



Program 8076 Minneapolis Interceptor Rehabilitation



Description:

This Program provides funding to address capital improvements for the interceptors that serve Minneapolis and the surrounding areas.

Purpose and Justification:

The project provides for the implementation of improvement and renewal projects needed to provide continued service to the metropolitan region and capacity to accommodate projected growth of the region.

Program Location:

The planned and active projects within this program are in Council Districts 6, 7, and 8.

Active Projects in Program:

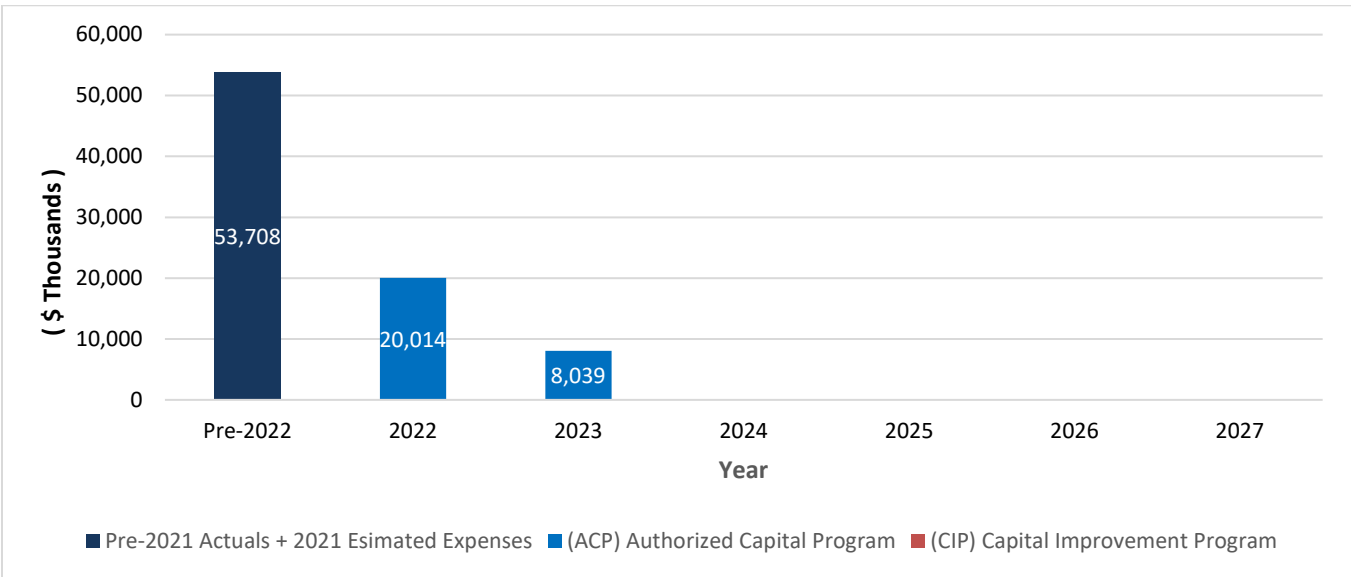
| Project Number | Project Title |
|----------------|---|
| 807600 | Minneapolis Interceptor System Rehabilitation (Parent Project) |
| 807618 | 1-MN-341 Pipe-in-Pipe Rehab |
| 807626 | West Meters Odor Management Facility Improvements |
| 807629 | Emergency Relief Structure R04 and 1-MN-344 Tunnel Improvements |
| 807640 | Maintenance Access Structures |
| 807643 | Minneapolis East Interceptor (MEI) Diversion Structure Rehabilitation |
| 807645 | Mpls 1-MN-330 and 1-MN-341 Access Improvements Co-op |
| 807647 | Lake Street Siphon Inspection |

| | |
|--------|--|
| 807650 | Minneapolis Joint Sewer Study |
| 807666 | 1-MN-310 Rehabilitation Between Dowling and Broadway |
| 807667 | 1-MN-310 Rehab Between Broadway and 8th Ave N |
| 807670 | Minneapolis Interceptor Odor Control Study – Phase 1 |

MCES 2022 – 2027 Capital Program:

