

An Energy Action Plan for **Winona**



October 6, 2017

Acknowledgements

Thanks to the following organizations and individuals for participating in developing this Energy Action Plan.

Winona's Energy Action Planning Team

The planning team was formed from a varied group of City staff, elected officials, local business representatives, representatives from educational institutions, and committed community members.

City and County Staff

- John Howard, Natural Resources Sustainability Coordinator, City of Winona
- Anne Morse, Sustainability Coordinator, Winona County
- Stephen Sarvi, City Manager, City of Winona
- Nick Larson, Community Development Specialist, City of Winona
- Jack Smyth, Intern, City of Winona, and Winona State student

City Council and Commission Members

- Chris Meyer, Citizens Environmental Quality Committee member and Coordinator Southeast Clean Energy Resource Teams
- Paul Schollmeier, City Council member

Business and Institution Representatives

- John Schollmeier, Physical Plant Director, Saint Mary's University
- Marvin Hodge, Retired businessman and community volunteer
- Bill O'Laughlin, Director of Buildings and Grounds, Winona Area Public Schools
- Emily Kurash, Winona Main Street Program Coordinator, Winona Area Chamber of Commerce

Partners in Energy

- Pam Newell, Residential Program Manager, Xcel Energy, and resident of Winona County
- Tami Gunderzik, Partners in Energy Program Manager, Xcel Energy
- Yvonne Pfeifer, Community Energy Efficiency Manager, Xcel Energy
- Ross Lexvold, Manager of Community Relations and Economic Development, Xcel Energy
- Sydney Gorski, Marketing Assistant, Xcel Energy
- Elena Foshay, Partners in Energy Community Facilitator
- Jamie Johnson, Partners in Energy Community Facilitator

Table of Contents

Acknowledgements	i
Table of Contents	ii
Executive Summary	i
Introduction	1
Commitment to Sustainability	2
The Case for a Community Energy Action Plan	4
Xcel Energy Partners in Energy	4
Where Are We Now? — Baseline Energy Analysis	7
Energy Data Sources	7
Community Energy Use	8
Baseline Energy Savings	11
Residential Sector Energy Use	12
Residential Energy Savings	13
Commercial and Industrial Sector Energy Use	14
Commercial and Industrial Energy Savings	16
Renewable Energy	18
Where Do We Want To Go? — Community’s Energy Vision, Focus Areas, and Goals	20
Our Energy Vision	20
Our Guiding Principles	20
Community Wide Goal	21
Focus Areas	21
Focus Area 1: Residential Energy	23
Residential Energy Goals	25
Residential Energy Strategies	25
Measuring Success	28
Additional Partners	28
Impact	29
Focus Area 2: Institutions	31
Institutions Goals	31
Institutions Strategies	31
Measuring Success	32

Additional Partners	32
Impact.....	32
Focus Area 3: Large Commercial/Industrial Energy Users.....	35
Large Commercial/Industrial Goals.....	36
Large Commercial/Industrial Strategies.....	36
Measuring Success	37
Additional Partners	37
Impact.....	37
Focus Area 4: Small/Medium Size Businesses	40
Small and Medium-Size Business Goals	40
Small and Medium-Size Business Strategies	41
Measuring Success	42
Additional Partners	42
Impact.....	42
Combined Impact of Energy Action Plan.....	45
Implementation.....	48
Operational Actions and Tracking.....	52
Conclusion.....	52
Appendix 1: Planning Memorandum of Understanding	53
Appendix 2: Glossary of Terms	56
Appendix 3: Community Background	58
Appendix 4: Summary of Sustainability Initiatives	64
Appendix 5: The Planning Process	67
Appendix 6: Additional Data	70
Appendix 7: Winona County Data	75
Appendix 8: Implementation Roles and Responsibilities	86

Executive Summary

Winona has set a bold goal of carbon neutrality by 2050. This Energy Action Plan represents an important first step that will ultimately lead to an estimated 34 percent reduction in the city's energy-related greenhouse gas emissions.

Winona is a unique community that stands out as a regional leader in taking action to both reduce energy bills and substantially decrease carbon emissions. Accomplishing the goals outlined in this plan will require proactive action by both residents and businesses in the community, and it will not happen without the support and engagement of a myriad of community groups and individuals.

In releasing this plan, the Energy Action Team hopes to spur interest and motivation among community and business leaders. There has been significant effort over the last two years to build momentum around energy and its relationship to climate change. The goals and strategies outlined in this plan will accelerate that momentum and generate some important and tangible results.

Our Vision

Winona will be a leader in efforts to reduce energy consumption and produce renewable energy, in pursuit of long-term environmental sustainability and reducing our carbon footprint. These efforts will be available to all, will maintain our high quality of life and vibrant economy, and will not limit growth.

Our Goals

The City of Winona aims to:

- Reduce energy use 10 percent over a 2016 baseline by 2025
- Achieve a 100 percent reduction in energy-related greenhouse emission (carbon neutrality) by 2050



Images from downtown Winona

How Will We Get There?

To achieve these results, Winona outlined a set of goals and strategies in four focus areas:

Residential Energy	Goals: <ul style="list-style-type: none">• Double annual participation in conservation programs.• Double the average number of renewable energy subscribers and double the average monthly subscription amount within one year.
Institutions	Goals: <ul style="list-style-type: none">• Reduce institutional energy use by 15 percent below a 2016 baseline by 2025.• Engage Winona institutions to support renewable energy development equal to 10 percent of their energy use by 2030.
Large Commercial/Industrial Energy Users	Goals: <ul style="list-style-type: none">• Engage 90 percent of large commercial/industrial customers to participate in at least one conservation program within three years.• Ensure at least three large commercial/industrial customers commit to adding on-site renewable energy generation within three years.
Small- and Medium-Size Businesses	Goals: <ul style="list-style-type: none">• Engage at least 40 small/medium size businesses to participate in conservation programs annually.• Double annual energy use reductions among small/medium businesses.• Ensure at least one small business subscribes to or installs renewable energy generation annually.

Starting in the fall of 2017, Winona will begin the process of implementing this Energy Action Plan. Xcel Energy's Partners in Energy will work with Winona for the first 18 months, providing marketing, project management, technical, and data tracking support. Key players from the City of Winona and the Energy Action Team will play an important role in implementing the plan, and the City will also seek community volunteers to help with outreach and community engagement. Interested individuals should contact John Howard, Natural Resources and Sustainability Coordinator, at jhoward@ci.winona.mn.us, or at 507-457-8273.

Introduction

Winona is a unique community that prides itself on its high quality of life and connection to its surrounding natural environment. Winona is already a regional leader in arts, culture, and education, and is a hub for industry. In developing and implementing this Energy Action Plan, Winona also stands out as a leader in its efforts to reduce energy use and substantially decrease carbon emissions.

Winona has set a bold goal of carbon neutrality by 2050. Achieving this goal will require increased energy efficiency and renewable energy generation, as well as substantial changes in transportation-related emissions and actions to offset any remaining carbon emissions. This Energy Action Plan represents an important first step down a path that will ultimately lead to an estimated 34 percent reduction in the city’s energy-related greenhouse gas emissions.

Accomplishing the goals outlined in this plan will require pro-active action by both residents and businesses in the community, and it will not take place without the support and engagement of numerous individuals and community groups. In adopting this plan, Winona hopes to spur interest and motivation among community and business leaders and build on momentum generated by previous and current efforts. The goals and strategies outlined in this plan will accelerate that momentum and generate some important and tangible results.

Winona Values and Assets

The Energy Action Team was asked to list two things — the values they feel are most representative of the community and the community’s greatest assets.

Values	<ul style="list-style-type: none"> • Appreciative of the natural landscape (i.e. river, bluffs, lakes) • Strong commitment to local food • High quality of life • Sense of frugality • Community engagement
Assets	<ul style="list-style-type: none"> • Access to diversity of educational and employment opportunities • Great schools • Diverse economy (i.e. hub for arts, education, industry, transportation) • Low cost of living • Community engagement • Farmers markets and local food • Multiple outdoor recreational opportunities that have a regional and local draw • Lake Winona and the Healthy Lake Winona group • People willing to take action and invest time and energy to make improvements • Lots of manufacturing and a large, diverse industrial base

Commitment to Sustainability

Both the City of Winona and Winona County have long demonstrated a commitment to sustainability. Starting in 1995, the City started integrating energy into its Comprehensive Plan. Figure 1 offers highlights of key sustainability efforts, and Appendix 4: Summary of Sustainability Initiatives provides further detail.

Figure 1: Timeline of Selected Winona Sustainability Efforts

Year	Sustainability Effort
1995	<ul style="list-style-type: none"> Comprehensive Plan included recommendations to establish incentives for alternative energy sources and efficiency
2007	<ul style="list-style-type: none"> Comprehensive Plan contained a specific goal of supporting energy conservation and renewable energy in City-owned buildings and in the broader community City of Winona signed the U.S. Conference of Mayors Climate Protection Agreement Formed Sustain Winona
2008	<ul style="list-style-type: none"> Began performance contracting for City-owned building efficiency (completed in 2011)
2010	<ul style="list-style-type: none"> Anaerobic digester installed at the Winona wastewater treatment plant
2016	<ul style="list-style-type: none"> Jefferson Center led Rural Climate Dialogues Brought on board the first City Sustainability Coordinator Launched Next Step Partners
2017	<ul style="list-style-type: none"> January: Began EPA Building Blocks technical assistance process February: City of Winona joined GreenStep Cities April: Winona County voted to purchase 100 percent of electricity to power County buildings from solar Ongoing: Next Step Partners project implementation, including low-income energy audits and energy contest

The City of Winona has been proactive in reducing energy use from its own operations. Between 2008 and 2011, the City engaged in a performance contract to reduce energy use and related greenhouse gas emissions in its buildings. The result was a roughly 26 percent reduction in the City's energy-related greenhouse gas emissions and \$159,000 in annual energy cost savings.¹ The City's largest buildings were

¹ Source: City of Winona

benchmarked during the performance contract years, and the City is currently working to update the information to better keep track of how energy is used. Concurrently, in 2010 an anaerobic digester was installed at the wastewater treatment plant, generating enough energy to make the plant self-sufficient.

In addition to improving efficiency in its own buildings, the City received funding from the Minnesota Department of Employment and Economic Development Small Cities Development Program (SCDP) to support rehabilitation of low-income homes located in the East End neighborhood. The City is currently working to renovate 15 low-income homes on the east side and will integrate energy efficiency improvements into the projects.

Sustain Winona is a group comprised of both the City and County, as well as Winona State University, Saint Mary's University, Winona Area Public Schools, and Minnesota State College — Southeast Tech. The group formed in 2007 to work on improving sustainability. When the Energy Action Team began their planning process, Sustain Winona was actively engaged in implementing projects through its Next Step Partners initiative, which launched the previous year.

Next Step Partners has an action plan with seven priority efforts. Several of these efforts lay the groundwork for the goals and strategies in this plan, and they will serve as pilot projects and test cases, providing opportunities from which to draw lessons learned. These efforts include:

- 1. Increasing energy efficiency among low- and fixed-income households in Winona County to help residents prepare for extreme weather events.**
 - a. Identifying and referring eligible low- and fixed-income households in Winona County to Semcac and Xcel Energy assistance programs.
 - b. Conducting energy audits in 30 Winona County households, with the goal of completing an additional 30 in the coming months.
 - c. Providing a funding pool for low- and fixed-income households to purchase energy efficiency light bulbs, seal air leaks, install insulation, and complete other projects as identified through energy audits.
 - d. Providing staff support to help households access state and utility rebates and assistance.
- 2. Establishing an energy conservation contest among Winona County households and small businesses to encourage adoption of energy efficiency technology and behavior changes to lower energy consumption.**
 - a. Concluding at the end of 2017, the contest will provide cash awards for documented energy savings.
- 3. Reviewing opportunities for energy efficiency improvements in cities and townships in Winona County.**
 - a. Hiring a student intern to assist with energy benchmarking efforts in publicly-owned buildings throughout Winona County.

- b. Prioritizing energy-efficient improvements based on energy usage in public buildings and pursuing Guaranteed Energy Savings Program (GESp) and other funding sources to increase energy efficiency.
- c. Convening an educational session on existing alternative energy efficiency and renewable energy financing mechanisms.
- d. Reviewing policies in Winona County to support alternative funding mechanisms for renewable energy development and energy efficiency improvements or to reduce energy use (i.e. Property Assessed Clean Energy or PACE Program).

Next Step Partners hosted two workshops in 2017, both of which support the goals and strategies in this plan. The first was held in March 2017 and co-hosted by the Clean Energy Resource Teams (CERTs). Sixty Winona County residents and representatives from Xcel Energy attended to learn the “Seven Steps to a Solar Ready Home,” which focused on improving energy efficiency before exploring solar options. The second workshop was co-hosted by the Chamber of Commerce. Eleven businesses attended to get more information on Property Assessed Clean Energy (PACE) financing as a mechanism for funding energy efficiency improvements. Next Step Partners will continue its work throughout Winona County, with a priority on integrating their work with the strategies outlined in this plan.

More details about Sustain Winona and Next Step Partners can be found in Appendix 4.

The Case for a Community Energy Action Plan

In January 2017, community stakeholders and staff from the U.S. Environmental Protection Agency participated in a two-day process called Building Blocks, which focused on integrating sustainability into city planning and economic development. One of the identified priority goal areas was to reduce the community’s carbon footprint. Developing an Energy Action Plan was called out as a key action towards achieving that goal. More details about Building Blocks can be found in Appendix 4.

The City had several priorities in mind before developing this plan, including lowering energy costs for both residents and the City itself and reducing the community’s environmental footprint. The City’s intention for the plan was to weave together past and recent efforts to increase efficiency and renewable energy generation, and guide them toward a common goal of reducing greenhouse gas emissions.

