City of La Crosse & La Crosse County

Sustainability Indicators

2016 Report

V2

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SUSTAINABILITY ANALYTICS

La Crosse, Wisconsin

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Acknowledgements

Thank you to all of those who have helped with this report. Special thanks to Sustainable La Crosse Commission, City and County Staff, City Council and County Board, and all residents, businesses, non-profits and other organizations engaged in the important work of preserving and improving the livability of our City and County.

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Introduction

In early 2009 the La Crosse County Board and La Crosse Common Council adopted the *City of La Crosse & La Crosse County Strategic Plan for Sustainability*. The plan identified multiple sustainability indicators to be monitored on an ongoing basis. Some have since been added to or removed, so the set of indicators tracked in this report differs somewhat from the original. Some of these indicators apply to government operations only, while others apply to the city and/or county as a whole. In this report, most indicators are measured and reported separately for the City of La Crosse and La Crosse County.

Table 1: Sustainability Indicators Reported

City/County Government Operations
Electricity Usage
Natural Gas Usage
Facility Energy Use Intensity
Vehicle Fuel Usage
Water Usage
Paper Usage
Green Product Purchasing

Community-Wide
Water Usage*
Solid Waste Generation & Diversion**
Municipal Recycling Collection
MTU Bus System Ridership
Bicycle Route/Trail Lengths
Alternative Commuting Rates
Land Use*
Education Attainment
Median Household Income
Poverty Rates
Unemployment Rates

*: Tracked for City of La Crosse only
**: Tracked for La Crosse County only

For most indicators, 2007 was the earliest year for which reliable data could be gathered. The year 2007 was therefore designated as the "base year" against which future values would be compared. According to the *Strategic Plan for Sustainability*, a report was to be generated on an annual basis to monitor and highlight improvements or setbacks in the pursuit toward sustainability. This report summarizes the status of those indicators through the end of 2016.

City of La Crosse Government Operations

Facility Energy Usage

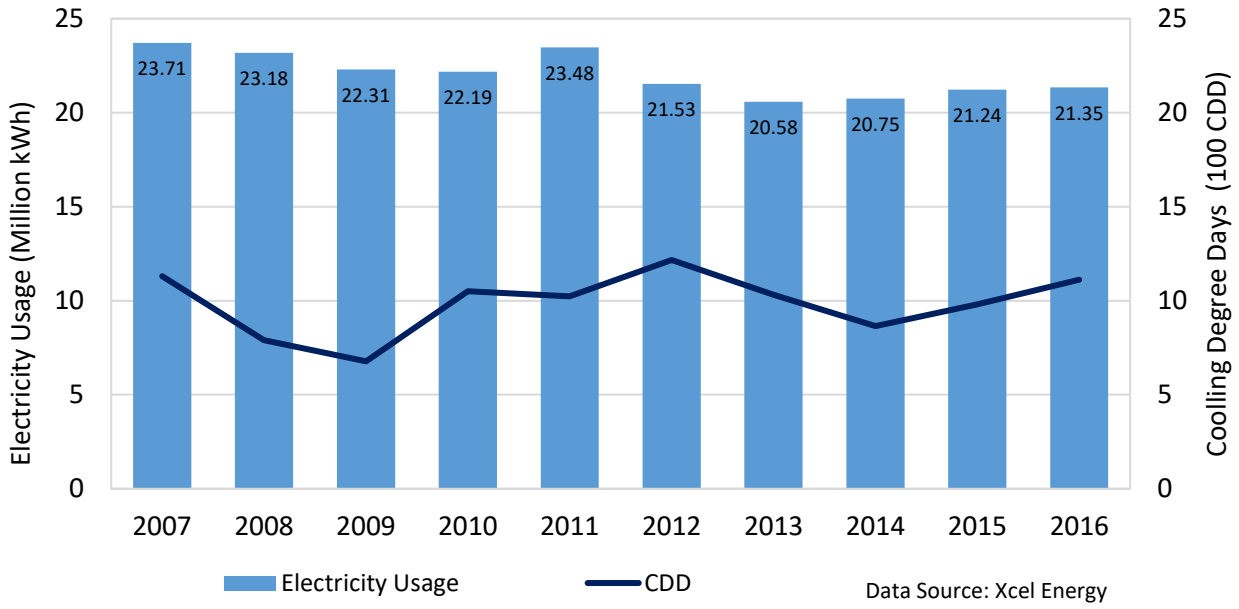
The City of La Crosse government utilizes energy in two forms to operate facilities: electricity and natural gas. Each is examined separately below. The *Strategic Plan for Sustainability* includes two long-term goals related to energy usage at city facilities:

- Goal 1A: By 2025, the City will reduce overall energy consumption as measured per square foot within City facilities from 2007 by a minimum of 25%.
- Goal 1B: By 2025, at least 25% of the City's energy needs in City facilities will be generated from renewable resources.

Electricity

The City of La Crosse government used 21.35 million kWh of electricity during 2016 – down from 23.71 million kWh in 2007 (-9.9%), but up from 21.24 million kWh in 2015 (+0.5%; see Figure 1)[1]. At $0.11 per kWh, the City government spent $259,431 less for electricity in 2016 than if usage had remained at the 2007 level[2].

Figure 1: City of La Crosse Government Annual Electricity Usage with Cooling Degree Days



[1] Data from previous years was updated in this report as it was discovered that certain accounts had been omitted. Also, usage from Green Island Ice Arena was removed because the city transferred control of the facility in 2014.

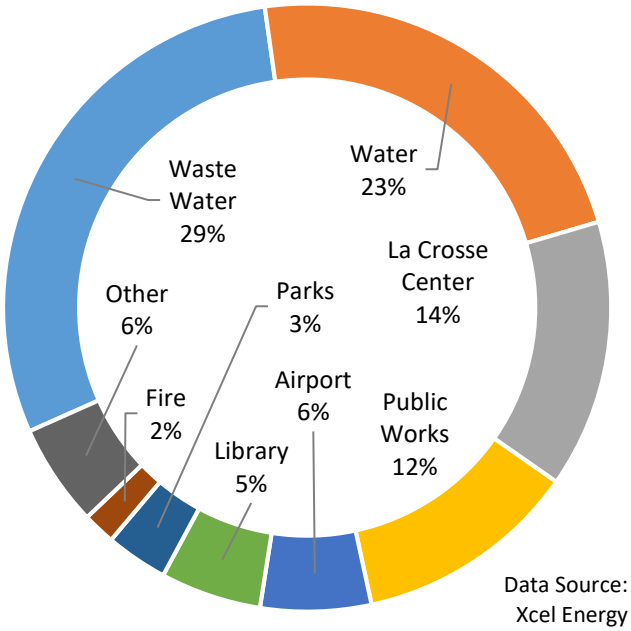
[2] $0.11 per kWh was the average commercial price for electricity in WI during 2016 (data source: US EIA).

Cooling degree days (CDD) measure the difference between outdoor temperature and the base indoor temperature of air-conditioned facilities. The annual CDD values shown in Figure 1 represent an index of overall summer heat levels. Higher electricity consumption for air conditioning is expected in years with higher annual CDD values.

Among city departments, the Waste Water Utility used the largest amount of electricity in 2016 (29% of city total), followed by the Water Department, La Crosse Center and Public Works -- which includes City Hall (see Figure 2).

Regarding Goal 1B of the *Strategic Plan for Sustainability*, 25% of the electricity that the City government purchased from Xcel Energy in 2016 was produced using renewable sources, primarily wind and hydro (see Figure 11 on page 16). The City government does not currently operate renewable energy generation equipment. Opportunities to add renewable energy generation equipment may include installation of solar photovoltaic panels on suitable city facility rooftops, and/or utilizing anaerobic digester gas from the Waste Water Treatment Plant to produce electricity.[3]

Figure 2: City of La Crosse Government 2016 Electricity Usage by City Department



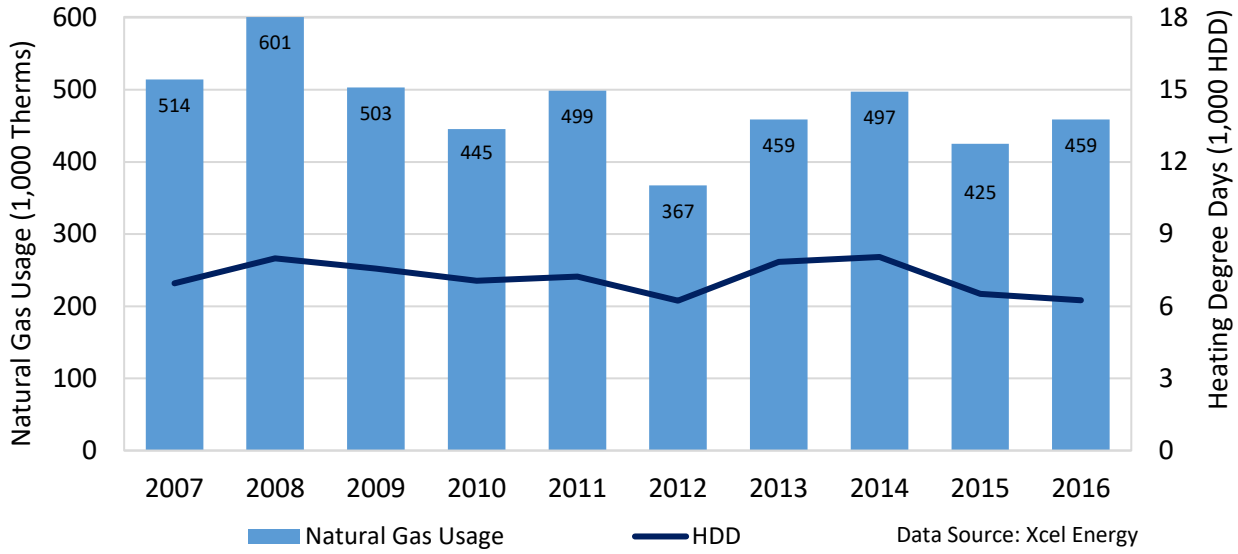
Data Source: Xcel Energy

[3] For more information about how the City's waste water treatment facility could generate significant amounts of electricity, see Focus on Energy's 2003 report, *Anaerobic Digester Methane to Energy: A Statewide Assessment*.

Natural Gas

The City of La Crosse government consumed 459,029 therms of natural gas during 2016 – down from 514,468 therms in 2007 (-10.8%), but up from 425,058 therms in 2015 (+8.0%; see Figure 3).[4] At $0.63 per therm, the City government spent $34,927 less on natural gas in 2016 than if usage had remained at the 2007 level.[5]

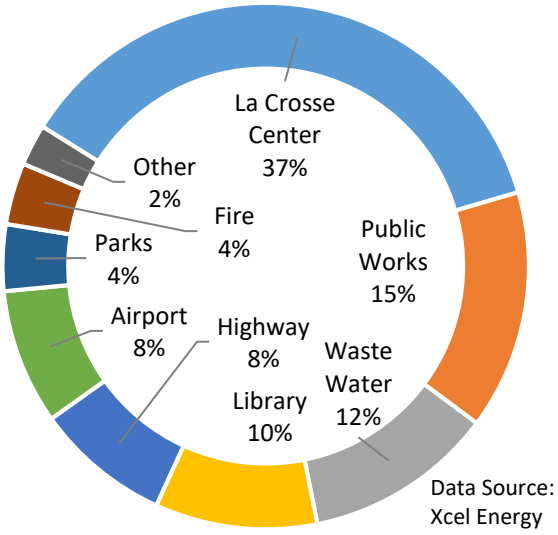
Figure 3: City of La Crosse Government Annual Natural Gas Usage with Heating Degree Days



Heating degree days (HDD) measure the difference between outdoor temperature and the base indoor temperature of heated facilities. The annual HDD values shown in Figure 3 represent an index of overall winter coldness. Higher natural gas consumption is expected in years with higher HDD values.

Among city departments, the La Crosse Center used the largest amount of natural gas in 2016 – 37% of the City government total (see Figure 4). Other departments using significant amounts of natural gas were Public Works (includes City Hall), the Waste Water Utility and Libraries.

Figure 4: City of La Crosse Government 2016 Natural Gas Usage by Department



[4] Data from previous years was updated in this report as it was discovered that certain accounts had been omitted. Also, usage from Green Island Ice Arena was removed because the city transferred control of the facility in 2014.

[5] The average commercial price for natural gas in WI during 2016 (data source: US EIA).

