

# When All Things Can Be Made New: Greensburg, Kansas

May 4, 2007 9:40 PM

Lynn Billman – August 3, 2008

(This presentation reflects the opinions of the author only, and does not represent the views of the Department of Energy or the National Renewable Energy Laboratory)





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# Before and After

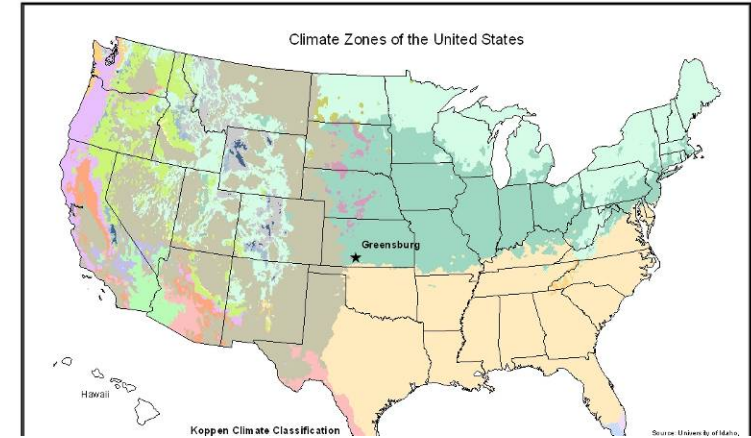


Greensburg High  
School





# Greensburg, Kansas



- Typical midwestern farming community
- Settled 1888, declining since 1960. Population 1,400.
- Low income population: \$18,054 average per capita
- About half the community committed to returning

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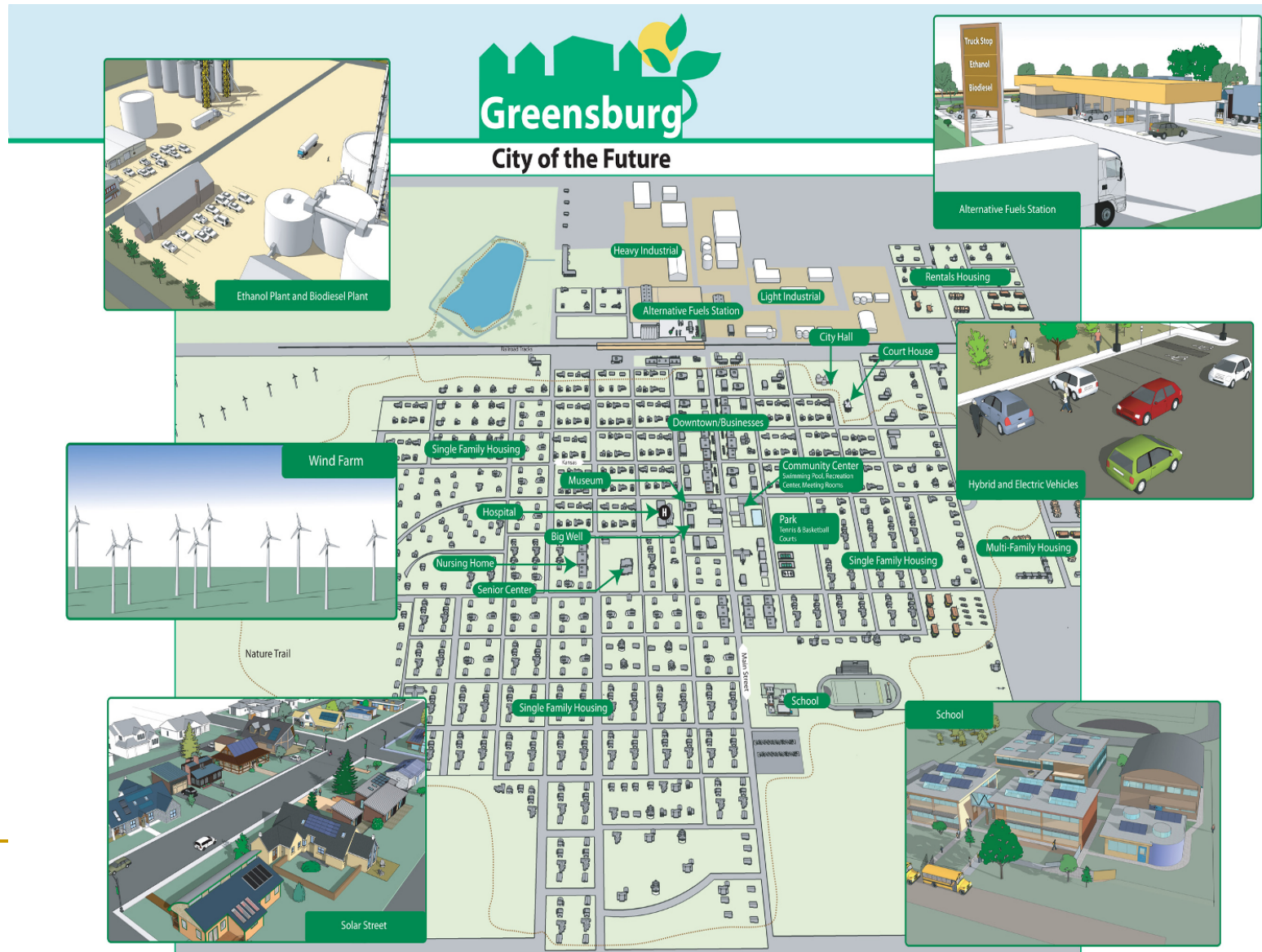
## Becoming New: The First Year

