

We strive to live in a community where...

people value and protect the natural resources for future generations.



Environment, Energy, and Transportation Subcommittee

Diane Wessel, Chair	Marathon County Conservation, Planning, and Zoning
Dale Grosskurth	Marathon County Health
Andy Johnson	Marathon County Conservation, Planning, and Zoning
Meleesa Johnson	Marathon County Solid Waste
Kelly Zagrzebski	Wisconsin Public Service

"Wisely using our natural resources is the basis for having a quality life."

*Elroy Zemke, Chair
Marathon County
Environmental Resources
Committee*

Environment, Energy, and Transportation

Section Summary

Community Success and Progress:

- Improvement and expansion to the Central Wisconsin Airport.
- Highway 51/29 interchange improvements and expansions completed in the last two years.
- Community survey indicates high satisfaction among county residents regarding parks and recreation and the quality of lakes, rivers, and streams.
- Infrequent violations of water quality standards and plentiful water resources.



Challenges and Opportunities to Improve:

Challenges

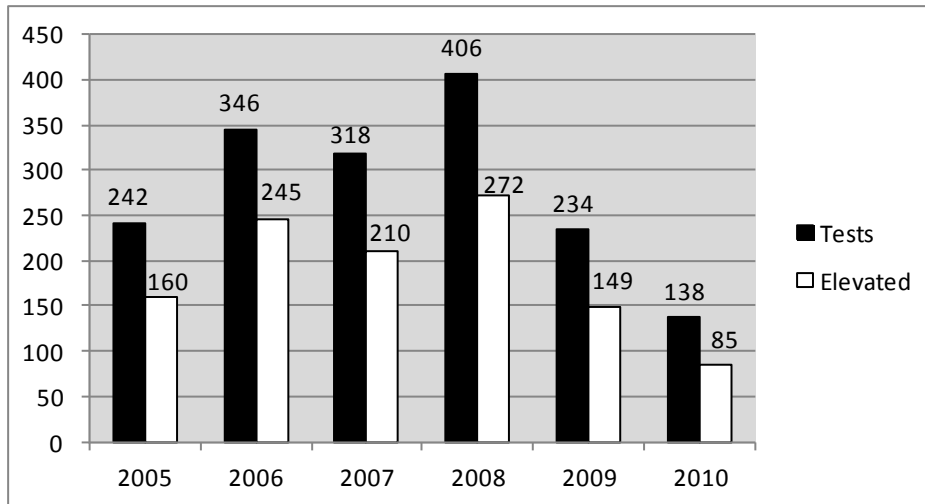
- Growing concern of farm runoff impacting water resources.
- A lack of private well water testing.
- Poor indoor air quality, especially relating to radon levels.
- The increasing costs of energy.
- The impact of public transportation budget reductions on the community.

Opportunities to Improve

- Educate public on energy cost savings through programs and literature.
- Continue programs which increase awareness and education on radon testing in homes and private well water testing.
- Greater collaboration and regional planning in regard to environment, energy, and transportation.
- Increase awareness of proper ways to dispose and recycle hazardous and special wastes.



Key Measure: Number of Indoor Air Quality Radon Screenings and Elevated Test Results in Marathon County, 2005-2010



COMMUNITY PERSPECTIVES

Clean air is necessary for good health. Air pollution can lead to chronic health problems such as coughing, difficulty breathing, respiratory illness, heart and lung disease, and even death. Air quality standards are set by the U.S. Environmental Protection Agency (EPA) and the State of Wisconsin to protect human health and the environment.

EPA has set national air quality standards for six common air pollutants: carbon monoxide, ozone, lead, nitrogen dioxide, particulate matter, and sulfur dioxide.

Outdoor air quality is affected by car exhaust, smoke, dust, factory emissions, ozone, etc. The Department of Natural Resources measures air quality and issues air quality advisories when pollutants reach unhealthy levels based on the Air Quality Index (AQI), which is based on the levels of lower level ozone and fine particle pollution.

