Green Bay Metropolitan Sewerage District Sustainability plan

Presented at the Wisconsin Wastewater Operators Association 44th Annual Conference

By
Lisa Evenson – Green Bay Metropolitan Sewerage District
And
Jon Butt - Symbiont

Cleaning Water Today for Tomorrow's Generations

SYMBIONT

Agenda

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

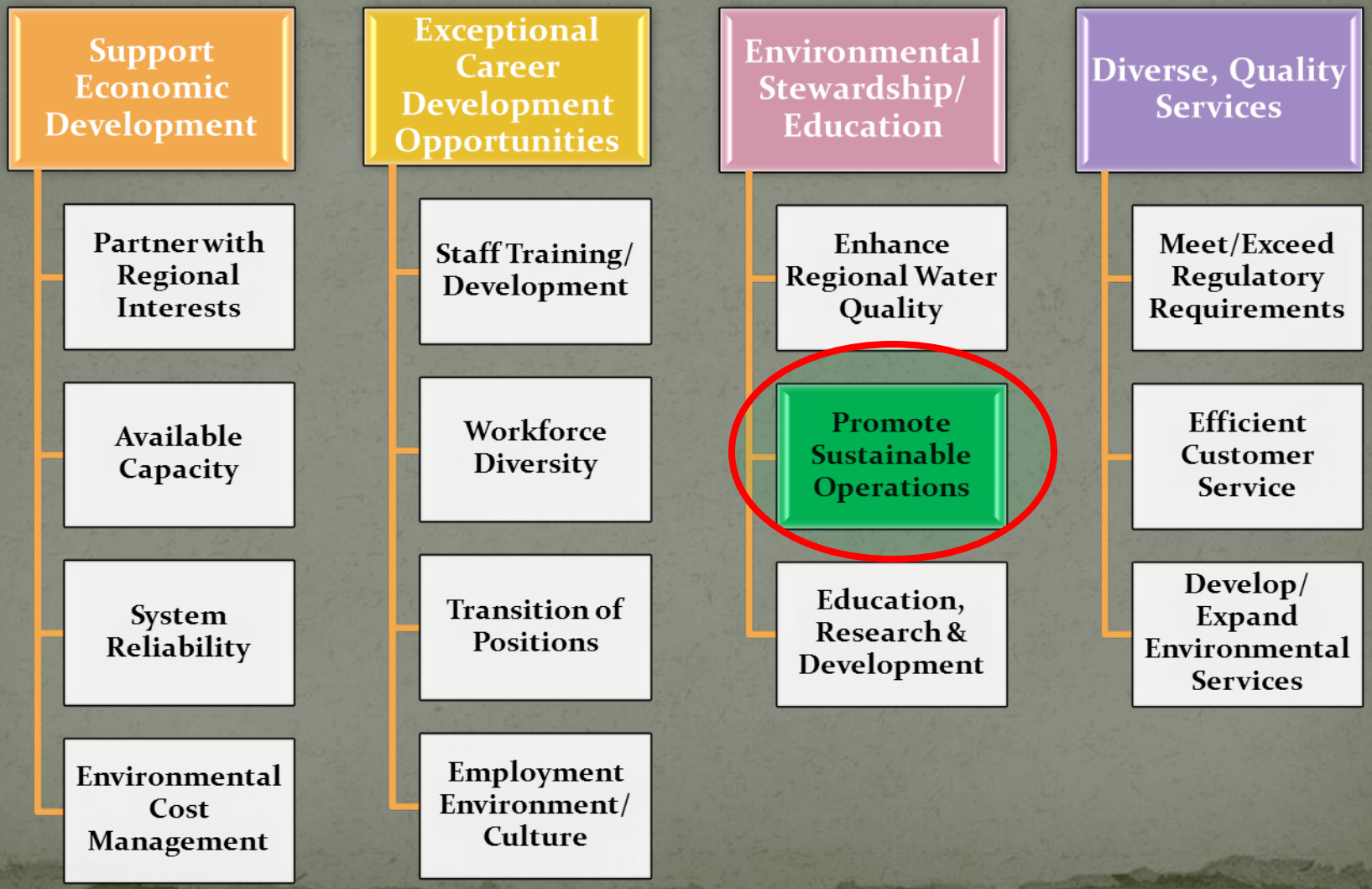
About GBMSD

- Wholesaler of wastewate
  treatment services.
- 17 municipal customers (
  direct industrial custome
- Service area of 285 squar
- 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:



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?