- My project: Leading a team to assist Greensburg in all energy aspects of its rebuilding after the tornado
- People of Greensburg: Amazing cultural transformation, embracing of a new self-image
- Christ sightings: Amazing grace

August 13, 2007



# Vision: A Sustainable Community from the Ground Up



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## Work Scope

### Reduce Energy Use

- High-Performance Homes
- High-Performance Public and Commercial Buildings

### Use Renewable Energy

- Renewable Energy – Community Scale
- Renewable Energy – Distributed Scale

### Reduce Gasoline/ Diesel Use

- Alternative Transportation
  - Onsite Coordination / Project Mgmt
-



LOTS of people had the same vision:



City of Greensburg, Kansas



# Accomplishments – Residential Buildings



- Counseled many homeowners
- Formal and informal training for 10-15 local builders
- 154 new house permits; 48 measured for energy efficiency: average 44% less energy than code
- 23 renovated houses average 25% less energy than code

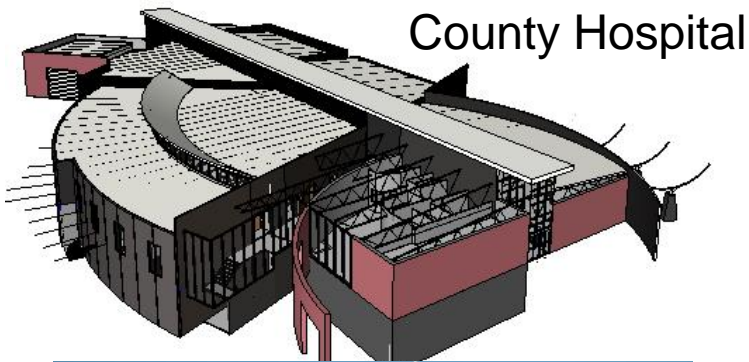


- Prairie Point – 32 units, ½ low-income; 40% energy savings
- 50 homes by Mennonite Housing; all ~50% energy savings
- Builder from Wichita building 5-10 spec houses, 50% savings

# Accomplishments – Public/Commercial Buildings



City Business Incubator



County Hospital

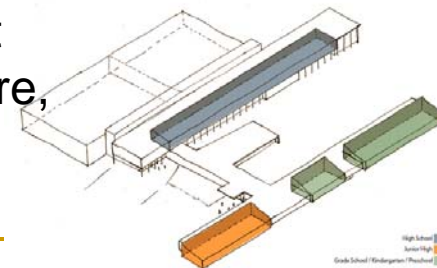


- City resolution: All city buildings will be LEED Platinum
- Others following suit: 31 commercial, public, non-profit, and multi-family buildings publicly reaching for at least LEED certification levels
- Important national impact from John Deere, Hospital



BTI Equipment (John Deere Dealership)

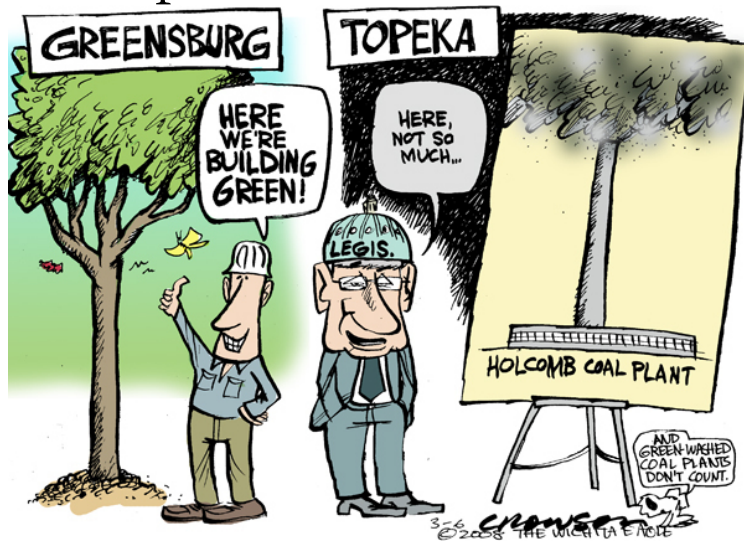
Greensburg School Complex





# Accomplishments – Renewable Energy Generation

- Pursuing a 10-MW wind project: grid connected, biodiesel generator backup, \$22 million investment
- Extensive studies; working on power purchase agreement; many players; turbulent political environment