One outdoor air pollutant that has been increasing in recent years is smoke from burning solid fuels. As heating costs rise, so does the popularity of burning wood for residential heating. Of particular concern is the rising numbers of outdoor wood boilers (OWB used to heat homes. Smoke from OWBs contains ozone, carbon monoxide, nitrous oxides, particulate matter, sulfur dioxide, and carcinogens). Since there are no federal or state regulations governing OWB siting or use, it is up to the local government to implement regulations on their use to minimize their impact on

human health. Several communities in Marathon County have implemented such regulations such as the City of Wausau, which does not allow OWB within the city limits. Most communities in the Wausau metropolitan area regulate placement, materials burned, distance from nearest building, and chimney height.

Indoor air quality is affected by mold, gases such as carbon monoxide and radon, and particulates. Indoor air quality can be improved through heating and cooling ventilation systems, air purifiers, mitigation systems, and regulations of pollutant source.

The primary indoor air quality concern in Marathon County is radon. Marathon County has among the highest occurrences of elevated radon levels in the state. This is due to the geology of Marathon County as radon is found in the soil and air movement out of the home draws in these soil gases. Radon is a colorless, odorless gas that causes lung cancer. It is the leading cause of lung cancer in non-smokers. There is no method of removing the source of radon (high levels of uranium in the soil, usually in granite). The only way to reduce radon levels in a building is by installing a radon mitigation system, which costs approximately \$1,000.

DATA HIGHLIGHTS

- On average, 66% of Marathon County radon test results are higher than the EPA action level of 4.0 pCi/L.
- Radon represents the second leading cause of lung cancer, and is the leading cause for non-smokers.
- Marathon County is ranked number one in the state for the amount of radon gas in homes.
- Marathon County has one air quality monitoring station in Lake Du Bay, which measures levels of Ozone. Another monitoring station in nearby Taylor County monitors for levels of particulate matter, PM_{2.5}.

SOURCES

- **Marathon County Health Department**
<http://www.co.marathon.wi.us/Departments/HealthDepartment/EnvironmentalServices/Radon.aspx>
- **Wisconsin Department of Natural Resources**
Air Quality and Health
<http://dnr.wi.gov/air/aq/health/>
- **Wisconsin Department of Health Services**
Radon Information for Wisconsin
<http://www.dhs.wisconsin.gov/radiation/radon/index.htm>

DATA HIGHLIGHTS

- In Marathon County, two municipal water systems had maximum contaminant level exceedances, Mosinee Waterworks and Schofield Waterworks.
- Mosinee Waterworks had two violations, exceeding the action level in copper and lead. The action level for copper is 1.3 ppm and the level found was 1.69 ppm. The action level for lead is 15 ppb and the level found was 43.9 ppb.
- Schofield Waterworks had one violation, exceeding the action level in lead. The action level for lead is 15 ppb and the level found was 43.9 ppb.
- Marathon County has 16 municipal water systems, totaling 72 municipal wells.
- Of Marathon County's 16 municipal water systems, 15 have wellhead protection plans. Athens Waterworks is the only system without one.

Key Measure: Number of Maximum Contaminant Level Exceedances/ Violations in Marathon County Municipal Water Systems, 2006-2010

Municipal Water Quality Maximum Contaminant Level Exceedances/Violations in Marathon County				
Year	Brokaw	Mosinee	Schofield	Total
2006	1	0	0	1
2007	1	0	0	1
2008	1	0	0	1
2009	1	0	0	1
2010	0	2	1	3

Note: Only municipal water systems with violations since 2006 are listed

COMMUNITY PERSPECTIVES

There are 16 municipal water systems in Marathon County. These water systems provide drinking water to approximately two-thirds of the county's population while also serving business and industry in the Wausau metropolitan area and outlying cities and villages. Good municipal water quality and quantity is vital to public and environmental health and the vitality of Marathon County's economy.

Recent studies have found traces of prescription medications in our wastewater. This phenomenon is a result of flushing unused or expired medications down the toilet or sink. This poses a public and environmental health risk as these pharmaceuticals enter our environment. Marathon County has implemented a prescription medication drop off program. Drop boxes are available in Wausau, Weston, Rothschild, Colby/Abbotsford, and Kronenwetter. The program ensures safe disposal of pharmaceuticals.

