City of Grosse Pointe

Capital Improvement Plan
May 11, 2020
2020-2021 CIP

- Public Utility Fund
  - Water Distribution
  - Sanitary / Combined Sewers
  - Streets
Public Utility Fund
Capital Improvement Plan Components

• Water Mains
• Sanitary Sewers
• Combined Sewers
Water System Facts

1.29 Miles of 4” Mains
10.95 Miles of 6” Mains
4.55 Miles of 8” Mains
0.56 Miles of 10” Mains
5.19 Miles of 12” Mains
0.50 Miles of 16” Mains
23.10 Total Miles of Water Main
Estimated Replacement Cost of 4” and 6” Mains

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>*Estimated Replacement Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4” Mains</td>
<td>6,811 Ft.</td>
<td>$1,975,190</td>
</tr>
<tr>
<td>6” Mains</td>
<td>57,816 Ft.</td>
<td>$16,766,640</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$18,741,830</td>
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</tbody>
</table>

* Based on $290/LF including engineering, observation and contingencies.
Sanitary Sewer System Facts

- 268 Feet of 6” Mains
- 76,839 Feet of 8” Mains
- 11,280 Feet of 10” Mains
- 18,704 Feet of 12” Mains
- 6,245 Feet of 15” Mains
- 4,838 Feet of 18” Mains
- 1,822 Feet of 20” Mains
- 809 Feet of 21” Mains
- 4,476 Feet of 24” Mains
- 296 Feet of 27” Mains
- 406 Feet of 30” Mains
- 5,915 Feet of 36” Mains
- 1,399 Feet of 42” Mains
- 602 Feet of 49” Mains
- 702 Feet of 51” Mains
- 1,203 Feet of 57” Mains
- 451 Feet of 69” Mains

137,076 Total Feet of Sanitary Sewer
### Storm Sewer System Facts

- **751 Feet of 6” Mains**
- **4,458 Feet of 8” Mains**
- **10,233 Feet of 10” Mains**
- **24,372 Feet of 12” Mains**
- **20,212 Feet of 15” Mains**
- **9,790 Feet of 18” Mains**
- **8,060 Feet of 20” Mains**
- **1,820 Feet of 21” Mains**
- **3,292 Feet of 22” Mains**
- **7,035 Feet of 24” Mains**
- **2,278 Feet of 27” Mains**
- **4,403 Feet of 30” Mains**
- **3,888 Feet of 36” Mains**
- **782 Feet of 42” Mains**
- **966 Feet of 48” Mains**
- **449 Feet of 53” x 83” Mains**
- **1,622 Feet of 58” x 91” Mains**
- **1,287 Feet of 63” x 98” Mains**

**114,514 Total Feet of Storm Sewer**
Sanitary / Combined Sewers

- Neff Road Pumping Station Needs
- Future Needs (needed over long term):
  - Replace other Pumps and Pump Valves
    - Important $200,000.00
    - Low $3,718,500.00
Sanitary / Combined Sewers

Remainder of work to be completed from the 2007 TV Inspection

- Medium Priority: $875,000.00
- Low Priority: $260,000.00
- Manhole Rehab: $355,400.00
Loraine Ave – Waterloo to Mack

Results of Sewer Investigation initiated due to multiple sinkholes

- Multiple fractures, 2 holes, and offset joint on sewer main between Mack and Charlevoix
- Multiple fractures at 5 locations and an offset joint on the sewer main between Charlevoix and Waterloo
- 19 service leads with separated joints, offset joints and visable soil
- The majority of the defects lined up with areas in the street where sink holes have developed
- Additional defective leads were identified in areas that have not caused street deterioration
Loraine Ave – Waterloo to Mack

768 Loraine
Loraine Ave – Waterloo to Mack

781 and 782 Loraine
Loraine Ave – Waterloo to Mack

793 Loraine
Loraine Ave – Waterloo to Mack

Why did this happen?:

- Original sewer is nearly 100 years old
- Improper installation and trench settlement have caused the joints in the leads to separate and offset
- Infiltration of soil into the sewer over time has caused the sink holes to form in the street
Loraine Ave – Waterloo to Mack

Recommendations:

- Excavate and replace 19 service leads from the main to the property line and install clean-outs
- Excavate and replace the sewer main at 3 locations due to offset joints and extensive cracking
- Install 560’ of full length cured-in-place pipe in the main between Mack and Charlevoix
- Install 5 sectional cured-in-place pipes in the sewer main between Charlevoix and Waterloo
- Reconstruct Loraine Avenue from Waterloo to Mack
Loraine Ave – Waterloo to Mack

Estimated Cost:

- Mack to Charlevoix - $554,000
- Charlevoix to Waterloo - $726,000
Benefits of Water & Sewer CIP

- Increased Water Pressure and Flow—Better for Fire Protection and Home Water Use
- Reduced Water Main Breaks
- More Uniform distribution of water throughout the City
- Reduce the number of “emergency repairs” that create sink holes, road cave-ins and sewer backups
- $$$ - avg. cost of trenchless repairs of $100/ft vs $400/ft for conventional excavation methods to repair sewer lines
- Proactive plan to address aging infrastructure versus crisis fixes
WATER AND SEWER CIP
FY 2020/21 TO 2025/26

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Work Year</th>
<th>Street</th>
<th>Limits</th>
<th>Length</th>
<th>Estimated Cost</th>
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</thead>
<tbody>
<tr>
<td>2020/2021</td>
<td>2021</td>
<td>Loraine Ave Sewer Repairs and Street Recon - Mack to Charlevoix</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$554,000 $195,098 $90,000</td>
<td>$839,098</td>
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<tr>
<td>2021/2022</td>
<td>2022</td>
<td>Loraine Ave Sewer Repairs and Street Recon - Charlevoix to Waterloo</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$726,000 $175,000 $90,000</td>
<td>$991,000</td>
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<tr>
<td>2022/2023</td>
<td>2023</td>
<td>Medium Priority Sanitary Sewer Repairs</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$250,000 $175,000 $90,000</td>
<td>$515,000</td>
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<tr>
<td>2023/2024</td>
<td>2024</td>
<td>Dead End Loops South of Jefferson</td>
<td>1407 Ft</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$492,450 $175,000 $90,000</td>
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<td>2024/2025</td>
<td>2025</td>
<td>Replace 4&quot; and 6&quot; Mains (locations TBD)</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$500,000 $175,000 $90,000</td>
<td>$765,000</td>
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<tr>
<td>2025/2026</td>
<td>2026</td>
<td>Replace 4&quot; and 6&quot; Mains (locations TBD)</td>
<td>Storm Sewer Replacement on Street Projects Lead Water Services (5% of 240 @ $7500 each)</td>
<td>$500,000 $175,000 $90,000</td>
<td>$765,000</td>
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NOTE: * Based on $350/LF including engineering, observation and contingencies
Road Improvement Fund
Road Improvement Fund

• This years projects include:

  • Goethe Street – University to Washington $498,190
  • University Place – Goethe to 105’ south $50,254
  • Rivard Blvd – Kercheval to St. Paul $339,383
  • Grosse Pointe Ct. – Charlevoix to Mack $187,752
City Equipment
Capital Improvement Plan
May 11, 2020

THANK YOU