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|---|--|
| Authorized Capital Program (ACP) \$81,761,000 | Capital Improvement Plan (CIP) \$0 |
|---|--|

Estimated Program Cash Flow 2022 - 2027:

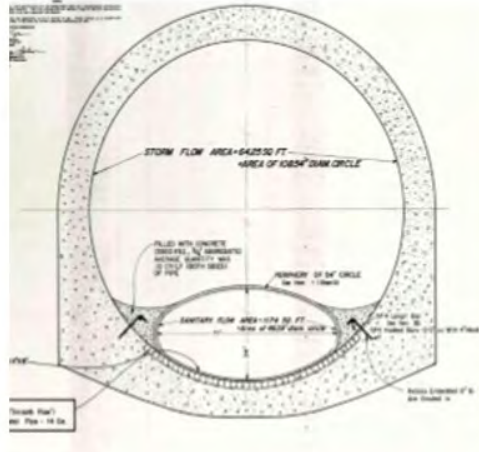


Note: The ACP is the total amount of all past and present authorizations including Pre-2022 Expenses.

Program Family: 8076
Project # 807618

Interceptor 1-MN-341 Pipe-in-Pipe Rehabilitation

Project Location:
Council District # 8
City of Minneapolis
38th St E from 23rd Ave S
to West River Parkway



Pipe in Pipe (PIP) Profile



PIP Damage

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|-----------------------------------|---|
| PROJECT TYPE: | Pipe-in-Pipe Rehabilitation |
| OBJECTIVES: | Preservation |
| CUSTOMER LEVEL OF SERVICE: | Maintain existing assets |
| SCOPE: | Repair holes in CMP pipe and pour new geopolymer crown for CMP/invert for storm sewer. |
| PROJECT NEED: | <p>Interceptor 1-MN-341 was built in the early 1920's as a 102" reinforced concrete combined sanitary/storm sewer. The segment of 1-MN-341 on 38th Ave S between West River Road and 24th Ave S was converted to a PIP separated sewer in 1965 using inlaid deformed corrugated metal pipe (CMP). Recent walking inspections and smoke tests of the PIP segment identified defects that are allowing inflow of stormwater into the sanitary sewer.</p> |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

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|--------------------------------------|-----------------------------------|---|--|
| 2022 Cash Flow \$5,000,000 | Current ACP \$7,722,000 | 2022 – 2027 Cash Flow \$5,500,000 | Total Project Cost \$7,722,000 |
|--------------------------------------|-----------------------------------|---|--|

Program Family: 8076
Project # 807629

ERS04 and 1-MN-344 Tunnel Rehabilitation

Project Location:

Council District # 8

City of Minneapolis

Minnehaha Park,
Longfellow Gardens



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|-----------------------------------|--|
| PROJECT TYPE: | Interceptor Rehabilitation |
| OBJECTIVES: | Preservation |
| CUSTOMER LEVEL OF SERVICE: | Comply with Permits, Minimize Impacts, Be A Good Neighbor, Communicate Information, Engage Customers and Coordinate With Others |
| SCOPE: | This project involves replacing Regulator 04 with an Emergency Overflow Structure, rehabilitating the four vortex drop shafts on tunnel 1-MN-340 and slip lining tunnel 1-MN-344 with fiberglass pipe. |
| PROJECT NEED: | The sandstone tunnel was constructed in 1936. The interior concrete wall of the tunnel is deteriorating and needs repair. |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

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|------------------------------------|------------------------------------|---|---|
| 2022 Cash Flow \$935,000 | Current ACP \$27,039,000 | 2022 – 2027 Cash Flow \$935,000 | Total Project Cost \$27,039,000 |
|------------------------------------|------------------------------------|---|---|

Program Family: 8076
Project # 807640

Maintenance Access Structures

Project Location:
Council District # 4, 6, 7, 8, 10, 13, 14
Cities of Minneapolis, St. Paul, Cottage Grove, Chaska, Mounds View
10 Locations



Access Structure

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|-----------------------------------|--|
| PROJECT TYPE: | Small construction projects at various locations to improve odor management. |
| OBJECTIVES: | Preservation and Quality Improvement |
| CUSTOMER LEVEL OF SERVICE: | Be a good neighbor |
| SCOPE: | Repair existing maintenance holes, hatches, and snow chutes that emit odors and upgrade existing carbon units to improve odor removal. |
| PROJECT NEED: | Repairs required to maintain level of service related to odors. |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