Most municipal water supplies are treated. Communities in the Wisconsin River valley typically treat their water for iron and manganese. The western Marathon County communities also add chlorine and fluoride. All municipal water systems must be routinely tested for compliance with drinking water standards. The frequency of testing depends on the size of the community. If the water does not meet drinking water standards, the community is required to

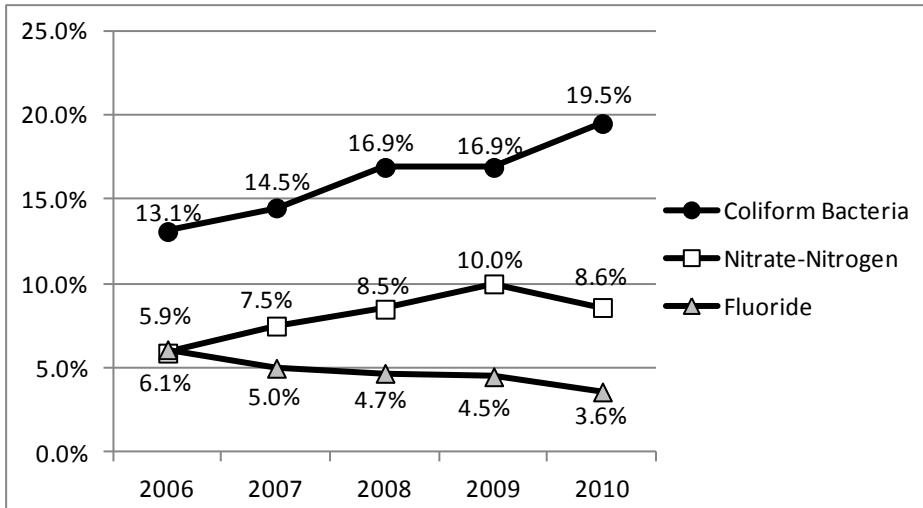
notify the public. All communities with public water supplies must annually publish a consumer confidence report that includes the results of water tests.

The Federal Safe Drinking Water Act (SDWA) was enacted in 1974 to protect public drinking water supplies. The SDWA requires all states to develop and implement a wellhead protection program. The state of Wisconsin's program requires municipal wells developed after May 1, 1992 to have an approved wellhead protection plan in place. Communities are also encouraged to develop wellhead protection plans for wells in service prior to 1992. Wellhead protection plans protect the quality and quantity of our public drinking water supplies by identifying existing and potential sources of contamination, establishing a public education program, establishing a water conservation program, a contingency plan for providing safe water in the event of contamination, and a management plan to address existing and potential sources of contamination. Fifteen of Marathon County's 16 communities with municipal water have wellhead protection plans in place

SOURCES

- **Wisconsin Department of Natural Resources**
Public Water Supply Systems: Consumer Confidence Reports
[http://prodoasext.dnr.wi.gov/inter1/pws2\\$.startup](http://prodoasext.dnr.wi.gov/inter1/pws2$.startup)

Key Measure: Percent of Private Well Samples Testing as Unsafe



2010 Private Well Water Tests in Marathon County

	Coliform Bacteria	Nitrate-Nitrogen	Fluoride
Private Well Samples Tested	1,645	838	473
Number Testing Unsafe	321	72	17
Percentage Testing Unsafe	19.5%	8.6%	3.6%

COMMUNITY PERSPECTIVES

Clean, safe drinking water is one of the most important elements of good health. Municipal water sources are regulated by the Environmental Protection Agency (EPA) and the state. However, there are very few regulations for private well water quality. Therefore, it is the consumer's responsibility to ensure safe drinking water. The primary contaminants of concern in Marathon County are coliform bacteria, nitrate-nitrogen, and fluoride.

Coliform bacteria can be found everywhere in the environment including soil, plants, and animals, and any amount in drinking water is unsafe. Consumption of the bacteria can cause severe intestinal illness; however, the primary concern of the presence of bacteria is that it is an indicator of the presence of other disease-causing organisms, such as E. coli (fecal coliform). The presence of E. coli is usually the result of contamination by sewage (failing septic system) or animal waste from farmlands. Bacteria presence can fluctuate rapidly due to environmental factors, age of the well, maintenance, and other factors.

