

## Progress Report on Fitchburg's Climate Protection Initiatives



Resource Conservation Commission  
and  
Green Team

Presentation to the Committee of the Whole  
May 25, 2011

### **Resource Conservation Commission**

- David Martin – Meteorologist
- Samuel Cooke, PE – Chemical Engineer
- Diane Streck – Accountant (CPA)
- Jan Kucher, PE – Environmental Engineer
- Mary Jean Huston – Nonprofit Conservation
- Vacant position
- Steve Arnold, PhD – Ecologist & IT Consultant
- Rick Eilertson, PE – (City Staff) Env'l Engineer
- Graham Ryan – (City Staff) Sustainability Intern

## Resource Conservation Commission

The RCC recommends policy, enforcement, and information programs that serve to promote the general preservation and improvement of the environment, including but not limited to stormwater (Chapter 30, article II and Chapter 40, article IV), waste material (Chapter 41), energy efficiency, and climate protection.



## Why Are We Here?

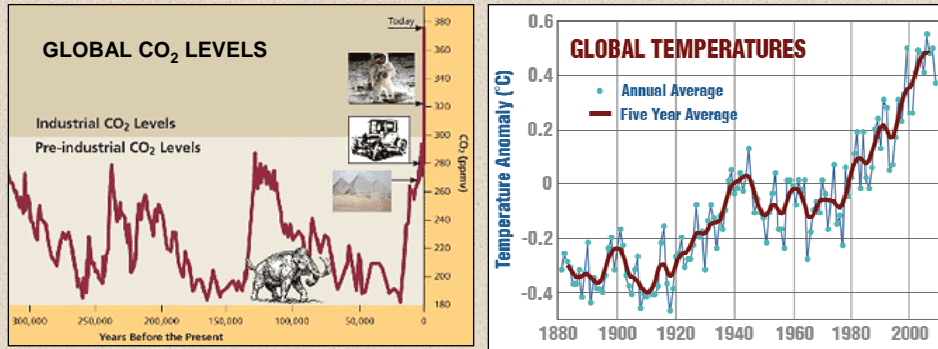
### **U.S. Mayors Climate Protection Agreement:**

An agreement signed by 1,053 mayors nationwide to reduce greenhouse gas (GHG) emissions 7% from 1990 levels by 2012. Fitchburg's baseline is 1998.

### **25x25 Resolution:**

Resolution to generate 25% of the city's electricity and transportation fuels from renewable resources by 2025. More than 140 communities in Wisconsin have adopted the 25x25 goals.

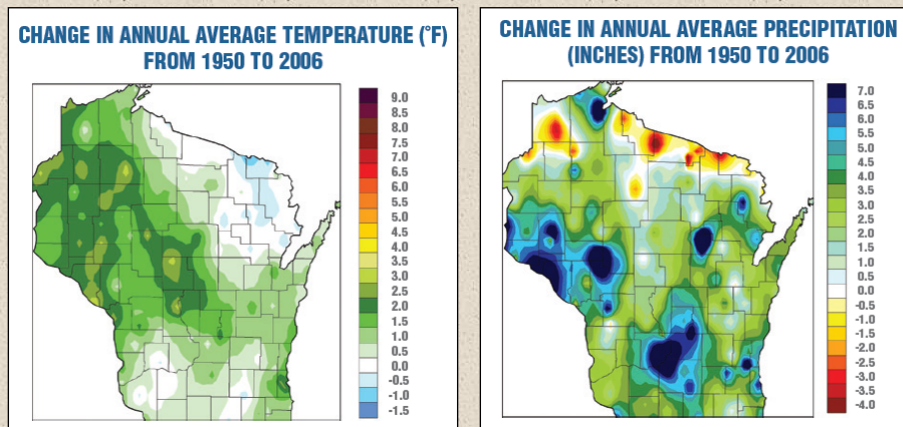
# Global Trends



Source: Intergovernmental Panel on Climate Change, 350.org

**CURRENT CO<sub>2</sub> LEVEL (March 2011): 392 PPM**

# Wisconsin Trends



Source: Wisconsin's Initiative on Climate Change Impacts, <http://www.wicci.wisc.edu>