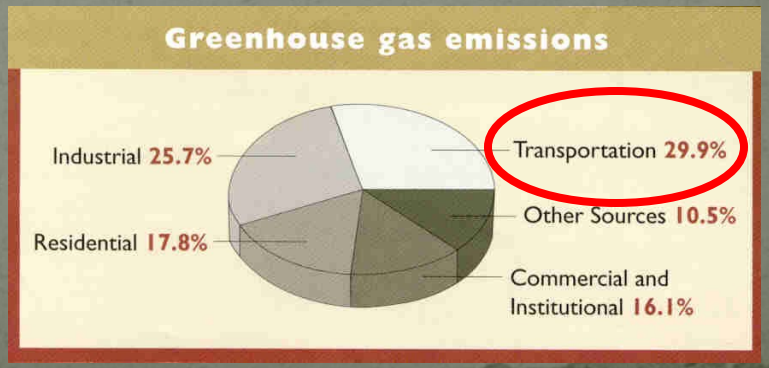
- Decisions are made by evaluating the three E's
  - Economy - Maximize your potential for revenue
  - Ecology - Minimize your environmental footprint
  - Social Equity – Improve your quality of life

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



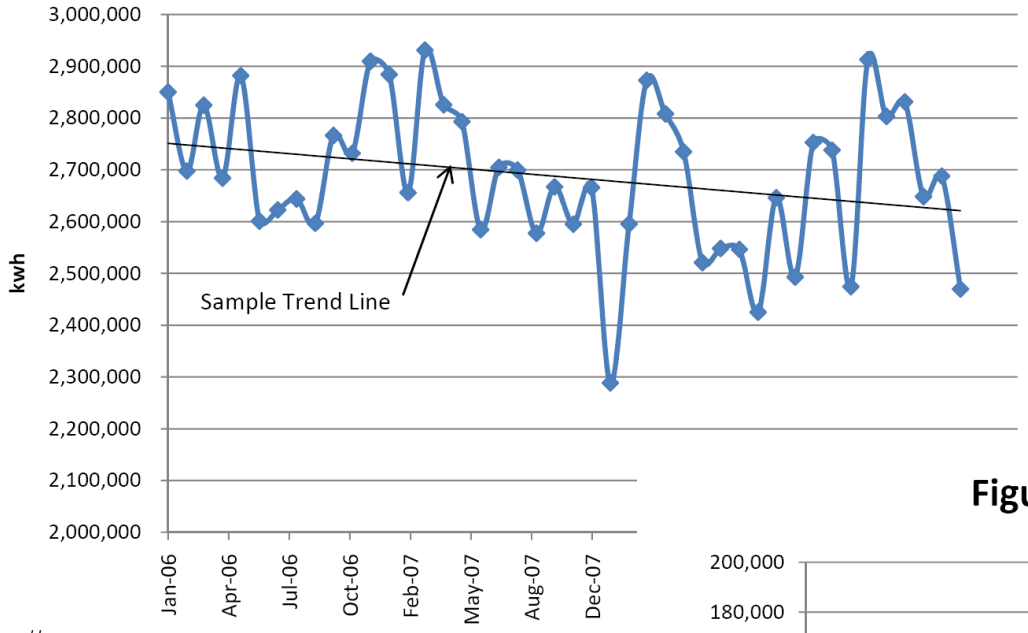
Why?

- 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 4: Electrical Energy Usage
(Green Bay Facility)



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SYMBIONT
Rebecca Vanderbeck, 11-13-09

Figure 12: Natural Gas Usage
(Green Bay Facility)