Nitrate-nitrogen occurs naturally in ground water, however levels of 10 milligrams per liter (10 parts per million) is the maximum allowable level for drinking water, where levels at or above 10 ppm pose significant health risks to infants and pregnant women. Nitrate-nitrogen reduces the blood's ability to carry oxygen, which could lead to coma or death. Sources of higher levels of nitrate-nitrogen in water include lawn and farm field fertilizers, livestock facilities, sewage treatment plants, and naturally occurring levels.

Fluoride is naturally present in water and is safe and effective to reduce tooth decay. However, fluoride levels above 2.0 mg/liter may increase the risk in children for enamel fluorosis, a condition that causes staining and pitting of the enamel surface of teeth. Levels over 4.0 mg/liter can result in bone disorders.

DATA HIGHLIGHTS

- According to the 2011 LIFE in Marathon County Community Survey, 38% of respondents have a private well. Of those that have private wells, 22% have their water tested annually.
- According to the 2011 LIFE in Marathon County Community Survey, the respondents who did not have their well water tested annually gave the following reasons:

Not Needed	48%
Cost	14%
Don't know where to get it tested	13%
Other	25%

- In 2010, of the 1,677 private wells samples tested, 19% were bacteriologically unsafe, a decrease from 23% testing unsafe in 2009.
- Testing for nitrate-nitrogen indicated that 2% of samples in 2009 and 2010 had elevated levels exceeding 10 mg/l.

SOURCES

- **Marathon County Health Department**
<http://www.co.marathon.wi.us/Departments/HealthDepartment/WaterTestingLab/PrivateWellTesting.aspx>
- **LIFE in Marathon County Community Survey**
Question 18 List C, Refer to Survey Section
- **Wisconsin Department of Natural Resources**
<http://www.dnr.state.wi.us/org/water/dwg/forms/dgo23.pdf>
- **Wisconsin Department of Health Services**
Water Issues
<http://www.dhs.wisconsin.gov/eh/Water/index.htm>

DATA HIGHLIGHTS

- According to the 2011 LIFE in Marathon County Community Survey, 62.5% of respondents agreed that lakes and rivers in Marathon County are clean.
- Six bodies of water in Marathon County had portions listed as impaired: Big Bass Lake (mercury), Big Eau Pleine Reservoir (phosphorus), Big Eau Pleine River (phosphorus), Big Rib River (mercury), Mayflower Lake (mercury), and the Wisconsin River (mercury, PCBs).
- Marathon County has about 33 bodies of water with portions classified as outstanding or exceptional resource water, most of which are located east of the Wisconsin River.

Key Measure: Major Marathon County Lakes with Acres, Impairment Status, and Pollutant

Body of Water	Acres	Impaired Status	Pollutant
Big Eau Pleine Reservoir	4909.16	Yes	Phosphorus Mercury (Removed)
Lake Dubay	4044.83	No	NA
Lake Wausau	1851.01	No	NA
Bass Lake	84.00	No	NA
Big Bass Lake	176.94	Yes	Mercury
Lilly Lake	83.40	No	NA
Lost Lake	42.07	No	NA
Mission Lake	104.44	No	NA
Mayflower Lake	98.56	Yes	Mercury
Pike Lake	203.69	No	NA
Norrie Lake	99.00	No	NA

COMMUNITY PERSPECTIVES

Good surface water quality is important to a community's quality of life, economy, and public health. A community's lakes and streams are a source of natural beauty and provide recreational and economic opportunities through tourism, power generation and residential development. Marathon County has 202 lakes along with 955 miles of rivers and streams.

Water pollution enters surface water through point and non-point sources. Point source pollution originates from a single, concentrated source such as a factory, waste water treatment plant, construction site, or large livestock farm. Non-point source pollution originates from a broad area such as a farm field or a community's storm drain system. Although both sources of pollution are regulated to minimize their impact to water, non-point source pollution is more difficult to control and reduce due to the vast area of its contribution.

