2013 Heating the Midwest with Renewable Biomass

The Biomass Initiative at Providence

Bruce Duggan
Director
BullerCentre.com
What is Providence?

- Christian
- small
- rural
actions about energy

- carpooling
- recycling
- energy retrofits
  - windows
  - insulation
  - boilers
- community garden
- geothermal
- wind research
- biomass — distributed biomass heating
- rural transit
- campus redesign
DLF Consulting

- Renewable Engineering Technology, Business, Project Management
- Technical and Economic Feasibility Analyses
- Author of the “Biomass Heating Feasibility Guide” – AURI
- Feasibility Analysis for Providence
- Project Management – District Biomass Heating
“heats more than 1 building”

district biomass heating
Providence Biomass District Heating System

- Area Heated: 144,100 sf
- Natural Gas Annual Average: 194,000 m3
- Natural Gas Cost per year: $79,000
- Peak estimated heating load: 3.3MMBtu
- System Cost: $750,000
- Size: 5 MMBtu (1.4 MW)
- Densified biomass per year: 3-500 tons
- Biomass Cost Estimated:
  - $50-60/ton (oat hull pellets)
  - $100 (wood pellets)
- Biomass Supply Issues
What Now?

- carpooling
- recycling
- energy retrofits
  - windows
  - insulation
  - boilers
- community garden
- geothermal
- wind research
- biomass
- rural transit
- campus redesign

Biomass Brokerage Manitoba

- replicate in other institutions
- distributed biomass heating
- industry infrastructure – a brokerage
A Brokerage?

examples

• Manitoba Buy & Sell
• kijiji
• eBay
• Manitoba Hay Registry
• Pellet Zone
• Stick Man
A Brokerage Makes a Market
A Brokerage Makes a Market

Biomass Brokerage Manitoba
### A Brokerage Makes a Market

#### All Companies

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# A Brokerage Makes a Market

![Image of a Microsoft Access database interface with information about a brokerage firm named Providence University College & Theological. The interface includes fields for company details, locations, contacts, production, processing, consumption, and notes about biomass. There is a note at the bottom of the image that reads: confidential to Biomass Brokerage Manitoba (a) Buller Centre for Business.](image-url)