Xcel Energy Partners in Energy

Xcel Energy, the main electricity and natural gas utility serving Winona, launched Partners in Energy to support communities in the development and implementation of customized, community-driven energy plans. In 2016, the City of Winona submitted an application to participate and became the tenth community in Minnesota to be selected. Other participating Minnesota communities include the Lake Street Corridor in Minneapolis, Ramsey County’s Parks and Recreation Department, and the Cities of Maplewood, Red Wing, St. Louis Park, Edina, Saint Cloud, Saint Paul, Shorewood,

Mahtomedi, Faribault, Eden Prairie, Bloomington, and Rosemount. In addition to these 15 Minnesota communities, there are currently 13 communities participating in Colorado.

The objective of Partners in Energy is to allow communities to develop actionable plans that advance their energy goals while being supported by Xcel Energy’s technical expertise, facilitation resources, and program knowledge. After several months of planning, Xcel Energy continues to collaborate with communities by providing plan implementation assistance for 18 months.

Figure 2: Partners in Energy Process for Success



Figure 3: Resources from Xcel Energy for Implementation



Winona convened a team of experts from the community to participate in the planning process. This Energy Action Team included City staff, elected officials, local business representatives, representatives from educational institutions, and community volunteers with expertise in energy. The team met four times over the course of five months to review energy use data, determine priorities, and develop actionable strategies to achieve energy goals.



Winona's Energy Action Team

*Bottom left: Marvin Hodge, Paul Schollmeier, Tami Gunderzik, John Howard;
Top left: Pam Newell, Anne Morse, Chris Meyer, Yvonne Pfeifer, Jamie Johnson, Elena Foshay.*

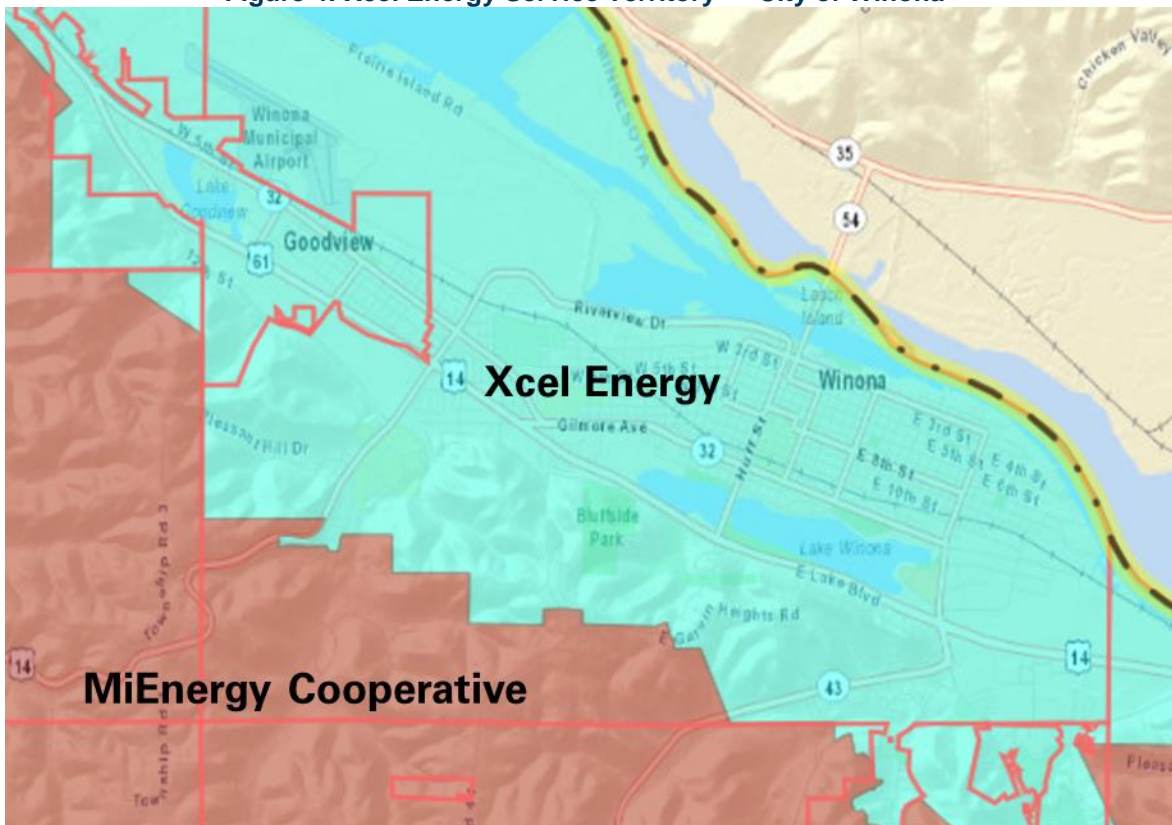
Where Are We Now? — Baseline Energy Analysis

Energy data provided by Xcel Energy played a crucial role in the planning process. Community-specific data enabled the Energy Action Team to accomplish two important tasks. First, the Energy Action Team identified how the city and county currently use and save energy. Second, team members were able to use scenario modeling with Winona-specific data to develop energy goals for the community.

Energy Data Sources

To obtain community-specific energy use and Xcel Energy program participation data, the team matched city and county shape files with Xcel Energy data from 2014 through 2016. Xcel Energy is one of two electricity providers serving the City of Winona and the only natural gas provider. Figure 4 shows which portions of Winona are served by Xcel Energy — only those customers served by Xcel Energy are included in the data analysis.

Figure 4: Xcel Energy Service Territory — City of Winona²



The data in this plan comply with Xcel Energy's 15 x15 data privacy rules, which require all data summary statistics for energy use to contain at least 15 entities, with no single entity responsible for more than 15 percent of the total. Following these rules, if an entity is responsible for more than 15 percent of energy use for a summary it is removed

² Minnesota Public Utilities Commission, *Electric Utility Service Areas*

from that summary. One commercial premise was removed from the data because its energy use violates this 15x15 rule. The City of Winona granted permission for its energy use data to be shared, so the City data are reported separately from other commercial energy use data.

Community Energy Use

This section provides a look at how Winona currently consumes and saves energy. The most recent data included in this section cover the years 2014, 2015 and 2016. While these three years of data were used for trending purposes, the year 2016 was established as the baseline for this plan. Additional details about energy use and program participation data for the rest of Winona County can be found in Appendix 7: Winona County Data.

In 2016, there were 12,443 distinct Xcel Energy natural gas and electric premises in the city of Winona. A premise is the area served by a single electric or natural gas meter. Of these, 85 percent are residential premises, 14 percent are commercial/industrial premises, and 1 percent belongs to the City.

Figure 5: Winona Premise Count

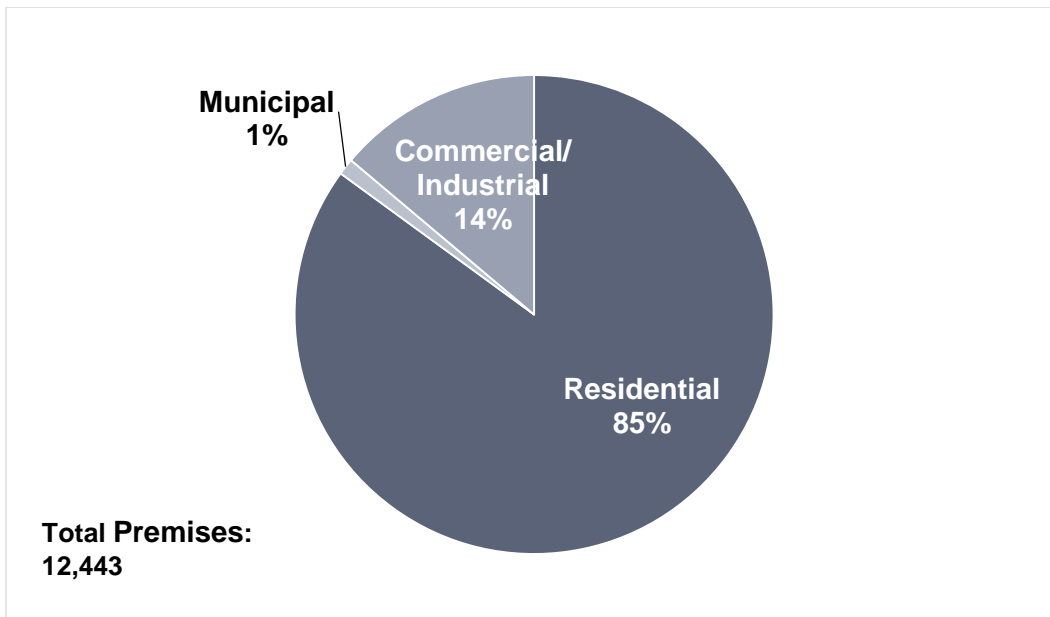


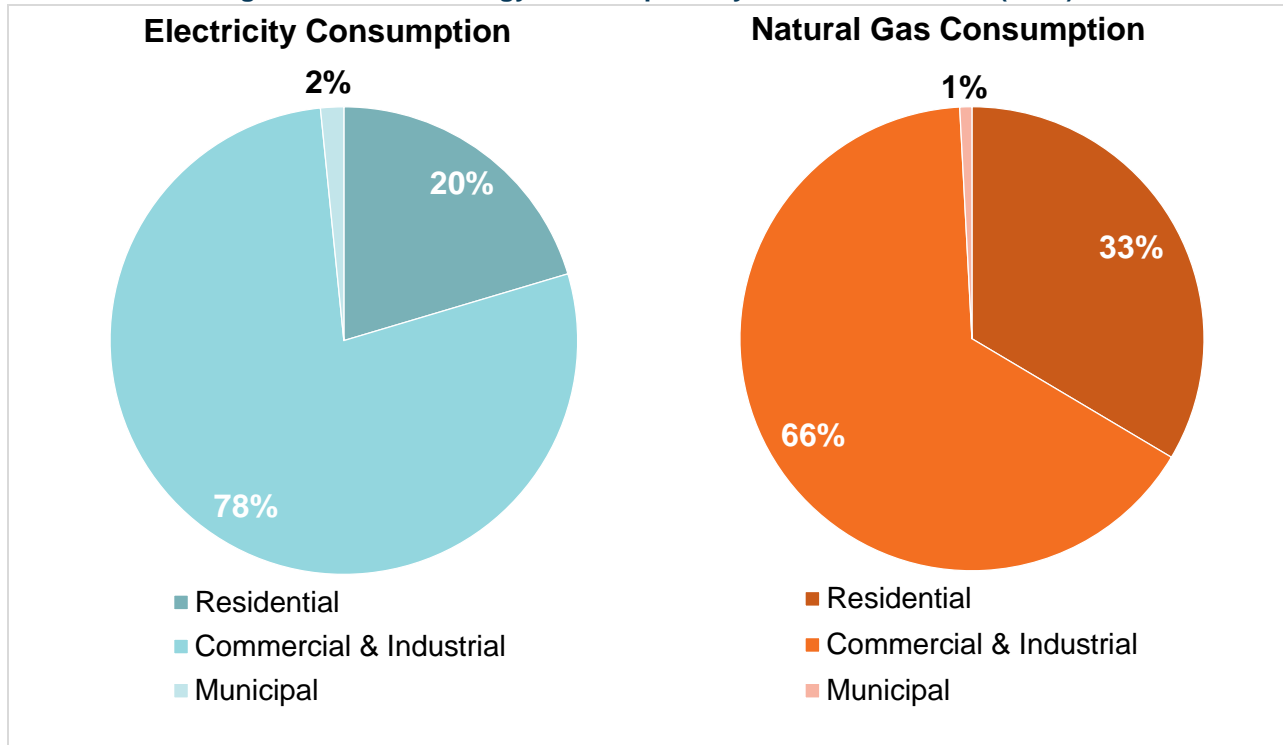
Figure 6: Baseline Energy Use

Winona's Baseline Energy Use (2016)	
Electricity	357,591,015 kWh
Natural Gas	16,590,840 therms
Total Energy	2,879,185 MMBtu

While the majority of premises are residential, the majority of energy is consumed by the commercial and industrial sector (Figure 7). This is especially true on the electric

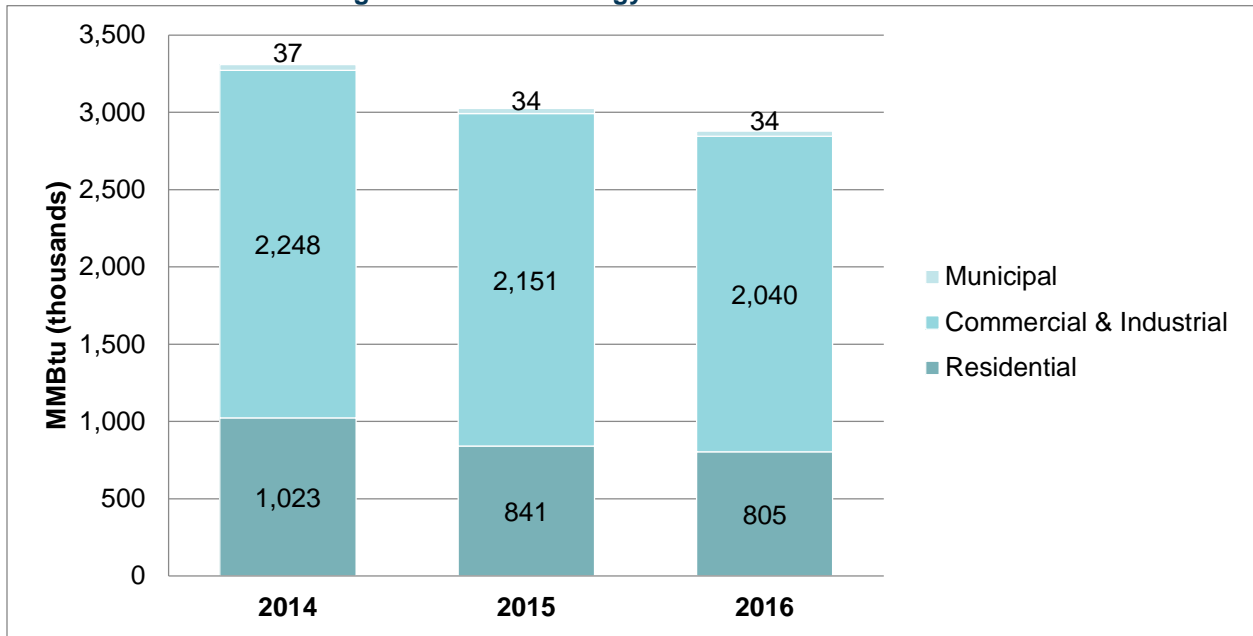
side where 15 percent of commercial and industrial premises consume 80 percent of the community's electricity.