# Greenhouse Gas Emissions

## What are greenhouse gases (GHG)?

- Carbon Dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous Oxide (N<sub>2</sub>O)
- Fluorinated Gases - PFCs, HFCs, Sulfur Hexafluoride (e.g., refrigerants, propellants, dielectrics)

## How are they measured?

- Most inventory protocols convert kWhs, therms or fuels into tonnes of “carbon dioxide equivalent” (eCO<sub>2</sub>)

# History

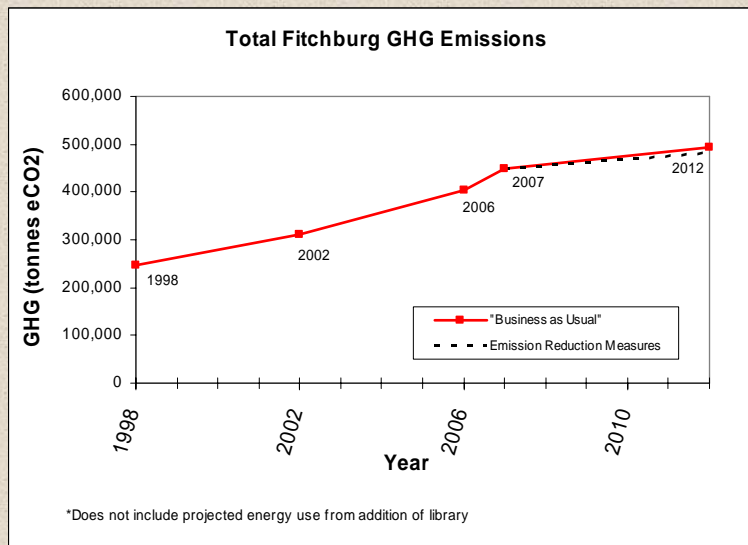
- Feb. 2007 – RCC began discussing USMCPA
- July 2007 – Resolution to “Study” was drafted
- Oct. 2007 – R-73-07 to “Study” USMCPA passed
- June 2008 – USMCPA “Study” completed
- Aug. 2008 – R-55-08 passed to endorse USMCPA
- Feb. 2009 – GHG Inventory presented
- March 2009 – RCC presents USMCPA Recommendations
- March 2009 thru Present - RCC & Green Team work on USMCPA Recommendations
- Aug. 2009 – Council passed 25x25 Resolution R-50-09
- Oct. 2009 – Fitchburg Green Team formed
- Sep. 2010 – Council passed Green Tier Charter Resolution R-82-10

## U.S. Mayors Climate Protection Agreement Action Items

- GHG (eCO<sub>2</sub>) Inventory
- Land Use
- Transportation
- Alternative Energy
- Energy Efficiency
- Energy Star Purchases
- Sustainable Buildings
- Fuel Efficiency
- Water/Wastewater
- Recycling
- Urban Forests
- Education



## Total Fitchburg GHG Emissions (2007)





## GHG Reduction Accomplishments Include:

### Transportation & Land Use

- Re-wrote Fitchburg's zoning code to permit and encourage compact, diverse, mixed-use neighborhoods
- Pursued Metro Transit improvements

### Energy / Fuel Efficiency

- Evaluated potential for no-mow zones
- Reduced brush collections
- Continued streetlight modifications
- Idling Reduction Policy added to City Personnel Manual
- Winterized McKee Park Shelter

### GHG Inventory

- Completed 2010 GHG Inventory

### Renewable Energy

- City Hall solar installations
- Included geothermal in library



## GHG Reduction Accomplishments Include:

### Water and Wastewater

- Increased Water Conservation
  - Rate structure & toilet rebate
  - Education
- Addressed Well #9 Issue
- Evaluated and reviewed preventative maintenance procedures for water utility pumps and equipment

### Education

- 2009 Climate Protection Forum
- Conducted two Green Expos
  - 2010 Fitchburg Green Expo
  - 2011 Transportation
- Hosted "Get in the Loop" geothermal education event
- Formed Green Team