The major contributing pollutants to Marathon County surface waters include soil erosion, nutrients (fertilizer and manure), and suspended solids from storm water runoff.

Water Quality Management Areas represent lands within 1,000 feet of lakes and 300 feet from streams. Activities that threaten water quality are restricted

in these areas. Enforcement of shoreland and wetland rules, zoning and performance standards along with land conservation programs such as nutrient management, rotational grazing and farmland preservation are initiatives aimed at safely managing these areas against runoff concerns.

Many agencies partner to create task forces and conduct studies in order to collect data pertaining to activities that impact surface water quality. These data are used to develop management plans and policy recommendations to improve and protect the water resources, such as the task force established to study and protect the Big Eau Pleine Reservoir.

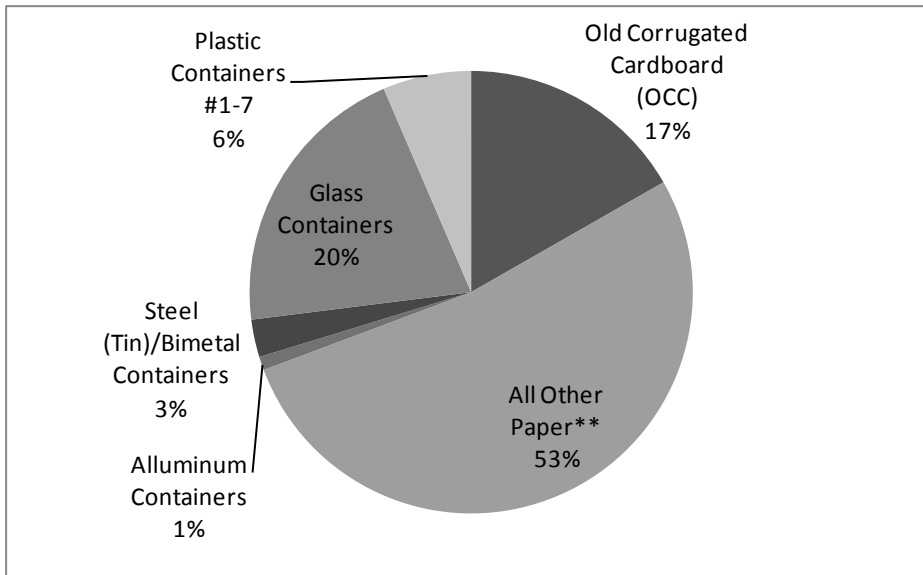
Urban storm water pollution is reduced through the Wisconsin Pollutant Discharge Elimination System (WPDES). Marathon County, the cities of Wausau, Schofield, Mosinee and Marshfield, the villages of Rothschild, Weston, and Kronenwetter, and the Town of Rib Mountain are permitted under WPDES and are required to meet storm water pollution standards.

Outstanding and Exceptional Resource Waters are water resources currently unaffected by pollution and therefore, have a higher level of protection. Marathon County has several of these water resources.

SOURCES

- **Wisconsin Department of Natural Resources**
Impaired Water Search
<http://dnr.wi.gov/water/impairedSearch.aspx>
Surface Water Data Viewer
http://dnr.wi.gov/org/water/data_viewer.htm

Key Measure: Percentage of Total Tons of Materials* Recycled from Curbside or Municipal Drop Sites in Marathon County, 2010



Note: *Materials above are banned from Wisconsin landfills
 **Contains some non-banned paper, primarily residential mixed paper

COMMUNITY PERSPECTIVES

Solid waste management is an imperative operation within any community that protects environmental and public health through reduction of landfills and the proper disposal of hazardous waste. Solid waste management includes the collection, transport, processing, and safe disposal of waste. Decreasing the amount of materials landfilled is accomplished by the reducing the amount of waste generated, reusing materials, and recycling.

Currently, the Marathon County Solid Waste Department (MCSW) serves the 63 municipalities of Marathon County and their residents with a variety of waste and recycling collection methods and programs. The MCSM also provides educational programming, assists businesses, and advocates for local, state, and federal policies supporting and enhancing environmental protections of modern waste management laws and regulations.

