Infiltration and Inflow Reduction Program Plan

Review and Approval of Professional Services
Commission Meeting
September 12, 2019

Madison Metropolitan Sewerage District
There is no one-fits-all approach or easy fix for infiltration and inflow.

- Complicated issue
- Wide-spread
- Collaboration is needed
- Will take time
- Costly
Best Practices for I/I Programs

- Structured **collaboration** throughout the program lifecycle
- Includes addressing I/I from **private property** sources
- Consistent and ongoing **public education** and outreach programs
Sources of Infiltration and Inflow

Over 50% of I/I is from private property

- Roof Drain Connection
- Connected Foundation Drain/ Sump Pump
- Faulty Lateral Connection
- Faulty Manhole Cover or Frame
- Deteriorated Manhole
- Catch Basin to Sanitary
- Storm Sewer
- Cracked or Broken Pipe
- Storm Cross Connection
Sources of Infiltration and Inflow

<table>
<thead>
<tr>
<th>Sewer Length Comparison</th>
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</thead>
<tbody>
<tr>
<td>MMSD Gravity Sewer</td>
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<tr>
<td>Local Mains</td>
</tr>
<tr>
<td>Laterals Estimate</td>
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</tbody>
</table>
Daily Flow to NSWTP = 40 MGD
- Daily Wastewater Flow = 34 MGD
Daily Infiltration = 6 MGD
Inflow Examples within District Service Area

**PS16**

**PS17**

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I/I Program Timeline

Collaboration with Customer Communities and Public Outreach

I/I Reduction Plan Development and Evaluation

**Years 1-2**
- Quantify I/I
- Program Framework

**Years 3-5**
- Establish metrics
- Policy changes

**Implement I/I Projects**

**Years 6-25+**
- Evaluate I/I reduction
- Modify program based on results

Madison Metropolitan Sewerage District
**Project Scope of Work**

Discuss impacts to:
- District
- Our customer communities
- Private property

Outcomes:
- Framework for Program
- Implementation Strategy

CMOM

District’s Role

Flow Data Analysis

Financial Incentives and Funding

Public Education and Outreach

Sewer Use Ordinance

Assess

Consider

Decide

Document

**Madison Metropolitan Sewerage District**
Advertising and Proposal Results

- Advertised in July
- 13 consulting firms contacted
- 2 proposals received

<table>
<thead>
<tr>
<th>Consulting Firm</th>
<th>Proposal Amount</th>
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<tbody>
<tr>
<td>Brown and Caldwell</td>
<td>$ 99,910</td>
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<tr>
<td>Stantec</td>
<td>$ 100,000</td>
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- Committee selection: Brown and Caldwell
Why Brown and Caldwell?

Local Resources
National Experience

Local BC staff are involved in important I/I related projects from coast to coast. This experience delivers fresh and successful perspectives on dealing with I/I.
Why Brown and Caldwell?

Working with Satellite Communities on Regional Wet Weather Issues
National Association of Clean Water Agencies (NACWA), Washington, DC

- Summarizes viable options for regional wet weather solutions
- Articulates strategies for multi-jurisdictional collaboration
- Translates USEPA incentive concepts to approaches appropriate in wet weather flow reduction situations

In a 2018 NACWA update of the paper, the authors concluded that the original work still represented “the most comprehensive work on this topic to date...”

BC’s Role in Project
Prime
Project Manager and Primary Author
Andy Lukas

Madison Metropolitan Sewerage District
Next Steps

• Part of the Collection System Facilities Plan
• Consider 3 program options
• Form a Technical Advisory Committee
• Check back in Spring 2020 with the Commission to present stakeholder input on program options and recommendation
Recommendation

- Award the contract to Brown and Caldwell
- Per the Resolution
- Work to begin October 2019; Complete by mid-2020