### Recycling

- Implemented paperless meetings
- Re-inventoried waste stream

## Green Team

*Purpose: Engage staff across all departments to advance sustainability actions to reduce the City's environmental footprint.*



## Green Team

- **Tony Roach** –  
**Administration, Chair**
- **Rick Eilertson** –  
**Public Works, Co-chair**
- Dan Crowley – Assessing
- Scott Endl –  
Parks and Recreation
- Joyce Frey –  
Economic Development
- Gary Heberling – Fire
- David Hill – Senior Center
- Tom Hovel - Planning
- Bonny Lundy – FACTv
- Tracy Mergen –  
Clerk's Office
- Kari Peterson – Finance
- Marcie Rekowski –  
Administration
- Amy Klusmeier –  
2010 Sustainability Intern
- Todd Stetzer - Police
- Stan Strandlie –  
Building Inspection
- Graham Ryan –  
2011 Sustainability Intern

## Green Team 2010 Initiatives

- Dane County Sustainability Network
- Commuter Challenge
- Reinforce City's computer-off policy
- Paperless meetings
- Virtual Servers installed



## Green Team 2011 Grant Funding

- \$2 million Sustainable Communities Grant via CARPC
- USEPA grant awarded to Planning Dept
  - Analyze water quality impacts of development
  - 2 day workshop/charette June 8th and 9th
- \$1,100 Dane County Bicycle Association Grant
  - Transportation Expo
  - Bicycle Rodeos
  - Commuter Challenge



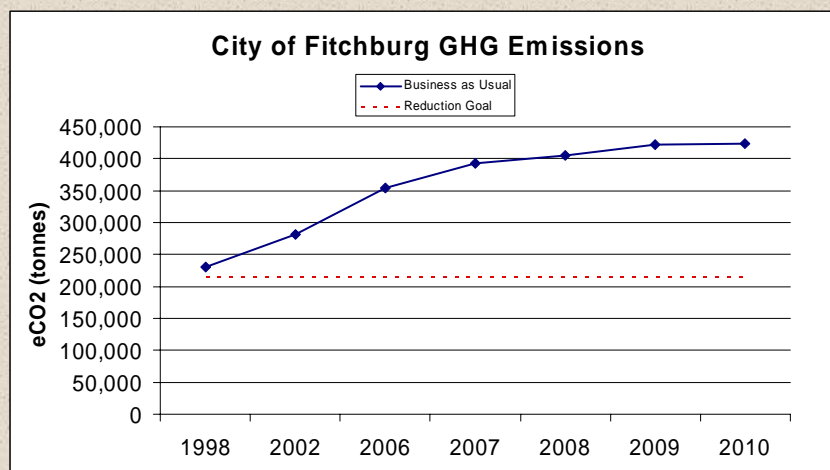


## Green Team - What's next?

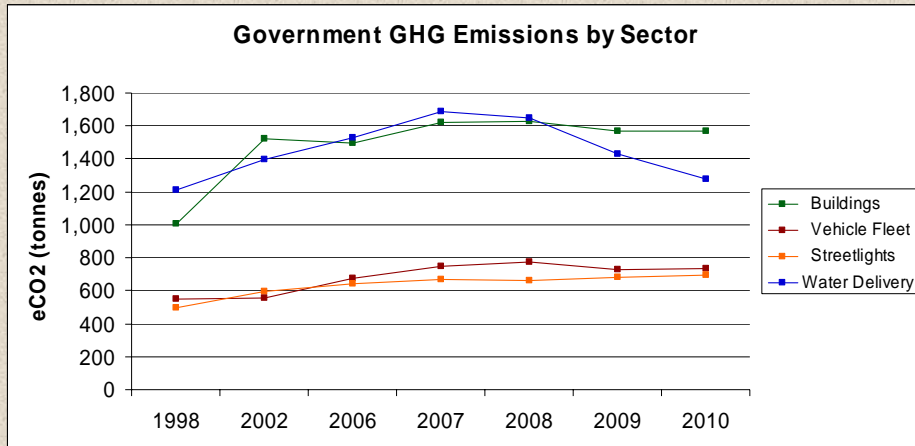
- 2011 Commuter Challenge
- Construction & demolition recycling ordinance
- Environment-Friendly suggestion box
- Encourage car pooling by City employees
- Reinforce City's Idling Reduction Policy
- Evaluation of battery use