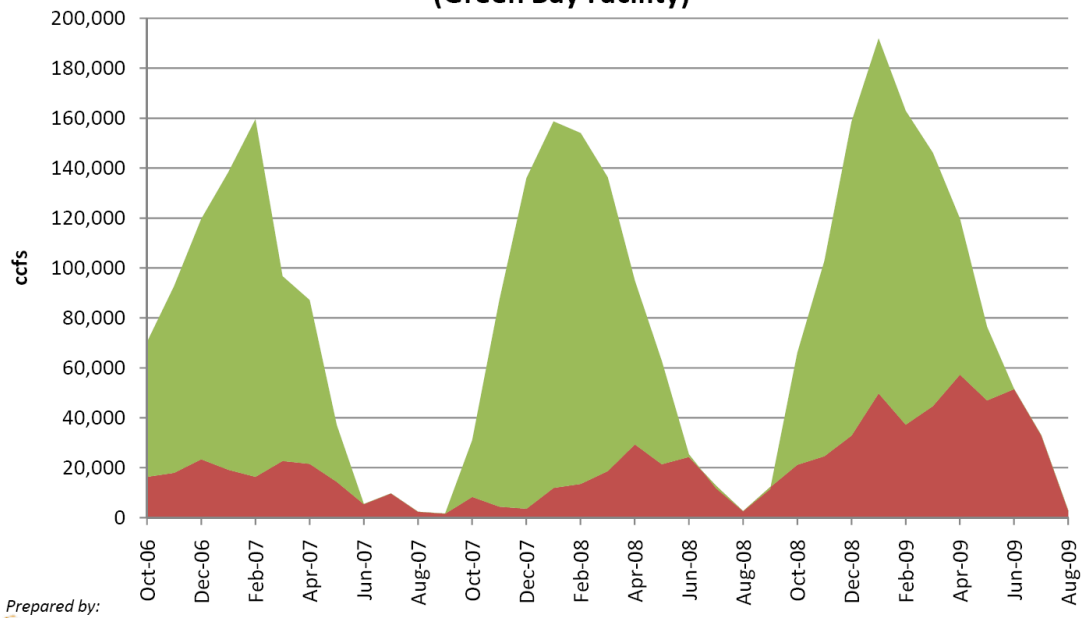

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Figure 14: Greenhouse Gas Emissions
(Green Bay Facility)

