project provides for the reconstruction of Gate 269 with a full crash beam gate, updated electrical controls, and a new full pre-fabricated guard booth.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

**Runway LED Lighting Upgrade** **\$1,000,000**  
Project provides for all runway edge lights, centerline lights, and touchdown zone lights on Runway 12L-30R to be replaced with LED lights.

### **31 – 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.

### **36 – Terminal 2-Humphrey**

**Terminal 2-Humphrey Employee Breakroom** **\$200,000**  
This project will provide a MSP employee break room that will have a quiet area for employees who work multiple shifts on the campus to eat, read, etc. By providing this quality work support area, front line and other employees will be able to rest and eat out of view of the public.

### **39 – Public Areas/Roads**

**Diverging Diamond Intersection Rehabilitation** **\$340,000**  
This project will complete pavement rehabilitation, mill and overlay, of the Diverging Diamond Intersection, The approximate limits of the project is from the 34th Avenue limit to MAC Property line (asphalt pavement only). The existing bituminous pavement has yearly maintenance work to repair potholes, cracks and other items. This project would complete repairs to the pavement after milling and prior to the bituminous overlay.

### **46 – Hangars and Other Buildings**

**Safety and Operations Center – AOC/EOC** **\$18,000,000**  
**Safety and Operations Center – APD** **\$20,000,000**  
**Safety and Operations Center – ARFF #2** **\$16,700,000**  
**Safety and Operations Center – Sitework** **\$14,200,000**  
**Safety and Operations Center – Technology** **\$8,600,000**

These projects together construct a new Airport Operations Center which includes Airside Operations and the Emergency Communications Center, a dedicated primary Emergency Operations Center, consolidated Airport Police Department facilities, and a replacement Aircraft Rescue and Fire Fighting (ARFF) Station #2. This combined facility is intended to bring together the airport entities that are stakeholders in the daily operations to improve collaboration and coordination.

### **56 –Trades/Maintenance Buildings**

**South Field Maintenance Building Wash Bay** **\$1,300,000**  
This project add an equipment wash bay to the South Field Maintenance Building.

### **63 – Police**

**Badging Office Relocation** **\$1**  
This project will co-locate all Badging Office functions to the spaces occupied by the Rental Car Agencies in the Red/Blue parking ramp core following RAC relocation to the Customer Service Building in the Silver Ramp. The Preliminary 2019-2025 CIP was issued with a placeholder \$1 for a cost, which is why it is shown at that cost in this document. The actual cost is anticipated to be closer to \$1,000,000.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Perimeter Fence Intrusion Detection System**

**\$1,000,000**

This is a three year program to provide for installation of a fence intrusion detection system. Project will include camera installations, perimeter gate upgrades, fiber distribution and collection node establishment, and systems integration.

### **70 – General Office/Administration**

#### **GO 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 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.

### **76 – Environment**

#### **Lift Stations at Ponds 1 and 2**

**\$850,000**

Project provides for construction of two stormwater lift stations adjacent to MSP Ponds 1 and 2. The lift stations will utilize the existing 8-inch forcemain to divert water from one pond to the other to facilitate pond cleaning and maintenance.

#### **Rwy 12R-30L Glycol Forcemain Environmental Improvements**

**\$1,500,000**

Project provides for construction of glycol pumping stations and forcemains to convey glycol-impacted stormwater from the Runway 30R and 30L deicing pads to the existing glycol sewers west of Runway 4-22 and the glycol management facility.

### **MSP NOISE MITIGATION PROJECTS**

#### **Noise Mitigation Consent Decree Amendment**

**\$7,500,000**

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.

### **MSP ONGOING MAINTENANCE PROJECTS**

#### **10 – Terminal 1- Lindbergh**

##### **Air Handling Unit (AHU) Replacement**

**\$2,500,000**

There are existing air handling units serving Terminal 1-Lindbergh that were installed with the original terminal construction in 1958-60 and are over 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.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Baggage System Upgrades** **\$500,000**

This multi-year program will provide necessary upgrades to the inbound and outbound baggage system not covered by general system maintenance.

