Beaver Dam: A Plan Toward Energy Independence, Savings & A Bright Future

Rebecca Glewen, Mayor
City of Beaver Dam, WI
Energy in Wisconsin

- 150 Energy Independent Communities

**Energy Independence:**
Generate 25% of WI power and transportation fuels from renewable resources by 2025
Process

- Collect energy bills from Alliant Energy
- Collect fleet fuel records from Kwik Trip
- On-site assessments of buildings, street lights, fleet
- Analyze solar potential of city buildings & land
- Analyze other renewable energy sources – solar fields
- Meet with Energy Independent Community Team –
  - ID potential energy efficiency projects, costs + savings
  - Review renewable energy options, costs + savings
  - Establish decision-making criteria
  - Prioritize EE & RE options
  - Formulate plan
Discoveries

Energy Use by Expenditure

- Beaver Dam spends over $1 million annually for Energy for city operations
  - Electricity is ¾ of that cost $826,000
  - Heat $191,400
  - Fleet $136,300

Energy Use by Fuel

- Electricity is 52% of energy use
- Natural Gas 36%
- Fleet Fuels 12%
Discoveries

• **Waste Water Treatment Plant** is central to energy independence
  • Generates 25% of its energy use currently

• **Street lights** are an opportunity for energy savings:
  • $240,00 investment with 3.3 year payback

• **Watermark Community Center** is the most efficient city building

• Small hydroelectricity generation is not a feasible renewable energy option
Projects: WasteWater Treatment Plant

- Largest municipal energy user
- Has comprehensive energy study – UW-M
- Generates 25% of its energy use from biogas available to city in 2020
Waste Water Treatment Plant

Grant funds for energy efficiency upgrades

Blowers - 900,000 kWh savings = 10% all city
Projects: Municipal Building

- $62,000 grant for solar from Focus on Energy
- Solar will offset 48% of current electric use
- Energy efficiency upgrades will return more $$ savings as phased in
- Office of Energy grant recipient: $257,879 Total project amount $299,675 Boiler replacement and addition of controls
Projects: Watermark Community Center

67.5% Solar Offset to electricity
Nearly $12,000 annual savings
From ~$19,000 to $7,000
Beaver Dam Energy Independent Community Goals

- Produce 25% of energy needs from renewable energy locally by 2020, and 35% by 2025
- Convert 50% of street lights to LED by 2025; 100% by 2030
- Upgrade Interior lighting: 50% by 2020; 100% by 2025
- Reduce building energy use 10% by 2018; 20% by 2020; 30% by 2025
Waste Water Treatment Plant Solar Field
Value Proposition

**Energy Saving Economics**
- Efficiency = $ saved
- Competitive advantage
- Branding / marketing
- Improved health
- Retains $ in local economy (7x roll over)
- Creates jobs
- Risk Management / Resilience
- Cleaner environment – air, H2O, soil, GHG reduction