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|------------------------------------|-----------------------------------|---|--|
| 2022 Cash Flow \$200,000 | Current ACP \$1,000,000 | 2022 – 2027 Cash Flow \$400,000 | Total Project Cost \$1,000,000 |
|------------------------------------|-----------------------------------|---|--|

Program Family: 8076
Project # 807643

Minneapolis East Interceptor (MEI) Control Gate Rehabilitation

Project Location:

Council District # 8,14

City of Minneapolis
City of St. Paul

6 locations

Deteriorated Hydraulic Gate



Stop Log



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|-----------------------------------|---|
| PROJECT TYPE: | Control Gate Structure Rehabilitation |
| OBJECTIVES: | Improvement and Quality Improvement |
| CUSTOMER LEVEL OF SERVICE: | Comply With Permits and Meet Capacity Needs |
| SCOPE: | Rehabilitate MEI Sites 1, 11, 15, 18, 20, and 26 by removing existing deteriorated hydraulic gates and replacing them with stop logs; removing and replacing vault hatches; improving ventilation, ladders, and grating for worker safety; and repairing deteriorated concrete. MEI Site 1 meters and hydraulic power units will be removed and replaced. Improvements will be made to the 1-MN-302 “pipe-in-pipe” at Site 11 and the abandonment of Interceptor 8255A. |
| PROJECT NEED: | The facilities were built in the early 1980’s and need rehabilitation. |