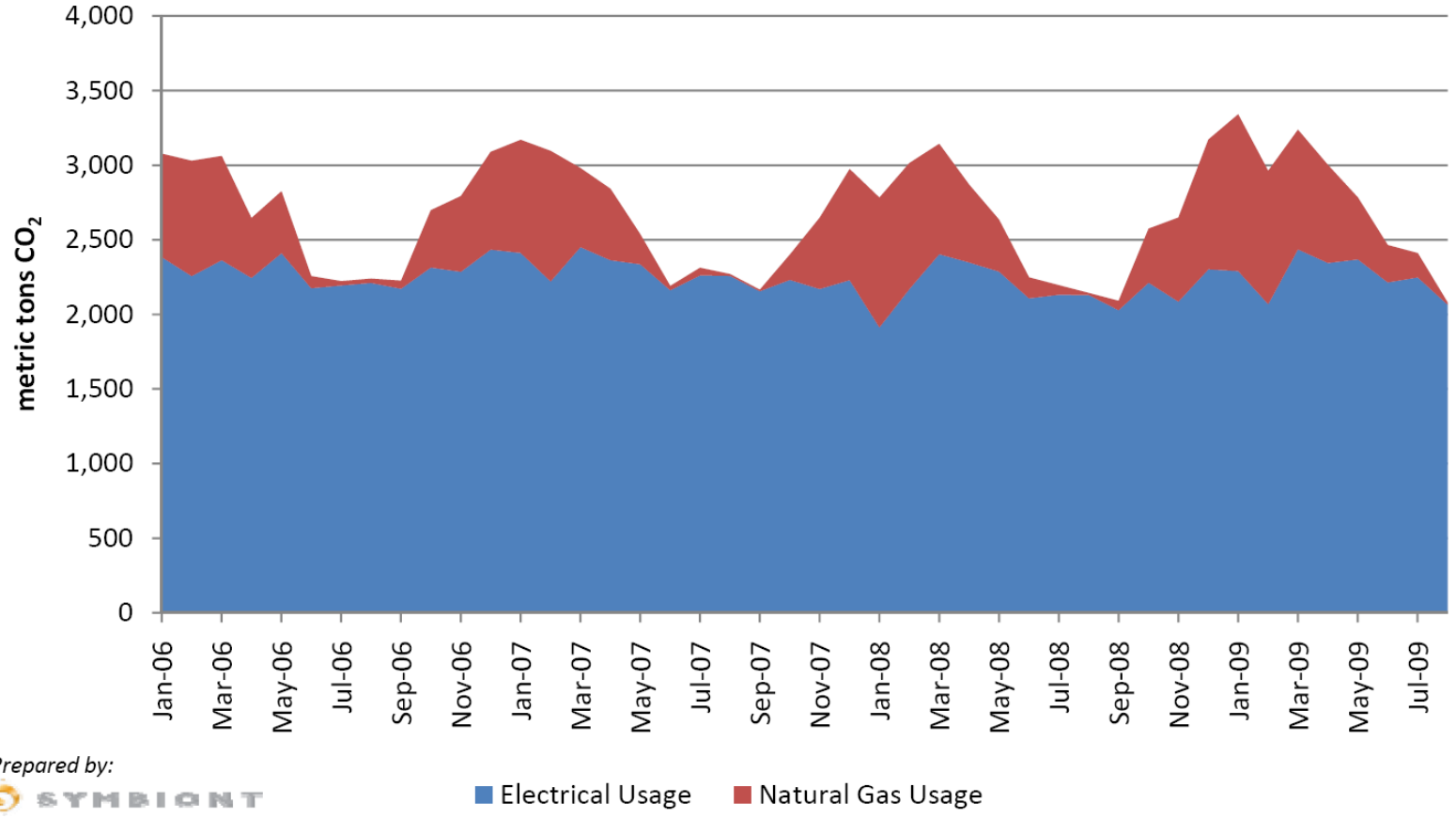

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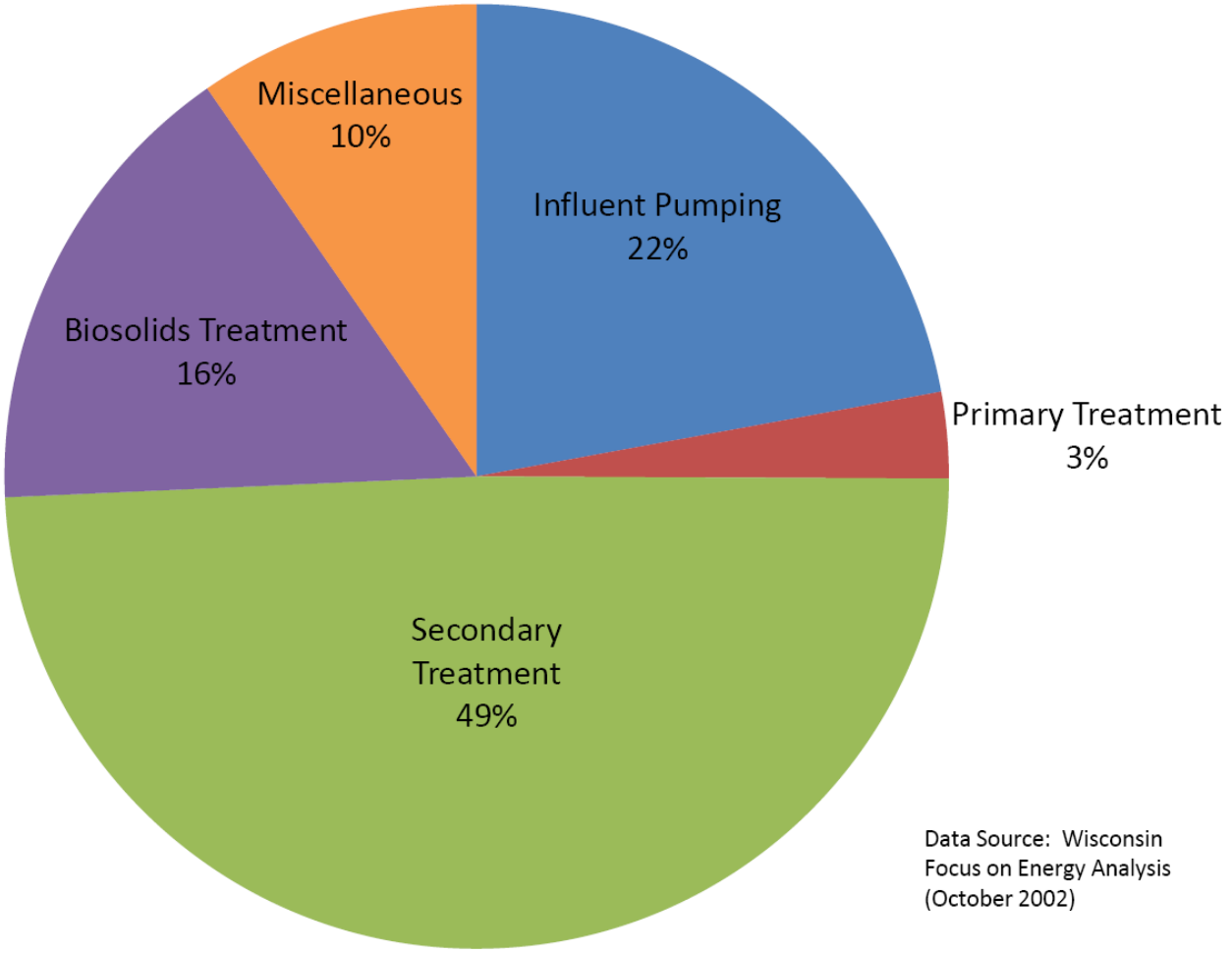
Figure 6: Percent of Total On-site Energy
(Green Bay Facility)



