Zero At-Risk
Floodplain Development

Kevin Shafer, PE
Executive Director
Milwaukee Metropolitan Sewerage District
# 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
Milwaukee Metropolitan Sewerage District

We Serve:
- 1.1 Million Customers
- 28 Municipalities
- 411 Square Miles

We Protect the Public & Lake Michigan:
- Convey/Store/Reclaim Wastewater
- Manage Flooding

We Have:
- 300 Miles of Sewers (municipalities and individuals have 6,000 miles!)
- 521 MG Tunnel System
- 2 Water Reclamation Facilities
MMSD’s Water Reclamation Facilities (WRFs)

Jones Island

South Shore
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

Photo by: David Stefanik
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
Lincoln Creek

- Concrete Removal
- Minimized Floodplain
- Habitat Enhancement
Valley Park Project
County Grounds
Menomonee River Low Gradient Removal Project

- Total Cost - $990,439
- Partners:
  - NOAA - $142,100
  - Fund For LM - $200,000
  - SOGL - $400,000
  - GLFT - $25,000
Menomonee River - Concrete Removal
Kinnickinnic River - 1961
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
Greenseams® More than 3,300 Acres
Green Infrastructure
Since 2002
21.5 Million Gallons
Green Roofs

Managing up to 512,000 Gal. Per Storm
22,187 Rain Barrels
Distributed since 2002
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

Kevin Shafer
Executive Director
Milwaukee Metropolitan Sewerage District
kshafer@mmsd.com
414-225-2088