BAXTER & WOODMAN
Consulting Engineers

Sustainability in the Water Industry

are you in?
Sustainable Thinking. Let it grow on you.

Wisconsin Water Association
89th Annual Meeting
September 16, 2010

thoughtfully planning for tomorrow

Sustainability

- What does it really mean?
- What does it include?
- Why should I care?
- What are other utilities doing?

BAXTER WOODMAN Consulting Engineers

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

BAXTER WOODMAN Consulting Engineers

AWWA Definition

<u>Sustainability</u> means providing an adequate and reliable water supply of desired quality – now and for future generations – in a manner that integrates economic growth, environmental protection and social development.

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

Sustainability

What Does It Include?

- Energy Conservation
- Water Conservation
- Other Carbon/Water Footprint Reductions

Saving Energy & Water = $$ Savings

Sustainability

- What Are Other Sustainable Items of Mention?

Sustainability

What do others think and why should I care?

- Energy Conservation; Focus on Energy, All Electric Companies, State of Wisconsin….
- Water Conservation (PSC, DNR, & others including *Clean Wisconsin*)
- Community Efforts/Citizen Groups

Why?.....Because you will NEED to

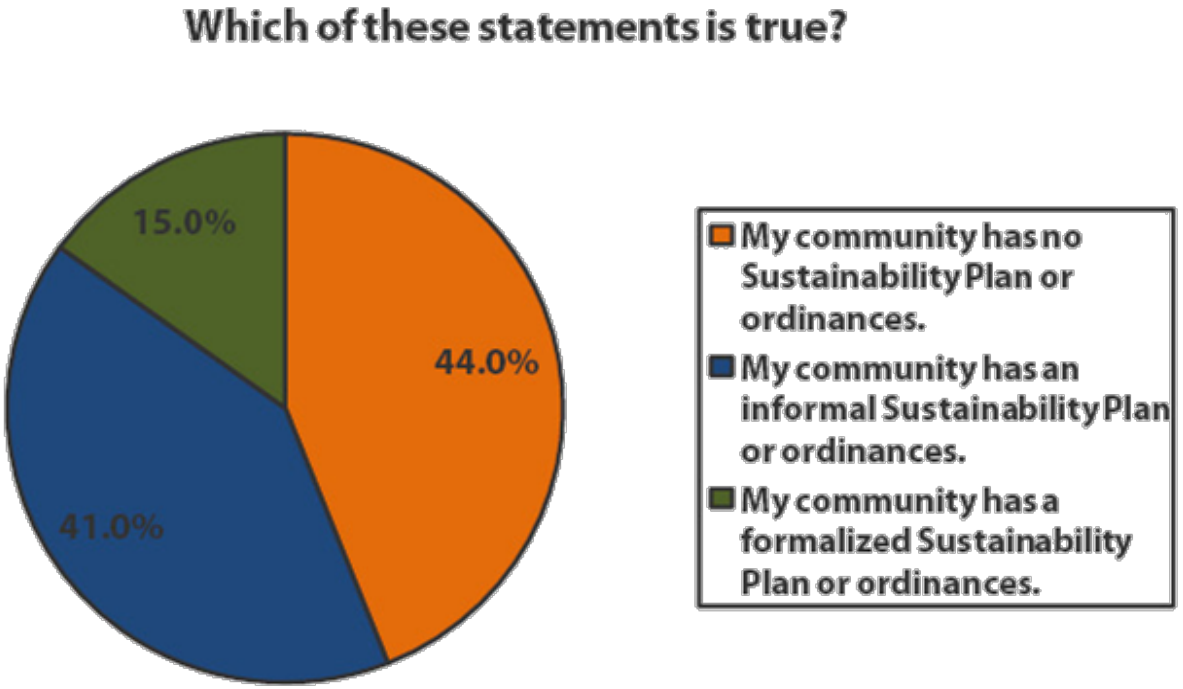
BAXTER & WOODMAN Consulting Engineers

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

What are others doing?