Data Source: Wisconsin Focus on Energy Analysis (October 2002)

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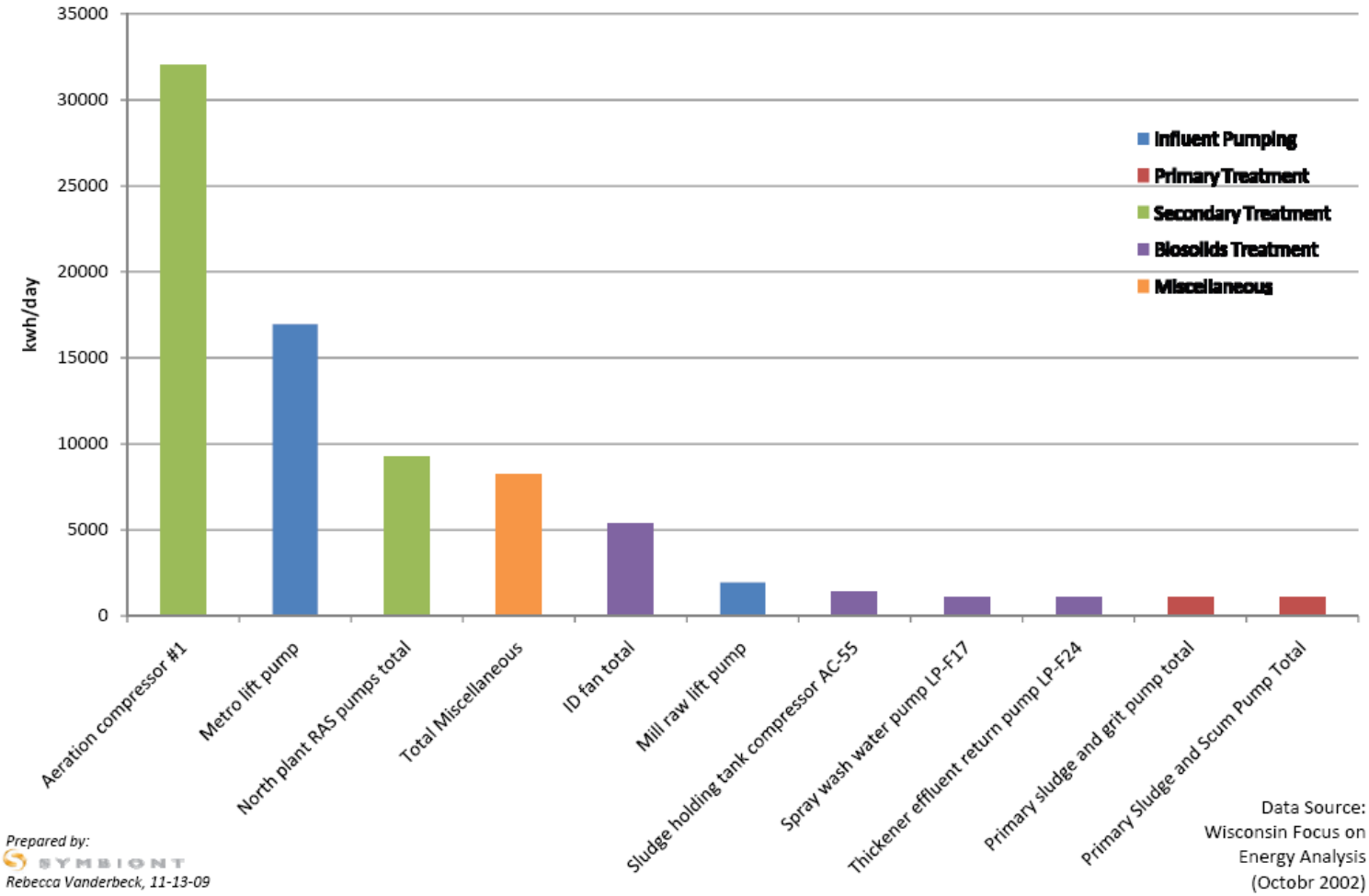
Figure 7: Top Sources of On-site Energy Use

