

# Energy Savings for Home & Auto

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Presented to: **Marinette County Residents at the Public Library**

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Content based on presentations based on:

UW-Extension [SHWEC - Solid and Hazardous Waste Education Center](http://www.uwex.edu/ces/cnred/links.cfm)  
<http://www.uwex.edu/ces/cnred/links.cfm>,

Wisconsin Public Service: <http://www.wisconsinpublicservice.com/home/home.asp>,

Wisconsin Focus on Energy: <http://www.wifocusonenergy.com/>

US Department of Energy: <http://www.eere.energy.gov/consumer/tips/>

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# Learning Objectives

- How to reduce **home heating** costs
  - How to reduce home **food storage** costs
  - How to reduce home **lighting** costs
  - How to reduce home **water heating** costs
  - Techniques for **weather stripping, caulking, & sealing** your home
- How to reduce **auto operating** costs
- Benefits for the Community & Environment
- Local & State Energy Assistance Programs

# Energy, the Environment, and your Community

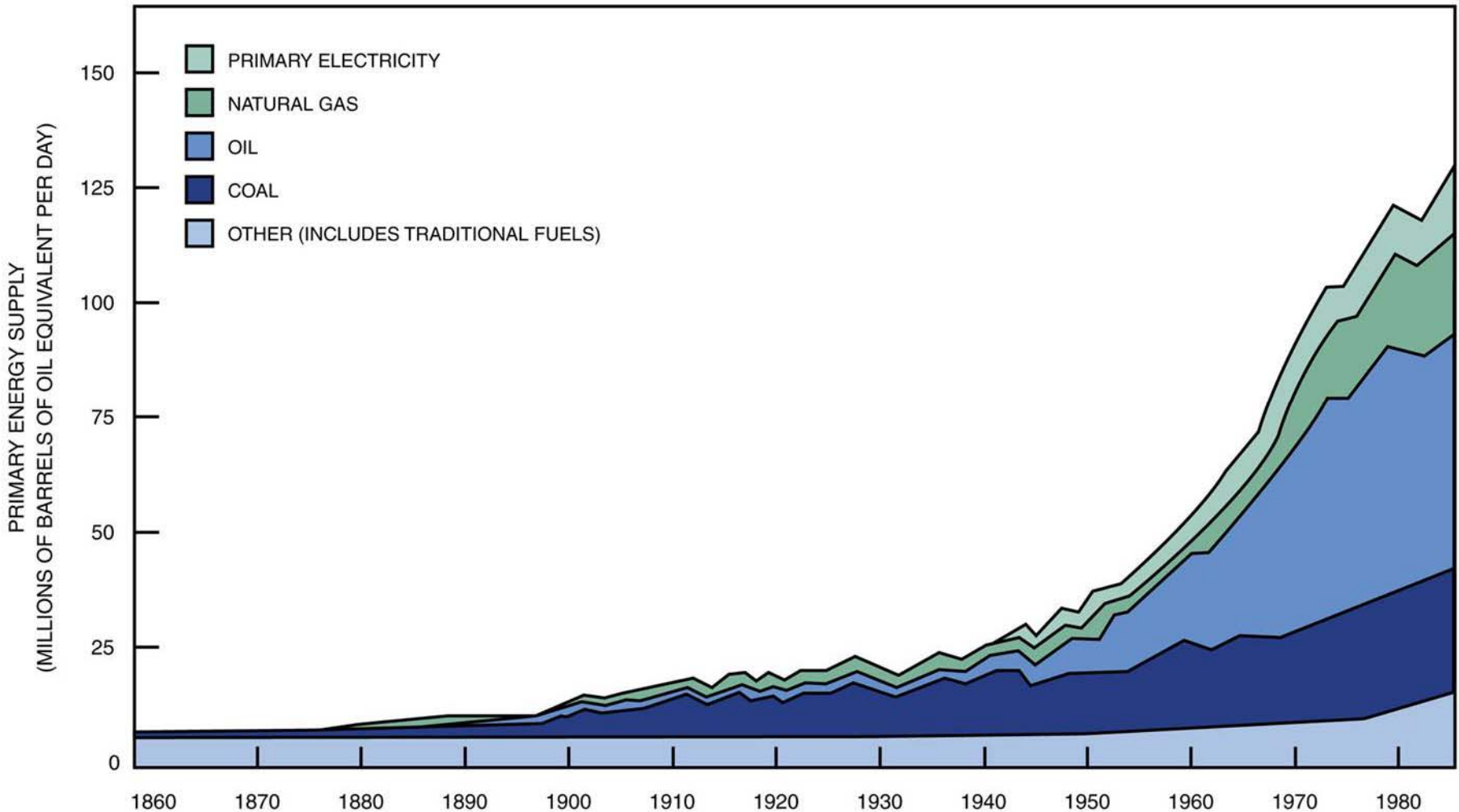
## THE GOOD NEWS

... “You are an influential person! What you do can help clean the air and save energy. You can conserve water and energy, and prevent pollution. Anything you can do to reduce your home heating will help reduce your greenhouse gas (GHG) emissions and your monthly bills.” [http://www.ec.gc.ca/eco/main\\_e.htm](http://www.ec.gc.ca/eco/main_e.htm)