PROJECT SCHEDULE



Planning
2017



Design
2018-2020

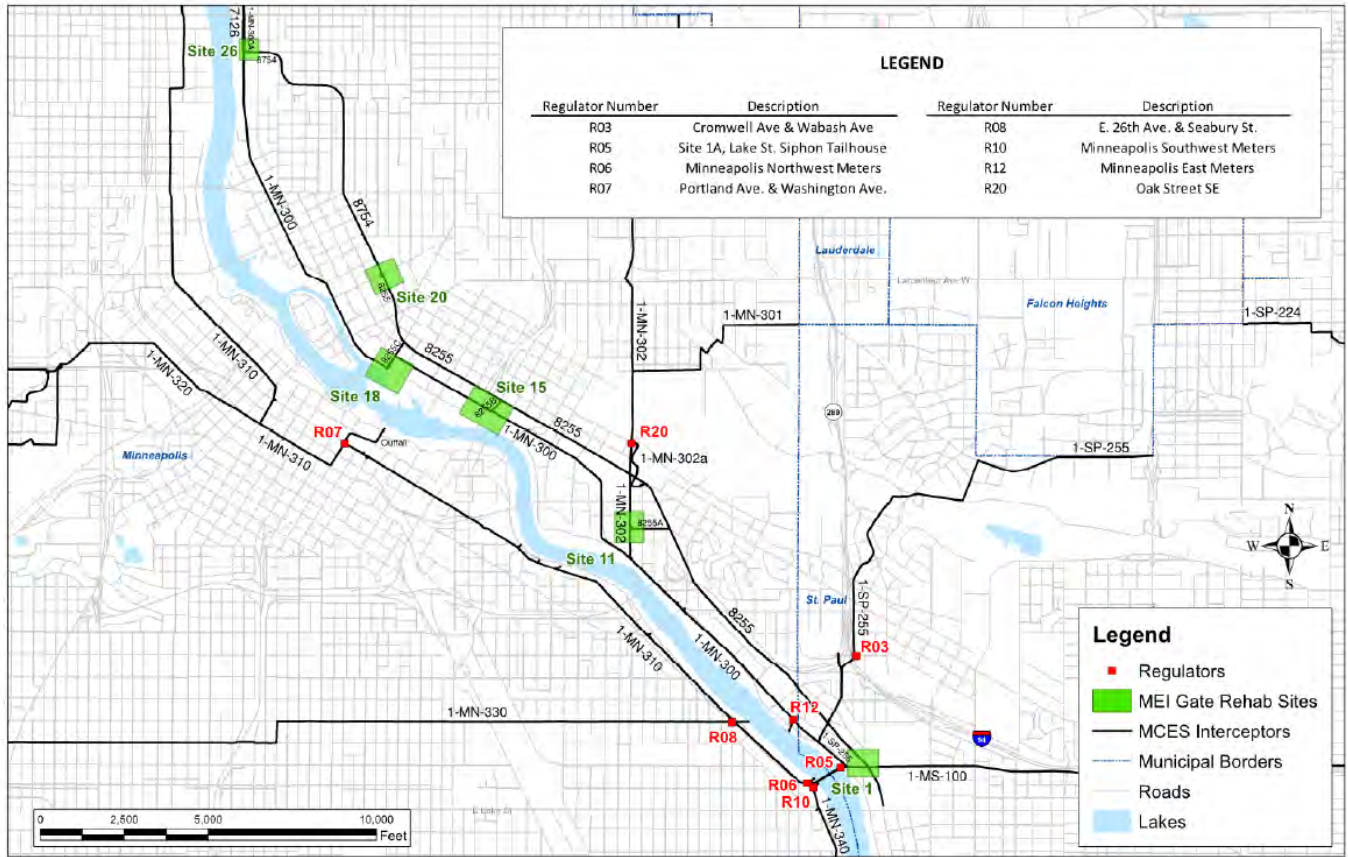


Construction
2020-2022

FINANCIAL ANALYSIS

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|-------------------------------|-----------------------------|---------------------------------------|------------------------------------|
| 2022 Cash Flow \$8,000,000 | Current ACP \$16,651,000 | 2022 – 2027 Cash Flow \$13,839,000 | Total Project Cost \$16,651,000 |
|-------------------------------|-----------------------------|---------------------------------------|------------------------------------|

PROJECT LOCATION MAP



Program Family: 8076
Project # 807647

Lake Street Siphon Inspection

Project Location:
Council District # 8
City of Minneapolis
2935 West River Parkway



Inside of Lake Street Siphon

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|-----------------------------------|---|
| PROJECT TYPE: | Inspection |
| OBJECTIVES: | Preservation |
| CUSTOMER LEVEL OF SERVICE: | Maintain existing assets |
| SCOPE: | This project will include temporary work such as siphon dewatering, lighting, and ventilation; permanent work such as ladder removal and replacement, stop log and hoist installation, and swing gate reinforcement; preparing and maintaining siphons to allow Third Party inspection under the Contractor’s Confined Space Entry Permit; Third Party Inspections including alignment, wall thickness, and ground penetrating radar; minor repairs as directed by the CAR. |
| PROJECT NEED: | The three 60” diameter Lake Street Siphons were last inspected in 1993. Inspections are needed to evaluate current conditions, identify future rehabilitation options, and ensure system reliability. |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

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|-----------------------------|----------------------------|------------------------------------|-----------------------------------|
| 2022 Cash Flow \$500,000 | Current ACP \$3,290,000 | 2022 – 2027 Cash Flow \$500,000 | Total Project Cost \$3,290,000 |
|-----------------------------|----------------------------|------------------------------------|-----------------------------------|

Program Family: 8076
Project # 807650

Minneapolis Joint Sewer Study

Project Location:

Council District #'s 6, 7,
& 8

City of Minneapolis

Various Sites



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|-----------------------------------|---|
| PROJECT TYPE: | Interceptor |
| OBJECTIVES: | Quality Improvement |
| CUSTOMER LEVEL OF SERVICE: | Comply with Permits, Lead by Example, Meet Capacity Needs, Communicate Information, Engage Customers, Coordinate with Others, and Preserve Assets |
| SCOPE: | Multi-year joint study with the city of Minneapolis to collect sanitary flow data at various locations throughout the City. Data will be used for I/I evaluation, hydraulic modeling and prioritizing future system improvements in both the local and regional collection systems. |
| PROJECT NEED: | Some of the oldest regional assets are in Minneapolis with some interceptors dating back to the 1880's and reflect a once combined storm/sanitary collection system. Growth within, and outside of Minneapolis needs to be accommodate through much of the regional system within the City. This coupled with I/I impacts on system flow identified a need to evaluate long-term system capacity needs and the ability of the system to accommodate it. |