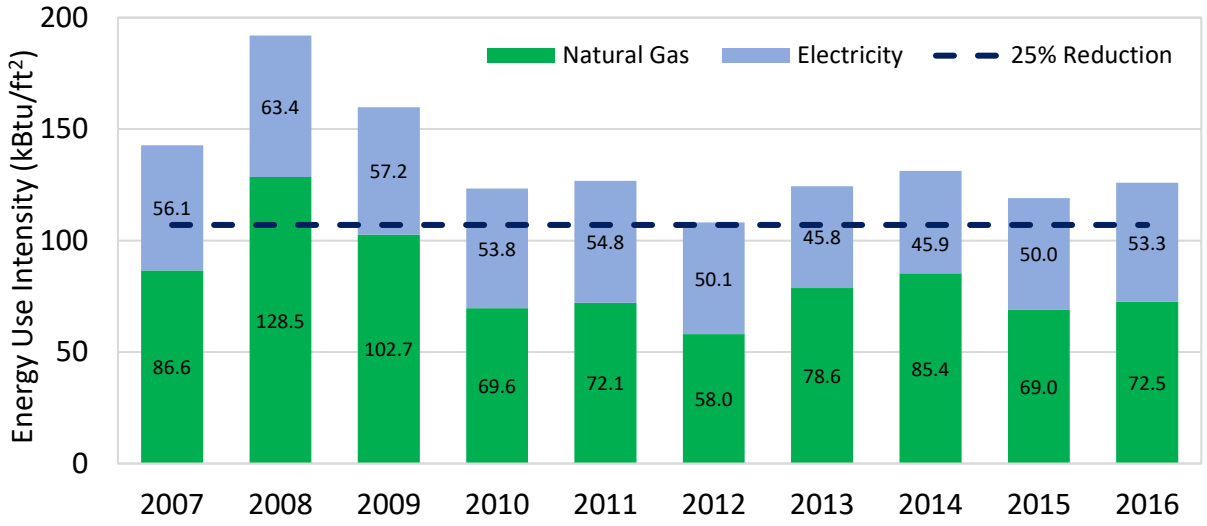
Energy Use Intensity (EIA)

A facility's annual energy usage per square foot, or *energy use intensity (EUI)*, is a measure of its total annual energy usage (in units of kBtu), standardized by its size (in units of ft^2). Goal 1A of the *Strategic Plan for Sustainability* aims to reduce EUI of City facilities 25% from 2007 by 2025. This analysis tracks EUI for two of the largest City government facilities – City Hall and the La Crosse Center – from 2007-2016.

City Hall

City Hall's 2016 EUI was 125.9 kBtu/ft^2 – down from 142.7 kBtu/ft^2 in 2007 (-11.8%), but up from 119.1 kBtu/ft^2 in 2015 (+5.0%; see Figure 5). The U.S. EPA Energy Star Portfolio Manager program publishes median EUI values by facility type among its participating facilities. In early 2016, the median site EUI value for offices was 67.3 kBtu/ft^2, indicating that City Hall uses more energy than most office facilities in the Portfolio Manager program. However, the ages, geographical locations, and specific usage patterns of participating facilities are undisclosed.

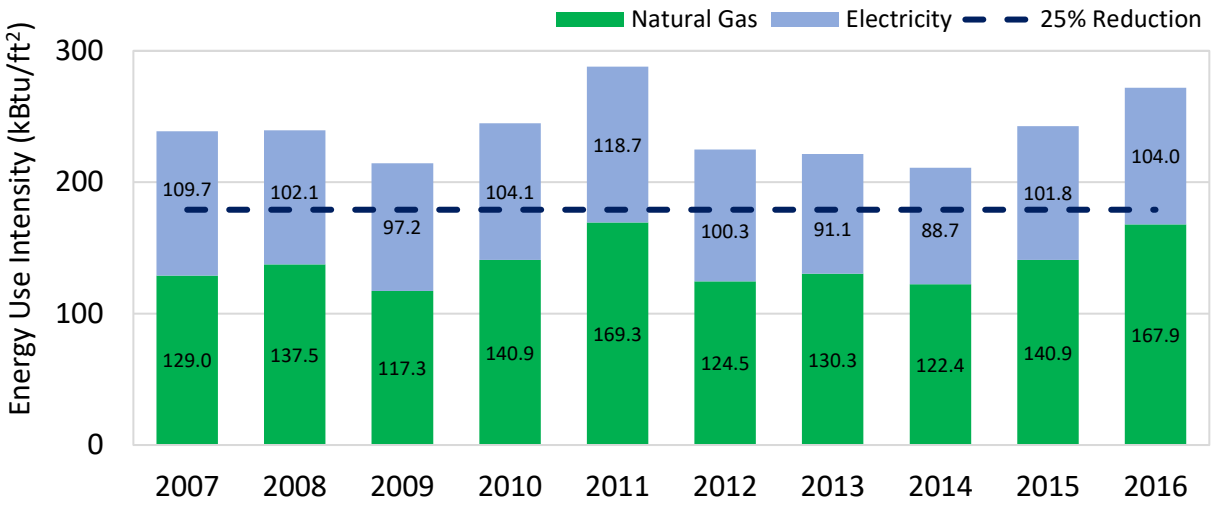
Figure 5: City Hall Annual Energy Use Intensity



La Crosse Center

The La Crosse Center's 2016 EUI was 272.0 kBtu/ft^2 – up from 238.8 kBtu/ft^2 in 2007 (+13.9%), and up from 242.8 kBtu/ft^2 in 2015 (+12.0%; see Figure 6). In early 2016 the Portfolio Manager median site EUI value for convention centers was 45.3 kBtu/ft^2, indicating that the La Crosse Center uses more energy than most convention centers in the Portfolio Manager program. However, the ages, geographical locations, and specific usage patterns of participating facilities are undisclosed.

Figure 6: La Crosse Center Annual Energy Use Intensity



These results indicate that the La Crosse Center used more than twice as much total energy per square foot than City Hall in 2016. One reason is the difference in overall shape between the building structures. City Hall is roughly cube-shaped, a compact design which requires less exterior surface area to enclose its interior space than the La Crosse Center's more spread-out shape. Since heat transfer is directly proportional to exterior surface area, City Hall is inherently more efficient than the La Crosse Center to heat and cool.

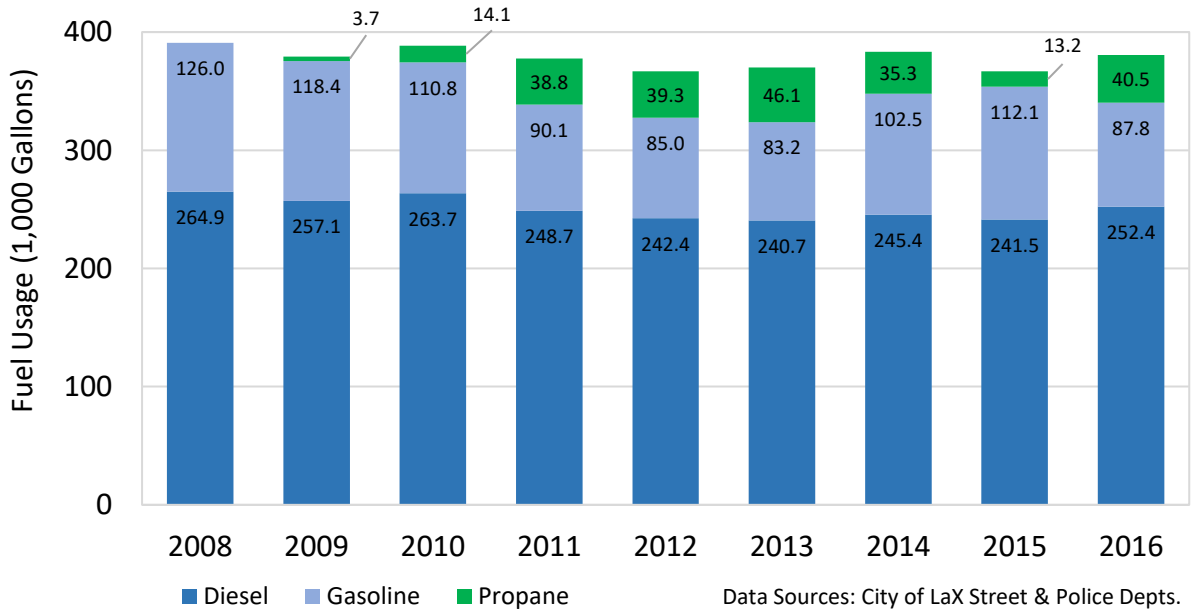
Vehicle Fuels

The City government's vehicle fleet uses three fuel types: diesel fuel, gasoline and propane. Usage of each type is examined separately below. The City government has set two long-term goals related to fuel usage in its vehicle fleet:

- Goal 1D: By 2025, the City will consume at least 25% less fossil fuel for its vehicle fleet.
- Goal 1E: By 2025, at least 25% of the fuel consumed for the City's fleet will come from renewable sources and alternative fuels.

With respect to Goal 1D, the City fleet's total fossil fuel usage in 2016 was 4.3% lower (by energy content) than in 2008. Diesel fuel and propane are purely fossil fuel sources. Most gasoline is formulated as a blend of 90% petroleum gasoline (fossil) and 10% ethanol (renewable). With respect to Goal 1E, renewable and/or alternative fuels accounted for 9.3% of the city fleet's total fuel usage (by energy content) in 2016. These included propane – an alternative fossil fuel – and the ethanol component of gasoline.

Figure 7: City of La Crosse Government Annual Vehicle Fuel Usage



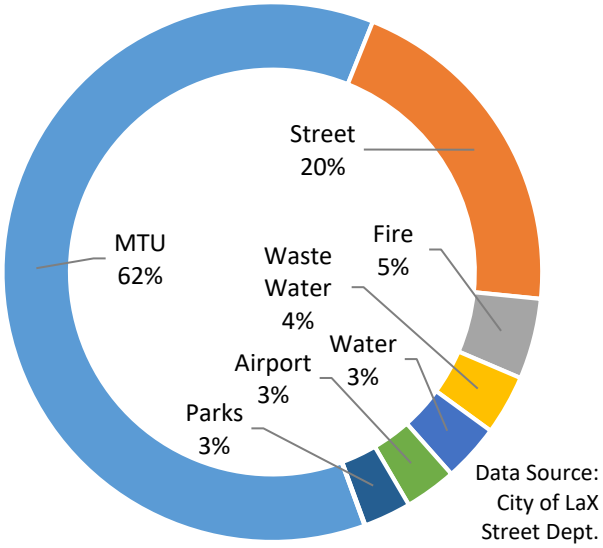
Diesel Fuel

Diesel fuel is typically utilized by heavy-duty vehicles such as buses, snow plows and construction vehicles. Therefore, diesel fuel usage is influenced by variables including snowfall amounts during winter and construction activity during other seasons.

The City fleet used 252,364 gallons of diesel fuel in 2016 – down from 264,878 gallons in 2008 (-4.7%), but up from 2451,538 gallons in 2015 (+4.5%; see Figure 7). Usage data for 2007 is not

available. Among City departments, the MTU (bus system) used the largest quantity of diesel in 2016 (62% of city total), followed by the Street Department (20%; see Figure 8).

Figure 8: City of La Crosse Government 2016 Diesel Fuel Usage by Department

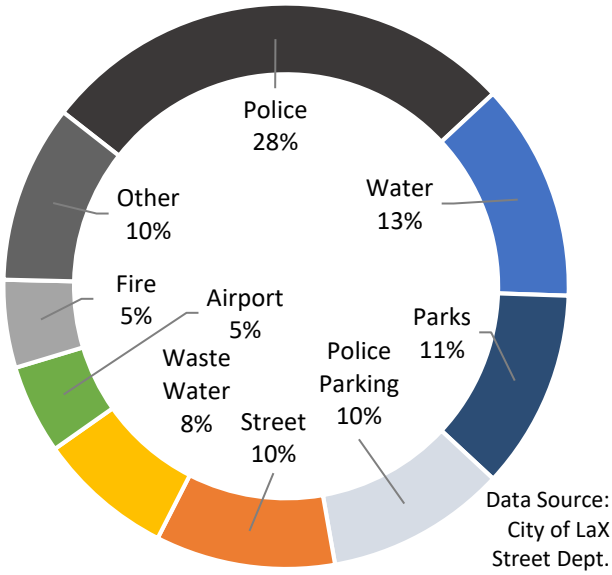


Gasoline

Gasoline is typically utilized by Light-duty vehicles such as passenger cars and pickup trucks. The City fleet used 87,801 gallons of gasoline in 2016 – down from 125,973 gallons in 2008 (-30.3%), and down from 112,132 gallons in 2015 (-21.7%; see Figure 7). Usage data for 2007 is not available). The Police Department's use of propane as an alternative option to gasoline explains part of the City government's gasoline usage reduction.

The Police Department was the largest user of gasoline among city departments (28% of city total; see Figure 9). The Water and Parks & Recreation Departments also used relatively large quantities of gasoline.

Figure 9: City of La Crosse Government 2016 Gasoline Usage by Department



Propane

The La Crosse Police Department began utilizing propane in 2009 to operate squad vehicles. The department now outfits all new squad vehicles to be able to use propane in addition to gasoline, and can utilize either throughout the year depending on fuel costs. Police department gasoline usage and propane usage are expected to be inversely related to each other.

