Welcome to NEW Water

Quarterly Update Meeting: Resource Recovery and Electrical Energy Project & Customer Quarterly Combined

March 5, 2015
Overview of Today’s Update

• Welcome! This year, combining R2E2 and Quarterly Update meetings
• Brief background for any newcomers
• NEW Water Financial Update
• R2E2 Update
• Interceptor Master Plan
• Billing Methodology
• Adaptive Management
• How to stay informed

Pictured here: 2015 winter is not as bad as 2014, not as many equipment issues. As always, NEW Water is providing round-the-clock service
NEW Water at a Glance

- Serving community since 1931
- Wholesale provider to 18 municipalities, 285-square mi.
- Two facilities treating average 38 million gallons per day
- Clean water stewards 24/7/365
- Award-winning effluent cleaner than receiving waters
NEW Water Finances: Overview

- $300 million in fixed assets, 110 miles of interceptors, 1,183 manhole structures, air releases, lift stations, wet wells, meter stations, junction chambers
- Aaa bond rating from Moody’s
- Budgeting begins in March; budget runs off calendar year January – December
- Currently in process of annual audit
NEW Water Finances: 2015 Budget

• $35.3 million
  – $19 million operations and maintenance
  – $16.3 million capital and debt service
• 9.9% rate increase over 2014
  – $2.90 per thousand gallons municipal rate charge
• Main drivers are:
  – Debt service for new solids handling facility
  – Green Bay Facility disinfection system
  – Reduced customer loadings (including 10% reduction in Biochemical Oxygen Demand)
  – Compliance with the new Wisconsin Pollutant Discharge Elimination System permit
Finances: Our Rates Compared

Source: National Association of Clean Water Agencies
EPA region 5: Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin
Resource Recovery & Electrical Energy

• New solids handling facilities including:
  – Anaerobic digestion
  – Centrifuge dewatering
  – Nutrient recovery system
  – Solids drying
  – Fluid bed incineration
  – Air pollution control equipment
Resource Recovery & Electrical Energy

- Resource recovery features:
  - Electrical energy generation
    - Biogas engines utilizing digester gas
  - Heat recovery
    - Biogas engine jacket & exhaust
    - Fluidized bed incineration exhaust
    - Utilize heat for solids drying, digester and building heat
  - Nutrient recovery
- Estimated energy savings = $2.2 million/yr
Resource Recovery: Struvite

- Nutrient recovery in the form of struvite
  - Converts into a fertilizer product
  - Creates a $400,000 revenue stream
  - Reduces maintenance of equipment & piping
  - Multiform Harvest was pre-selected vendor
R2E2 Budget Summary

• Project budget summary
  – $147,000,000 capital cost from the 2011 Facility Plan estimate
  – $149,000,000 current engineer’s estimate

• Contractor prequalification completed
  – (6) general contractors
  – (4) mechanical contractors
  – (4) electrical contractors
# R2E2 Timeline

<table>
<thead>
<tr>
<th>Description</th>
<th>Estimated Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract 33 – Construct New Switchgear Building and Substation</td>
<td>Complete</td>
</tr>
<tr>
<td>Contract 33 – New Switchgear Operational</td>
<td>Complete</td>
</tr>
<tr>
<td>Contract 33 – Substantial Completion</td>
<td>April 2015</td>
</tr>
<tr>
<td>Contract 34 – Bidding Period</td>
<td>April - May 2015</td>
</tr>
<tr>
<td>Contract 34 – Digestion &amp; Solids Facilities Construction</td>
<td>Mid 2015 – End 2017</td>
</tr>
<tr>
<td>Contract 34 – Digestion &amp; Solids Facilities Commissioning</td>
<td>Late 2017 – Early 2018</td>
</tr>
<tr>
<td>Contract 34 – Digestion &amp; Solids Facilities Operational</td>
<td>Early 2018</td>
</tr>
<tr>
<td>Contract 34 – Existing Solids Facilities Shutdown</td>
<td>Early 2018</td>
</tr>
<tr>
<td>Contract 35 – Existing Solids Building Demolition &amp; Site Restoration</td>
<td>Mid 2018 – Mid 2019</td>
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Interceptor System Master Plan Update