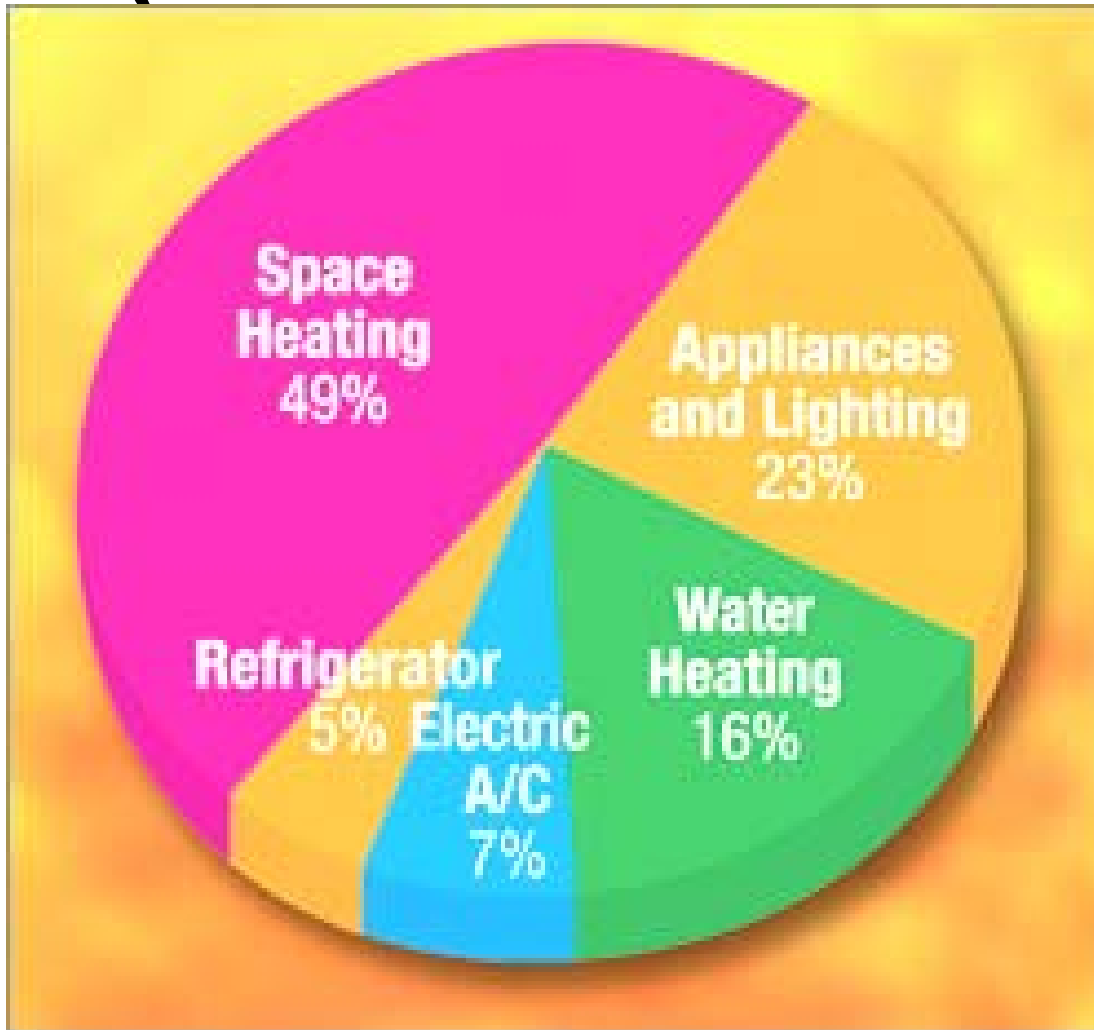
## THE BAD NEWS

- “Energy and home heating have risen faster than anything else in the household budget.” (Smart Money Magazine Jan 2006)
- Space heating uses the largest amount of energy of all these activities.
- Analysts report the “Era of cheap energy is over.”

# US Escalating Energy Use



# How We Use Energy In Our Homes (based on national averages)



The largest portion of a utility bill for a typical house is for heating and cooling.

[http://www.eere.energy.gov/consumer/tips/home\\_energy.html](http://www.eere.energy.gov/consumer/tips/home_energy.html)

# Water Heating

- Turn down temperature to *warm-120F*
- Lower your flow -Add Aerator to faucets
- Put a jacket on hot water heater
- Pre-made foam tubes around hot water pipes in basement

# Simple Heating Tips

- Turn Down the Thermostat
  - Wear a sweater
  - Use a lap quilt when reading or watching TV
  - Programmable recommended
- Close off unused rooms
- Keep doors closed



# Window Coverings

- Window is as close to a hole in the wall, in terms of energy escaping, as you can get
  - Pull shades; let sunlight in when it's out
  - Draw drapes/curtains at night
- Ways to cover Windows
  - Store plastic kits
    - Inside & Outside
  - Cheaper: Buy roll/tape separate

# Changing the way you use **Appliances/Electronics**

- T.V.
  - Turn off when not watching
  - Smaller/newer ones use less energy
- Electric Blanket
  - Warm the bed, then turn off before/during sleep
- Dishwasher uses less hot water than hand washing
- Computer
  - Turn off when not using
  - Smaller/newer ones use less energy

# Lights – 20% of Energy

- Turn off
- Lower wattage
- Energy saving bulbs
- Clean bulbs
- One bulb vs. two smaller
  
- According to the [U.S. Department of Energy](#), American households could save 31.7 billion kilowatt-hours of electricity annually by switching to [compact fluorescent lights](#). That's enough electricity to light about one-third of all U.S. households for an entire year.