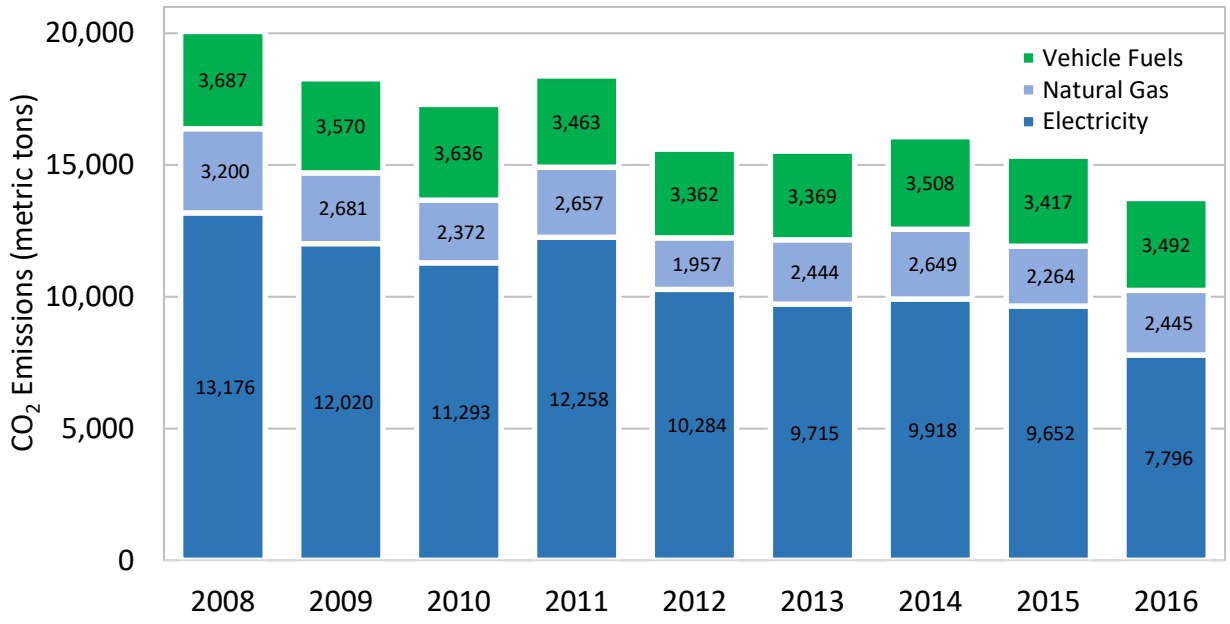
In 2016 the police department's squad vehicles used 40,494 gallons of propane – up from 13,207 gallons in 2015 (+206.6%; see Figure 7). Propane usage in 2015 was abnormally low, however, compared with usage in earlier years for two reasons: low gasoline prices and the department's switching to a different propane vendor, which resulted in a multiple-month period without propane availability in 2015.

CO_2 Emissions from Facility Energy Usage & Vehicle Fuels

Energy consumption is responsible for the majority of the City government's total greenhouse gas emissions, as combustion of fossil fuels to produce energy emits carbon dioxide (CO_2) into the atmosphere. Other greenhouse gases are also emitted, but in smaller amounts and therefore have relatively less climate impact. This analysis is limited only to CO_2 emissions resulting from the City government's energy usage.

The City government's 2016 energy usage resulted in an estimated 13,733 metric tons of CO_2 emissions – down from 20,064 metric tons in 2008 (-31.6%), and down from 15,333 metric tons in 2015 (-10.4%; see Figure 10).[6] The electricity component was the largest driver of reduced emissions, having decreased by 40.8% since 2008 and by 19.2% since 2015.

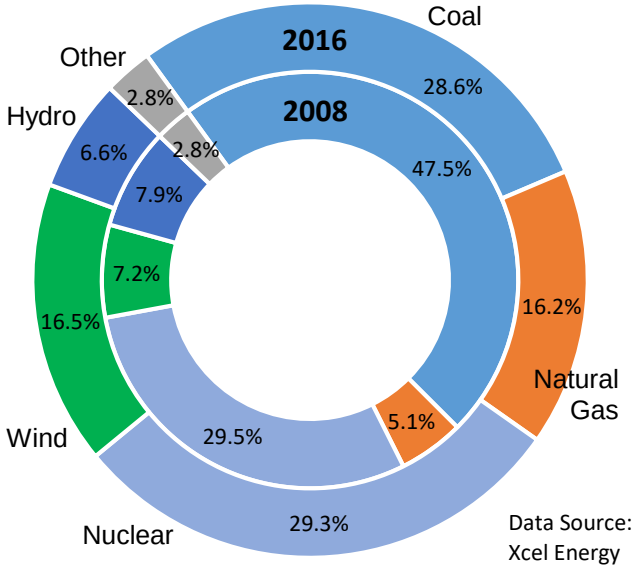
Figure 10: City of La Crosse Government Annual CO_2 Emissions from Energy Usage



[6] City fleet vehicle fuel usage data are not available for 2007, so 2008 is used as a baseline instead.

The City government's CO_2 emissions from electricity are influenced by two factors: the City government's electricity usage quantities and Xcel Energy's electricity emission rates – i.e., CO_2 quantities emitted per unit of electricity produced. In this case, Xcel's emission rates were primarily responsible for the reduction in City government electricity emissions. Xcel's Upper Midwest Region emission rate in 2016 was 805 lbs. CO_2 per 1,000 kWh produced -- down from 1,253 lbs. in 2008 (-35.8%), and down from 1,002 lbs. from 2015 (-19.6%). This resulted from Xcel's reducing coal use to produce electricity, and increasing natural gas and wind energy sources (see Figure 11).

Figure 11: Xcel Energy Upper Midwest Region Electricity Resource Mix, 2008 & 2016



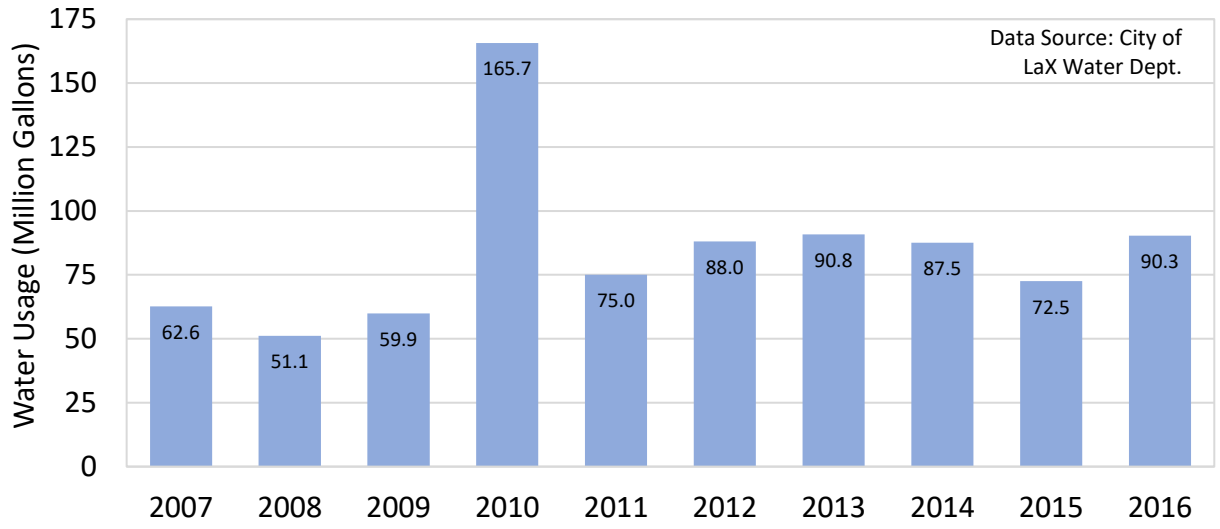
The police department's use of propane in squad vehicles reduces CO_2 emissions by 15% per mile, as compared to gasoline. In 2016, propane usage avoided 43 metric tons of CO_2 emissions.

In 2013, the MTU purchased four diesel-electric hybrid buses – which use 47% less fuel per mile than conventional diesel buses. The hybrid buses annually save 19,133 gallons (est.) of diesel fuel and avoid 194 metric tons (est.) of CO_2 emissions.

Water Usage

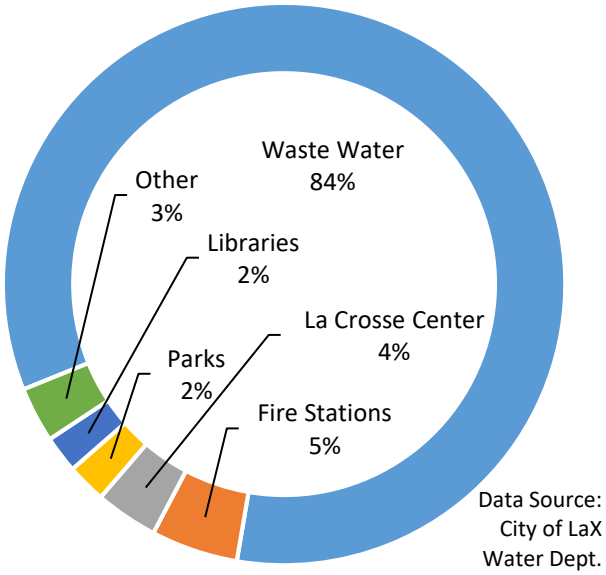
This indicator tracks water used by major City government facilities, including City Hall, La Crosse Center, Libraries, Fire Stations, Swimming Pools & Erickson Ball Fields, Airport, Municipal Service Center, MTU Transit Center, Waste Water Treatment Utility, and the Water Utility's Myrick Park Pump Station. A number of smaller end uses are excluded.

Figure 12: City of La Crosse Government Annual Water Usage



The City's government's water usage in 2016 was 90.3 million gallons – up from 62.6 million in 2007 (+44.2%), and up from 72.5 million gallons in 2015 (+24.5%; see Figure 12). Among city departments, the Waste Water Treatment Utility accounted for 84% of the city total (see Figure 13). Increased usage by the Waste Water Treatment Utility accounts for most of the total increase between 2015 and 2016, and also for the abnormally high water usage in 2010 – resulting from flushing of the digester and storage tanks at the Waste Water Treatment Utility.

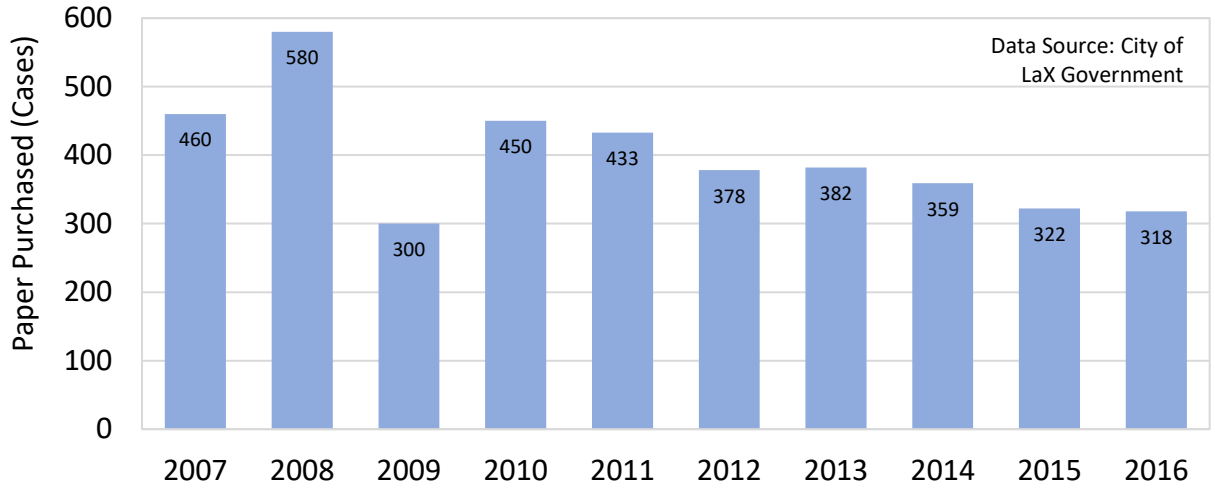
Figure 13: City of La Crosse Government 2016 Water Usage by Department



Paper Usage

The City government used 318 cases of paper in 2016 – down from 460 cases in 2007 (-30.9%), and down from 322 cases in 2015 (-1.2%; see Figure 14). A large purchase of paper late in 2008 probably explains the abnormally high value for that year and the abnormally low value for 2009. In Goal 3B of the *Strategic Plan for Sustainability*, the City government aimed to reduce paper consumption by at least 10% each year for five years. On average, the City government's paper usage has declined by 4.0% per year for the period 2007-2016. At $0.05 per printed sheet of paper, the City government spent $35,500 less on paper in 2016 than in 2007.

Figure 14: City of La Crosse Government Annual Paper Usage



Green Product Purchasing

In *Strategic Plan for Sustainability* Goal 2A, the City government set a goal to replace 50% of purchased products with environmentally preferred products. Examples of environmentally preferred products include post-consumer content paper products, chlorine-free paper, and chemical products containing low Volatile Organic Compound (VOC) levels. As of 2013, the City government's product purchase database contained a relatively small number of environmentally preferred products (see Table 2).

Table 2: City of La Crosse Government Purchase Item Count by Environmentally Preferred Status

Environmentally Preferred Status	Number of Items
Green Product	20
Green Potential Product	100
No Green Potential	651
Unknown	53
Total	824

La Crosse County Government Operations

Facility Energy Usage

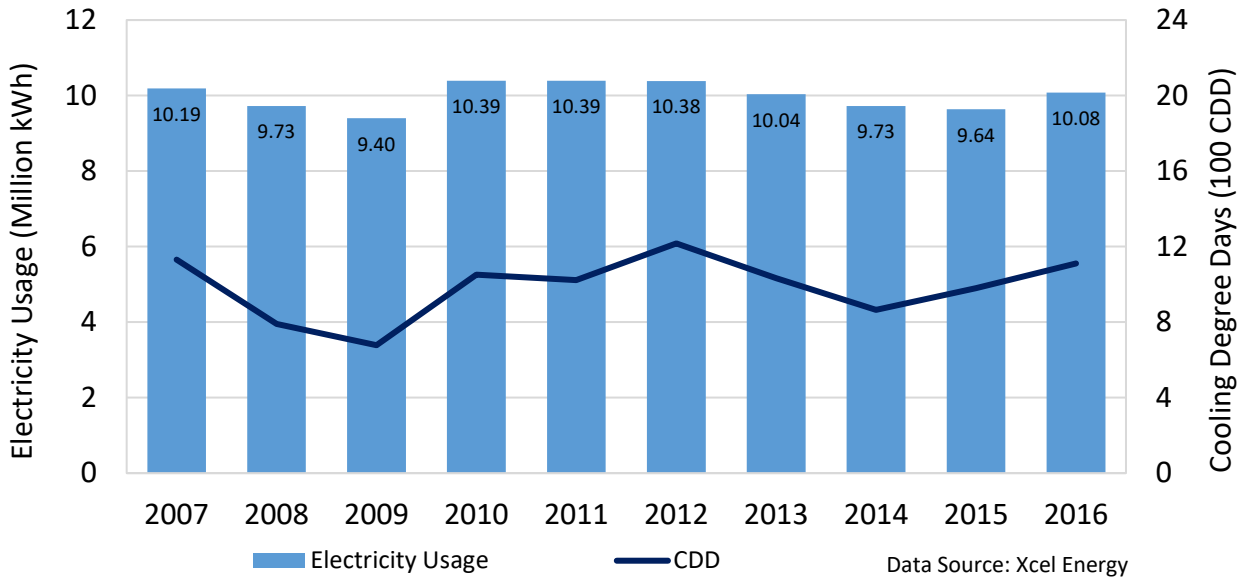
The La Crosse County government utilizes electricity and natural gas energy sources to operate facilities; each is examined separately below. The County government's implemented several facility changes in 2016 that will affect energy usage levels:

- A new Lakeview Health facility opened late in 2016, replacing the old facility.
- The Administration Center was relocated to another existing facility – smaller in area – in La Crosse. After renovations were completed, the new facility opened early in 2017.
- La Crosse County also completed LED lighting retrofits at Law Enforcement Center and Solid Waste facilities.