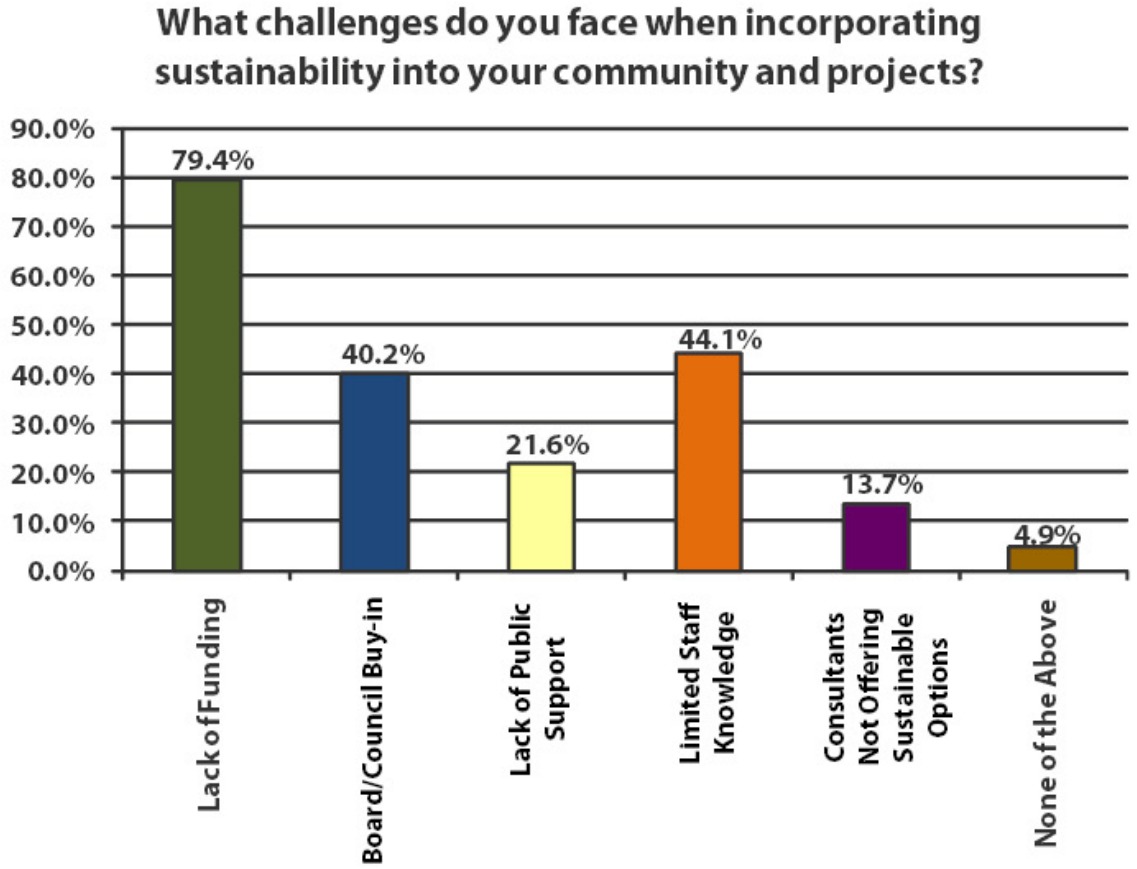
Sustainability Planning



Most Utilities do not have a formal plan but most have incorporated sustainable features.

Source: Baxter & Woodman Sustainable Practices in Government Agencies Survey, August 2010

Implementation Challenges



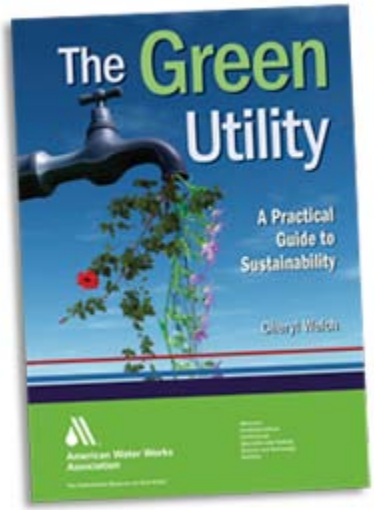
Lack of funding was cited by almost 80% of survey respondents as a challenge to incorporating sustainable features/items

Source: Baxter & Woodman Sustainable Practices in Government Agencies Survey, August 2010

AWWA Initiatives

Help is on the Way!