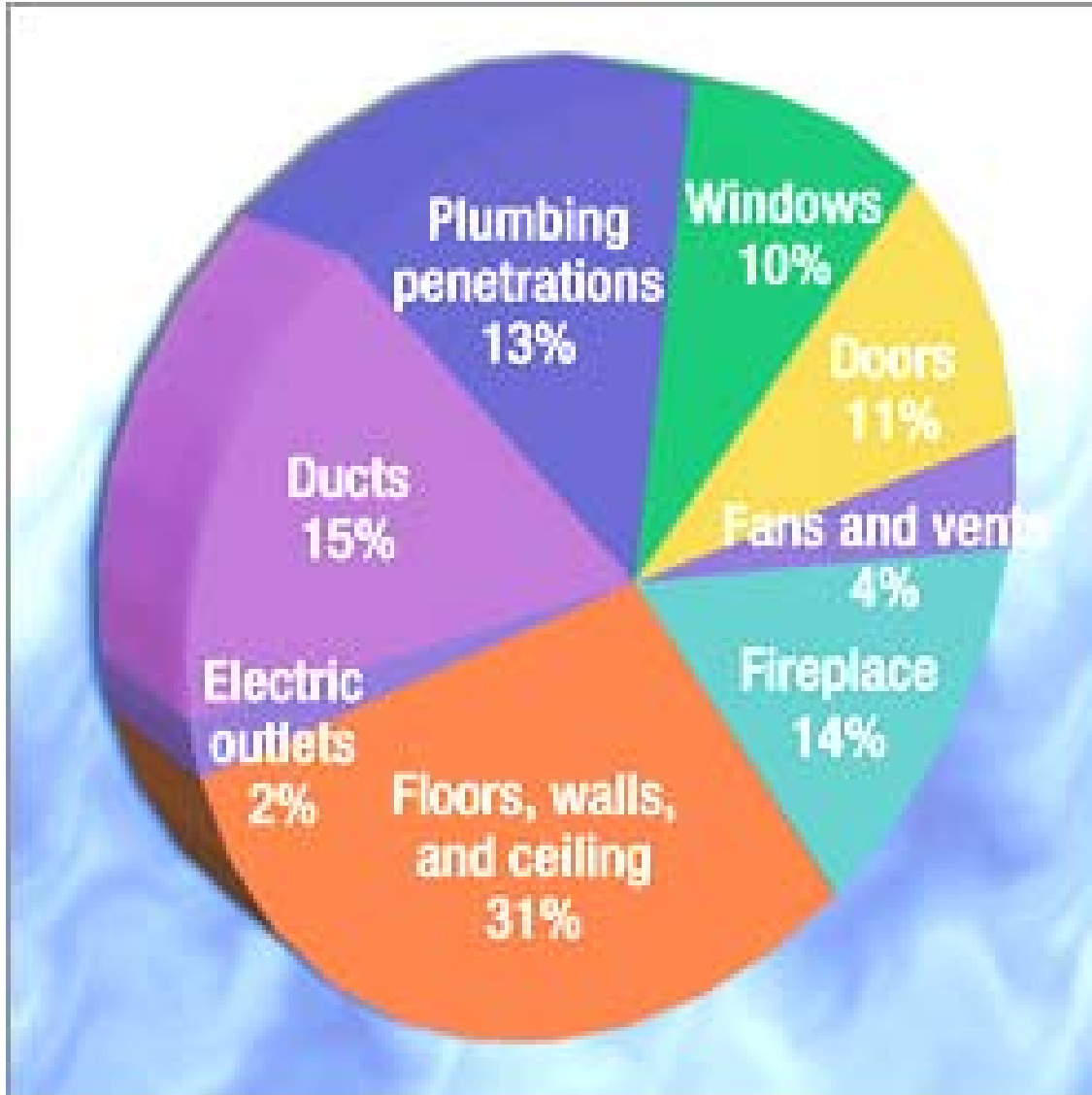
# Food Storage

- Less than 40 degrees for refrigerator
- 0-5 for freezer
- Keep refrigerator & freezer full
  - Space hard to cool
- Newer refrigerator's/freezer's use 1/3 energy of 15-20 year old models

## Tip

If the temperature outside is freezing, take a plastic container, fill with water, and place it outside to freeze (leave room for expansion). Once frozen, place it in your refrigerator and enjoy the benefit of free cooling. This reader says "I've noticed a marked difference in my energy bill and the amount of time my fridge is on."

# How Does Air Escape?



Air infiltrates in and out of your home through every hole, nook, and cranny. About one third of this air infiltrates through openings in your ceilings, walls, and floors.

