Green Bay Metropolitan Sewerage District
Sustainability plan

Presented at the Wisconsin Wastewater Operators Association 44th Annual Conference
By
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And
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Agenda

- About GBMSD
- Strategic Planning Process
- Program development
- Outline of the program
- Where are we?
About GBMSD

- Wholesaler of wastewater conveyance and treatment services.
- 17 municipal customers (219,000 people) and 1 direct industrial customer.
- Service area of 285 square miles.
- Two Wastewater Treatment Plants (WWTP), seven miles apart, discharging to Fox River.
- Green Bay WWTP – 30 mgd, 45,300 lbs/day Biochemical Oxygen Demand (BOD).
- De Pere WWTP – 8 mgd, 29,900 lbs/day BOD.
Strategic Planning Process

- Strategic Planning process
  - Needed to address future
- Involved multiple stakeholders
- Established future goals
- Identified 14 strategic investments
Strategic Investments:

Support Economic Development:
- Partner with Regional Interests
- Available Capacity
- System Reliability
- Environmental Cost Management

Exceptional Career Development Opportunities:
- Staff Training/Development
- Workforce Diversity
- Transition of Positions
- Employment Environment/Culture

Environmental Stewardship/Education:
- Enhance Regional Water Quality
- Promote Sustainable Operations
- Education, Research & Development

Diverse, Quality Services:
- Meet/Exceed Regulatory Requirements
- Efficient Customer Service
- Develop/Expand Environmental Services
Strategic Planning Investments

1. Watershed-Based Planning
2. Services to Other Municipalities
3. In-District Sustainability
4. Risk-Based Asset Management
Sustainability Plan Development

- Define Sustainability
- Engage Consultants
- Selection Process
In-District Sustainability

GBMSD’s Definition:
Strategies that integrate economy, ecology, and social equity into daily decisions, polices, and practices to ensure a prosperous and healthy future for today and tomorrow’s generations.

Highlights GBMSD commitment to “triple bottom line”.
Engage Consultants

- Invited consultants to provide proposals
- Selected two respondents for interviews
- Selected on one firm, provided notice, received approval from the board August, 2010
Program Development Process

- Task 1 – Education
- Task 2 – Technical Investigation
- Task 3 – Program formulation
Education

- Two way street
- Conducted workshop on sustainability
- Provided background information on key issues
- Conducted phone interviews with selected individuals
- The focus was to lay a foundation for program formulation
What is Sustainability?

- Decisions are made by evaluating the three E’s
  - Economy - Maximize your potential for revenue
  - Ecology - Minimize your environmental footprint
  - Social Equity – Improve your quality of life
Small, Simple Wins

- Turn off lights when you leave a room
- Turn off computers when not in use
- Don’t heat or cool buildings not in use
- Use programmable thermostats
- Utilize natural lighting wherever possible
- Go electronic - reduce paper, become more efficient
  - Monthly newsletter
  - Company letters
  - Customer and vendor billing
  - Commission meetings
Employee Incentive Programs

- One gallon of gas = 1 lb of CO$_2$ emission
- Cut one 10-mile (reduce 10lbs of CO$_2$) trip a week
- 90 staff members = 900 lbs of CO$_2$/week or 43,200 lbs of CO$_2$/year

Greenhouse gas emissions

- Transportation 29.9%
- Industrial 25.7%
- Residential 17.8%
- Other Sources 10.5%
- Commercial and Institutional 16.1%
Why?

- Healthy, rested, and well-trained employees means:
  - Staying with the company
    - Buildup collective knowledge
    - Contribute to long-term stability
    - Reduce recruitment costs
  - Performing better and producing more
  - Bringing ideas and showing enthusiasm
  - Lessening sick time use
  - Creating a positive environment for everyone to want to work here
Technical Evaluation

- Review plant records
- Prepare summaries to be used in plan formulation
- Rearrange data in different ways to review results.
- Some examples:
Figure 14: Greenhouse Gas Emissions
(Green Bay Facility)

Prepared by:
Symbiont
Rebecca Vanderbeck, 11-13-09
Figure 6: Percent of Total On-site Energy  
(Green Bay Facility)

- Secondary Treatment: 49%
- Influent Pumping: 22%
- Biosolids Treatment: 16%
- Miscellaneous: 10%
- Primary Treatment: 3%

Data Source: Wisconsin Focus on Energy Analysis (October 2002)
Figure 7: Top Sources of On-site Energy Use
(Green Bay Facility)

Data Source:
Wisconsin Focus on Energy Analysis
(Octobr 2002)
GBMSD recently replaced the anoxic zone mixers. The result lowered the energy associated with secondary treatment. Energy reduction estimate at 196,584 KWH per year (40% reduction). Equal to eliminating one 30 Hp motor.
Program Formulation

• Critical Step – Brainstorming workshop
  • Need representation from all areas
• Next – develop plan outline, share with team
• Next – develop draft plan, share with team
• This process must be iterative!
• The process must engage all team members!
Commitment to Sustainability

- GBMSD has already provided a lot of direction by
  - Defining sustainability
  - Having a strategic plan with investments
  - Committing to “triple bottom line”
Outline of the Plan

• The plan consists of 6 parts:
  • Introduction
  • Goals
  • Structure
  • Timeline
  • History
  • Next Steps

• The key elements are Goals and Structure
Goals

- Baseline measurement
- Evaluate energy efficiency
- Create energy conservation policies
- Create sustainability training
- Incorporate into decision-making
- Standardize
- Create recognition program
Structure

- Project Management
- Office and Building Operations
- Plant Operations
- Human Resources
- Financial
- Communications and Outreach
One Example – Triple Bottom Line

- GBMSD is committed to applying this into decision making
- How to weight each element?
- One approach – consider each strategic investment – how do they relate to triple bottom line?
## Matrix of investments

<table>
<thead>
<tr>
<th>Strategic Investment</th>
<th>Ecology</th>
<th>Economy</th>
<th>Social Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partner with Regional Interests</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Available Capacity</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>System Reliability</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Environmental Cost Management</td>
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<td>X</td>
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<td>Staff Training Development</td>
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<td>Workforce Diversity</td>
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<td>Transition of Positions</td>
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<tr>
<td>Employment Environment Culture</td>
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<td>X</td>
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<tr>
<td>Enhance regional Water Quality</td>
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<tr>
<td>Promote Sustainability</td>
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<td>Education, Research &amp; Development</td>
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<tr>
<td>Meet/Exceed Regulatory Requirements</td>
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<tr>
<td>Efficient Customer Service</td>
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<tr>
<td>Develop/Expand Environmental Services</td>
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<tr>
<td>Totals</td>
<td>7</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Percentage</td>
<td>33.3%</td>
<td>33.3%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>
Results

- Economy: 33.3%
- Ecology: 33.3%
- Social Equity: 33.3%

Early Wins
Where are we?

• Final Plan Complete
• Elements of the plan already advancing:
  • HR employee evaluation forms include sustainability
  • Large scale projects being identified
  • Energy savings evaluation of operations is beginning
  • Potentially working with UW-Green Bay internship program
• Management Systems Development needed
Thank You!

Contact Information

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