On-going concerns in Marathon County regarding solid waste management include maintaining and expanding the convenient, affordable collection of solid waste and recycling, increasing the availability of recycling services for materials not collected at the curb, and

diverting the payment of the Recycling Fee disposal tax from landfill customers to non-recycling related state programs.

Another growing concern is the proper disposal of hazardous waste. Survey results indicate that there is a general lack of knowledge when it comes to the definitions, methods of disposal and recycling, and costs associated with hazardous waste management.

The groups responsible for solid waste management continue to mitigate such concerns through efforts to educate and advise the public about the different programs and methods implemented to properly dispose of solid waste in Marathon County.

Several programs have been implemented to reduce the amount of waste entering landfills, including:

- Computer recycling
- Hazardous and special waste disposal
- Home composting/municipal yard waste collection and drop off
- Pharmaceutical collection/drop off
- Recycling (glass, aluminum, plastic, paper, etc)
- Beneficial reuse

DATA HIGHLIGHTS

- The LIFE in Marathon County Community Survey asked respondents if they properly dispose of or recycle hazardous and/or special wastes. The results:

Always	51.9%
Usually	37.7%
Sometimes	10.4%
- Of the respondents who answered "sometimes," the LIFE in Marathon County Community Survey asked why respondents only sometimes properly disposed of or recycled hazardous and/or special wastes. The results:

Do not know what are household hazardous wastes	10.2%
Do not know what are special wastes	9.0%
Not sure where to take waste for disposal and/or recycling	31.9%
Not willing to pay cost in disposing	22.3%
Location/hours for disposing are inconvenient	18.7%
Not sure where to find information on less toxic alternatives to hazardous items	7.8%

- In 2010, the Marathon County Solid Waste Management Department sold 110 compost bins and 72 compost kitchen pails.
- In 2010, the total tons of materials recycled from curbside or municipal drop sites in Marathon County was about 23,604 tons.

SOURCES

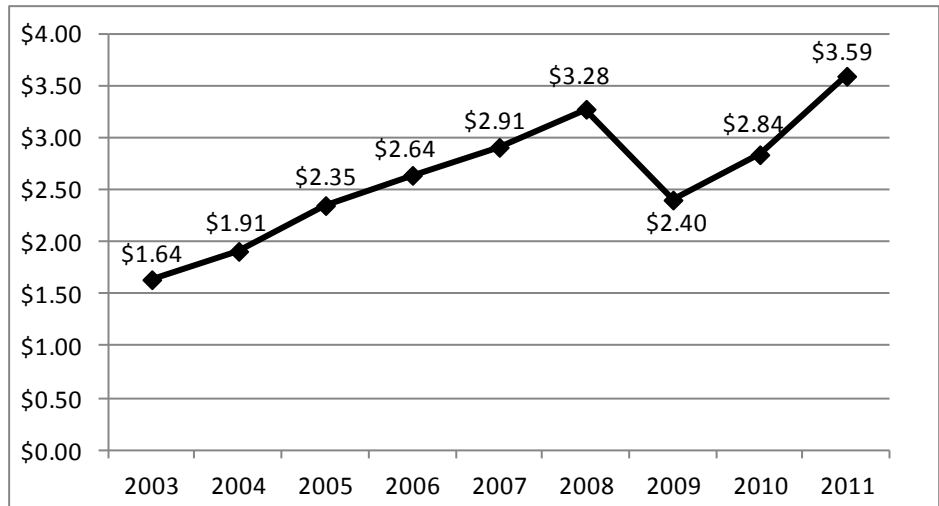
- **2011 LIFE in Marathon County Community Survey**
Question 17, Refer to Survey Section
- **Wisconsin Department of Natural Resources**
Bureau of Waste & Materials Management
<http://dnr.wi.gov/org/aw/wm/>
- **Marathon County Solid Waste Management Department**
www.marathoncountysolidwaste.org/