[http://www.eere.energy.gov/consumer/tips/air\\_leaks.html](http://www.eere.energy.gov/consumer/tips/air_leaks.html)

# Techniques for **weather stripping, caulking, & sealing** your home

- Over half of U.S. homes are improperly insulated
- Utility providers recommend a home energy audit
- Ceiling, Windows, and Walls are biggest source of energy loss
  - Attic & Ceiling insulation most important
    - Vapor Barrier to prevent moisture build up
    - Installing at least R-38 rated insulation for “up north”
    - Walls may require professional
  - Seal leaks by
    - Caulking, Felt Strips, Plastic Covering

Improve your Auto Fuel  
Efficiency by:

***“Keeping your car in shape”***

# What do higher gas prices cost our local economy?

<b>Increased Gas Cost</b>			
Wisconsin Counties, Cities, Villages, U.S., State of Wisconsin			
Place	Increased Gas Cost 5-17-04 to 9-02-05	Increased Gas cost per \$.50 rise	Increased Gas Cost Per Capita
Crivitz village, Wisconsin	\$532,140.29	\$186,193.24	\$533.21
<b>Marinette city, Wisconsin</b>	<b>\$6,594,168.13</b>	<b>\$2,307,266.67</b>	<b>\$561.25</b>
Marinette County, Wisconsin	\$27,117,297.49	\$9,488,207.66	\$625.05
Niagara city, Wisconsin	\$1,069,324.56	\$374,151.35	\$568.79
<b>Peshigo city, Wisconsin</b>	<b>\$1,808,268.19</b>	<b>\$632,704.05</b>	<b>\$538.66</b>
Wausaukee village, Wisconsin	\$310,205.00	\$108,539.19	\$542.32
<b>United States</b>	<b>\$149,927,572,385.89</b>	<b>\$52,458,912,661.26</b>	<b>\$532.75</b>
<b>Wisconsin</b>	<b>\$3,102,067,680.97</b>	<b>\$1,085,398,068.92</b>	<b>\$578.35</b>

H46. AGGREGATE NUMBER OF VEHICLES AVAILABLE BY TENURE [3] - Universe: Occupied housing units

Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

\*Source: Wisconsin Department of Transportation, 2003 Analysis of Current and Non-Expiring Vehicles. January 2003 file analysis; Vehicle type by tax district by county code report, [http://www.doa.state.wi.us/docs\\_view2.asp?docid=771](http://www.doa.state.wi.us/docs_view2.asp?docid=771), Ave. Annual miles per auto in WI = 13,060, Ave. auto miles per gallon of gasoline in WI = 24.5