2011 meetings: 10 am – 11 am  
on 4<sup>th</sup> Wednesday of alternating months  
- Next meeting: July 27

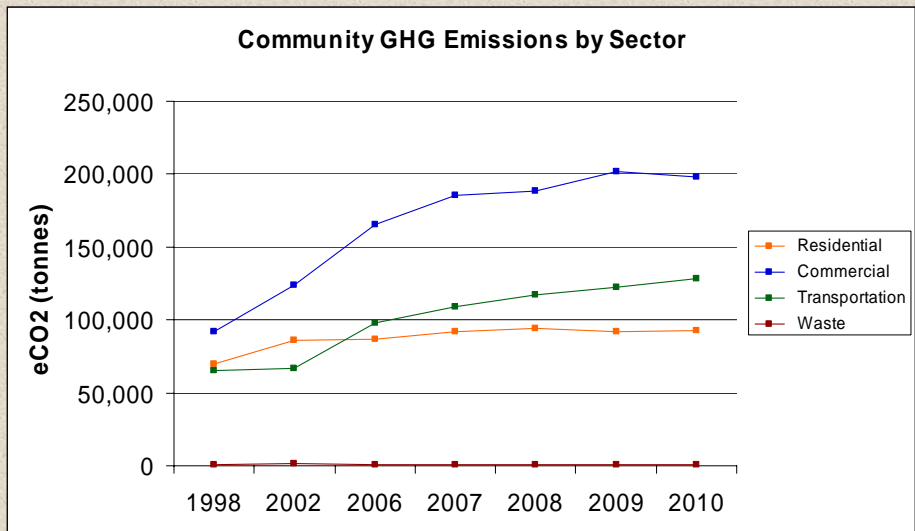
## Total Fitchburg GHG Emissions (2010)



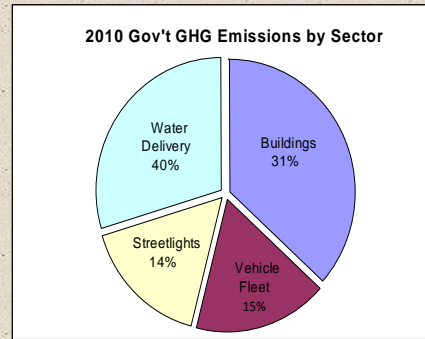
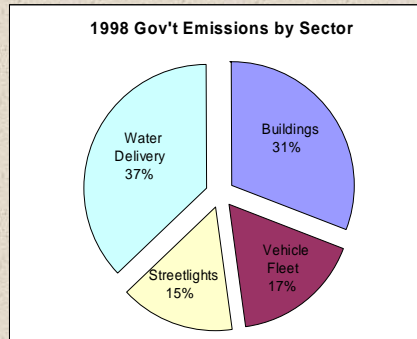
## Government GHG Emissions by Sector



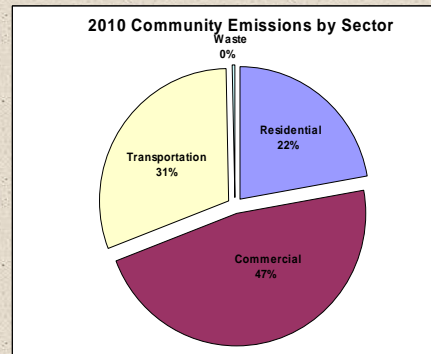
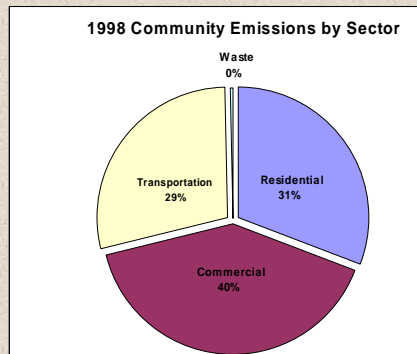
## Community GHG Emissions by Sector