Figure 7: Winona Energy Consumption by Sector and Source (2016)



Overall, total energy consumption in Winona has been trending downward between 2014 and 2016 (Figure 8). While this may be in part due to energy conservation measures, weather-related energy use also plays a part. Both 2015 and 2016 were record-setting warm winters in Minnesota, leading to dramatic decreases in natural gas use for heating purposes.

Figure 8: Winona Energy Use Trends 2014-2016



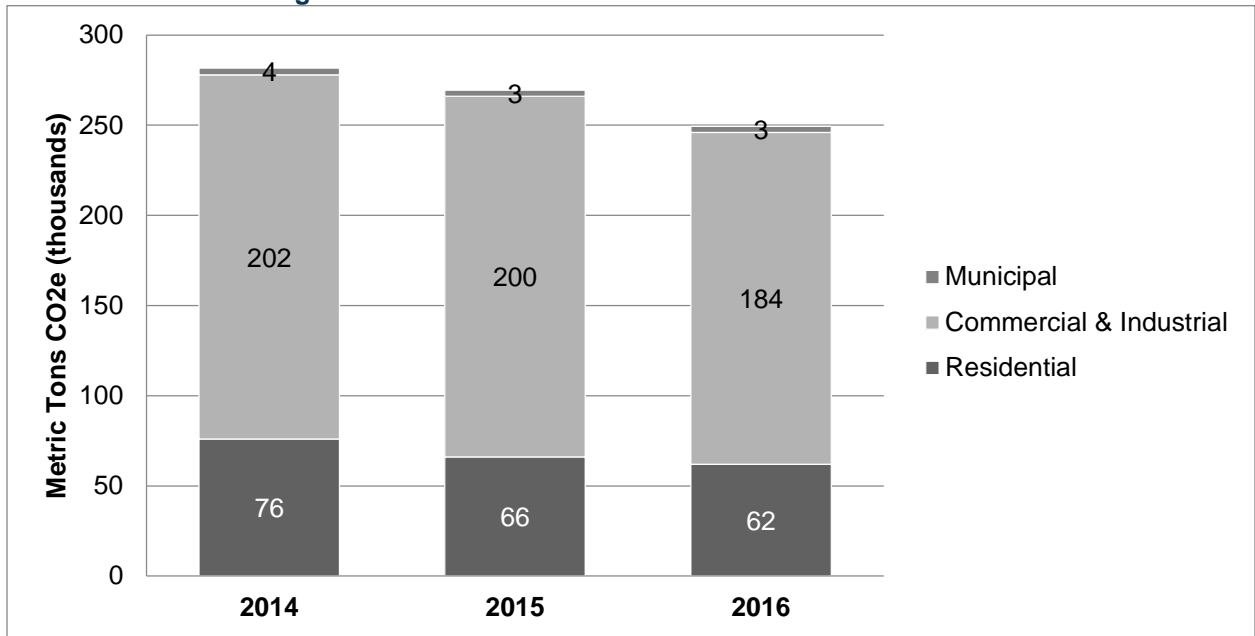
Winona residents spent a total of \$44 million on energy in 2016. Average household energy costs were \$96 per month in 2016, or about three percent of average household monthly income.

Figure 9: Average Energy Costs (2016)

Customer Type	Average Energy Cost (\$/premise/year)	Total Energy Cost
Residential	\$ 1,147	\$12,128,137
Commercial and Industrial	\$ 17,202	\$32,044,388

Energy-related greenhouse emissions in 2016 were estimated at 230,949 metric tons of carbon dioxide. This is equivalent to emissions from 48,784 passenger cars driven for a year. Energy-related emissions decreased by almost 20 percent between 2014 and 2016, with about a fifth of the decrease attributable to energy conservation and the remaining decrease likely related to weather-related changes in demand for energy.

Figure 10: Greenhouse Gas Emissions Trends 2014-2016



Baseline Energy Savings

To understand current baseline levels of engagement in energy conservation, the Energy Action Team reviewed data on Xcel Energy conservation program participation and the resulting energy and cost savings. Overall, Winona has a history of robust participation in Xcel Energy conservation programs in the past three years. Energy savings have averaged 1.5 percent of total energy use, though the majority of these savings are the result of actions taken in the commercial and industrial sector (Figure 12). Through energy conservation actions, Winona residents and businesses saved more than half a million dollars in energy costs in 2016.

Figure 11: Total community energy savings from Xcel Energy conservation program participation (2016)

	Electricity	Natural Gas
Energy Savings	3,940,571 kWh	316,967 therms
Cost Savings	\$539,274 (combined)	

Figure 12: Electricity savings from Xcel Energy conservation program participation by sector

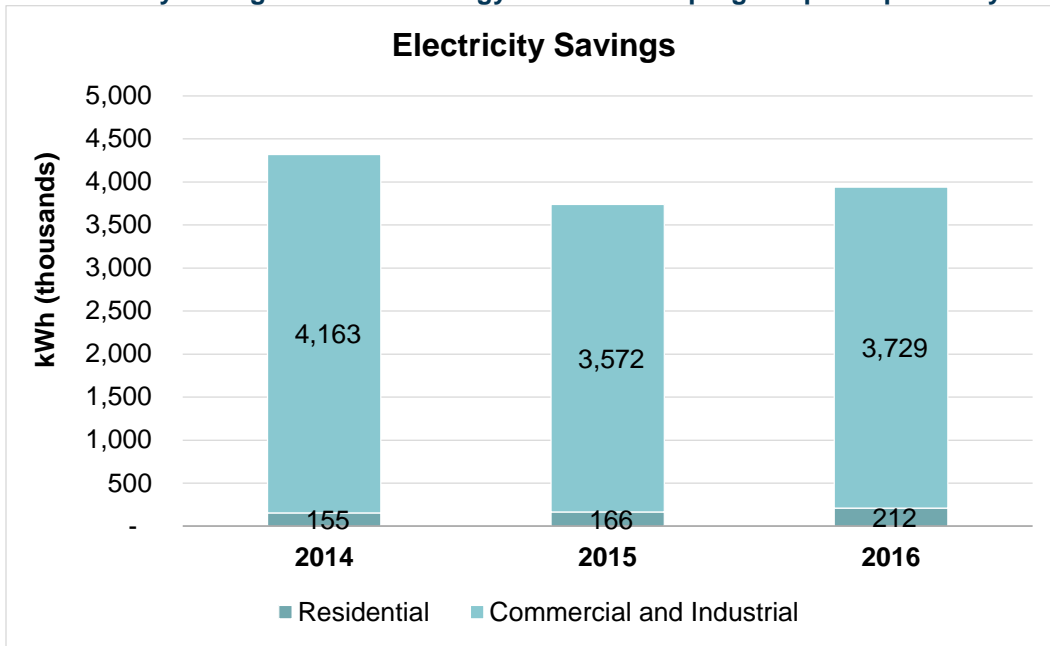
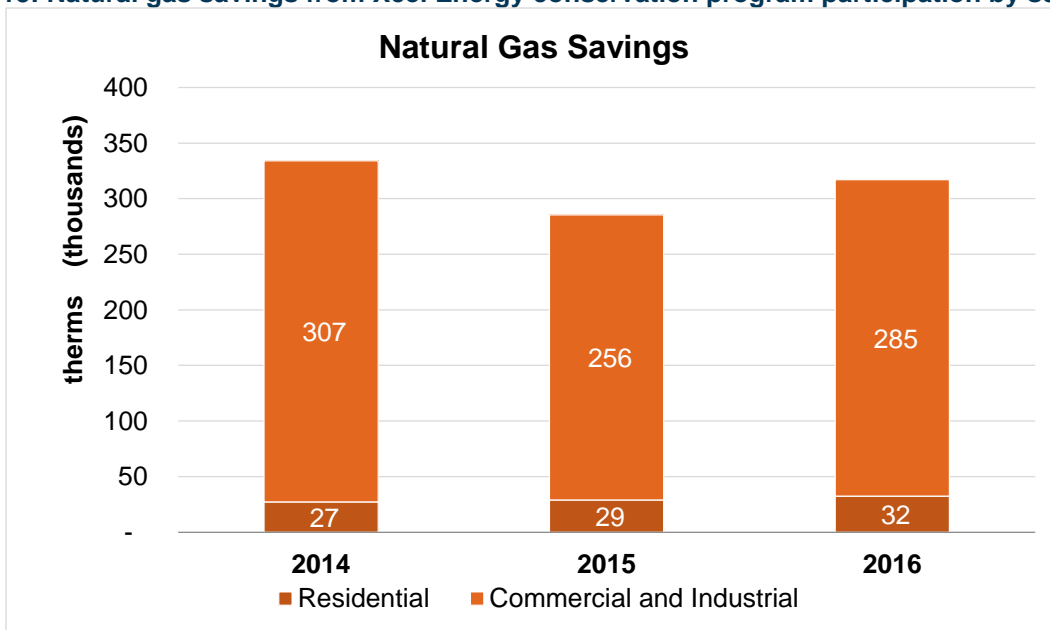


Figure 13: Natural gas savings from Xcel Energy conservation program participation by sector

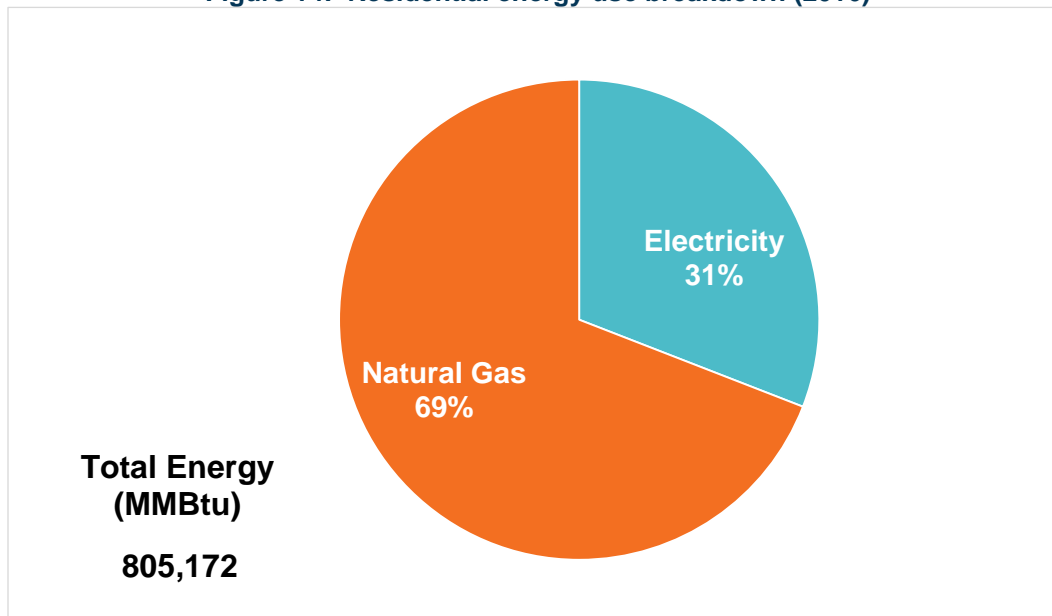


Residential Sector Energy Use

The residential sector consumes just 28 percent of the community’s total energy use, though it represents the majority of Winona premises. In 2016, Winona residential premises consumed 72.9 million kWh and 5.6 million therms. Overall, close to 70 percent of residential energy use is attributed to natural gas while 31 percent is

attributed to electricity. Two thirds of Winona homes depend on natural gas for heat while fewer than 28 percent of homes are heated using electricity.³

Figure 14: Residential energy use breakdown (2016)