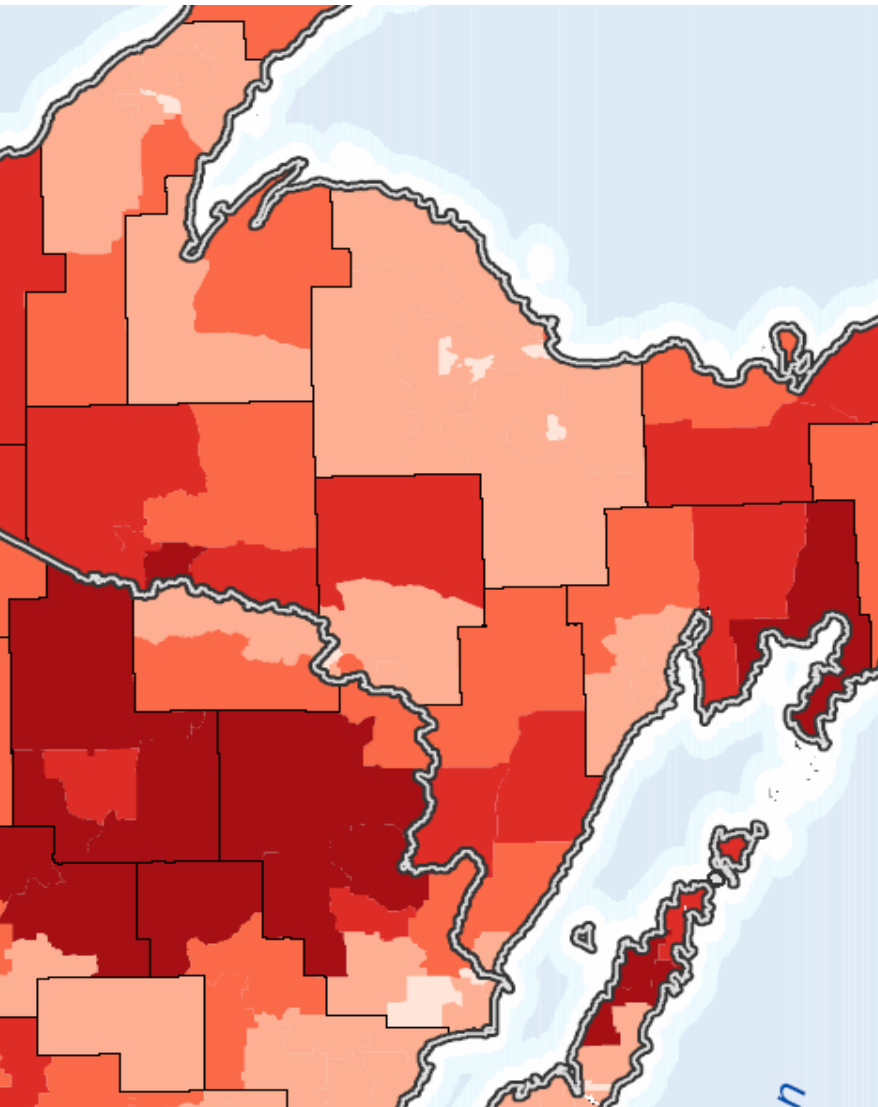
\*\*Source: Wisconsin Energy Statistics 2003, p. 82, [http://www.doa.state.wi.us/docs\\_view2.asp?docid=771](http://www.doa.state.wi.us/docs_view2.asp?docid=771), Ave. Annual miles per auto in WI = 13,060, Ave. auto miles per gallon of gasoline in WI = 24.5

\*\*\*Source: *Daily Fuel Gauge Report*, For Wisconsin, 5-21-2004, AAA, <http://www.fuelgauge.com/WIavg.asp>

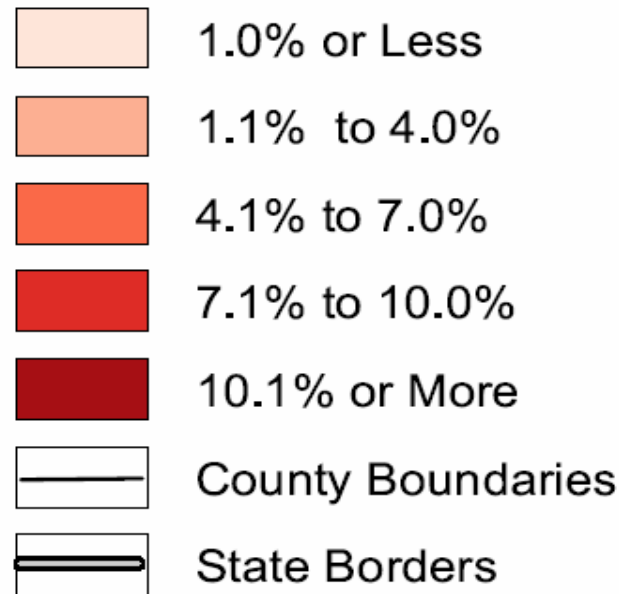
\*\*\*\*Source: Wisconsin Department of Transportation (Data available at the County Level only), 2003 Analysis of Current and Non-Expiring Vehicles. January 2003 file analysis; Vehicle type by tax district by county code report, [http://www.doa.state.wi.us/docs\\_view2.asp?docid=771](http://www.doa.state.wi.us/docs_view2.asp?docid=771), Ave. Annual miles per auto in WI = 13,060, Ave. auto miles per gallon of gasoline in WI = 24.5