### **Concourse G AHU Replacement Program** **\$3,500,000**

In January 2016, the MAC took ownership of the G Concourse at Terminal 1 - Lindbergh from Delta Airlines. With that came additional maintenance of all of the equipment on that concourse. Most of the equipment was original to the building, dating back more than forty years. Air handling units (AHUs) typically have a lifespan of twenty-five years. Inspections and routine maintenance revealed that these AHUs need replacement.

### **Concourse G Rehabilitation** **\$4,000,000**

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.

### **Electrical Infrastructure Program** **\$2,000,000**

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.

### **Emergency Power Upgrades** **\$2,000,000**

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.

### **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 2019 project is to continue the replacement of aging plumbing systems.

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

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.

### **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 2019.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### 13 – Energy Management Center

#### **EMC Plant Upgrades (T1 & T2)**

**\$1,500,000**

This multi-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 regular maintenance.

### 21 – Field and Runway

#### **Airside Bituminous Rehabilitation/Electrical Construction**

**\$1,100,000**

Project provides for the removal and replacement of airfield lighting and signage with LED technology, and lighting control upgrades.

#### **Glycol Tank Repairs**

**\$500,000**

Project provides for repair of leaking construction joints and cracks in concrete walls and floors of the glycol tanks located at the MSP Glycol Management Facility. The 2020 project will include repairs to the west wall of tank No. 3.

#### **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.

### 26 – 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.

### 31 – 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.

### 39 – Public Areas/Roads

#### **34<sup>th</sup> Avenue Reconstruction**

**\$13,000,000**

This project provides for the reconstruction of 34th Avenue South between I-494 and Gate 222. The existing bituminous pavement is nearing the end of its design life and is in need of replacement. The new corridor section will include: concrete pavement, lighting and electrical infrastructure, concrete walk, ADA access, and bicycle lane improvements.

#### **Concrete Joint Repair**

**\$900,000**

This is the first year of a new multi-year program intended to complete landside pavement joint repair on MSP campus roadways as a preventative maintenance activity to prolong the existing pavement from reconstruction.

#### **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.



## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **Landside Utility Rehabilitation** **\$750,000**

Each year there are a number of landside utility projects that are beyond the resources of MAC's staff and operating budget to accomplish. These projects are prioritized annually and completed with either a series of contracts or purchase orders. Electric power, sanitary sewer, storm sewer and watermain improvements will be addressed with this program. In this first year of the program, a study will be conducted as part of to identify future potential projects. The study will be updated annually reflect current priorities.

### **Roadway Fixture Refurbishment** **\$150,000**

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.

### **46 – Hangars and Other Buildings**

#### **Campus Building Rehabilitation Program** **\$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 is part of an on-going program to maintain MAC buildings as assets.

#### **MSP Campus Building Roof Replacements** **\$2,900,000**

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. In 2020, the roof of the Field Maintenance building will be replaced. Emergency repairs may also be needed on some other roofs; this program will provide dollars for such instances.

## **MSP TENANT PROJECTS**

### **10 – 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.

#### **Concourse G Delta SkyClub** **\$30,000,000**

This project will infill space between Pods 4 and 5 to provide additional gatehold seating and shell space for Delta to finish a third SkyClub at MSP.

## **RELIEVER AIRPORTS LONG TERM COMPREHENSIVE PLAN PROJECTS**

### **82 – Lake Elmo**

#### **21D Airfield Modifications** **\$3,000,000**

The updated long term comprehensive plan for this airport proposes relocating and extending the primary runway northeast of its current alignment. The scope for this project includes taxiway construction and airfield modifications associated with construction of the replacement Runway 14-32.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

### **21D Runway 14-32 Replacement** **\$2,000,000**

The updated long term comprehensive plan for this airport proposes relocating and extending the primary runway northeast of its current alignment. This year's scope includes the second phase of runway construction. This project includes all wetland mitigation, earthwork grading, subgrade improvements, electrical lighting system and bituminous pavement installation.