Electricity

The La Crosse County government consumed 10.08 million kWh of electricity during 2016 – down from 10.19 million kWh in 2007 (-1.1%), but up from 9.64 million kWh in 2015 (+4.6%; see Figure 15).[7] At $0.11 per kWh, the County government spent $12,091 less in 2016 than if electricity usage had remained at 2007 levels.[8] This reduction occurred in spite of a significant expansion of the Law Enforcement Center in 2010, from 169,000 ft^2 to 315,000 ft^2.

Figure 15: La Crosse County Gov't. Annual Electricity Usage with Cooling Degree Days

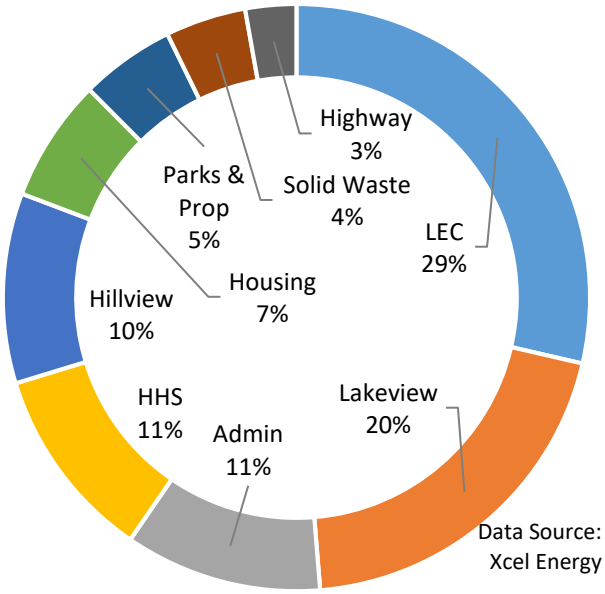


[7] Data from previous years was updated in this report as it was discovered that certain accounts had been omitted.
[8] The average commercial price for electricity in WI during 2016 (data source: US EIA).

Cooling degree days (CDD) measure the difference between outdoor temperature and the base indoor temperature of air-conditioned facilities. The annual CDD values shown in Figure 15 represent an index of overall summer heat levels. Higher electricity consumption for air conditioning is expected in years with higher annual CDD values.

Among County facilities/departments, the Law Enforcement Center used the largest amount of electricity in 2016 (29% of city total; see Figure 16). Lakeview Health Center, the Administration Center, Health and Human Services, and the Hillview Health Care Center also used relatively large quantities.

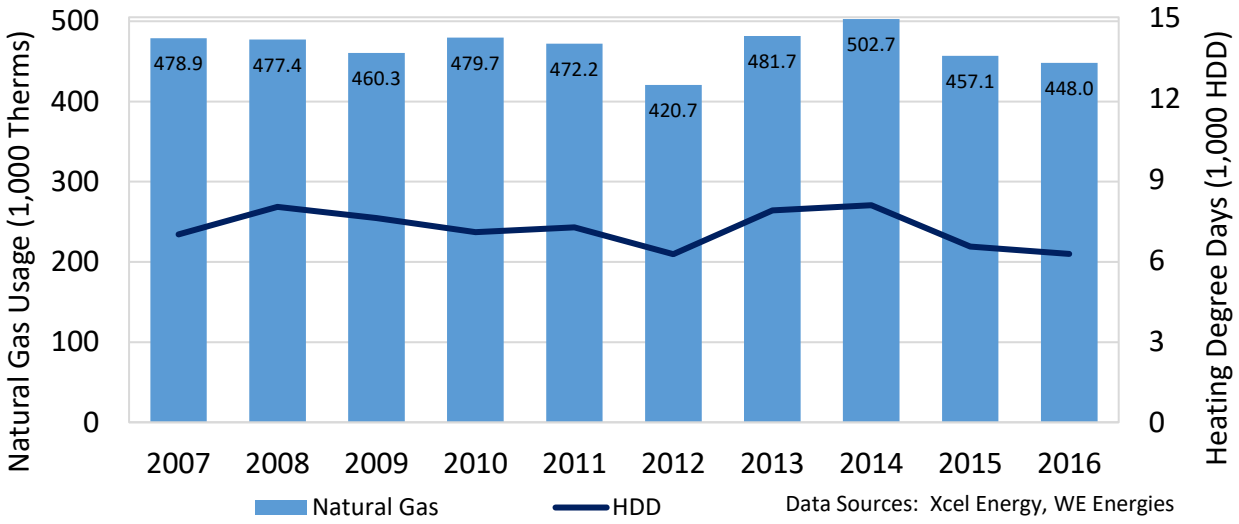
Figure 16: La Crosse County Gov't. 2016 Electricity Usage by Facility / Department



Natural Gas

The La Crosse County government consumed 448,015 therms of natural gas during 2016 – down from 478,918 therms in 2007 (-6.5%), and down from 457,081 therms in 2015 (-2.0%; see Figure 17).[9] At $0.63 per therm, the County government spent $19,469 less for natural gas in 2016 than if usage had remained at the 2007 level.[10] This reduction occurred in spite of a significant expansion of the Law Enforcement Center in 2010, from 169,000 ft^2 to 315,000 ft^2.

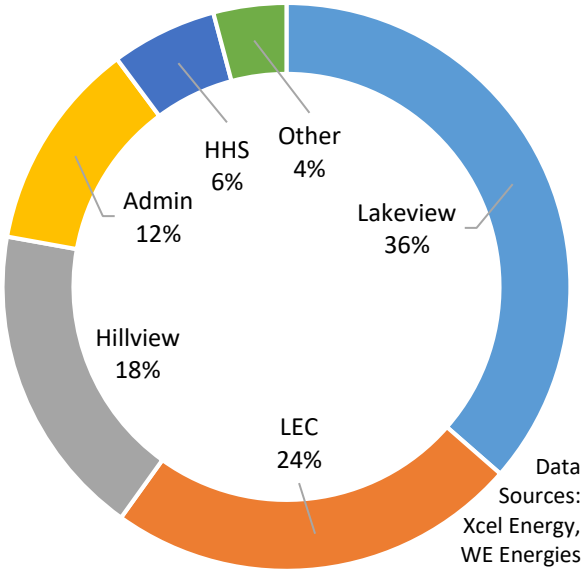
Figure 17: La Crosse County Gov't. Annual Natural Gas Usage with Heating Degree Days



Heating degree days (HDD) measure the difference between outdoor temperature and the base indoor temperature of heated facilities. The annual HDD values shown in Figure 17 represent an index of overall winter coldness. Higher natural gas consumption is expected in years with higher annual HDD values.

Among county facilities, Lakeview Health Center used the largest amount of natural gas in 2016 (36% of county total; see Figure 18). The Law Enforcement Center, Hillview Health Care Center and the Administration Center also used relatively large quantities.

Figure 18: La Crosse County Gov't. 2016 Natural Gas Usage by Facility



[9] Data from previous years was updated in this report as it was discovered that certain accounts had been omitted.
[10] $0.63 per therm was the average commercial price for natural gas in WI during 2016 (data source: US EIA).

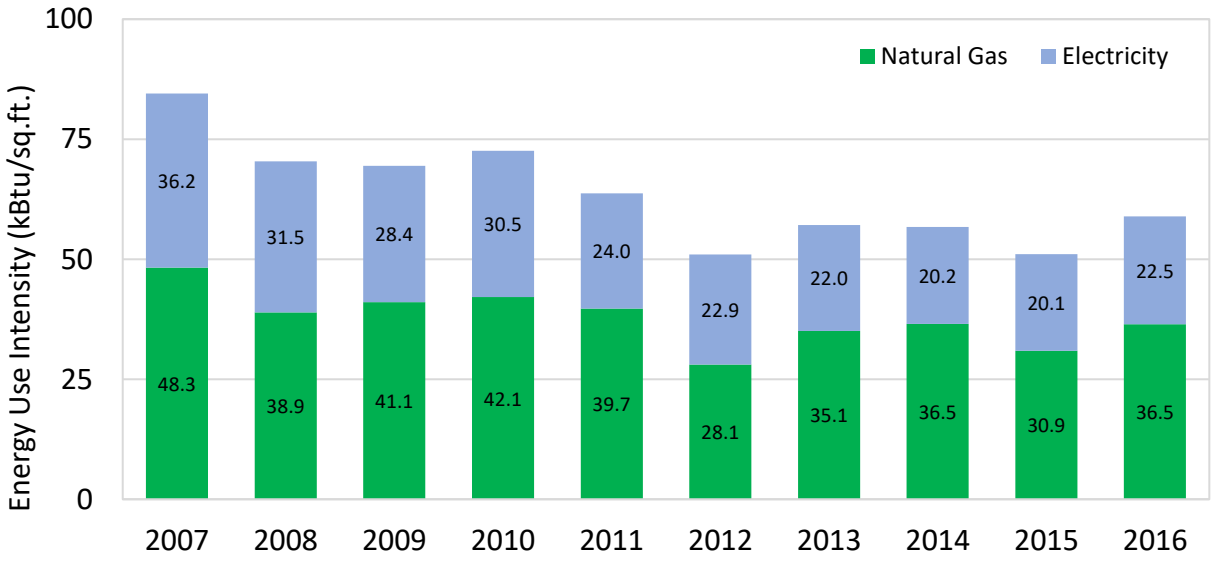
Energy Use Intensity

A facility's annual energy usage per square foot, or *energy use intensity (EUI)*, is a measure of its total annual energy usage (in units of kBtu), standardized by its size (in units of ft^2). EUI is useful for comparing energy use among facilities of different sizes. This analysis tracked EUI for three County government facilities – the Administration Center (old), Lakeview Health Center (old) and the Law Enforcement Center – from 2007-2016.

Administration Center

The old Administration Center's 2016 EUI was 58.9 kBtu/ft^2 – down from 84.5 kBtu/ft^2 in 2007 (-30.2%), but up from 51.1 kBtu/ft^2 in 2015 (+15.4%; see Figure 19). For comparison, U.S. EPA's Energy Star Portfolio Manager publishes median EUI values by facility type. As of March 2016, the median site-level EUI value for offices was 67.3 kBtu/ft^2. Had the Administration Center's EUI hypothetically remained at 2007 levels, the facility's 2016 energy cost would have been approximately $57,000 higher than it actually was.[11]

Figure 19: Old Administrative Center Annual Energy Use Intensity

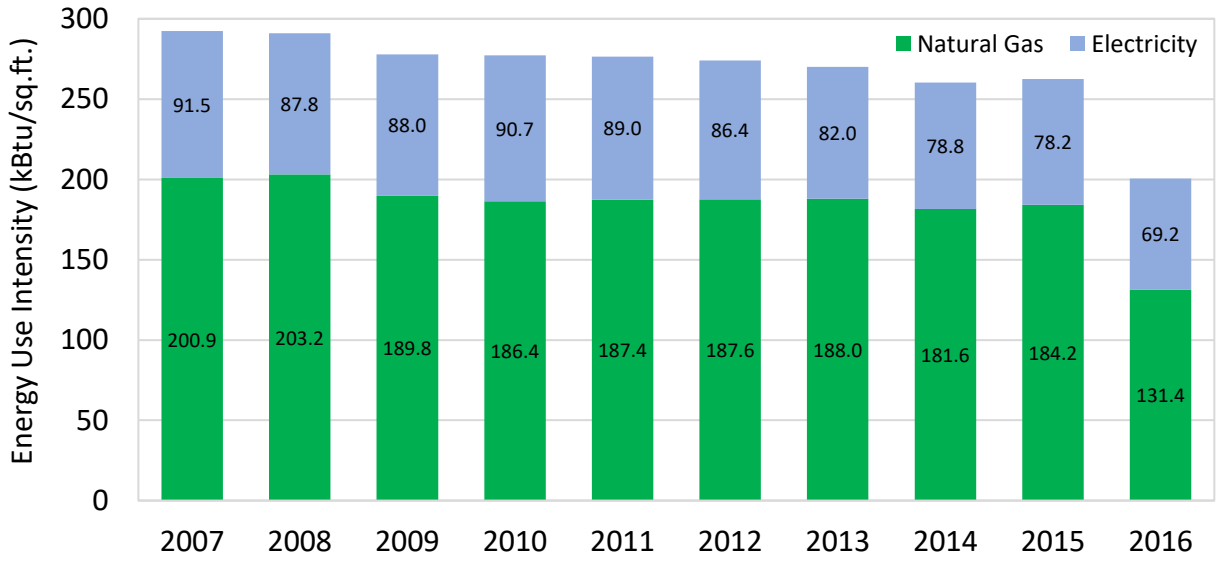


[11] Cost savings estimates calculated using the facility's actual 2016 average energy cost rates