Census Definition of "Vehicles Available": The data on vehicles available were obtained from answers to long-form questionnaire Item 43, which was asked on a sample basis at occupied housing units, vans, and pickup or panel trucks of 1-ton capacity or less kept at home and available for the use of household members. Vehicles rented or leased for 1 month or more, company vehicles, and

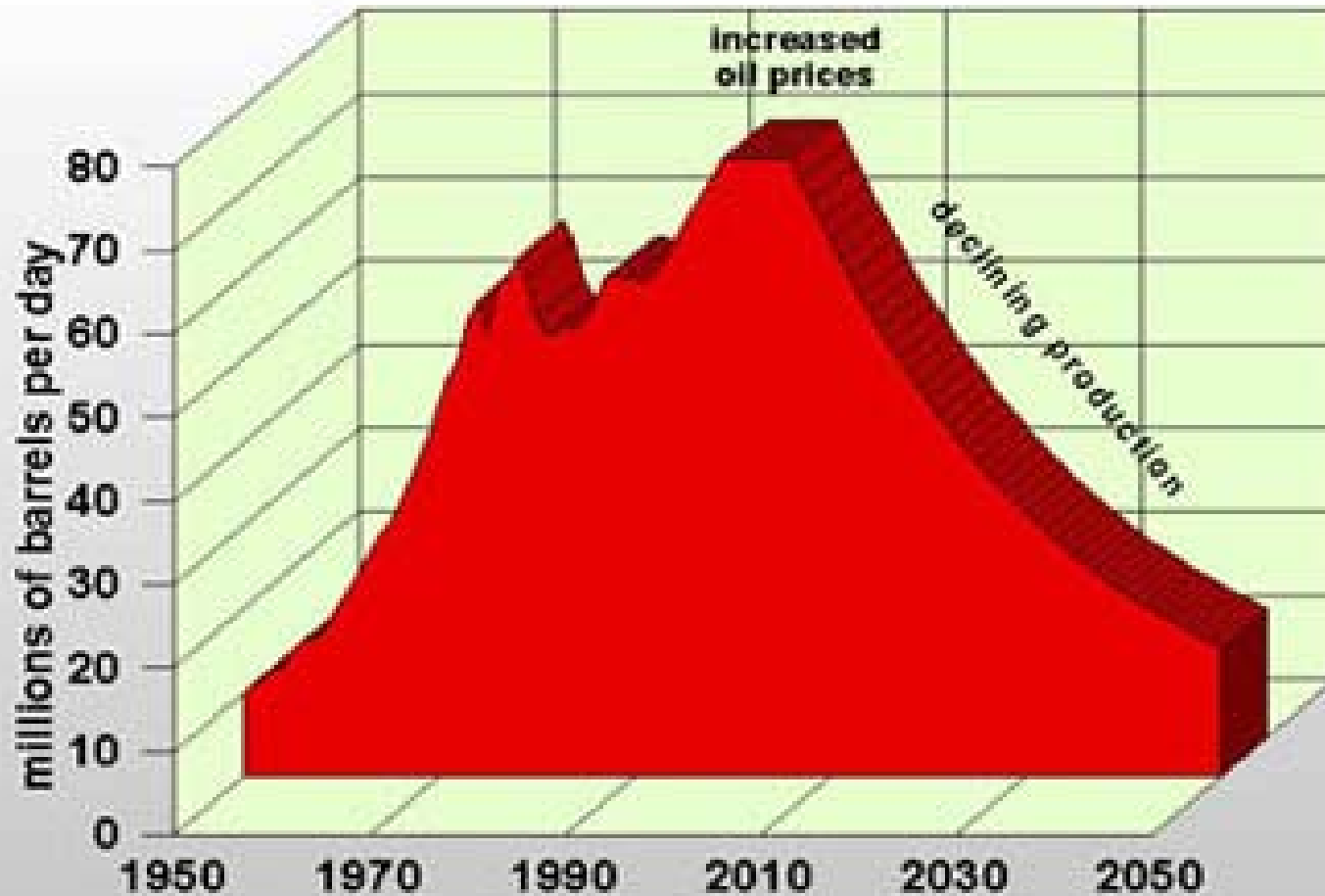
# Effects are worse for rural commuters



**Percent of Commuters Driving 50+ Miles to Work (each way) in each Census Tract ( 2.1% of all WI Commuters)**



# Declining oil production



**Figure 2. Actual and Projected Worldwide Oil Production**

# Keep Your Engine Properly Tuned

- Fixing a car that is noticeably out of tune or has failed an emissions test can improve its gas mileage by an average of 4 percent, though results vary based on the kind of repair and how well it is done.
- Fixing a serious maintenance problem, such as a faulty oxygen sensor, can improve your mileage by *as much as 40 percent*.
- **Fuel Economy Benefit: 4%**
- **Equivalent Gasoline Savings: \$0.13/gallon**



# Check & Replace Air Filters Regularly

Replacing a clogged air filter can improve your car's gas mileage by as much as 10 percent. Your car's air filter keeps impurities from damaging the inside of your engine. Not only will replacing a dirty air filter save gas, it will protect your engine.

- **Fuel Economy Benefit: up to 10% E**
- **Equivalent Gasoline Savings: up to \$0.31/gallon**



# Keep Tires Properly Inflated

You can improve your gas mileage by around 3.3 percent by keeping your tires inflated to the proper pressure. Under-inflated tires can lower gas mileage by 0.4 percent for every 1 psi drop in pressure of all four tires. Properly inflated tires are safer and last longer.

**Fuel Economy Benefit: up to 3%**

**Equivalent Gasoline Savings: up to \$0.09/gallon**

RECOMMENDED			