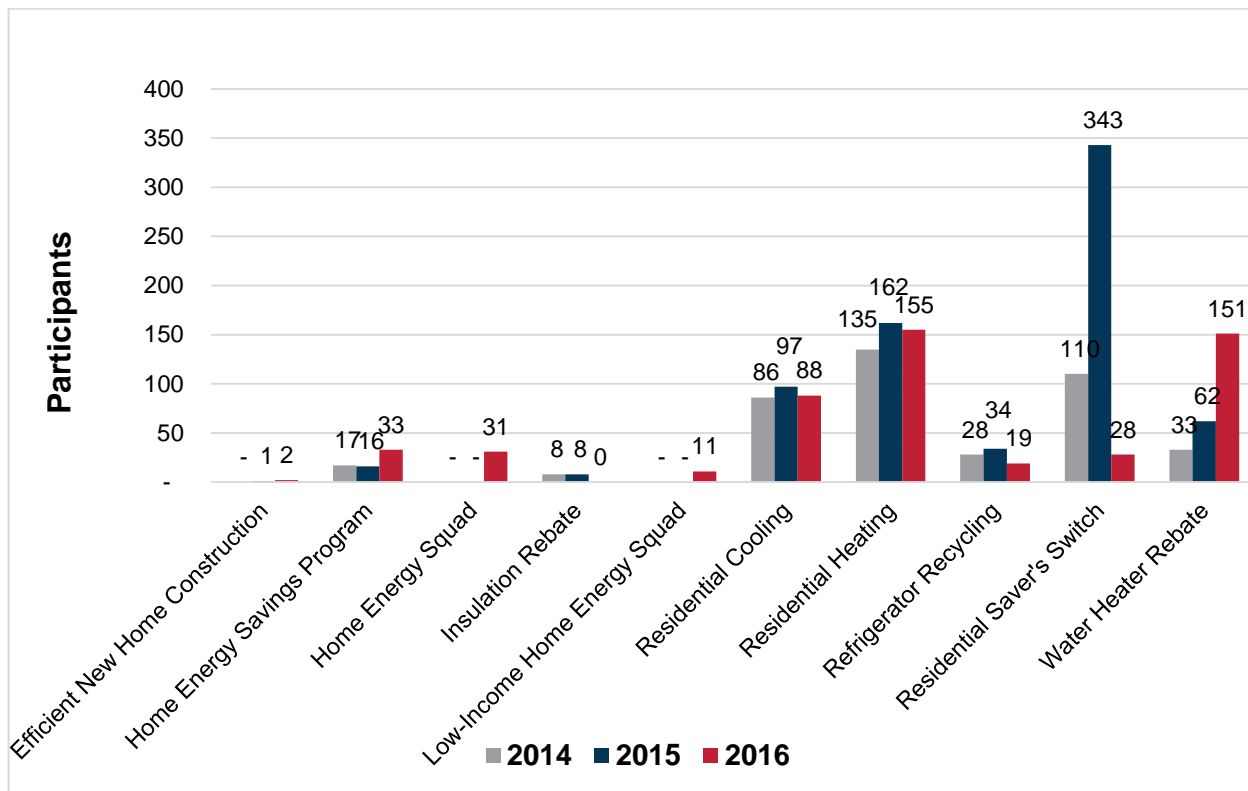


Residential Energy Savings

The residential sector averaged savings of 0.4 percent of energy use over the past three years. In total, 1,727 residential premises — or about 1 in 6 — participated in Xcel Energy conservation programs between 2014 and 2016. About a third of this participation was in Saver’s Switch, which reduces electricity load on the grid during times of peak demand and allows residents a way to get credit on their electric bills, but does not translate into any substantive energy savings. Heating, cooling, and water heater rebates had by far the greatest level of participation and associated energy savings (Figure 15).

³ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: Housing characteristics for occupied housing units*.

Figure 15: Residential participation in Xcel Energy conservation programs 2014-2016



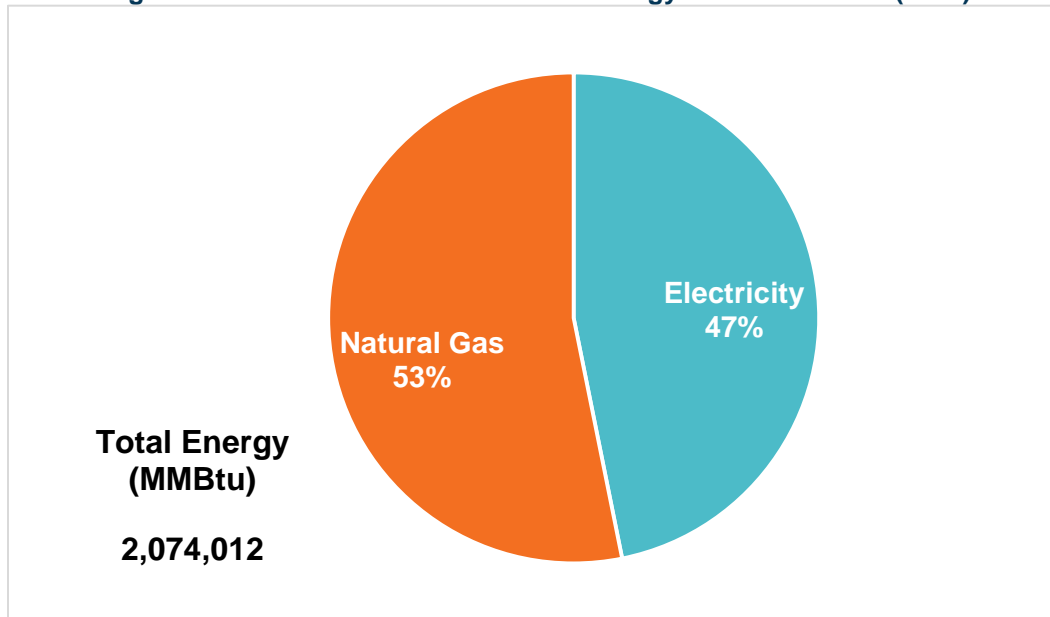
Commercial and Industrial Sector Energy Use

Winona has a wide variety of building types and energy needs in the commercial and industrial sector. The range includes:

- City and county office buildings, many of which are older.
- University classroom, laboratory buildings, and dormitories.
- A broad range of small and medium-sized businesses located in the community, including restaurants, shops, medical offices, auto repair, light industrial and others.
- Large retail stores and supermarkets.
- Schools and day care centers.
- Certain apartment buildings, based on how they are metered.
- Large industrial and manufacturing operations.

As a whole, the commercial and industrial sector represents 72 percent of total community energy use and includes 1,875 total premises. Unlike the residential sector, which consumes about twice as much natural gas as electricity, the split between the two fuel sources is fairly even for this sector (Figure 16). In 2016, Winona commercial and industrial premises consumed 285 million kWh and 11 million therms.

Figure 16: Commercial and Industrial Energy Use Breakdown (2016)



Taking a closer look at commercial energy data, premises can be divided into three groups: large commercial/industrial energy users, small- and medium-sized businesses, and institutions.⁴ Figure 17 shows the proportion of premises within each of the three groups, and Figure 18 shows the proportion of energy used by each group. While almost two-thirds of premises are small- and medium-sized businesses, only 7 percent of energy use can be attributed to this group. The majority of energy use falls under the large commercial/industrial category, followed by institutions, making both a top priority for achieving energy savings.

⁴ Large commercial/industrial buildings includes the top 20 percent of commercial energy users. Institutions includes schools and universities, City and County buildings, hospitals and nursing care facilities, nonprofits and community organizations, and churches. Small- and medium-size businesses includes the remaining commercial premises.

Figure 17: Distribution of commercial and industrial premises (2016)

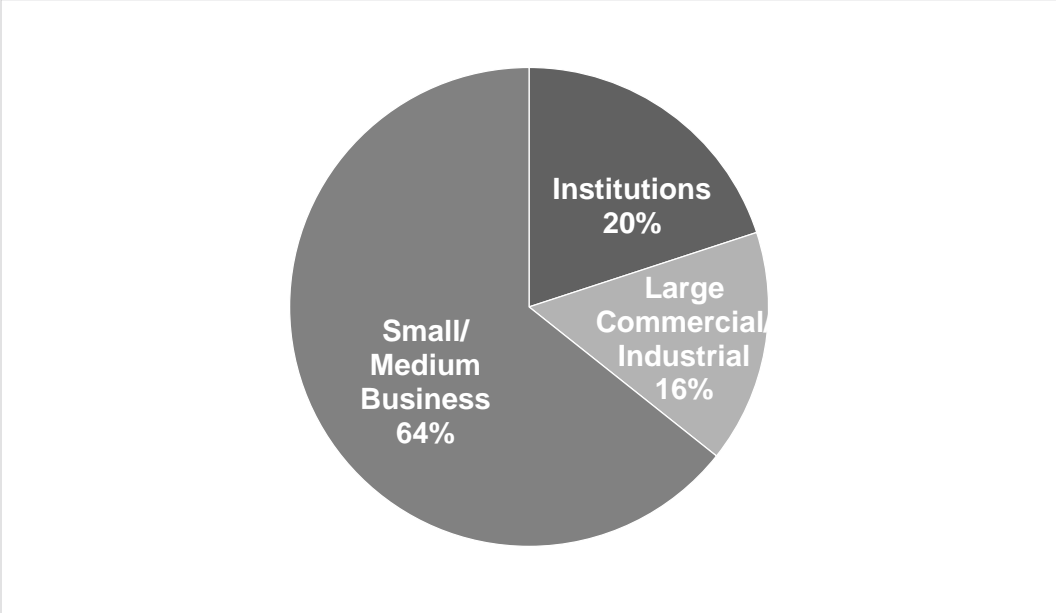
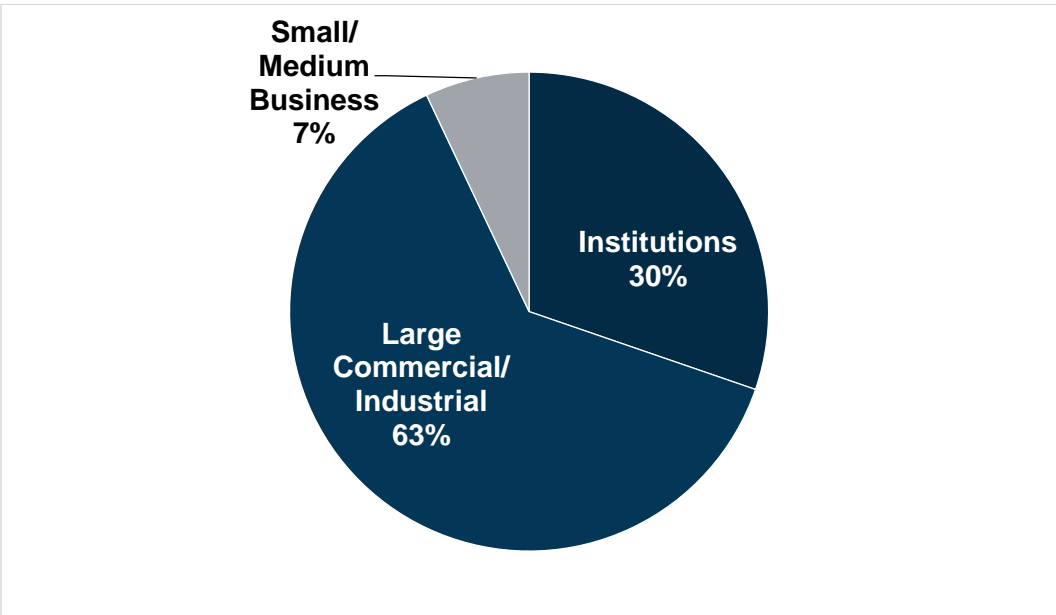


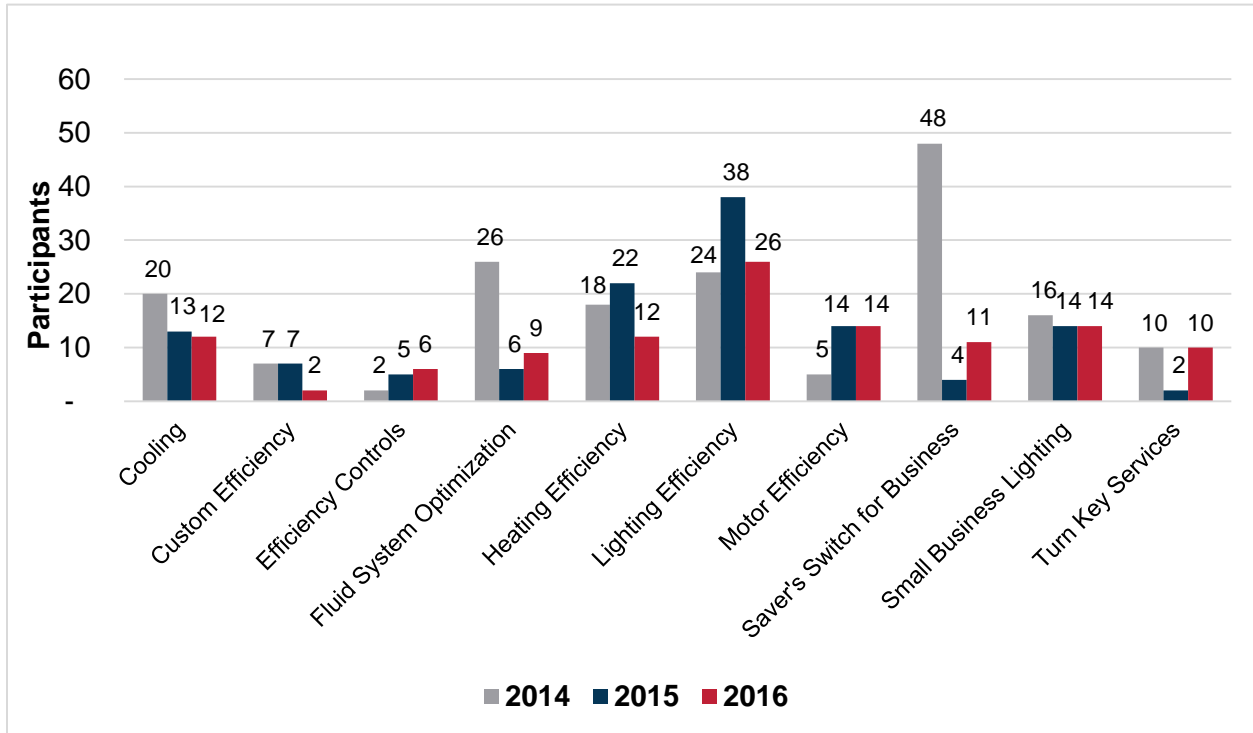
Figure 18: Estimated proportion of total commercial and industrial energy use (2016)