Lakeview Health Center

The old Lakeview Health Center's 2016 EUI was abnormally low because the facility did not operate for the entire year. The 2015 EUI was 262.5 kBtu/ft^2 – down from 292.4 kBtu/ft^2 in 2007 (-10.2%), but up from 260.3 kBtu/ft^2 in 2014 (+0.8%; see Figure 20). For comparison, the Portfolio Manager's median EUI value for residential care facilities in March 2016 was 125.7 kBtu/ft^2. The trend toward lower EUI has significant financial implications. Had Lakeview Health Center's EUI hypothetically remained at 2007 levels, the facility's 2015 energy cost would have been approximately $34,000 higher than it actually was.[12]

Figure 20: Old Lakeview Health Center Annual Energy Use Intensity

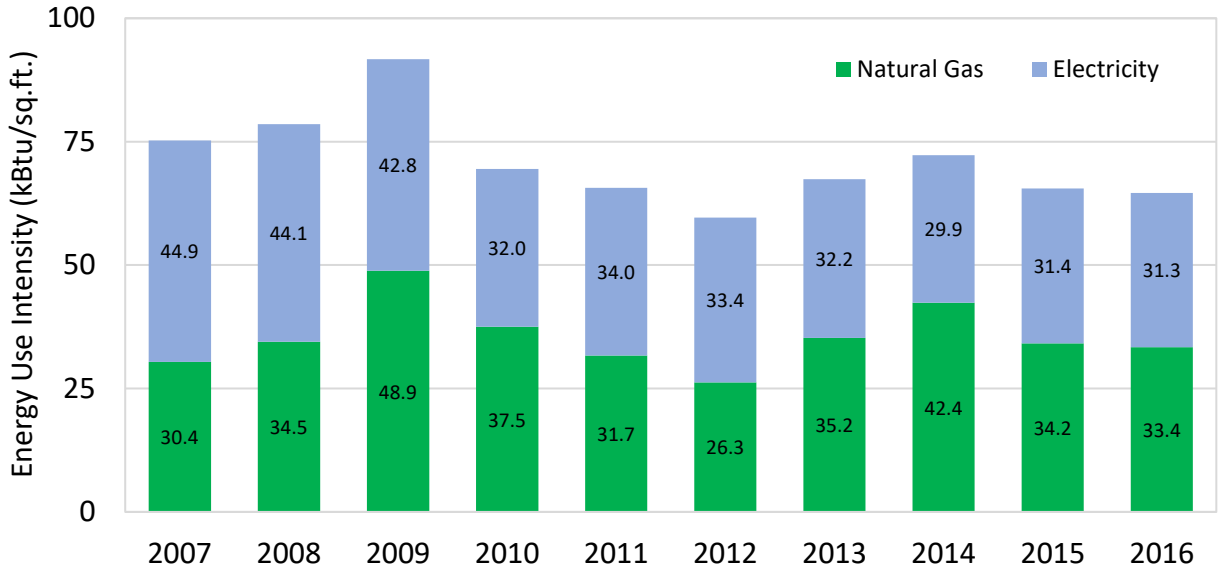


[12] Cost savings estimates calculated using the facility's actual 2016 average energy cost rates

Law Enforcement Center

The Law Enforcement Center's 2016 EUI was 64.6 kBtu/ft^2 – down from 75.3 kBtu/ft^2 in 2007 (-14.1%), and down from 65.5 kBtu/ft^2 in 2015 (-1.4%; see Figure 21). For comparison, Portfolio Manager's median EUI value for courthouses and prisons in March 2016 was 93.2 kBtu/ft^2. An addition – which opened in 2010 – increased the size of the Law Enforcement Center from 169,000 ft^2 to 315,000 ft^2. The relatively higher efficiency of the addition reduced the annual EUI of the entire facility by an average of 14%. Had the Law Enforcement Center's EUI hypothetically remained at 2007 levels, the facility's 2016 energy cost would have been approximately $100,000 higher than it actually was.[13]

Figure 21: Law Enforcement Center Annual Energy Use Intensity



[13] Cost savings estimates calculated using the facility's actual 2016 average energy cost rates

Vehicle Fuels

The County government's vehicle fleet uses three fuel types: diesel fuel, gasoline and compressed natural gas (CNG). Usage of each type is examined separately below. The County government's 2025 energy goal is 25% reduction from 2007 baseline usage levels. The County fleet's total vehicle fuel usage in 2016 was 9.6% lower (by energy content) than in 2007.

Diesel

Diesel fuel is typically utilized by heavy-duty vehicles such as buses, snow plows and construction vehicles. Therefore, diesel fuel usage is influenced by variables including snowfall amounts during winter and construction activity during other seasons. The County government used 126,404 gallons of diesel fuel in 2016 – down from 133,348 gallons in 2007 (-5.2%), but up from 116,524 gallons in 2015 (+8.5%; see Figure 22). The Highway Department accounted for 99% of this usage, and the Facilities Department for 1%.

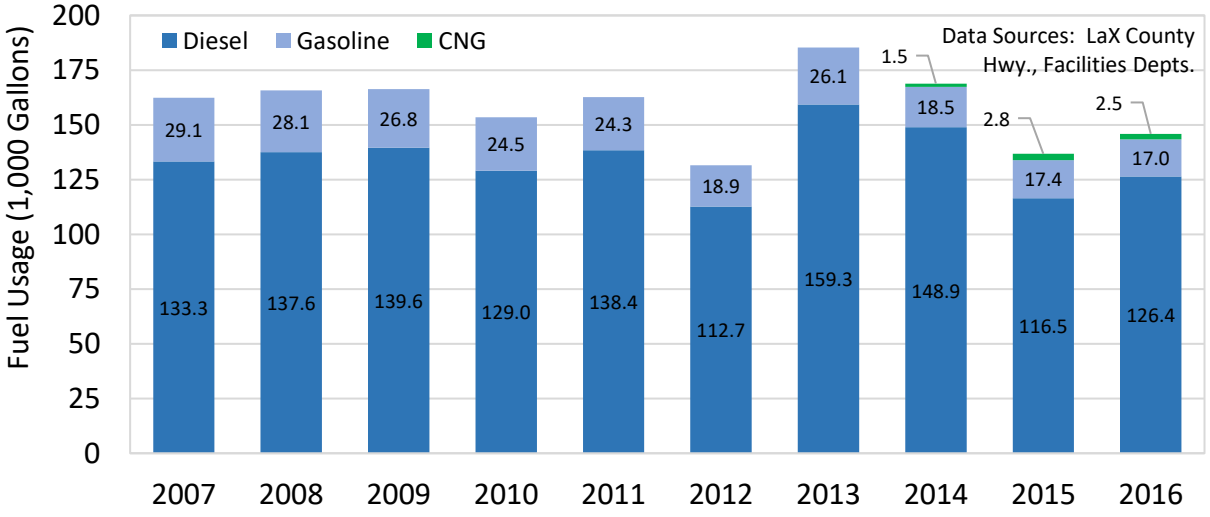
Gasoline

Gasoline is typically utilized by light-duty vehicles such as passenger cars and pickup trucks. The County government used 16,992 gallons of gasoline in 2016 – down from 29,050 gallons in 2007 (-41.5%), and down from 17,405 gallons in 2015 (-2.4%; see Figure 22). The Highway Department accounted for 75% of gasoline usage in 2016, and the Facilities Department for 25%.

Compressed Natural Gas (CNG)

In 2014, the Highway Department began operating two full-size pickup trucks that were converted to use compressed natural gas (CNG) rather than gasoline. Total usage in 2016 was 2,499 gallons of gasoline equivalent (GGE), which was down from 2,830 GGE in 2015 (-11.7%; see Figure 22). CNG quantities are typically measured in GGE, which represents a quantity of CNG whose energy content is equal to that of a gallon of gasoline.

Figure 22: La Crosse County Government Annual Vehicle Fuel Usage

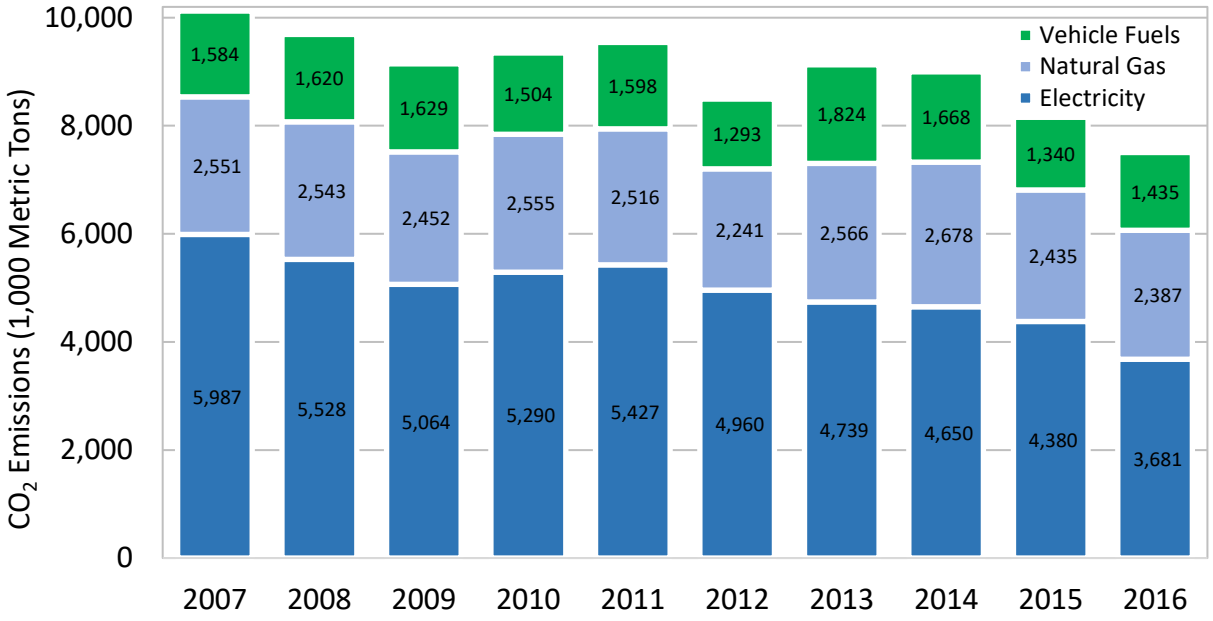


CO_2 Emissions from Facility Energy Usage & Vehicle Fuels

Energy consumption is responsible for the majority of the County government's total greenhouse gas emissions, as combustion of fossil fuels to produce energy emits carbon dioxide (CO_2) into the atmosphere. Other greenhouse gases are also emitted, but in smaller amounts and therefore have relatively less climate impact. This analysis is limited only to CO_2 emissions resulting from the County government's energy usage.

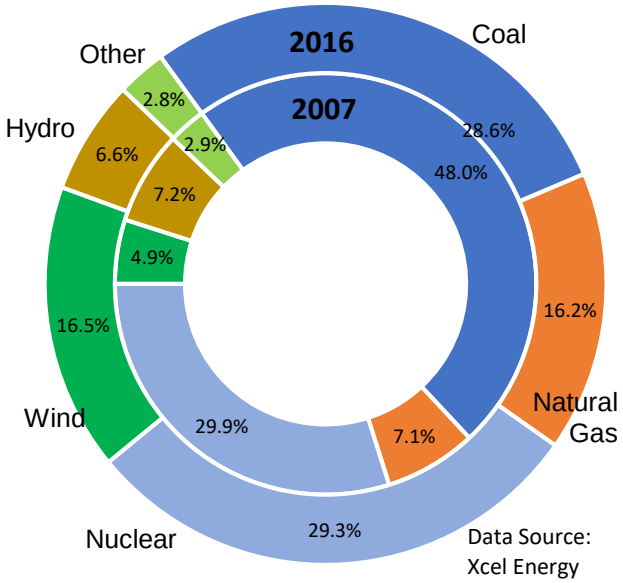
The County government's 2016 energy usage resulted in an estimated 7,503 metric tons of CO_2 emissions – down from 10,122 metric tons in 2007 (-25.9%), and down from 8,155 metric tons in 2015 (-8.0%; see Figure 23). The electricity component was the largest driver of reduced emissions, with 2016 levels down 38.5% from 2007 and down 15.9% from 2015.

Figure 23: La Crosse County Government Annual CO_2 Emissions from Energy Usage



The County government's CO_2 emissions from electricity are influenced by two factors: the County government's electricity usage quantities and Xcel Energy's electricity emission rates – i.e., CO_2 quantities emitted per unit of electricity produced. In this case, Xcel's emission rates were primarily responsible for the reduction in the County government's CO_2 emissions from electricity. Xcel's Upper Midwest Region emission rate in 2016 was 805 lbs. CO_2 per 1,000 kWh produced -- down from 1,295 lbs. in 2007 (-37.8%), and down from 1,002 lbs. from 2015 (-19.6%). This resulted from Xcel's reducing coal use to produce electricity, and increasing natural gas and wind energy sources (see Figure 24).