### **RELIEVER AIRPORTS MAINTENANCE/FACILITY UPGRADE PROJECTS**

#### **81 – St. Paul**

### **STP Airport Perimeter Roads** **\$400,000**

This is an ongoing effort to rehabilitate airport pavements 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 rehabilitation of the airport access road along Airport Road and Eaton Street.

### **STP 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.

#### **83 – Airlake**

### **LVN LED Edge Lighting** **\$500,000**

This project includes the installation of the taxiway edge lighting system, edge lighting will include LED lighting.

### **LVN Underground Fuel Storage Tank Replacement** **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

#### **84 – Flying Cloud**

### **FCM Taxiways A1, A3, F Pavement Rehabilitation** **\$300,000**

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 Taxiways A1, A3, and Foxtrot.

### **FCM Underground Fuel Storage Tank Replacement** **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

#### **85 – Crystal**

### **MIC Alleyways Pavement Rehabilitation** **\$550,000**

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 rehabilitation of alleyways in the North Building Area.

### **MIC Building Demolition – Flight Simulator Building** **\$150,000**

This project will remove the Flight Simulator Building which has reached the end of its functional life and is beyond rehabilitation.

## 10.2 APPENDIX B – Descriptions for 2019 and 2020 Proposed Projects

**MIC MAC Building Improvements** **\$500,000**

This is an ongoing program to provide for facility modifications to ensure continued efficient operation of MAC buildings. This year's project includes improvements to the MAC East and North Maintenance Building, Administration Building, and both restroom buildings.

**MIC Underground Fuel Storage Tank Replacement** **\$100,000**

This project will replace aging underground storage tanks that are owned and maintained by the. The tanks were installed in 1991 and have a life expectancy of 25-30 years.

**86 – Anoka County - Blaine**

**ANE Air Traffic Control Tower Equipment Upgrades** **\$100,000**

The Anoka County-Blaine Airport control tower is owned by MAC. The equipment used by the air traffic controllers has been in service for over 20 years and needs to be replaced and/or updated to ensure continued reliability.

**ANE Alleyways Pavement Reconstruction** **\$750,000**

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 rehabilitation of alleyways in the West Building Area.

**ANE LED Edge Lighting Upgrade** **\$800,000**

This project includes replacement of the existing medium intensity runway edge lighting system, new edge lighting will include LED lighting.

## 10.3 APPENDIX C – DRAFT DESCRIPTIONS FOR 2021-2025 PROJECTS THAT MEET CRITERIA DEFINED IN MINNESOTA STATUTE SECTION 473.614

### MSP LONG TERM COMPREHENSIVE PLAN PROJECTS

#### Terminal 1 – Lindbergh

##### **2021 Baggage Claim / Ticket Lobby Operational Improvements** **\$32,500,000**

This program addresses issues of congestion and functionality in the Baggage Claim and Ticket Lobby. It will provide the level of service requirements for short- and medium-term growth of the origination and destination passengers, including walkways that meet required codes, public seating areas, centralized meet and greet space, unclaimed baggage storage, baggage service offices, concessions, improved lighting, fire protection throughout the space, structural enhancements, improved sight lines, curbside lighting and access, ticket counter consolidations, airline ticket offices, improved vestibules and access, east mezzanine removal/reduction, structural enhancements, curtain wall replacement, and other operational improvements.

##### **2021 Lower Level Curbside Expansion** **\$12,000,000**

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.

##### **2022 D-Pod Outbound Baggage System** **\$5,000,000**

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

### RELIEVER AIRPORTS LONG TERM COMPREHENSIVE PLAN PROJECTS

#### Lake Elmo

##### **2021 Runway 14-32 Replacement** **\$2,000,000**

This project will be the third phase of the Runway 14-32 Replacement project, which relocates and extends 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.

#### Airlake

##### **2022 Runway 12-30 Improvements** **\$3,500,000**

This project will provide for the extension of Runway 12-30 from 4,098 feet to the maximum feasible length (approximately 4,850 feet) that can be provided without having to relocate Cedar Avenue, which lies directly east of the airfield. Project details are currently being evaluated in the process to update the airport's Long Term Comprehensive Plan.