Commercial and Industrial Energy Savings

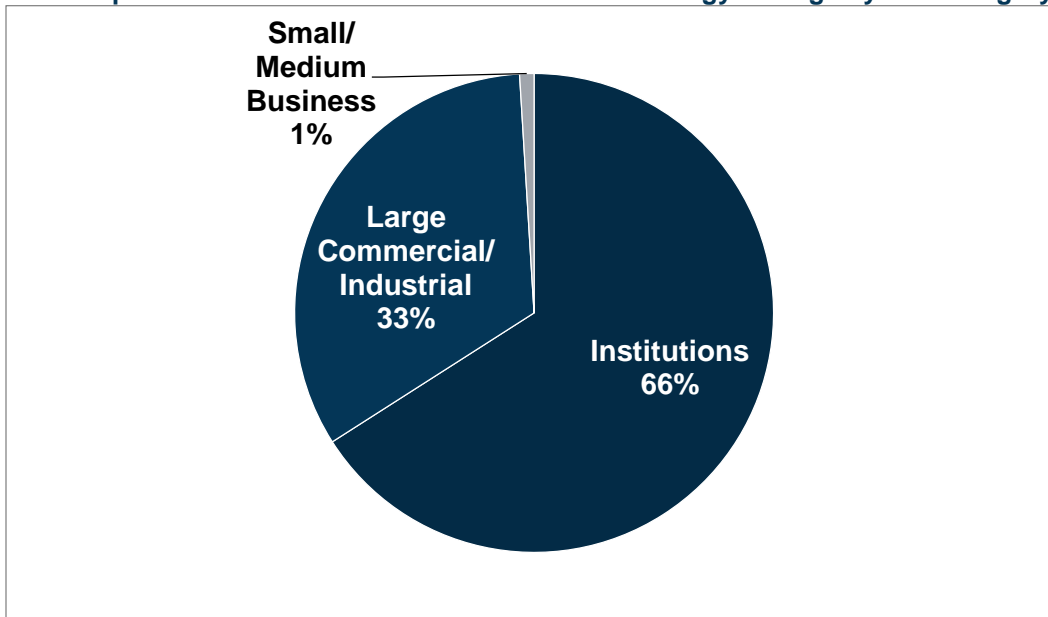
In total, 425 commercial and industrial premises participated in Xcel Energy conservation programs between 2014 and 2016, showing a participation rate of 23 percent. As a result, the commercial and industrial sector saved 1.9 percent of energy annually — which is substantially higher than the savings achieved by the residential sector. Lighting upgrades were the most common actions taken, followed by heating and cooling rebates (Figure 19).

Figure 19: Commercial and Industrial Program Participation 2014-2016



A closer look at savings in this sector reveals that the majority of participation occurs among the top energy users in both the large commercial/industrial and institutional categories. Institutions in particular have taken significant steps toward energy conservation, reducing energy use an estimated 4 percent per year over the last three years. Large commercial/industrial businesses have also made progress, saving an estimated 1 percent per year over the last three years.

Figure 20: Proportion of total commercial and industrial energy savings by sub-category (2016)



Renewable Energy

Renewable energy is an important component in reducing overall greenhouse gas emissions. Many Winona institutions have already shown motivation in making a commitment to support renewable energy. In April 2017, Winona County agreed to purchase 100 percent of its electricity from a local community solar garden. Winona Area Public Schools has two solar arrays — a 1kW array on the high school agriculture building and a bike shelter with a solar roof — and a geothermal system located at the Winona Area Learning Center.⁵ Cotter High School also has solar arrays, which total 80 kW in production capacity.⁶ The school district recently announced that it will purchase 100 percent of its remaining electricity from community solar gardens. Saint Mary's University and Winona State University have both invested in community solar gardens. The City also recently announced that it would obtain 40 percent of its electricity from community solar gardens.⁷

To support renewable energy generation more broadly, the City defined provisions in the new Unified Development Code for both large- and small-scale renewable energy development. It is important to note that, while any investment in renewable energy is important, only those projects that keep the Renewable Energy Credits, or RECs, contribute to reducing the community's baseline carbon emissions. A REC quantifies and monetizes the "green" aspect of the energy that is generated and, in the case of

⁵Minnesota Renewable Energy Society. *Renewable Energy and Schools* (June 2011). http://www.cleanenergyresourceteams.org/sites/default/files/publication_files/RenewableEnergy_Schools_Guide_MRES.pdf

⁶Flanagan, R. "Cotter grad Kaehler helps school go solar," *Cotter Chronicle* (October 24, 2014). <http://www.cotterschools.org/page.cfm?p=513&newsid=16>

⁷"Winona City Council further exploring solar energy," *Winona Daily News* (August 21, 2017).

community solar, is typically sold to Xcel Energy by developers. When the RECs are sold, they contribute to achieving Xcel Energy's greenhouse gas emissions reductions goals.

The Energy Action Team had limited access to data on renewable energy generation in the community. City permit data shows 20 solar installations in Winona, but does not include information about the size of these installations, and Xcel Energy was able to share data on subscriptions to Windsource[®], its most popular renewable energy offering. In 2016, 362 Winona households and two businesses subscribed to Windsource. Seventy percent of residential subscribers were signed up for the minimum 100 kWh per month, while 12 percent of residential subscribers cover all of their electricity use with Windsource. Total Windsource usage represents 0.2 percent of community electricity use.

Where Do We Want To Go? — Community’s Energy Vision, Focus Areas, and Goals

After reviewing baseline energy use and savings information, the Energy Action Team spent time developing a shared vision for Winona’s energy future. The team also developed a set of guiding principles, which represent the priorities that served as a backdrop for the planning process.

Our Energy Vision

Winona will be a leader in efforts to reduce energy consumption and produce renewable energy, in pursuit of long-term environmental sustainability and reducing our carbon footprint. These efforts will be available to all, will maintain our high quality of life and vibrant economy, and will not limit growth.

Our Guiding Principles

- 1. Pursue a sustainable energy future with clean energy available to all businesses and residents, with particular support for low-income households.*
- 2. Increase overall energy literacy among residents, including where energy comes from, the environmental impacts of different types of energy generation, and what can be done to reduce energy use.*
- 3. Expand renewable energy generation.*
- 4. Lead by example and offer recognition for successful energy efforts.*
- 5. Make energy efficiency feasible, affordable, and achievable for both residents and businesses.*
- 6. Promote economic growth while increasing energy conservation and renewable energy generation.*
- 7. Empower future generations to be self-motivated in working toward a sustainable energy future.*
- 8. Inspire and support a high quality of life for future generations.*

The Energy Action Team set a bold goal that would serve as a guidepost for current and future energy action. They wanted Winona to stand out as a regional leader in boosting efforts to address climate change, and set their sights on achieving carbon neutrality in the long term.

Community Wide Goal

Winona aims to:

- *Reduce energy use 10 percent by 2025.*
- *Achieve a 100 percent reduction in energy-related greenhouse gas emissions (carbon neutrality) by 2050.*

The Energy Action Team also established an interim target that would help benchmark progress toward reaching the goal of carbon neutrality. This target is focused on reducing energy use across all sectors in the community, with the understanding that energy conservation is an important first step in reducing greenhouse gas emissions.

Focus Areas

Based on its analysis of baseline energy use combined with existing community priorities, the Energy Action Team chose four primary areas of focus for this plan.

Focus Area 1: Residential Energy

Includes all single-family homes, as well as multifamily units that are individually metered.

Focus Area 2: Institutions

Includes schools and universities, City and County buildings, hospitals and nursing care facilities, nonprofits and community organizations, and churches.

Focus Area 3: Large Commercial/Industrial Energy

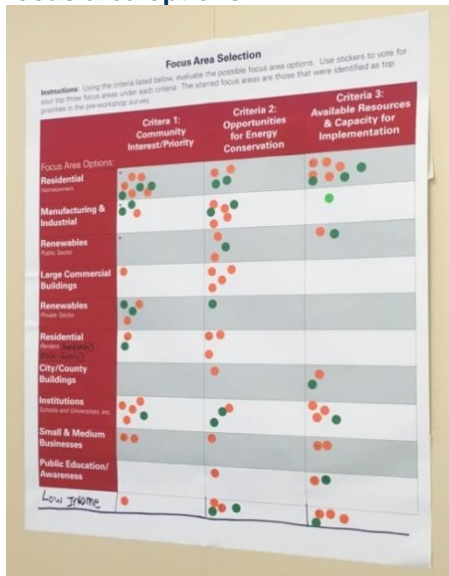
Includes the top 20 percent of commercial energy users in the community.

Focus Area 4: Small- and Medium-Sized Businesses

Includes all other commercial premises in the community.

The following sections detail the goals and actionable strategies for each focus area, as well as how progress will be tracked and additional partners that could be involved in implementation. Each section also includes an estimate of the impact on participation and energy conservation. A discussion on the potential overall impact of this Energy Action Plan on energy use and greenhouse gas emissions follows the focus area discussions.

Figure 21: Evaluation of different focus area options



The Energy Action Team considered several other areas of focus, including student and multifamily housing. After some discussion, the team decided that targeting and achieving energy savings in both of these sectors would be challenging due to the separation between who owns the properties and who pays the energy bills. The decision was made to focus on residential homeowners and large commercial/industrial energy users first, acknowledging that student and multifamily housing are key segments of energy users. The Energy Action Team plans to address these sectors in a later phase of implementation.

The Energy Action Team also discussed whether renewable energy, being a top priority for the community, should be its own focus area. The decision was made to integrate renewable energy

goals and strategies into all focus areas rather than listing it separately. A similar discussion was had about how best to serve low-income homes. The group decided that targeting low-income homes should be integrated into the overall residential marketing plan with specific strategies to reach these households.

Focus Area 1: Residential Energy

Though the residential sector consumes just 28 percent of the community’s total energy use, it represents an important target to achieve broad engagement and support for energy conservation and emissions reduction goals. With historically low savings and participation rates in this sector (see previous section), there is significant opportunity to capture greater residential savings potential.

Winona has a mix of housing types. About two-thirds of Winona’s housing units are single-family homes, while the remaining third is a mix of both small and large multifamily buildings (Figure 22). Nearly 40 percent of housing units are renter-occupied, which creates a challenge for promoting energy efficiency improvements since tenants — rather than owners — often pay the electricity bills.

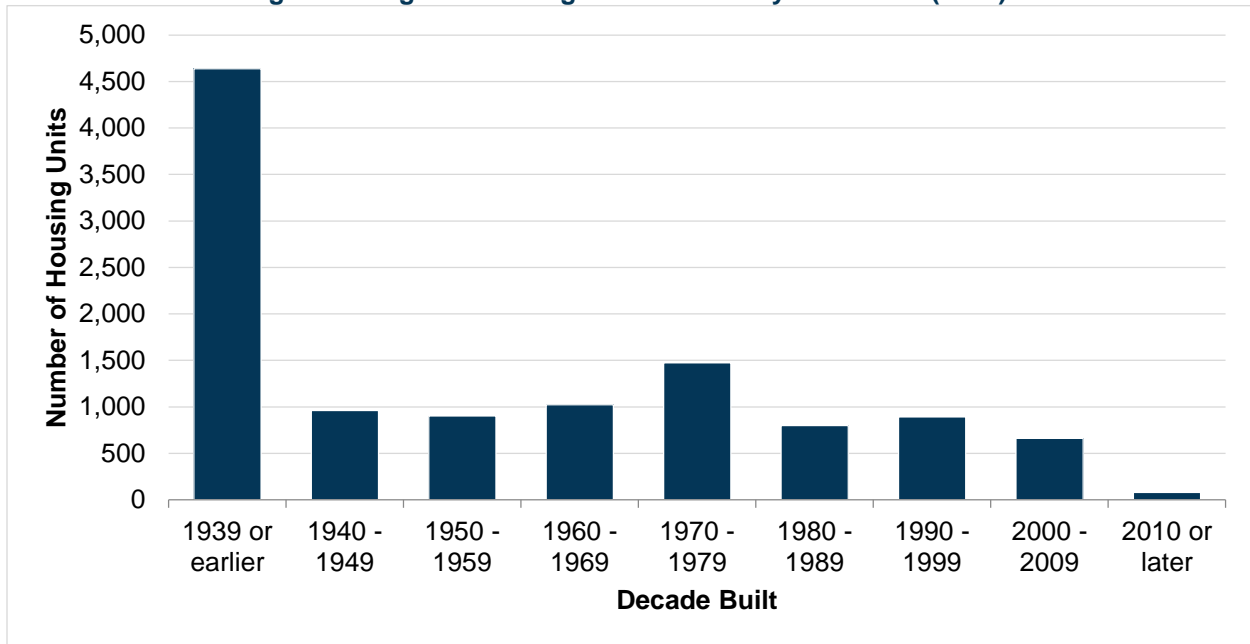
Figure 22: City of Winona Housing Units by Type (2015)⁸

Housing Units by Type	Housing Units	Percent
Total housing units	11,429	
Single family	7,381	64.6%
2-4 units	1,596	14%
5 to 19 units	1,120	9.8%
20 or more units	1,299	11.4%
Mobile home	33	0.3%

More than half of Winona’s housing stock was constructed prior to 1960 (Figure 23). In particular, single-family homes are older, with 62 percent built more than 50 years ago. Because building codes have gradually strengthened energy efficiency requirements over the past few decades, older homes are often less efficient and have more opportunities for energy conservation.

⁸ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city Housing Characteristics for Occupied Housing Units*.

Figure 23: Age of Housing Units in the City of Winona (2016)⁹



Targeting outreach to offer energy efficiency programs and services and reduce energy bills for Winona’s low-income population is a critical priority within the residential focus area. The median income in Winona is \$41,023, 33 percent lower than the state median.¹⁰ Nearly 40 percent of Winona households earn \$15,000 or less, and the vast majority (82 percent) of these households are renters.¹¹ An estimated 37 percent of households — approximately 3,800 households — have incomes at or below 50 percent of the state median income, which is the threshold for low-income program eligibility.¹² This represents a critical opportunity to connect Winona households to programs that will help reduce energy bills by improving efficiency.