	FRONT	REAR	SPARE TIRE
TIRE SIZE	P145/80R12		T105/80D13
COLD TIRE PRESSURE	32 PSI		60 PSI
AT MAX LOAD	220 KPA		420 KPA
VEHICLE CAPACITY			
MAX. LOAD (LBS)	688 (OCCUPANTS PLUS LOADS)		
OCCUPANTS	FRONT 2	REAR 2	
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION			

# Use the Recommended Grade of Motor Oil

You can improve your gas mileage by 1-2 percent by using the manufacturer's recommended grade of motor oil. For example, using 10W-30 motor oil in an engine designed to use 5W-30 can lower your gas mileage by 1-2 percent. Using 5W-30 in an engine designed for 5W-20 can lower your gas mileage by 1-1.5 percent. Also, look for motor oil that says "Energy Conserving" on the API performance symbol to be sure it contains friction-reducing additives.

**Fuel Economy Benefit: 1-2%**

**Equivalent Gasoline Savings: \$0.03-\$0.06/gallon**

# Drive Slower and “gadgets” don’t work

- Drive slow (under 25mph) until engine is warm
- Accelerate slower, use less R.P.M’s
- Warning about “gas saving” gadgets or “fuel enhancers”
  - fuel additives that cleans *fuel injectors* is supposed to help fuel efficiency, and is cheaper than having a shop manually clean them

# Important Tips to Remember

- Insulate the Attic
- Cover, Weather Strip, & Caulk the Windows & Doors
- Use Appliances & Lights Efficiently
  - Buy Energy Efficient Appliances & Lights
- Turn down thermostat in house & water heater
- Keep car tuned up

# More Information & Topics

- Alternative/Renewable Home Heating Options/Technologies
- Wood/corn burning
  - Safety
  - Stoves
  - Fireplaces
- Energy Trends
- Others \_\_\_\_\_,?????

For more information and handouts relevant to situation, contact us at:

UW-Extension, Marinette County Courthouse Room C325  
1926 Hall Ave  
Marinette WI, 54143

Call Toll Free at: 1-877-884-4408, local 732-7510

URL: <http://www.uwex.edu/ces/cty/marinette/index.html>