(Green Bay Facility)



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Systems update

- 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

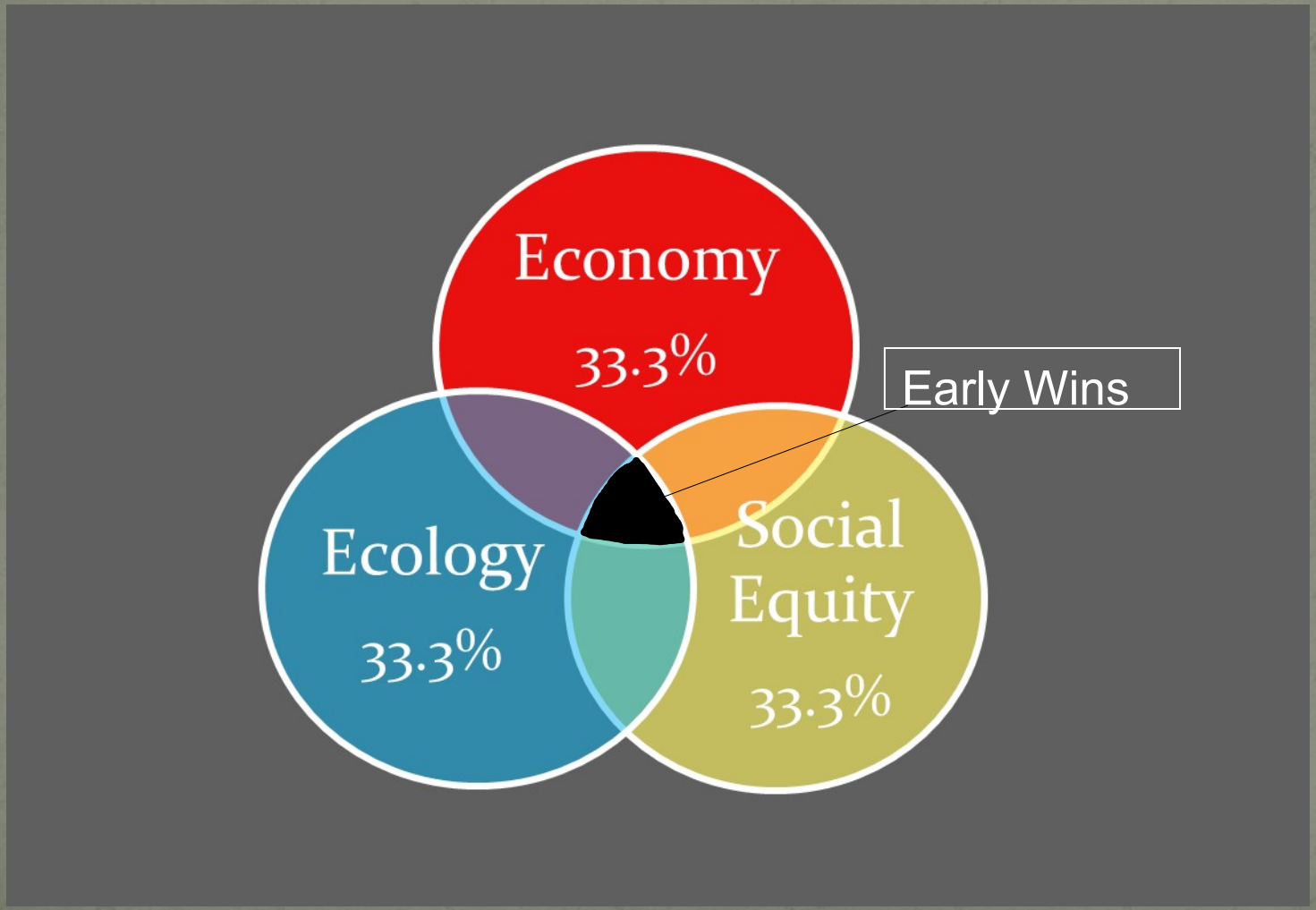
One Example – Triple Bottom Line

- 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

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

Results



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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Green Bay Metropolitan Sewerage District
Lisa Evenson
Communications and Education Coordinator
920-438-1064
levenson@gbmsd.org

Symbiont
Jon Butt
Process/Project Manager
414-291-8840
jon.butt@symbiontonline.com

SYMBIONT