Figure 24: Xcel Energy Upper Midwest Region Electricity Resource Mix, 2007 & 2016

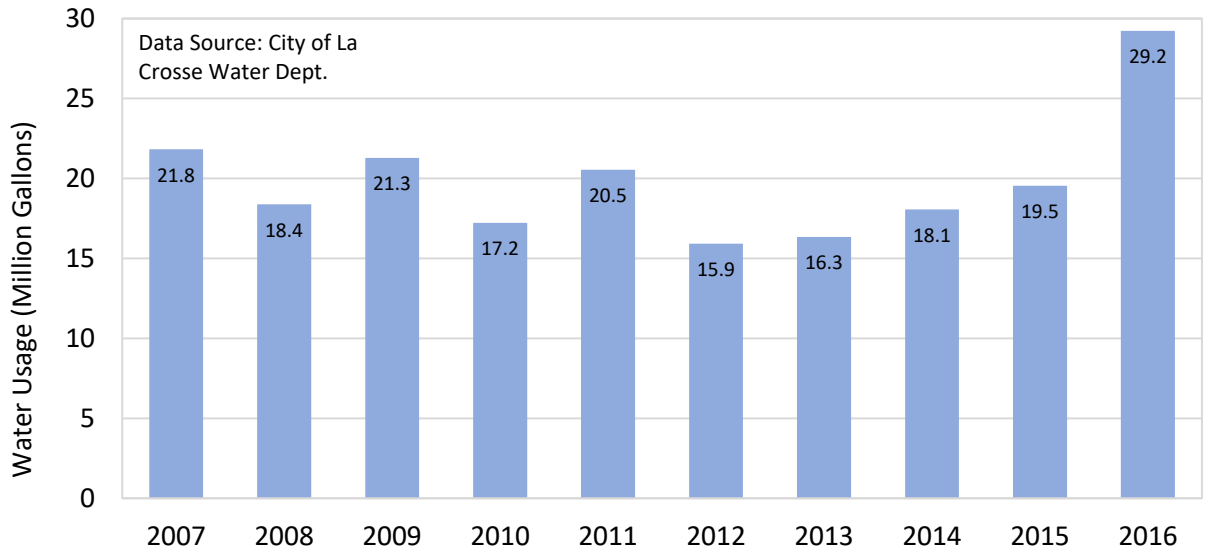


The County Highway Department's use of CNG in two full size pickup trucks reduces CO_2 emissions by 23% per mile as compared to gasoline. Using CNG, the trucks avoid 7 metric tons of CO_2 emissions annually.

Water Usage

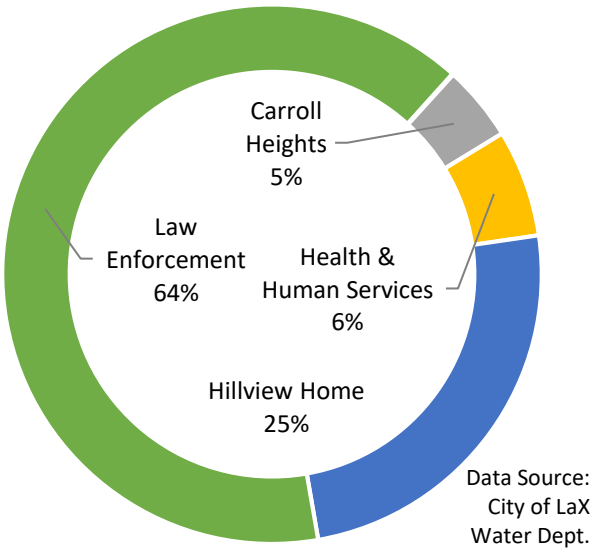
This indicator includes water usage only at County government facilities that are located within the City of La Crosse and served by the City Water Utility: Administration Center, Health & Human Services, Law Enforcement Center, Hillview Health Care Center, Carroll Heights and the Highway Department facility on Park Lane Dr. A number of facilities located in other municipalities are excluded; e.g., Lakeview Health Center, Highway Department Headquarters.

Figure 25: La Crosse County Government Annual Water Usage



The County government's water usage in 2016 was 29.2 million gallons – up from 21.8 million gallons in 2007 (+33.9%), and up from 19.5 million gallons from 2015 (+49.5%; see Figure 25). Among included County facilities, the Law Enforcement Center accounted for the largest water usage among (64.4% of total; see Figure 26). Hillview Health Care Center also used a relatively large quantity. Increased usage by the Law Enforcement Center, due to an issue with the well, accounts for most of the total increase between 2015 and 2016.

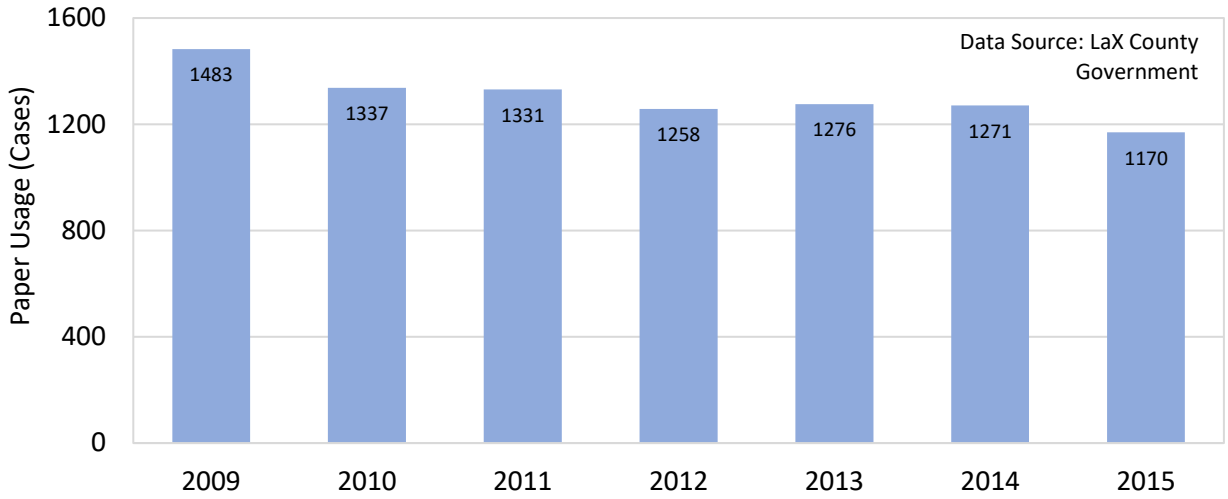
Figure 26: La Crosse County Government 2016 Water Usage by Facility



Paper Usage

Paper usage data for the County government is not yet available for 2016. In 2015, the County government used 1170 cases of paper – down from 1,483 cases in 2009[14] (-21.1%), and down from 1,271 cases in 2014 (-7.9%; see Figure 27). At $0.05 per printed sheet of paper, the County spent $78,250 less on paper in 2015 than in 2009.

Figure 27: La Crosse County Government Annual Paper Usage



Green Product Purchasing

In August of 2008, the County Board passed a resolution to incorporate a sustainability provision into its purchasing policy. The resolution, established priority for purchasing products, equipment and services that meet sustainability standards. Examples include paper products (paper towels, toilet paper, etc.) with 100% recycled content, biodegradable hand soaps and environmentally friendly cleaning products. As of 2009, all Request for Proposals received from vendors for $20,000 or more must include sustainability criteria.

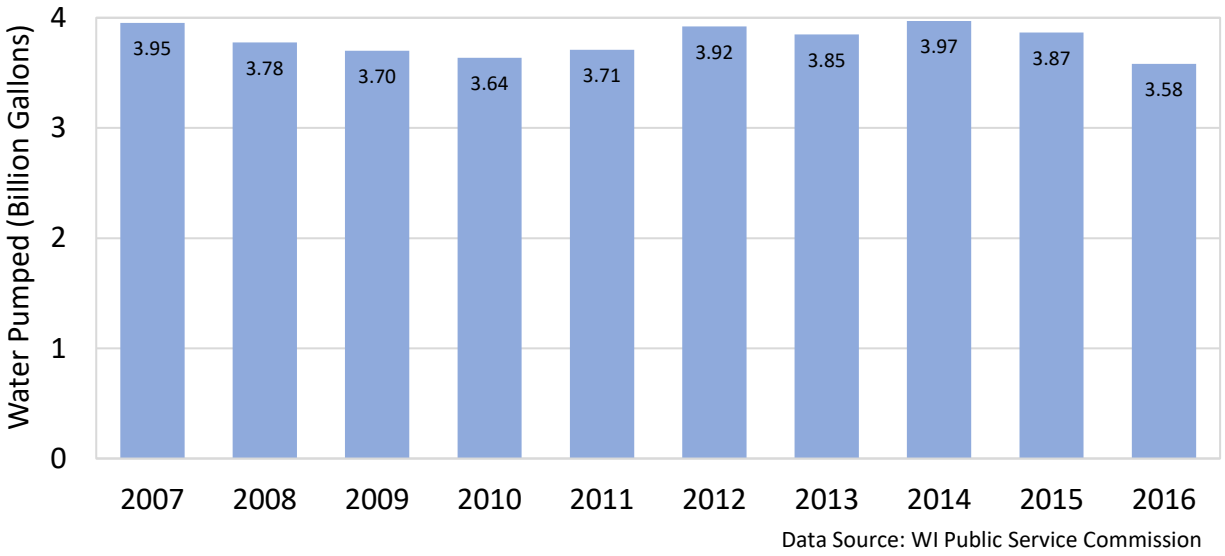
[14] 2009 is the earliest year for which County paper usage data is available.

Community-Wide Indicators

Water Usage

This indicator tracks the total amount of water pumped annually by the City Water Utility's wells. It includes both metered usage and unmetered usage/losses such as main breaks, service leaks, system flushing and fire suppression. Community-wide, the City of La Crosse used 3.58 billion gallons of water in 2016 – down from 3.95 billion gallons in 2007 (-9.4%), and down from 3.87 billion gallons in 2015 (-7.4%; see Figure 28). Total water usage is influenced by growing-season rainfall amounts, as more pumped water is used for landscape irrigation during periods of low rainfall.

Figure 28: City of La Crosse Annual Water Usage



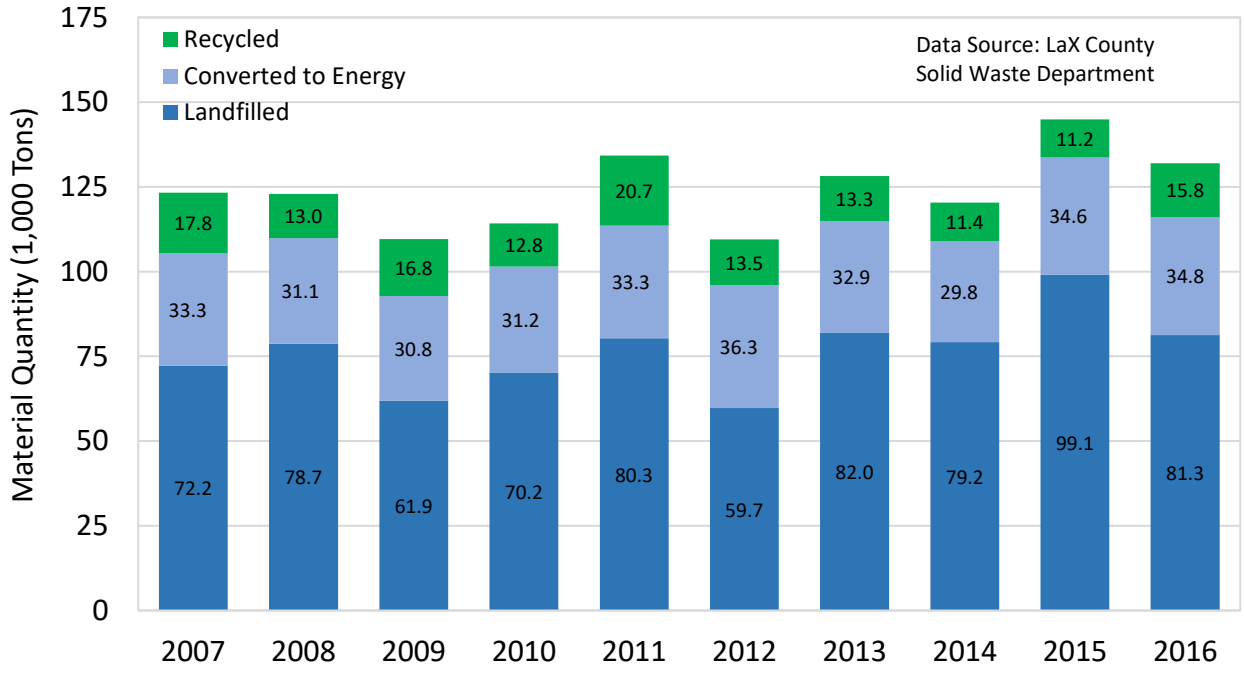
Data Source: WI Public Service Commission

Solid Waste Generation & Diversion

Solid waste generated in La Crosse County enters one of three waste streams: deposition in the La Crosse County Landfill, incineration at the Xcel Energy Waste-to-Energy facility on French Island (which generates electricity), or recycling. Recycled quantities include the following materials diverted for recycling at the landfill: shingles, concrete, tires, scrap metal, yard waste, wood waste and household hazardous materials.

In total, La Crosse County generated 131,9786 tons of solid waste in 2016 – up from 123,274 tons in 2007 (+7.1%) but down from 144,883 tons in 2015 (-8.9%; see Figure 29). Solid waste generation is influenced by trends in economic activity. In particular, more construction activity generates more solid waste. Economic recession may explain the relatively low quantity of solid waste generated in 2009 and the subsequent increasing trend.