PROJECT SCHEDULE



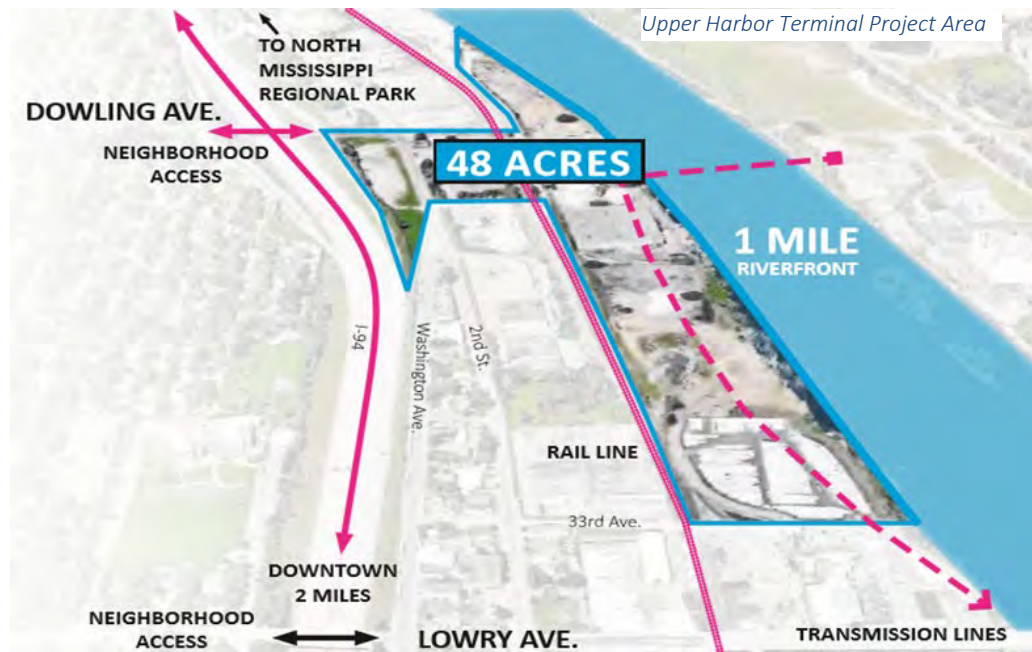
FINANCIAL ANALYSIS

| | | | |
|--------------------------------------|-----------------------------------|---|--|
| 2022 Cash Flow \$1,300,000 | Current ACP \$6,030,000 | 2022 – 2027 Cash Flow \$2,600,000 | Total Project Cost \$6,030,000 |
|--------------------------------------|-----------------------------------|---|--|

Program Family: 8076
Project # 807666

1-MN-310 – Upper Harbor Terminal

Project Location:
Council District # 7
City of Minneapolis
2nd St N



| | |
|-----------------------------------|---|
| PROJECT TYPE: | Cured in Place Pipe Rehabilitation |
| OBJECTIVES: | Preservation |
| CUSTOMER LEVEL OF SERVICE: | Maintain existing assets |
| SCOPE: | CIPP line 5,000 feet of 1-MN-310 from 34th Avenue North to 22nd Avenue North; rehabilitate 20 maintenance holes. |
| PROJECT NEED: | Interceptor 1-MN-310 is adjacent to the proposed Upper Harbor Terminal project in Minneapolis. Recent CCTV inspection has identified Condition 4 deterioration between 34th and 22nd Aves N. The project schedule will be coordinated to limit project impacts on future development in the area. |

