Why do we Strive to be a Utility of the Future?

Kevin L. Shafer, PE
Milwaukee Metropolitan Sewerage District
What drove Milwaukee to strive toward being a Clean Water Utility of the Future?

Permit?
Financials?
Politics?
Efficiencies?
The Environment?
Climate Change?
Public Pressure?
“Milwaukee is swimming in sewage”
In 2004, I decided I had to reshuffle the deck.

- Put aside the Permit
- Put aside the Budget
- Focus on the Environment
- Focus on Efficiencies
- Rely on Good Science
- Include Climate Adaptation
- Pray the Media Changes
- Build from our Strengths
Deep Tunnels

300 Feet Below ground

521 Million Gallons of Storage

28.5 Miles Long

17- to 32-feet In Diameter

Designed to minimize basement backups and for 1-2 overflows per year.
98.3%
Capture & Clean
Since 1993
So, what did we do?

First, we change our tone from defensive to one of, “We need your help,” and, “We are not perfect.”
# The Greater Milwaukee River Watersheds

<table>
<thead>
<tr>
<th>Watershed</th>
<th>Area (square miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kinnickinnic River</td>
<td>24.7</td>
</tr>
<tr>
<td>Menomonee River</td>
<td>135.8</td>
</tr>
<tr>
<td>Milwaukee River</td>
<td>700.0</td>
</tr>
<tr>
<td>Oak Creek</td>
<td>28.2</td>
</tr>
<tr>
<td>Root River</td>
<td>197.6</td>
</tr>
<tr>
<td>Lake Michigan Direct</td>
<td>40.7</td>
</tr>
</tbody>
</table>

**Drainage Area**

- **Total**: 1,127.0

**Number of Counties**: 9

**Number of Local Municipalities**: 83
SEWRPC’s Regional Water Quality Management Plan Update
Pollution Sources Summary

CONCLUSION: Focus on abating stormwater runoff pollution
MMSD’s 2035 Vision
(http://v3.mmsd.com/NewsDetails.aspx)

**Integrated Watershed Management Goals:**

- Zero sanitary sewer overflows
- Zero combined sewer overflows
- Zero homes in the 100 year floodplain
- Acquire an additional 10,000 acres of river buffers through Greenseams®
- Use green infrastructure to capture the first 0.5 inch of rainfall
- Harvest the first 0.25 gallons per square foot of area of rainfall

**Energy Efficiency and Climate Mitigation & Adaptation Goals:**

- Meet 100% of MMSD's energy needs with renewable energy sources
- Meet 80% of MMSD's energy needs with internal, renewable sources
- Use the Greenseams® Program to provide for 30% sequestration of MMSD's carbon footprint
- Reduce MMSD's carbon footprint by 90% from its 2005 baseline
Valley Park Project
County Grounds
Menomonee River Concrete Removal
Kinnickinnic River Progress

74 out of 83 properties acquired

5 homes deconstructed/demolished in 2015

Photos by: Eddee Daniel
Schoonmaker Creek
Managing Water Where it Falls
Green Infrastructure

Since 2002

21.5 Million Gallons
Green Roofs

Managing up to 512,000 Gal. Per Storm
22,187 Rain Barrels

Total Storage = 1,150,000 Gallons
Up to 12,000 gal. per Storm

MMSD’s Fresh Coast 740 brings you

WEST ALLIS
green summer
2015

100 Rain Barrels
23 Rain Gardens
Questions

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