Winona has historically seen relatively low average energy savings in the residential sector. This can be attributed, in part, to challenges in making certain residential programs available. Home Energy Squad[®] will be a recommended first step in energy efficiency improvements for Winona residents. With Home Energy Squad staff and equipment based in the Twin Cities, visit promotions must be grouped together and are not offered during winter months. Additionally, residents can only access Xcel Energy’s insulation rebates if the work was completed by approved contractors with Building Performance Institute (BPI) certification, and there are currently no certified contractors in the Winona area. This plan includes strategies to address both of these challenges,

⁹ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: Housing Characteristics for Occupied Housing Units*.

¹⁰ *Ibid.*

¹¹ Maxfield Research and Consulting. *Comprehensive Housing Needs Assessment: City of Winona Housing Study* (November 15, 2016).

¹² U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: Financial characteristics*.

including focusing HES outreach efforts during the spring and summer months and working to bring BPI certification classes to Winona.

In addition to program access, there exists a key opportunity to focus on energy efficiency in new construction. The City of Winona completed a housing study in 2016, which found a significant shortage in both affordable and market-rate housing in the community, as well as a shortage in both rental and for-sale units.¹³ The City formed a Housing Task Force to begin work on an action plan to meet housing needs. The work of this task force and the resulting housing construction will open up an important opportunity to integrate energy efficiency into new housing construction through a variety of strategies outlined below.

Initially, the residential sector work will focus on promoting Home Energy Squad and Windsorce, with the hope that these first steps will drive additional action. Home Energy Squad Enhanced visits include an energy audit with a suite of recommendations for achieving additional energy savings, along with follow-up assistance to help with next steps. Additionally, since natural gas accounts for two-thirds of residential energy use, energy conservation efforts will focus on those programs and opportunities that achieve greater natural gas savings, such as insulation, heating system, and water heater rebates.

Residential Energy Goals

To reduce residential energy use and increase investment in renewables, Winona will:

Double annual participation in conservation programs

Double the average number of renewable subscribers and double the average monthly subscription amount within one year

The following table outlines a series of strategies and actions that will help Winona work toward achieving these goals.

Residential Energy Strategies

Strategy 1: Develop a residential marketing campaign.
<p>Actions:</p> <ul style="list-style-type: none">• Increase participation in conservation and renewable subscription programs through a broad outreach and marketing campaign targeting all homeowners.• Promote use of My Energy, an online tool accessible through Xcel Energy online accounts to track and compare energy use.• Develop information materials that compare the various renewable energy options available to residents.• Engage elementary school students in energy conservation through the use of

¹³ Maxfield Research & Consulting. *Comprehensive Housing Needs Assessment: City of Winona, Minnesota* (November 15, 2016).

Xcel Energy education kits in fifth and sixth classrooms, designating October as Energy Action Month.

- Encourage employers to buy down the cost of Home Energy Squad visits as an employee benefit.
- Publicly recognize homes that have taken action through methods such as yard signs or mailbox stickers.
- Identify and partner with congregations to promote energy efficiency after services, such as at church coffee hours.

Strategy 2: Target low-income homes and those just above the low-income eligibility threshold.

Actions:

- Identify additional funding to buy down the cost of Home Energy Squad visits for those just above the low-income threshold who would not qualify for free or reduced-rate weatherization and home audits.
- Partner with Semcac, County Veteran Services, and County Health and Human Services to promote low-income Home Energy Squad visits.
- Work with Winona’s Housing and Redevelopment Authority (HRA) to target all low-income multifamily building complexes for energy efficiency upgrades.
- Partner with Winona organizations that serve low- and fixed-income residents to share information about energy efficiency programs.

Strategy 3: Target blue-collar workers through workplace-based outreach.

- Host off-shift presentations at workplaces to discuss Home Energy Squad and other residential efficiency opportunities.
- Identify one employer to host a pilot workplace-based campaign in the first year of implementation.
 - Engage the CEO/company president to promote energy efficiency as a company benefit.
 - Offer a free Home Energy Squad visit to one person who is willing to serve as a spokesperson.
 - Host a brief lunch and learn where they share their experience and the benefits of participating
- Encourage employers to buy down the cost of a Home Energy Squad visit for employees.

Strategy 4: Improve energy efficiency in residential new construction and renovation.

Actions:

- Ensure energy efficiency and renewable energy are integrated into Winona's Workforce Housing Initiative.
- Research, identify, and pursue the best policy and enforcement options for ensuring that all new construction and renovation meets or exceeds energy code.
- Host a workshop for local builders, the Housing Task Force, permit/building inspection staff, architects, and design engineers about available rebates and incentives for efficient new home construction and renovation.
- Provide training to code enforcement officials, architects, and design engineers to ensure compliance with energy efficiency building code requirements.

Strategy 5: Address barriers to participation by providing Building Performance Institute (BPI) certification training to local contractors.**Actions:**

- Identify local insulation and home renovation contractors interested in adding energy efficiency to their services.
- Address the lack of certified auditors/contractors eligible to access Xcel Energy rebates and incentives for customers by providing subsidized BPI certification training.

As part of an initial discussion around marketing campaign design, the Energy Action Team identified a list of target groups on which to focus outreach efforts and key outreach tactics through which to communicate energy opportunities (Figure 24). When developing campaign messaging and outreach tactics, it is important to know the audience. In this case that means knowing what kind of housing they live in, what they value and worry about, and how they interact with energy. As a first step in implementation of this plan, a subcommittee will take a deeper dive into prioritizing targets and tactics, developing effective messaging, and mapping out actions and timelines for campaign launch.

Figure 24: List of target groups and key communication tactics for residential outreach

Winona City and County Residential Marketing Targets and Tactics	
Key Target Groups	
<ul style="list-style-type: none"> • Seniors • Blue collar and skilled trades workers • Faculty • Managers and CEOs • Small business owners • Families with children 	
Key Communication Tactics	
<ul style="list-style-type: none"> • Community workshops/seminars • Outreach at community events • Case studies/articles in local newspapers and newsletters • Social media outreach • Billboards • University communication channels • Video testimonials • Posters/print advertising to post at the Friendship Center, library, and storefronts of businesses 	

Measuring Success

Success in this focus area will be measured in the following ways:

- Number of households participating in conservation and renewable subscription programs.
- Average renewable subscription amount.
- Number of low-income households and those just above the low-income threshold participating in conservation programs.
- Number of participants in Energy Efficient New Home Construction
- Number of contractors that receive BPI certification

Additional Partners

The following additional partners can play an important role in assisting with residential strategies:

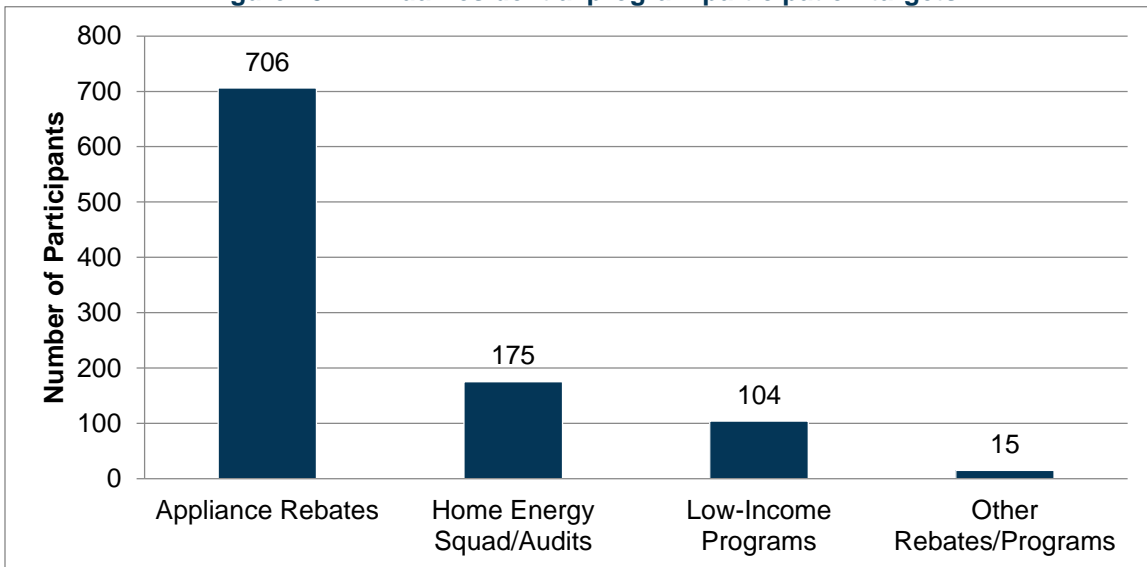
- Partners in household outreach:
 - Habitat for Humanity
 - Salvation Army
 - Restored Blessings
 - Meals on Wheels
 - Winona Catholic Worker Transitional Housing
 - Interfaith Council

- Elder Network
- Winona Health
- Interfaith Council and Interfaith Power and Light to assist with outreach to congregations
- School district to implement energy education kits
- CERTs to co-host workshops for builders and Housing Task Force

Impact

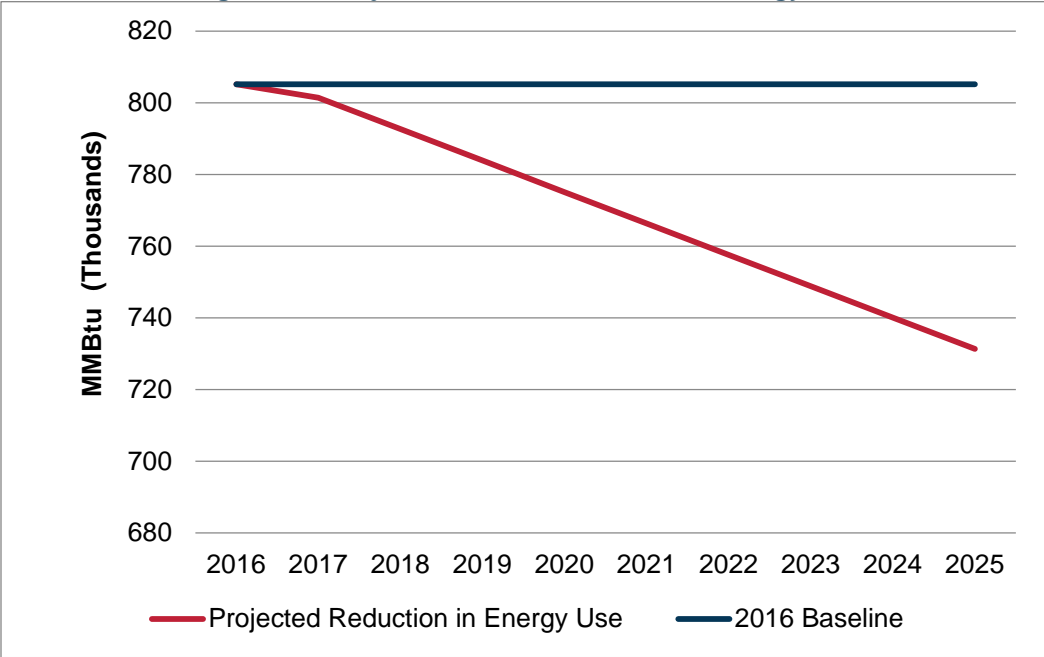
Achieving the goals outlined here will generate important impacts on both community engagement and energy use. Doubling conservation and renewable program participation will result in 1,000 homes taking action in the first year, a nine percent participation rate. As a result, residential energy use will decrease by nine percent by 2025, saving 472,000 kWh and 71,500 therms in the first year of implementation. In addition to reducing energy use, achieving these goals will improve the quality of life for Winona residents by improving the health and comfort of their homes and lowering their energy bills. In achieving the conservation program goal, participating homes will save an average of \$102 annually on their energy bills.

Figure 25: Annual residential program participation targets



Doubling participation in renewable energy programs equates to 724 total subscribers, with an average monthly subscription amount of 400 kWh. This will result in five percent of residential energy use being covered by renewables in the first year of implementation. In the long term, maintaining this subscription level while achieving energy conservation targets will result in an estimated nine percent reduction in residential energy-related carbon emissions below a 2016 baseline by 2025.

Figure 26: Projected trends in residential energy use



Focus Area 2: Institutions

The institutions category represents about 372 premises and about 22 percent of total community energy use. It includes schools and universities, City and County buildings, hospitals and nursing care facilities, nonprofits and community organizations, and churches. Though institutions only represent a third of overall commercial energy use, they represent a third of historic conservation program participation and two-thirds of historic average energy savings. As described above, Winona institutions have also taken substantial steps to support renewable energy generation and have demonstrated a strong commitment to renewables in the future.

Energy conservation action and renewable energy investment by both the City and County are critically important. Demonstrating leadership will help motivate other businesses and individuals in the community to take action and will provide a platform for showing that both energy and cost savings can be achieved. Sustain Winona will continue to play a key role in promoting energy conservation and renewable energy among institutions. The group has already inspires members to invest in both energy efficiency and renewables, and it will strengthen its role in holding members accountable for the commitments outlined below.

Institutions Goals

To reduce institution energy use and increase investment in renewables, Winona will:

Reduce institutional energy use by 15 percent below a 2016 baseline by 2025.

Engage Winona institutions to support renewable energy development equal to 10 percent of their energy use by 2030.

The following table outlines a series of strategies and actions that will help Winona achieve these goals.

Institutions Strategies

Strategy 1: Engage major institutions in energy conservation.
Actions: <ul style="list-style-type: none">• Host a workshop aimed at facility managers and financial decision makers of institutions summarizing energy efficiency opportunities, with information on savings potential and estimated payback.• Create an info sheet about performance contracting, explaining how it works and some key tips around decision making.
Strategy 2: Reduce energy use in City and County buildings.
Actions: <ul style="list-style-type: none">• Identify best options for conservation at City and County buildings.• Develop an implementation plan with budget request and present to County

<p>Board and City Council for approval</p> <ul style="list-style-type: none"> • Support energy benchmarking of City and County buildings through a B3 “data jam,” where facilities staff meet up and are joined by technical experts to input data together.
<p>Strategy 3: Provide detailed information about financing options for energy projects.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Research and summarize financing options for energy projects specifically available to institutions and nonprofits. • Host a workshop targeting large energy users to discuss financing options and provide case studies of example projects.
<p>Strategy 4: Show leadership by increasing use of renewable energy by institutions.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Host a workshop to provide information about available renewable energy options and financing, including peer sharing from other institutions that have already committed to renewables. • Ensure investment by the City of Winona and other institutions in renewable energy, including installing on-site solar.