PROJECT SCHEDULE



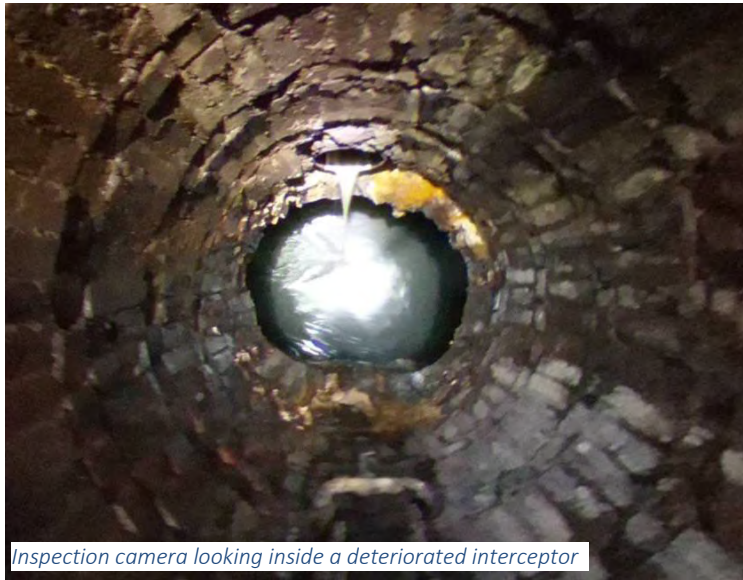
FINANCIAL ANALYSIS

| | | | |
|--------------------------------------|-----------------------------------|---|--|
| 2022 Cash Flow \$1,502,000 | Current ACP \$3,150,000 | 2022 – 2027 Cash Flow \$1,502,000 | Total Project Cost \$3,150,000 |
|--------------------------------------|-----------------------------------|---|--|

Program Family: 8076
Project # 807667

Interceptor 1-MN-310 Rehabilitation Between Broadway and 8th Ave N

Project Location:
Council District # 7
City of Minneapolis
2nd St N



Inspection camera looking inside a deteriorated interceptor

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|-----------------------------------|---|
| PROJECT TYPE: | Cured in Place Pipe Rehabilitation |
| OBJECTIVES: | Preservation |
| CUSTOMER LEVEL OF SERVICE: | Maintain existing assets |
| SCOPE: | CIPP line 2,100 feet of 1-MN-310 from 15th Avenue North to 8th Avenue North; rehabilitate seven maintenance holes; extend temporary conveyance downstream of the siphon so it can be cleaned, inspected and field measured to prepare for a future rehabilitation project that will include the siphon and the remainder of the Condition 4 interceptor downstream. |
| PROJECT NEED: | Interceptor 1-MN-310 was built under 2nd St N in the City of Minneapolis in 1932. Recent CCTV inspection has identified Condition 4 deterioration between 15th and 3th Aves N as shown in gold below. The siphon under Bassett Creek near 8th Ave N has never been inspected. |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

| | | | |
|----------------|-------------|-----------------------|--------------------|
| 2022 Cash Flow | Current ACP | 2022 – 2027 Cash Flow | Total Project Cost |
| \$1,502,000 | \$3,150,000 | \$1,502,000 | \$3,150,000 |

Program Family: 8076
Project # 807670

Minneapolis Odor Control Study – Phase 1

Project Location:

Council District # 6,7,8

Cities of Richfield,
Minneapolis, St. Paul,
Eureka Township, and
Golden Valley



Photo of a carbon unit

| | |
|-----------------------------------|---|
| PROJECT TYPE: | Odor Management |
| OBJECTIVES: | Quality Improvement |
| CUSTOMER LEVEL OF SERVICE: | Minimize Impacts, Be A Good Neighbor, Communicate Information |
| SCOPE: | Model air and wastewater flows, deploy field instruments, and collect samples to identify individual odor sources and propose odor management strategies at the direction of the MCES Odor Management Team. |
| PROJECT NEED: | Consistent improvement of odor mitigation efforts is required to meet MCES level of service goals. |

PROJECT SCHEDULE



FINANCIAL ANALYSIS

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|----------------|-------------|-----------------------|--------------------|
| 2022 Cash Flow | Current ACP | 2022 – 2027 Cash Flow | Total Project Cost |
| \$150,000 | \$1,141,000 | \$150,000 | \$1,141,000 |

MAP of MCES ODOR CONTROL UNITS

MCES Service Area - Odor Control Units -

Jan 14, 2019 - As shown in GIS

Odor Control Units

- Misc Odor Control (3)
- Biofilter (21)
- Biocide (19)
- Carbon (81)

Wastewater Treatment Plants

- Lift Stations

Wastewater Treatment System

- Interceptors

- City & Township Boundaries