Figure 29: La Crosse County Annual Solid Waste Quantities



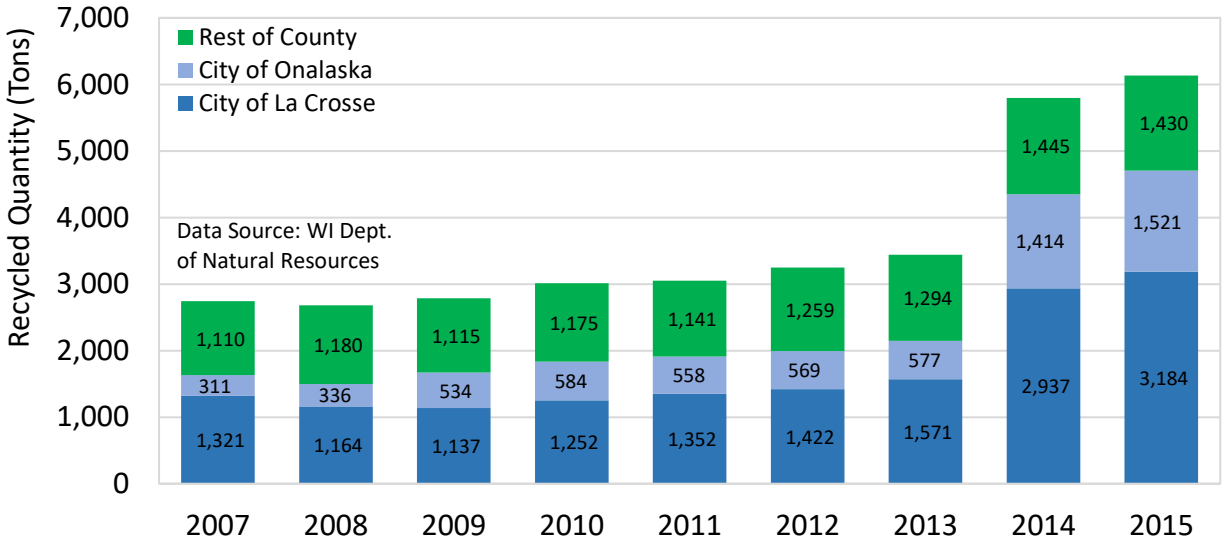
Of the total solid waste generated in 2016, 61.6% was deposited into the landfill, 26.4% was incinerated to produce electricity, and 12.0% was recycled (see Figure 29). The total diversion rate (i.e., the sum of the percent incinerated and the percent recycled) was 38.4% in 2016, down from 41.4% in 2007, but up from 31.6% in 2015.

Municipal Recycling Collection

This indicator tracks quantities of recyclable materials, collected through curbside and drop off collection methods, by all municipalities within La Crosse County. Materials include paper products (newspaper, corrugated, magazines), containers (aluminum, steel, bi–metal, plastic, glass) and polystyrene foam packaging.

Recycling collection quantities have increased significantly since 2007. Together, the county's municipalities collected 6,938 tons of materials for recycling in 2015 – up from 3,160 tons in 2007 (+119.6%), and up from 6,416 tons in 2014 (+8.1%; see Figure 30). The increase in recycled quantities between 2013 and 2014 for the Cities of La Crosse and Onalaska coincide with the initiation of a "single stream" collection process and distribution of much larger storage containers to residents in both communities.

Figure 30: La Crosse County Annual Municipal Recycling Quantities



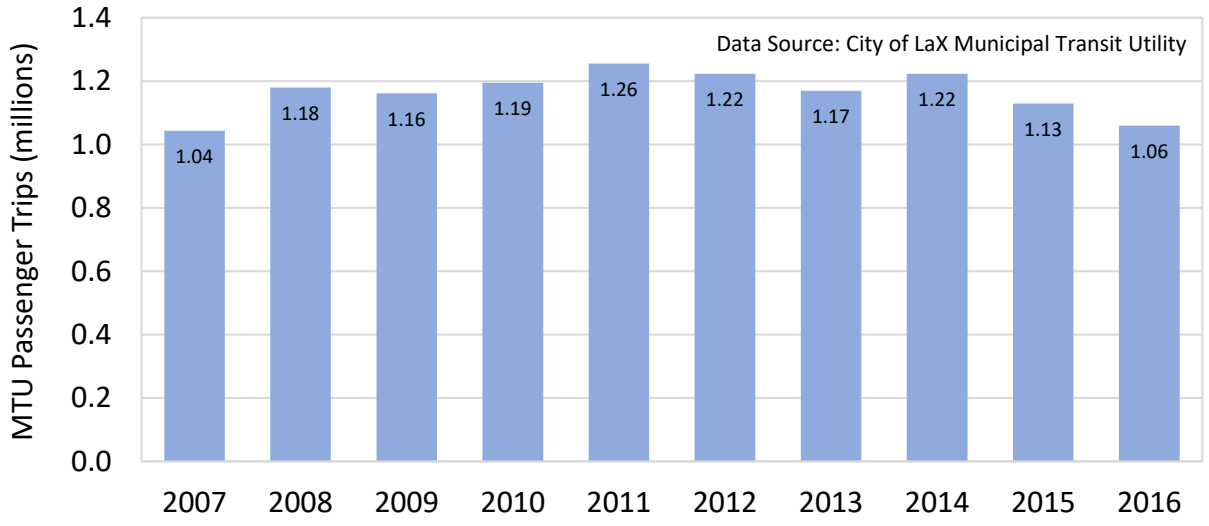
Transportation

This report tracks three indicators related to alternative forms of transportation: ridership on the Municipal Transit Authority (the City bus system), the total length of bicycle routes and trails within the City and the County, and residents' usage of alternative methods for commuting to work. In Goal 1G of the *Strategic Plan for Sustainability*, the City set a general goal to "enhance our community's transportation system."

MTU Ridership

The Municipal Transit Authority provided 1.06 million rider trips in 2016 – up from 1.04 million trips in 2007 (+1.5%), but down from 1.13 million trips in 2015 (-6.2%; see Figure 31). A fare increase in 2016 may explain the decrease in ridership from 2015-2016.

Figure 31: MTU Annual Passenger Trip Totals



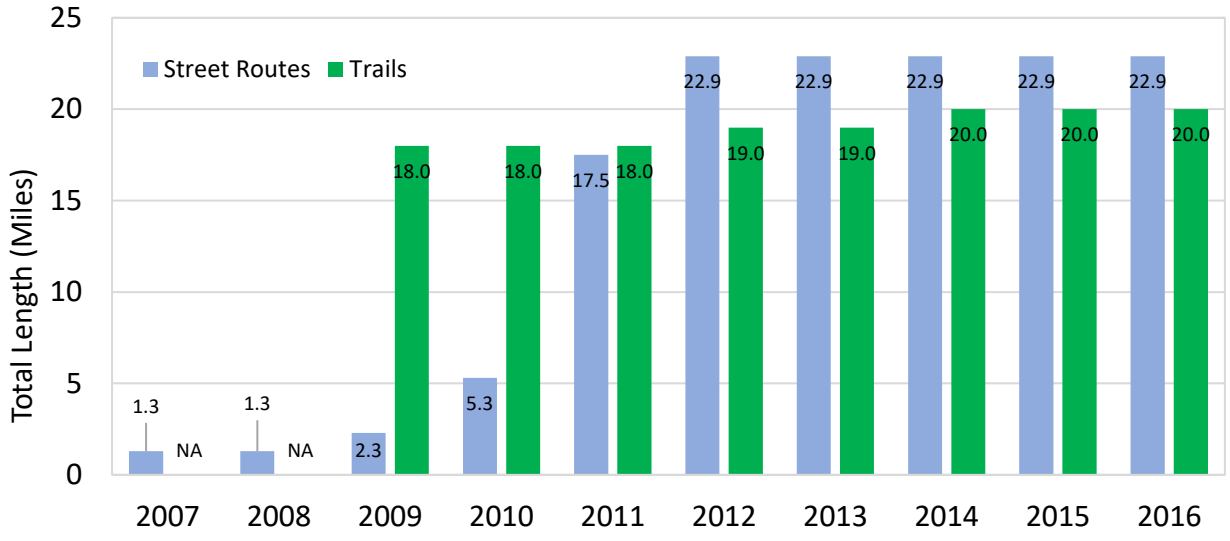
Bicycle Routes & Trails

Bicycle routes refer to streets that are designated for bicycle use with signage and/or pavement markings. Trails refer to off-street bicycle pathways, which may be paved or unpaved. However, trails with grass or earth surfaces – such as the mountain bike trail network in and around the Hixon forest – are not included in these totals.

Total length of bicycle routes in the City of La Crosse was 22.9 miles in 2016 – up from just 1.3 miles in 2007, but unchanged from 2015 (see Figure 32). Bicycle trail length in 2016 was 20.0 miles; up from 18.0 miles in 2009 (+11.1%), but also unchanged from 2015. [15]

[15] 2009 is the earliest year for which bicycle trail data is available.

Figure 32: City of La Crosse Bicycle Route and Trail Total Lengths

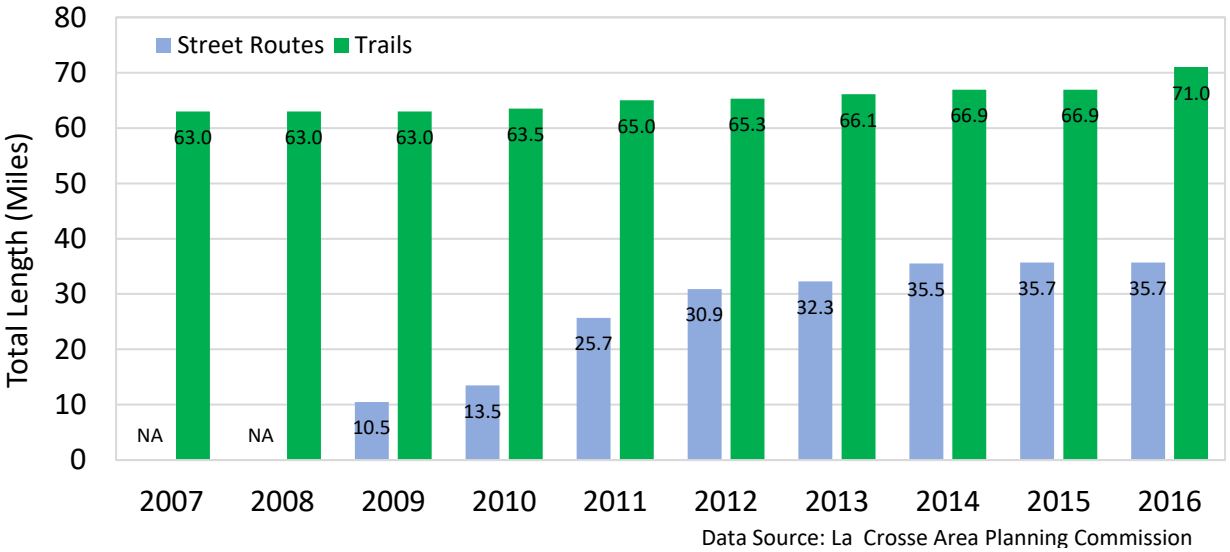


Data Source: La Crosse Area Planning Commission

La Crosse County gained two new bicycle trails in 2016, adding 4.1 miles in trail length. One trail was constructed along WI-16 between Landfill Road in Onalaska and the La Crosse River bridge in West Salem; the other runs along WI-35 in Onalaska between Quincy and Mason Streets.

The 2016 total trail length of 71.0 miles is up from 63.0 miles in 2007 (+12.7%), and up from 66.9 miles in 2015 (+6.1%; see Figure 33). County bicycle route total length in 2016 was 35.7 miles – up from 10.5 miles in 2009 (+240.1%), but unchanged from 2015.[16]

Figure 33: La Crosse County Bicycle Route and Trail Total Lengths



Data Source: La Crosse Area Planning Commission

[16] 2009 is the earliest year for which bicycle trail data is available

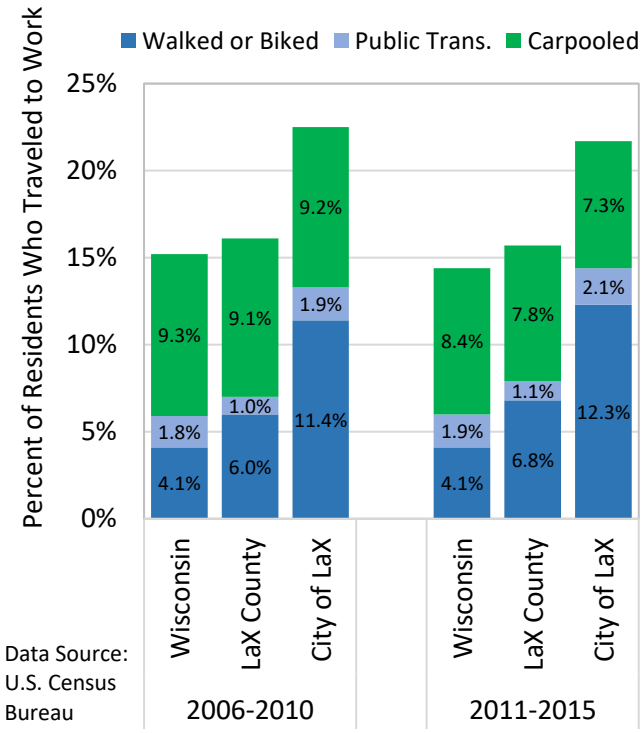
Alternative Commuting Rates

This indicator examines percentages of workers who travel to work in ways other than driving alone in an automobile: bicycling or walking, public transportation or carpooling. Data are collected as part of the US Census Bureau's American Community Survey (ACS). ACS results are published as 5-year averages; this analysis examines alternative commute rates in two periods: 2006-10 and 2011-15.