DATA HIGHLIGHTS

- Eight electric utilities distribute electricity to the county. WPS provides for approximately 70% of the County's 54,228 services, with 2,174 miles of lines.
- WPS provides 35,344 services with natural gas via 897 miles of gas main, 6 gate stations and 68 regulator stations.
- The Weston Power Plant generates electricity by using coal.
- Renewable energy use in Wisconsin increased 8.95% in 2009; the County has residential and educational applications of solar, wind, biogas and ethanol, in addition to the hydro facilities.
- Residents received aid for their energy costs from the Wisconsin Department of Energy which has funded \$334.5 million for projects and clean energy tax programs as of June 1, 2011, in addition to Focus on Energy incentives.
- There are 60 retail locations in the County to purchase gasoline and diesel (BP, Mobil, Shell, CITGO, Phillips, Conoco and Cenex).
- Base load generation for Marathon County:

Weston 1	60 MW
Weston 2	90 MW
Weston 3	325 MW
Weston 4	500 MW
Wausau Hydro	5.4 MW

Key Measure: Average Yearly Cost of Gasoline per Gallon in Marathon County, 2003-2010



COMMUNITY PERSPECTIVES

Marathon County is home to various energy infrastructures, such as Wisconsin Public Service's (WPS) Weston Power Plant and Wausau Hydro Plant which provides a renewable source of energy. There are 897 miles of gas main, 6 gate stations, 68 regulator stations, 2,174 miles of electric distribution lines and 15 distribution substations.

In the state of Wisconsin, 63% of generated power came from coal in 2010, which is the source used at the Weston Power Plant. An additional 21% was created using nuclear power and 9% from natural gas. The remaining 7% comes from hydro, biogas, wind and fuel oil sources. The renewable energy use in the state increased 8.95% from 2009-2010 (according to Wisconsin Energy Statistics 2010). WPS currently has 20 net metering customers, which is a mixture of farm, small business, and residential units that have the capability of generating 129 KW of energy with a mix of 43 KW of solar and 86 KW of wind. The Ringle landfill has the capability of generating up to 2.4 megawatts. Since 2006, Focus On Energy has helped fund 50 renewable projects in the county.

Residents have been successful in decreasing their overall energy consumption due to incentives from Wisconsin's Focus on Energy and the Wisconsin Department of Energy. From

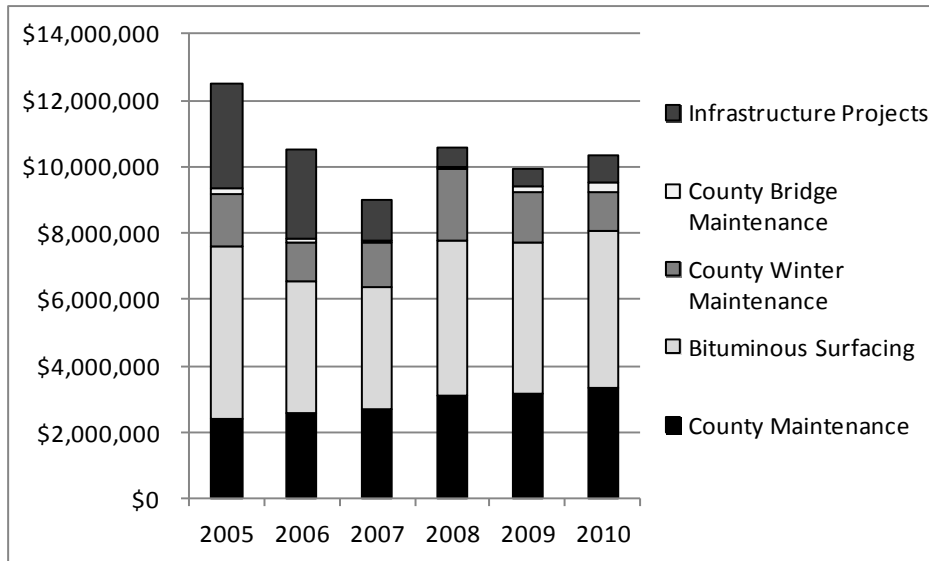
2006 until June of 2011, residential customers annually saved over 24.4 million kwh and over 1.2 million therms by implementing energy saving options and received over \$2 million in incentives from Wisconsin Focus on Energy for 7,100 projects. In addition, business customers annually saved over 50 million kwh, over 5.32 million therms, and received over \$4.3 million in incentives for 1,900 projects.