*Phase 1: Completed in 2014*

- Review of existing NEW Water interceptor records and databases
- Collection of sanitary sewer information and water billing records (where available) from customer municipalities
- Review of Customer Allocations in NEW Water interceptors
- Selection of the modeling software
- Development of a flow monitoring plan
- Initial Inflow and Infiltration Analysis
Interceptor System Master Plan Plan Update

Phase 2: 2015 - 2016

- Phase 2 approved January, 2015
- Flow meter installation in select areas to better define flows within the interceptor system. Data will be used to calibrate the hydraulic model of the NEW Water interceptor system
- Hydraulic modeling of the NEW Water interceptor system using MIKEURBAN
  - Will help identify any system capacity deficiencies
- Final Inflow and Infiltration Analysis
- Development of a 20-year Capital Improvement Plan
- Finalizing the Interceptor System Master Plan Report
Billing Methodology Project Update

- Stakeholder Advisory Committee met in 2014 to select equitable and defensible methodology
- A “mass loading” option was selected, slight revision to status quo
- Beginning design of new program in April
- Implementation for 2016
Adaptive Management - Background

- NEW Water is seeking lowest-cost option for new phosphorus rules
- Adaptive Management offers a more cost-effective, and environmentally sustainable solution
- Facility improvements would cost:
  $223 - $394 million capital cost + $2 million annual O&M cost
Adaptive Management Pilot: Silver Creek

Silver Creek Watershed (LF05-8) a sub-watershed of the Lower Duck Creek (HUC12 040302040106)

<table>
<thead>
<tr>
<th>Watershed Area</th>
<th>4799.8 acres (7.50 mi²)</th>
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<tbody>
<tr>
<td>MS4</td>
<td>346 acres (7.2% of watershed)</td>
</tr>
<tr>
<td>Land cover</td>
<td></td>
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<tr>
<td>2012 Cropland Data Layer USDA NRCS</td>
<td></td>
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<tr>
<td>Agricultural</td>
<td>2296.4 acres (47.8%)</td>
</tr>
<tr>
<td>Forest</td>
<td>585.1 acres (12.2%)</td>
</tr>
<tr>
<td>Grassland</td>
<td>12.3 acres (0.3%)</td>
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<tr>
<td>Pasture</td>
<td>1065 acres (22.2%)</td>
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<tr>
<td>Urban</td>
<td>503.9 acres (10.5%)</td>
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<tr>
<td>Water</td>
<td>64.5 acres (1.3%)</td>
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<tr>
<td>Wetlands</td>
<td>272.6 acres (5.7%)</td>
</tr>
<tr>
<td>Stream Length</td>
<td>14.93 miles</td>
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<tr>
<td>TMDL Phosphorus Baseline Load</td>
<td>3391 lbs. (0.71 lbs. per acre)</td>
</tr>
</tbody>
</table>
Silver Creek 2013-2014: Inventory & Partnership Building

• Installation of US Geological Survey station
  – Event sampling, flow and loading measurements
• Soil sampling and analyze data
• Stakeholder and landowner/grower meetings
• Stakeholder commitments and work planning
• Nutrient Management Plans
Silver Creek: 2015 - Onward: Conservation Planning / Implementation

- Finish soil sampling
- Develop Nutrient Management Plans and review with grower
- Schedule field walks and develop Conservation Plans
- Enrollment into programs and identify cost share needs
- Continued implementation of best management practices (BMPs)
- Wetland restoration planning
- 2018: NEW Water must provide information to DNR regarding future direction of phosphorus reduction options as required in WPDES permit
  - Is Adaptive Management a more cost-effective solution than capital investment at the treatment facility?
  - Can more phosphorus and sediment be removed from the watershed through Adaptive Management than facility improvements?
The Business Case for the Watershed

• NEW Water has captured more than $2 million in grants for Silver Creek
• NEW Water is driven by finding lowest-cost approach to phosphorus reduction
• Silver Creek, if successful, could be replicated
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Questions/Comments?

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