- June 2010 JAWWA & ACE10 Topics
- The Green Utility Guide
- MOP; Sustainability Plans, Best Practices and Metrics
- Standard for "Minimal Sustainable Requirements"



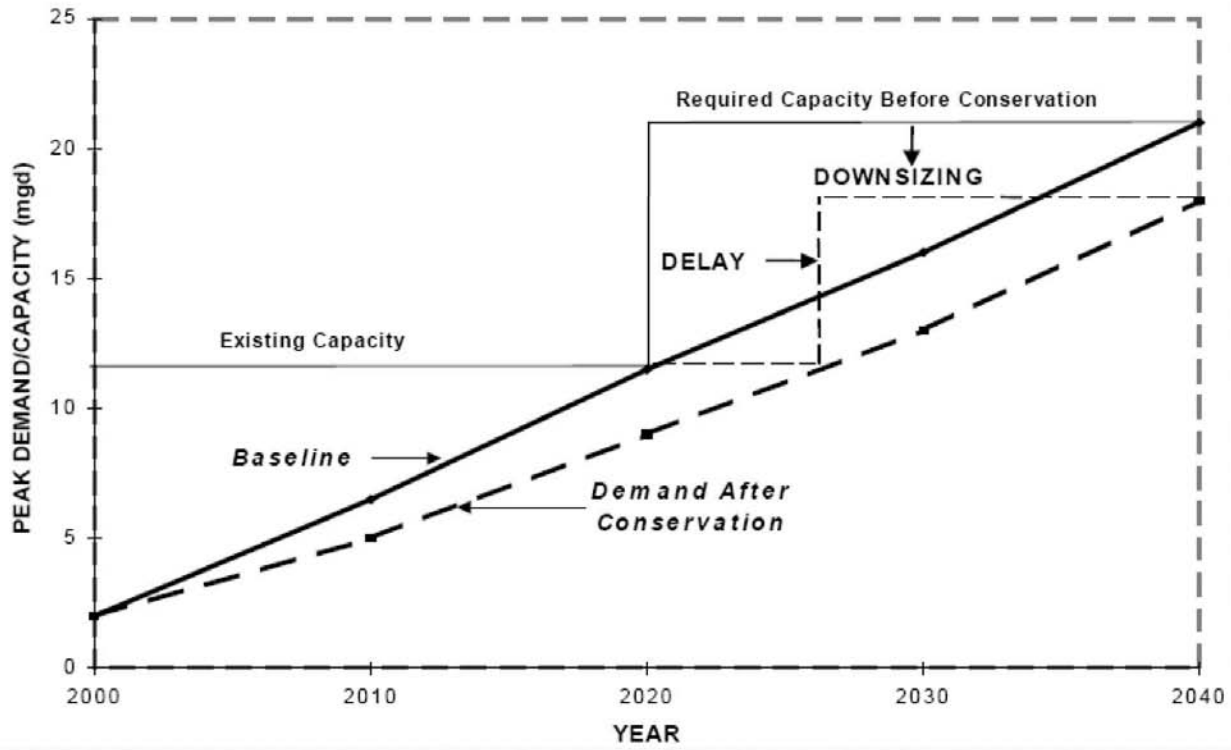
BAXTER & WOODMAN Consulting Engineers

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

Benefits of Conservation

Delay and Downsizing = $ Saved



Credit: Mary Ann Dickinson, Alliance for Water Efficiency

Challenges with Sustainability

Water Conservation: Fact or Fiction?

- Water rates will decrease
- Water use will decrease
- Customer bills will decrease
- Immediate savings will be realized
- Water quality will improve
- Operations will be made easier

Other Sustainable Challenges

- Energy Conservation: Fact or Fiction?

  - Smaller motors will save BIG $$$
  - VFD's will always save you money
  - Energy Management Techniques do not truly save energy
  - Excess well supply and storage is needed for time of day pumping