For the 2011-15 period, 12.3% of La Crosse residents walked or bicycled to work, a higher percentage than for La Crosse County (6.8%) or for the state as a whole (4.1%; see Figure 34). The City's relatively compact spatial arrangement with short travel distances between residential and commercial areas make walking/bicycling practical. Although many students also walk or bike to school in the City of La Crosse, students are not included in the analysis.

The percentage of residents who walked or bicycled to work in the City and the County increased from the 2006-2010 period to the 2011-2015 period. Percentages of workers who carpooled declined in all three geographies, particularly within the City of La Crosse. Percentages of workers using public transportation were nearly unchanged.

Figure 34: Workers Using Alternative Commute Methods



Data Source: U.S. Census Bureau

Land Use

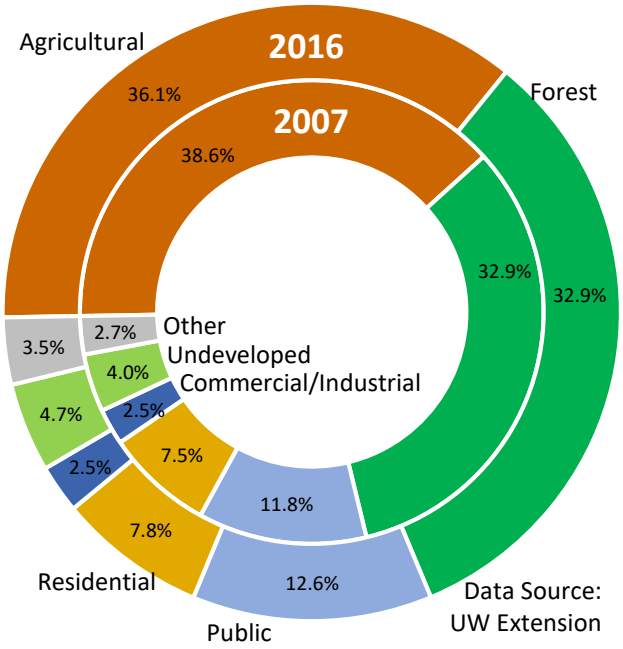
This indicator tracks land use change across La Crosse County. Land classification categories include: residential, agricultural, forest, commercial/manufacturing, public (i.e., local/state/federally owned), undeveloped and other.

Of the County's land area is classified as agriculture or forest (see Figure 35). Public and residential uses make up most of the remainder.

Public, residential, undeveloped and other land use types gained area between 2007 and 2016. Agricultural land was the only type that lost area. Transition of agricultural land into "undeveloped" land may occur with Conservation Reserve Program enrollment, or loss of access for a season because of high water. Of perhaps greater concern is conversion of agricultural land into residential areas.

The increase in public land may result from WI DNR stewardship grants in within the County, or from any road building or expansion projects that increase right of way.

Figure 35: La Crosse County Land Use Classifications



Socio-Economic Indicators

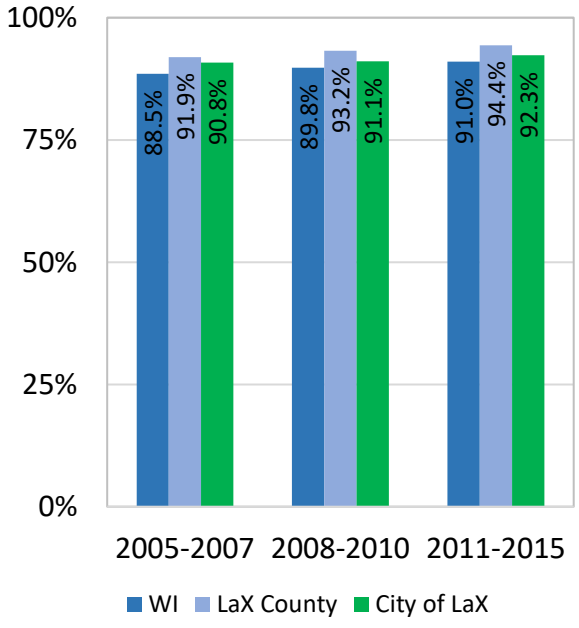
Socio-economic indicators specified by the *Stratagic Plan for Sustainability* include educational attainment, median household income, poverty rate and unemployment rate. Values for each are compared among the City of La Crosse, La Crosse County and the state of Wisconsin.

For all socioeconomic indicators, data for 2016 were not yet available to include in this report. For all but the unemployment rate, data are collected as part of the US Census Bureau's American Community Survey (ACS). ACS results are now published as 5-year averages, but were previously published as 3-year averages.

Education Attainment

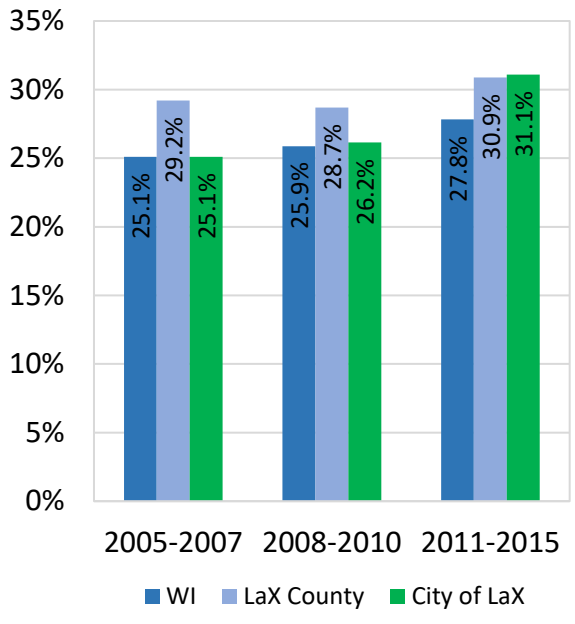
For all three time periods examined – 2005-07, 2008-10 and 2011-15 – City residents than state residents held high school diplomas (see Figure 36) and bachelor's degrees (see Figure 37) at slightly higher rates than state residents. In general, County rates were slightly higher than City rates, with the exception of the 2011-15 period for bachelor's degrees. Both high school diploma and bachelor's degree indicators reveal a trend toward higher education levels among City, County and state residents over the time periods examined. This aligns with similar trends across many jurisdictions nationally.

Figure 36: Percent of Residents with HS Diploma or Equivalent



Data Source: U.S. Census Bureau

Figure 37: Percent of Residents with Bachelor's Degree



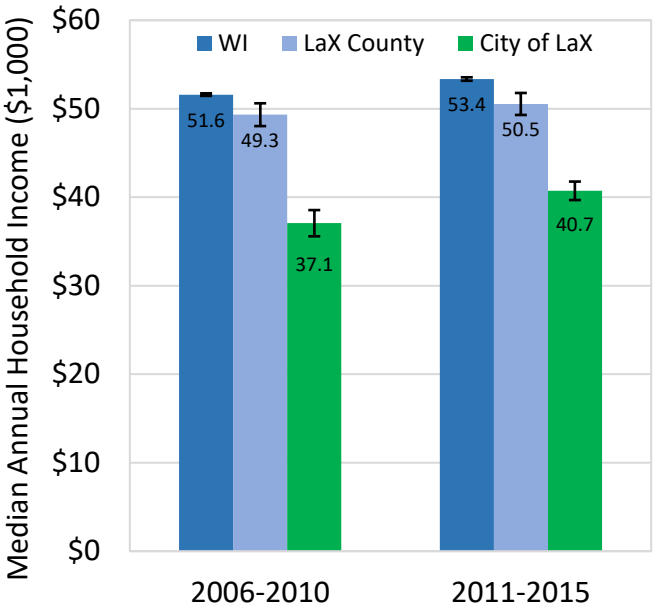
Data Source: U.S. Census Bureau

Median Household Income

For the 2011-2015 period, median household income (MHI) in the City of La Crosse ($40,725) was significantly lower than County ($50,539) and statewide ($53,357) MHI values (see Figure 38). This pattern was also evident in the previous period, 2006-2010. Since the City of La Crosse is included within La Crosse County, it follows that MHI among households in other municipalities within the County must be higher than the County-wide MHI value.

MHI for City, County and state all increased between the 2006-2010 period and the 2011-2015 period, concurrent with economic recovery from the "great recession" across the nation. However, the City experienced a higher rate of increase between periods (9.9%) than the County (2.5%) and state (3.4%).

Figure 38: Annual Median Household Income



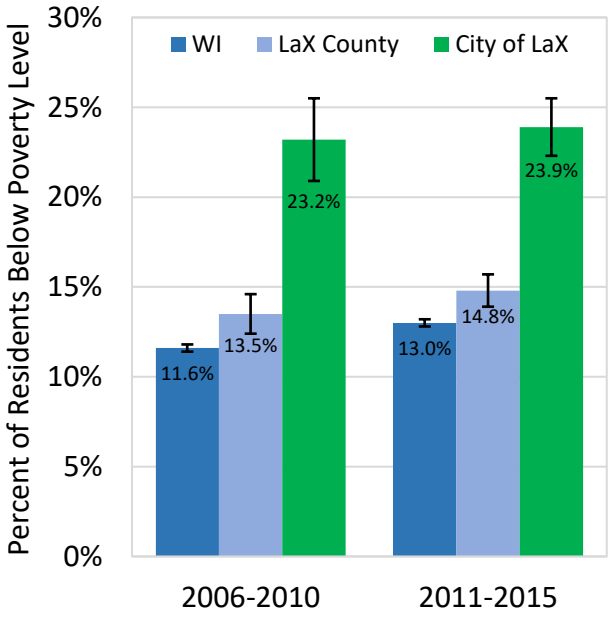
Data Source: U.S. Census Bureau

Poverty Rate

This analysis examines the percentage of residents whose income in the past twelve months was below poverty level. For the 2011-2015 period, that percentage was much higher in the City of La Crosse (23.9%) than in the County (14.8%) and the state (13.0%, see Figure 39). One factor that likely contributes to the City's relatively high poverty rate is its large college student population, since college students living off campus are included in poverty measures.

At City, County and State levels, poverty rates increased somewhat between 2006-10 and 2011-15 periods. However, the time periods over which these values are pooled mask shorter-term changes that probably occurred as a result of the "great recession." The earlier period covers both before and during the recession, while the later period covers both during and the recession and the slow recovery afterward.

Figure 39: Resident Poverty Rates

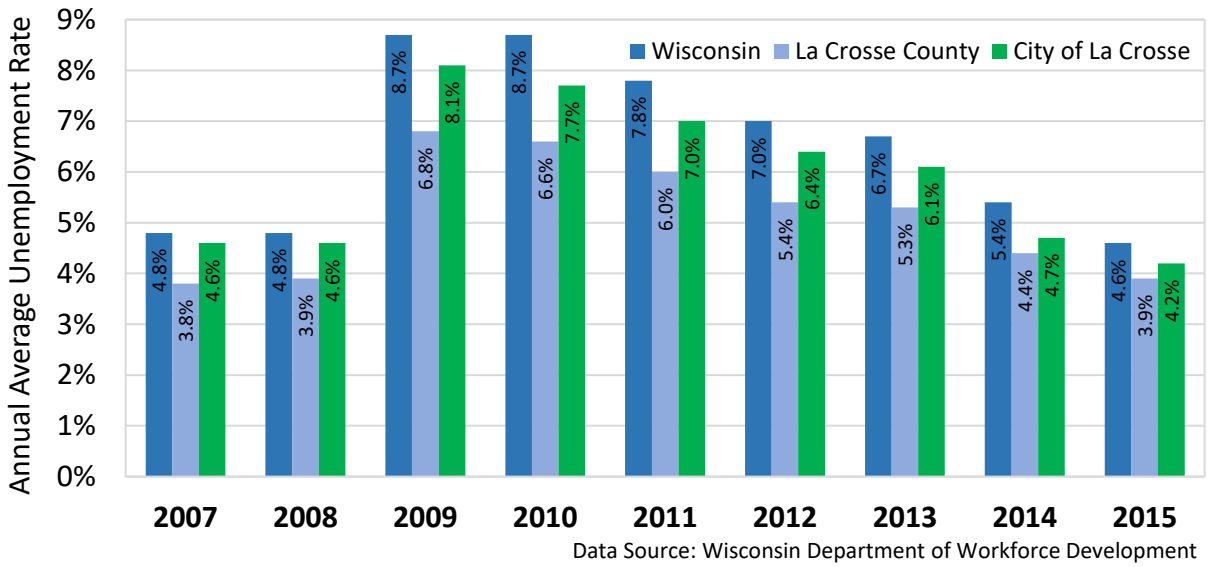


Data Source: U.S. Census Bureau

Unemployment Rate

This indicator tracks trends in annual average unemployment rate, as measured by the Wisconsin Department of Workforce Development. The City, County and state all experienced a large jump from low unemployment rates in 2007 and 2008 to much higher rates in 2009, as a result of the "great recession" (see Figure 40). Rates then slowly declined as the economy gradually recovered, and by 2015 rates had returned to 2007-08 levels. Throughout the analysis period, annual average unemployment rates in La Crosse County have been consistently lower than those in the City of La Crosse. Both have been consistently lower than the rates in the state overall.

Figure 40: Annual Average Unemployment Rates



Data Source: Wisconsin Department of Workforce Development