## Government GHG Emissions by Sector



## Community GHG Emissions by Sector



## 25x25 Progress

- City Hall Solar Installations
  - 64 PV panels
    - 44 MMBtu (Million British thermal units) of renewable energy
    - 0.2% of City's electricity\*
  - 12 Solar thermal panels
    - Expected to reduce energy usage by 88 MMBtu\*
- Library Geothermal Installation
  - Expected to reduce the building's energy usage by 1,690 MMBtu\*
- Public Works Maintenance Facility Solar Installation
  - PV panels are currently being installed



2010 City Energy Usage

	Energy Usage (MMBtu)
Buildings	10,355
Streetlights	2,831
Water Delivery	5,311
Transportation	10,201
<b>Total</b>	<b>28,698</b>

\*Renewable resources do not include solar thermal or geothermal energy; those are energy use reductions

## GHG Reduction Measures/ Recommendations In Progress

### Transportation and Land Use

- Draft forest management plan for all public woodlands
- Formalize City's policy for car-pooling\*

### Water Conservation

- Evaluate water utility facilities for variable frequency drives
- Encourage water conservation

### Energy Conservation

- Adopt a green IT program
- Reinforce City's computers power-off policy\*
- Encourage "local" purchasing
- Adopt municipal construction guidelines
- Encourage vehicle sharing between depts., reimbursing employees for use of their personal vehicle and teleconferencing\*

\*Green Team Measure



## GHG Reduction Measures/ Recommendations In Progress

### Education

- Increase energy conservation awareness of residents and businesses
- Promote composting
- Promote USMCPA-related topics on FACTv and in Fitchburg Update
- Encourage residents to reduce voluntary vehicle idling
- Promote fuel-efficient vehicle purchases by Fitchburg residents and businesses

### Waste Reduction

- Require construction/demolition waste recycling
- Promote composting

## Food Residual Composting

### 2009 Residential Waste Sort (40 homes)

(a follow-up to the 1999 Waste Sort)

#### Findings (% by weight)

- Current recycling rate= 33%
- Potential recycling rate= 48%
- Potential diversion rate= 87%

- 
- Food waste = 27%
  - Contaminated paper = 15%

**Total Compostable Organics = 42%**



## **Why Compost Food Residue?**

- Preserve expensive airspace at Rodefild Landfill (full in approximately 2013)
- Reduce waste disposal costs
- Process option for 27 – 60% of waste stream
- Compatible with existing recycling model
- Established process – used in over 180 US cities
- Create a useable product for agriculture and landscaping

## **How is Food Residue Composting Accomplished?**

- Collect in kitchen containers
- Place in 20 – 35 gallon bin for weekly collection
- Collect and haul to a compost facility
- Place in windrows for approximately 6 months
- Cooks naturally at 130 deg F (kills pathogens)
- Turn windrows to keep aerobic
- Screen product and bag, or stockpile

## Typical Kitchen Container



### **Windrow Turning Machine**

Typical Compost Facility

## Summary

- Public aware and generally in favor of composting process
- Common sense, low tech solution
- Extend life of landfills
- Reduce waste disposal costs
- Natural process, just accelerated
- Create a useful product

## Suggested GHG Reduction Measures to Target Next

- Devise a plan to systematically upgrade existing municipal buildings to either LEED EB or Energy Star
- Encourage residents to minimize use of small engines
- Establish an Environment-friendly suggestion box for City staff (Green Team)
- Reinforce idling policy; use monthly fuel consumption reports to manage fuel use and monitor changes (Green Team)
- Conduct a community Idling Reduction Awareness Campaign
- Work with Focus on Energy, MGE and Alliant to develop and implement a plan to assist businesses and residents with implementation of energy-efficient methods and equipment



## Questions/Survey

For further information, see...

RCC's Web Page:

<http://www.city.fitchburg.wi.us/RCC>

and Green Team's 2010 Annual Report:

[http://www.city.fitchburg.wi.us/departments/cityHall/publicWorks/  
documents/GreenTeam2010Report.pdf](http://www.city.fitchburg.wi.us/departments/cityHall/publicWorks/documents/GreenTeam2010Report.pdf)