Measuring Success

Success in this focus area will be measured in the following ways:

- Number of institutional customers participating in conservation programs.
- Proportion of institutional energy covered by renewables.

Additional Partners

The following additional partners can play an important role in helping to implement the institution strategies:

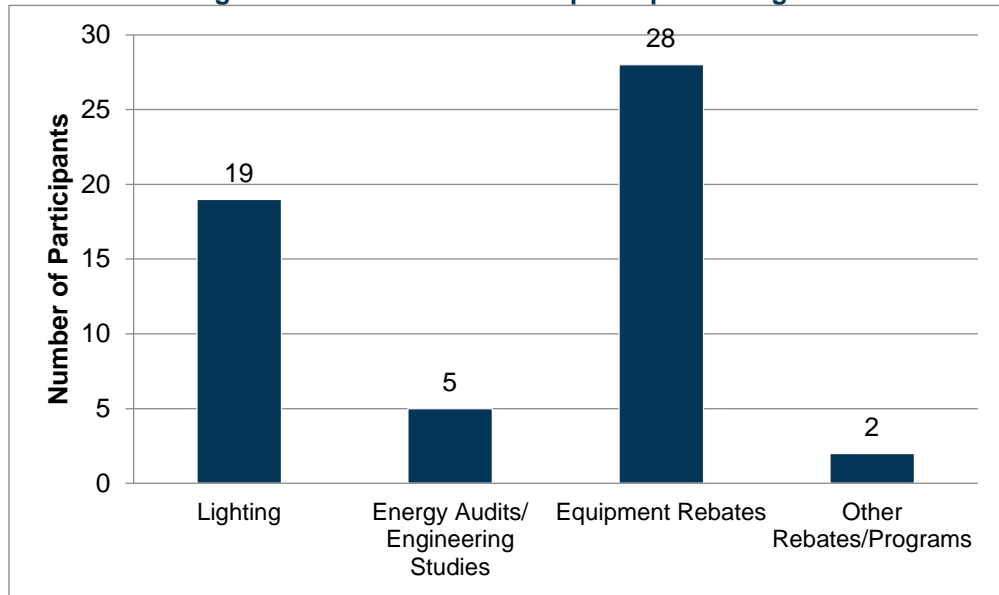
- Sustain Winona to add institutions goals and a strategies check-in as regular agenda items.
- Interfaith Power and Light to present to congregations about renewable energy project implementation process and support follow-through.
- Clean Energy Resource Teams (CERTs) to co-host renewable energy workshop.
- MiEnergy Cooperative to assist with energy conservation workshop.

Impact

Achieving the goals outlined here will build on existing momentum in the institutions sector and will help engage additional partners in support of this Energy Action Plan. Achieving a 15 percent energy use reduction by 2025 will require institutions to

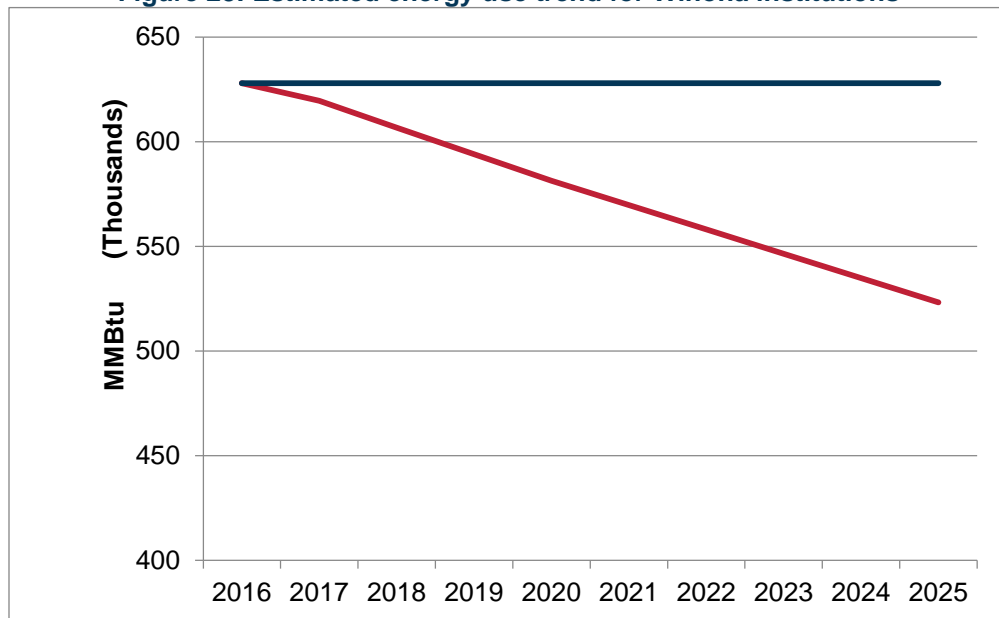
collectively take at least 54 energy saving actions each year, with a primary focus on lighting and HVAC system upgrades.

Figure 27: Institutions annual participation targets



Stepping up the pace of action in the first year will set a strong precedent and help the sector achieve its 15 percent energy savings goal. Hitting the targets laid out in this plan will result in estimated savings of 1.8 million kWh and 66,000 therms in the first year of implementation.

Figure 28: Estimated energy use trend for Winona institutions



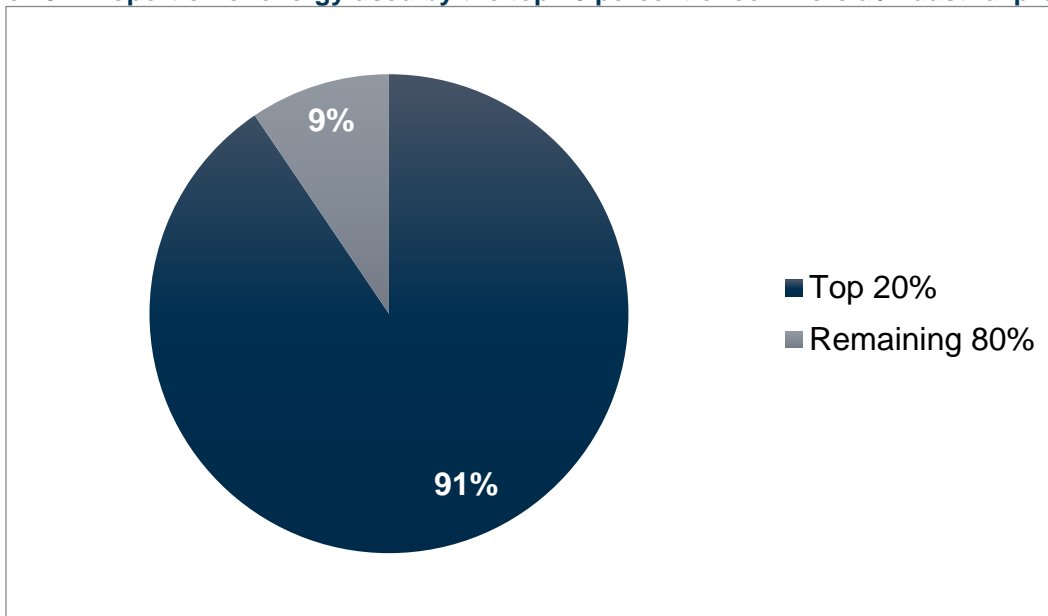
Investing in renewable energy is also a critical piece of demonstrating institutional leadership. Achieving 10 percent renewable generation by 2030 will require investments

in 4.6 million kWh of production capacity over the next decade. And if the chosen renewable investment options allow institutions to keep the Renewable Energy Credits, or RECs, the resulting reductions in greenhouse gas emissions can be counted toward the community's carbon neutrality goal.

Focus Area 3: Large Commercial/Industrial Energy Users

The large commercial/industrial category represents the top 20 percent of commercial energy users, or about 293 premises that consume almost half of the community’s total energy use. Looking specifically at the commercial sector, when all commercial premises are divided into quintiles, the top 20 percent of users consume 91 percent of the energy for that sector (Figure 29).

Figure 29: Proportion of energy used by the top 20 percent of commercial/industrial premises



Because these premises are the largest energy users, this category has by far the greatest potential for energy conservation. Many large commercial/industrial energy users have already taken significant steps toward reducing energy use. Of the premises in this category, 35 percent have participated in at least one of Xcel Energy’s conservation programs in the past three years, and 15 percent have participated in multiple programs. That said, there still remain many businesses that can and should take the first step toward reducing energy use, as well as many others that can do more.

The goals and strategies outlined here will achieve energy use reductions while also building lasting relationships between the City and business leaders in the community. One of the primary strategies for this focus area is the creation of a Mayor’s Green Ribbon Commission, which will be an opportunity for business leaders to actively engage in reaching the goals laid out here, with recognition and support from the City’s highest elected official. The goal of the commission is to inspire action among members and motivate other businesses in the community to do their part.

Large Commercial/Industrial Goals

To reduce large commercial/industrial energy use and increase investment in renewables, Winona will:

Engage 90 percent of large commercial/industrial customers to participate in at least one conservation program within three years.

Ensure at least three large commercial/industrial customers commit to adding on-site renewable energy generation within three years.

The following table outlines a series of strategies and actions that will help Winona work toward achieving these goals.

Large Commercial/Industrial Strategies

Strategy 1: Create a Mayor's Green Ribbon Commission.

Actions:

- Identify CEOs/company presidents who are leaders in energy efficiency and renewables and invite them to serve as commission members to elevate importance of issue, serve as role models, and develop effective strategies for business engagement.
- Convene semi-annual commission meetings that are hosted by the Mayor to discuss actions, opportunities, and barriers.
- Publish newspaper editorials at least once a year to highlight energy actions and opportunities.
- Host regular roundtable luncheons for large commercial/industrial businesses to share ideas, answer questions, and create recognition for businesses taking action.
- Host an annual recognition event to highlight businesses that show leadership in energy conservation.

Strategy 2: Employ targeted one-on-one outreach and engagement of large commercial/industrial customers.

Actions:

- Conduct a phone survey to gauge interest in energy conservation and identify the right person to work with on energy action.
- Identify outreach volunteers and provide training on available Xcel Energy programs.
- Conduct outreach with at least two large energy users per month through trusted messengers to encourage energy conservation, with the goal of building personal relationships with energy managers/decision makers at each company.
- Provide relevant and customized information about energy saving opportunities, including case studies of successful projects and return-on-investment calculations.

Strategy 3: Provide detailed information about financing options for energy projects, including PACE financing.

Actions:

- Create informational resources summarizing financing options, including local banks, PACE, and others.
- Distribute information about financing for energy projects at the City permit desk.
- Host a workshop targeting large energy users to discuss financing options and provide case studies of resulting energy savings.

Strategy 4: Increase use of renewable energy by large commercial/industrial customers

Actions:

- Develop and distribute informational resources highlighting available renewable energy options for businesses.
- Develop case studies of successful renewable energy projects on large commercial/industrial buildings.
- Identify at least three large commercial/industrial customers interested in installing on-site renewable energy generation and provide necessary information to move the project forward.

Measuring Success

Success in this focus area will be measured in the following ways:

- Number of large commercial customers participating in conservation programs.
- Establishment and active membership of the Green Ribbon Commission.
- Proportion of large commercial/industrial energy powered by renewable energy.

Additional Partners

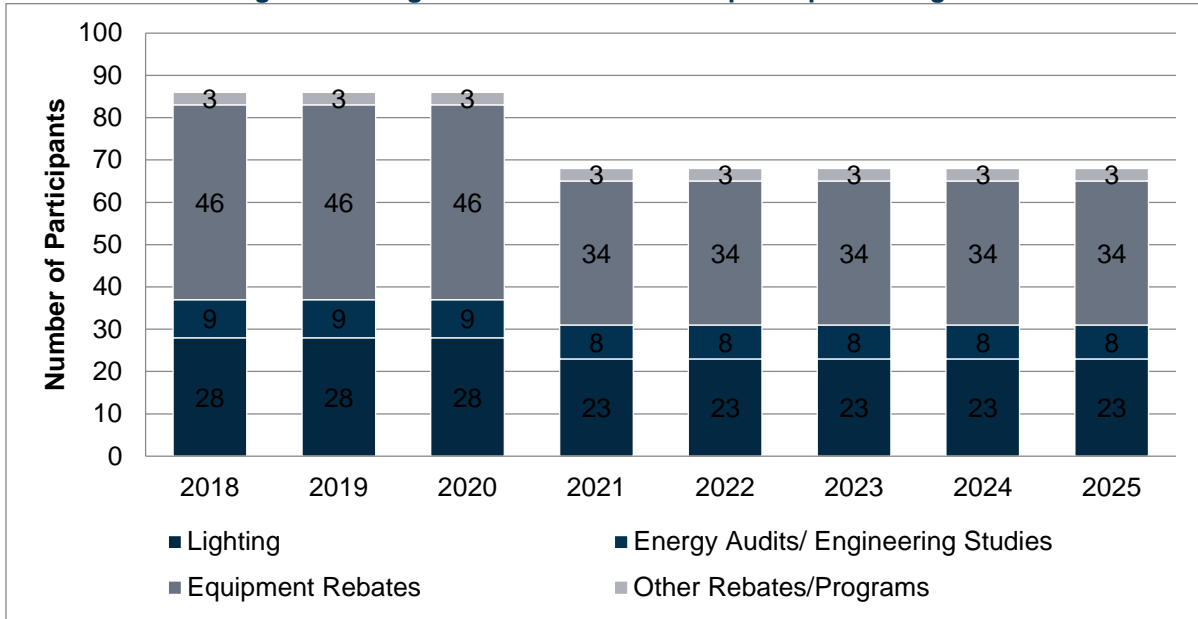
The following additional partners can play an important role in assisting with implementation of large commercial/industrial strategies:

- Chamber of Commerce to integrate energy into existing events targeting a similar audience.
- Local banks to participate in financing workshop.
- Minnesota Technical Assistance Program (MnTAP) and Energy Intelligence to provide energy assessments and efficiency recommendations to manufacturers and industrial businesses.