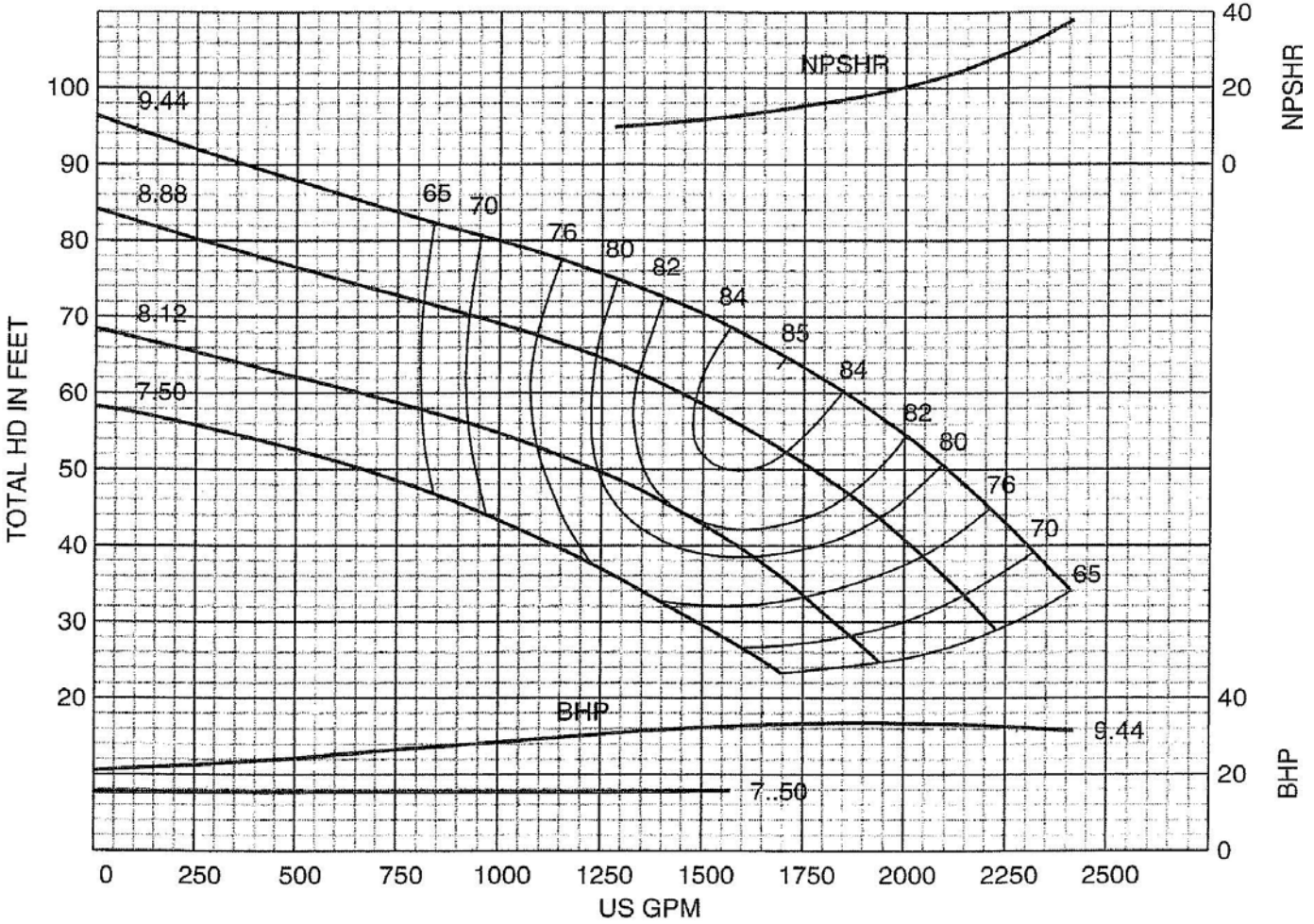
BAXTER WOODMAN Consulting Engineers

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

Use of VFD

Pump Efficiencies Are Reduced



BAXTER WOODMAN Consulting Engineers

are you N? Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow

Cost/Benefit Example

Time of Day Pumping

- Average day
- Max day
- Firm supply
- Amount of storage
- Time of day duration
- Electrical savings (use/demand)

Cost/Benefit Example

Time of Day Pumping

- Average day = 2 mgd
- Max day = 3.6 mgd
- 12 hour time of day duration
- Minimum excess supply = ??
- Minimum additional storage = ??
- Energy Savings > Annualized Costs

High Benefit/Cost Options

- Sprinkling Restrictions
- Energy Audit/Efficiency Studies
- Water Audit/Leak Detection
- Water Conservation Efforts (Watersense Products and Public Education)

Summary/Conclusions

- Encompasses a wide range of approaches and features
- Can offer long term savings and environmental benefits
- Will be part of the Water Industry into the future
- Sustainable “tools” to help are on the way

BAXTER & WOODMAN
Consulting Engineers

Sustainability in the Water Industry

are you in?
Sustainable Thinking. Let it grow on you.

thoughtfully planning for tomorrow