First turbine (4.2 kw) in Greensburg, at John Deere dealership model for community wind



Lamar, Colorado community-scale example

## Accomplishments: Other

- Distributed generation:
  - ❑ Developed net billing policy, interconnection agreement, wind and solar ordinances
  - ❑ Did studies in solar, district heating and cooling, biomass; dealt with questions on ground source heat pumps, solar hot water
- Alternative Transportation
  - ❑ Study and recommendations completed
- Formalized 24 energy recommendations in summary report; 500-page appendix
- Starting Year Two activities





# Cultural Change: Before

- May 2007: Only a handful of residents believed in the vision of a new kind of community
  - ❑ Not sure about this “green” idea
  - ❑ Not a big deal anyway
  - ❑ Will slow down rebuilding
- Why?
  - ❑ Concern with immediate survival, life decisions
  - ❑ Tradition
  - ❑ Older population
  - ❑ Isolation
  - ❑ Self-sufficiency
  - ❑ Individual rights

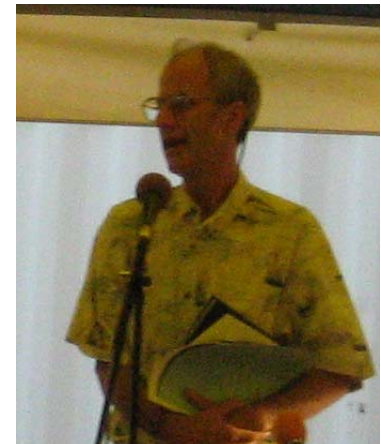


## Cultural Change: After

- May 2008: Most residents embrace the “Green Initiative”
  - Reason for young people to stay in town
  - Foundation of future economic development
  - New town “brand”
  - Hope
- What happened?
  - Key early believers with credibility : the new Mayor, a city councilman, a well-positioned advocate (lived 35 mi away, so less immersed in the immediate tornado drama)
  - Influence of credible outsiders (experienced master planning firm brought in by State; DOE/NREL)
  - Discovery / Planet Green
    - Skeptical of the Hollywood hype, but....
    - Promise of donations to the City
    - GreenBuild conference Nov 2007 in Chicago
    - Publicity; national/international response



Mayor John Janssen



Daniel Wallach,  
Greensburg GreenTown



# The Future of Greensburg



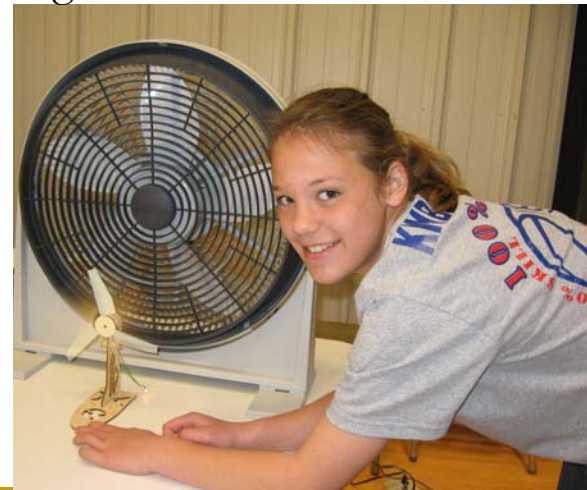
Needed a job – now trained as an energy rater



New High School Green Club



Three generations – staying put



Learning about wind energy

# The Discovery Experience





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## Amazing Grace

- Incredibly strong faith community
- Nine churches for 1400 people
- Started all public meetings with prayer
- Embraced the “outsiders”
- Discovery crews learned a lot!
- Community vision: Greensburg residents see themselves as:

**Blessed with a unique opportunity to create a strong community devoted to family, fostering business, working together for future generations.**

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# Signs of Grace



# Signs of Grace



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## For More Info

- Volume I: Near-Term Energy Strategy Recommendations for Greensburg, Kansas (Draft, May 2008)

[http://www.nrel.gov/docs/temp/43014\\_vol1\\_draft.pdf](http://www.nrel.gov/docs/temp/43014_vol1_draft.pdf)

- Volume II: Supporting Studies, Presentations, and Ordinances (Draft, May 2008)

[http://www.nrel.gov/docs/temp/43014\\_vol2\\_draft.pdf](http://www.nrel.gov/docs/temp/43014_vol2_draft.pdf)

- Greensburg Sustainable Comprehensive Plan (BNIM Architects, 5/19/08)

<http://www.greensburgks.org/recovery-planning/Greensburg%20Comprehensive%20Master%20Plan%2001-16-08%20DRAFT.pdf>

- Planet Green 13-part series on Greensburg, beginning Sunday June 15 9:00 ET, continuing weekly

<http://planetgreen.discovery.com/tv/>

(has a channel finder link)

- Lynn Billman, Project Lead

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