Through the 2009 American Recovery and Reinvestment Act, federal tax credits were created that reward homeowners who make energy conservation improvements to their homes. Additionally, the Wisconsin DOE created recovery act projects that have provided \$334.5 million in funding for selected projects and clean energy tax programs.

SOURCES

- **Wisconsin Public Service**
www.wisconsinpublicservice.com/
- **University of Wisconsin Energy Institute**
Wisconsin Energy Statistics
http://www.energy.wisc.edu/?page_id=56

Key Measure: Marathon County Highway Department Project Expenditures, 2005-2010



COMMUNITY PERSPECTIVES

A variety of services exist in Marathon County when it comes to transportation and its infrastructure. Marathon County features public transportation options with the Metro Ride partnership between various municipalities, a system of roads and highways maintained by the Marathon County Highway Department, and air travel through the Central Wisconsin Airport.

Public transportation has been part of the fabric of our community for many years, dating back to the first street cars in 1906. Much has changed over the years, but the objective - to provide safe, reliable, affordable, basic mobility remains unchanged. Today, Metro Ride provides accessible city bus service, as well as paratransit service for persons with disabilities. This transit system represents a successful local partnership between the City of Wausau, the Village of Rothschild, the City of Schofield, the Village of Weston, Marathon County and the Wausau School District. Each municipality pays a portion of Metro Ride's annual operating costs and is a voting member on the transit commission. This arrangement is unusual for municipal services, but very important for citizens who must travel regardless of local boundaries to conduct their daily lives.

The Marathon County Highway Department operates the highway system under its jurisdiction to provide a safe and convenient means for the vehicular transportation of people and goods. The department oversees the maintenance of over 600 miles of the county trunk highway system and annually contracts with the Wisconsin Department of Transportation (WisDOT) to maintain over 700 additional lane miles of State and Federal Highway System roads. The Highway Department also provides technical assistance, financial aid, and various services to other local units of government. These services are critical to maintaining a safe, convenient, and efficient transportation system serving communities, residents, and businesses throughout Marathon County.

The Central Wisconsin Airport (CWA) is a regional non-hub airport located in Mosinee, WI, roughly equidistant between Stevens Point and Wausau. The airport is owned by Marathon and Portage Counties and is governed by the Central Wisconsin Joint Airport Board. It is currently served by three airlines: Delta, United and American and operates 14 daily departures. Delta Air Lines provides flights daily to Minneapolis/St. Paul and Detroit. Both United Airlines and American Airlines provide flights daily to Chicago O'Hare.

DATA HIGHLIGHTS

- According to the LIFE in Marathon County Community Survey, 60.4% of respondents agreed that streets, roads, and highways are well maintained.
- According to the LIFE in Marathon County Community Survey, 51.1% of respondents are concerned about the availability of public transportation in the community, while 13.6% did not know.
- In 2010, the Marathon County Highway Department spent about \$10.35 million on county highway projects.
- Metro Ride had about \$3.7 million in funding for 2009, 39% of which comes from federal funds.
- Every \$1 spent on public transit in Wisconsin reaps more than \$3 in economic benefits.
- Metro Ride had 794,121 total riders in 2009.
- The Central Wisconsin Airport (CWA) plans on a \$30 million renovation and expansion due to the increasing amount of departing passengers which totaled to 160,000 in 2010.
- CWA recently received a \$250,000 Small Community Air Service Development Program grant from the US Department of Transportation.

SOURCES

- **Marathon County Highway Department**
<http://www.co.marathon.wi.us/Departments/HighwayDepartment.aspx>
- **City of Wausau**
Metro Ride Executive Report
<http://www.ci.wausau.wi.us/LinkClick.aspx?fileticket=gKH61uAN6UA%3d&tabid=466>
- **Central Wisconsin Airport**
<http://www.fly-cwa.org/About.html>