Impact

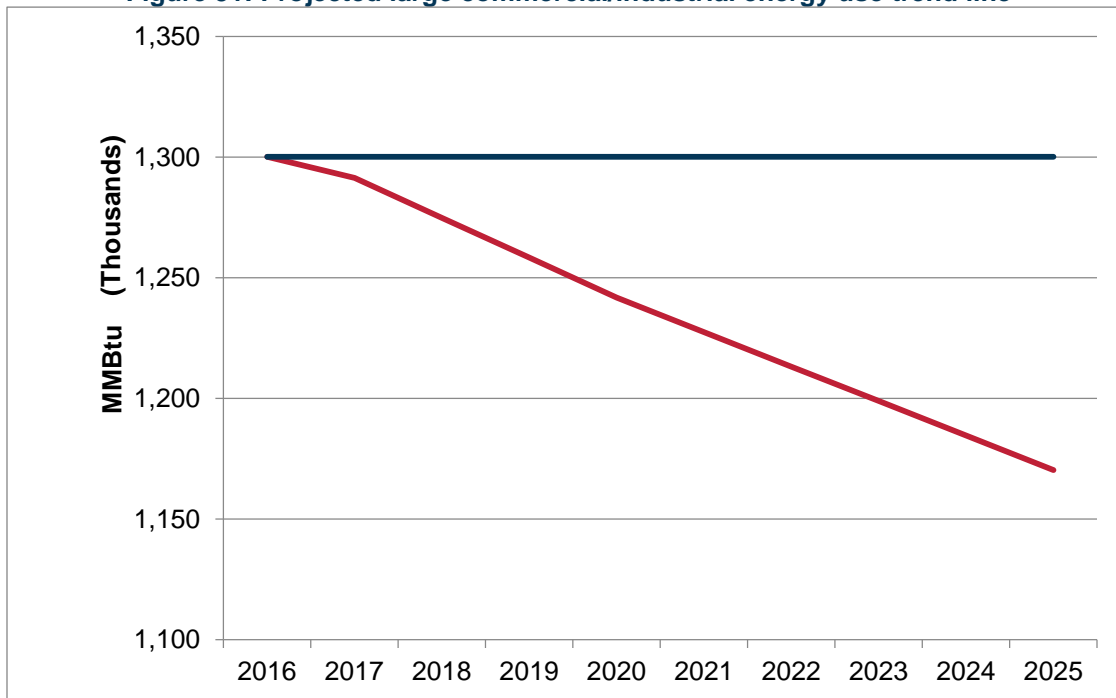
Achieving the energy conservation goal for this focus area will require large commercial/industrial energy users to collectively take at least 200 additional energy efficiency actions over the next three years. This will result in an estimated nine percent reduction in large commercial/industrial energy use by 2025.

Figure 30: Large commercial/industrial participation targets



Achieving the goals laid out in this plan will result in an estimated 15 percent reduction in energy use by 2025 and will save an estimated 2.5 million kWh and 78,000 therms in the first year of implementation.

Figure 31: Projected large commercial/industrial energy use trend line



Achieving the goal of three businesses committing to on-site renewable generation will elevate the role of businesses as sustainability leaders, with the potential for a substantial impact on Winona’s carbon neutral goal. The impact of renewable energy

generation for this focus area will not be included in the overall estimates of impact on greenhouse gas emissions outlined later in this plan. This is because it is difficult to predict the size of the renewable energy systems and whether the businesses will keep or sell the RECs. Any future investment in renewable generation made by businesses where they keep the RECs will, however, be counted toward achieving Winona's greenhouse gas emission reduction goals.

Focus Area 4: Small/Medium Size Businesses

The small and medium-size business category represents all remaining non-residential premises not included in the previous two categories — about 1,200 premises that represent five percent of total community energy use. This segment has been slower to engage in energy conservation, leaving significant opportunity to capture remaining energy savings potential. Focusing on small and medium-size businesses also aligns with other community goals around supporting local business development and revitalizing downtown.

Winona has seen very low penetration of energy efficiency programs into its small business community. Over the past three years, small businesses in Winona have participated in just 85 programs, a penetration rate of seven percent, and have saved an average of approximately 0.3 percent of energy used by premises in this category. The most popular program for Winona small businesses is Saver's Switch, which makes up about half of small business program participation. As mentioned above, Saver's Switch reduces electricity load on the grid during times of peak demand and allows businesses a way to earn credit on their electric bills. However, it does not translate into any substantive energy savings. There has also been relatively high participation of lighting programs among small- and medium-sized businesses, which achieved high levels of energy savings. Combined, lighting rebates were responsible for about 97 percent of small and medium-sized business kWh savings.

While the energy conservation potential is lower for small-and medium-sized businesses, the low historic participation rate means there is likely substantial low-hanging fruit that can be captured. And engaging small and medium-sized businesses also has other benefits, including achieving tangible cost savings and creating another venue through which they can contribute to and support their community.

Implementing the strategies outlined here will require door-to-door, individualized outreach to local business owners, with follow-up and support around accessing programs and rebates. The Winona Chamber of Commerce has the potential to be a key partner in this effort, by offering energy efficiency and the resulting energy cost savings as a service and benefit to its members.

Small and Medium-Size Business Goals

To reduce small and medium-size business energy use and increase investment in renewables, Winona will:

Engage at least 40 small/medium size businesses to participate in conservation programs annually.

Double annual energy use reductions among small/medium businesses.

Ensure at least one small business subscribes to or installs renewable energy generation annually.

The following table outlines a series of strategies and actions that will help Winona achieve these goals.

Small and Medium-Size Business Strategies

<p>Strategy 1: Launch a small- and medium-size business outreach campaign.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Gather information about business energy concerns by integrating energy-related questions onto the Grow Minnesota Business Retention Survey and/or through a Chamber of Commerce member survey. • Create a small to medium-sized business recognition program to highlight those who take energy action. • Publish a quarterly spotlight/case study in local newspapers and the Main Street Program e-newsletter highlighting businesses that have taken energy action. • Conduct door-to-door outreach with small to medium-sized businesses, and provide individual follow-up to those businesses interested in taking action. <ul style="list-style-type: none"> ○ Create a university student internship to assist with business outreach. ○ Look into providing walk-throughs through Xcel Energy’s Turn Key Services with a promotional discount for follow-through. • Host annual community business meetings with presentations about energy opportunities and peer sharing. • Send a co-branded email through Xcel Energy to small and medium-size business customers highlighting energy conservation opportunities.
<p>Strategy 2: Create information resources targeting small- and medium-size businesses.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Create a toolkit for business energy efficiency highlighting energy conservation and renewable energy options, with information on cost and return on investment.
<p>Strategy 3: Engage electrical, HVAC, and other contractors that serve the business community in promoting energy efficiency.</p>
<p>Actions:</p> <ul style="list-style-type: none"> • Host a contractor workshop to provide information about available Xcel Energy conservation programs, rebates, and trade ally benefits to those who promote them. • Incorporate information about how to elevate energy efficiency beyond building code requirements.

Measuring Success

Success in this focus area will be measured in the following ways:

- Number of businesses participating in conservation programs.
- Number of attendees at business meetings and contractor workshops.

Additional Partners

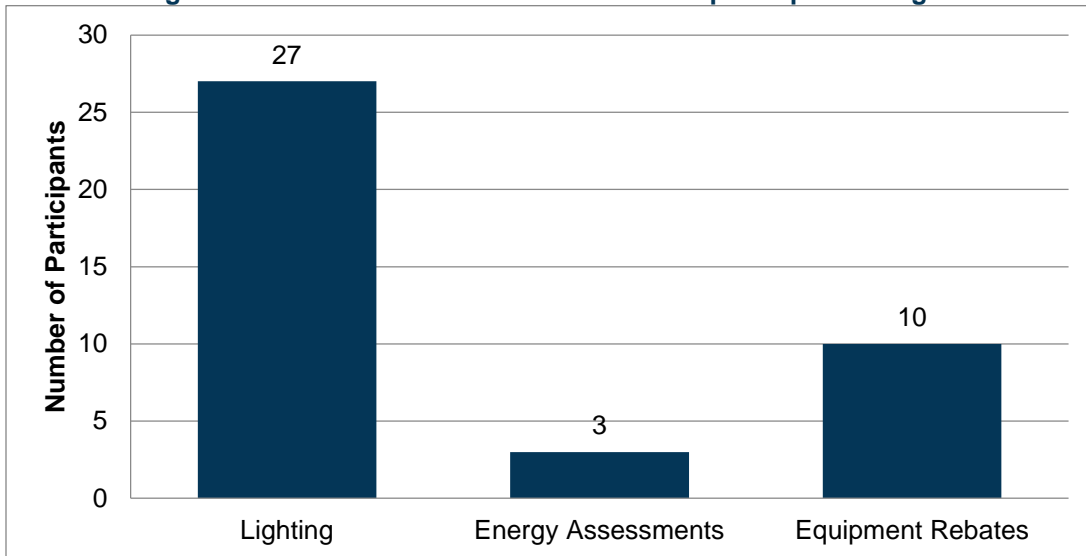
The Energy Action Team suggested the following additional partners to assist in implementing small and medium-size business strategies:

- The Chamber of Commerce and Main Street Program to play an important role in engaging small and medium-size businesses, including:
 - Conducting the annual Grow Minnesota Business Retention Survey
 - Promoting energy efficiency and renewable energy options to members
 - Sharing case studies of businesses who have taken energy action through website and social media
 - Co-hosting an annual business meeting with the City
 - Assisting in creating and distributing a business efficiency tool kit
 - Assisting in identifying and reaching out to contractors serving the business community
 - Recognizing and highlighting the achievements of businesses making strides in improving the energy consumption at the Business Celebration Month in May
- The Minnesota Chamber of Commerce EnergySmart program to assist in providing initial energy assessments
- CERTs to partner on door-to-door business outreach

Impact

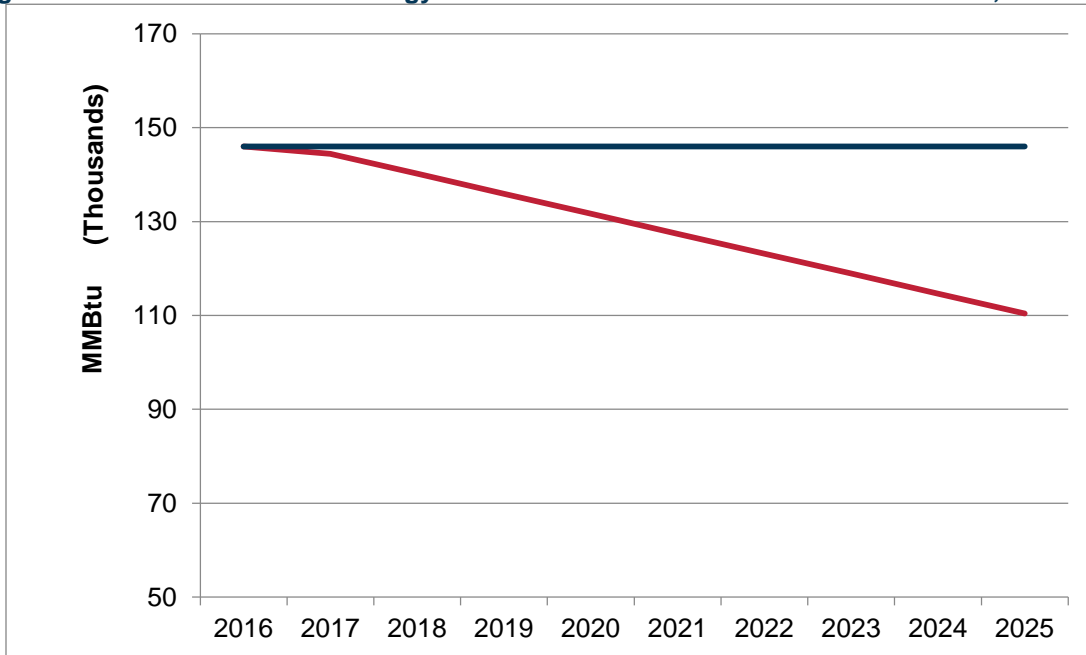
Engaging small and medium-size businesses in energy conservation achieves two important goals. First, it can help save an estimated \$960 per year in energy costs for participating businesses, depending on actions taken. Second, the outreach required to engage small and medium-size businesses will help build and reinforce relationships between business owners and the City. This will result in a deeper and stronger connection with the business community and the City, which is good for the long-term health of Winona's economy.

Figure 32: Small- and medium-size business participation targets



In order to achieve the goals outlined here, an additional 30 small and medium-size businesses need to take energy conservation action each year, with a primary focus on lighting upgrades and energy assessments through Xcel Energy’s Turn Key Services to identify additional energy saving options. Reaching these goals will result in an estimated 23 percent reduction in small and medium-size business energy use by 2025 and a savings of 892,000 kWh and 12,000 therms in the first year of implementation.

Figure 33: Estimated trend in energy use for small- and medium-size businesses, 2016-2025



Installing or subscribing to renewable energy represents an important contribution to Winona’s carbon neutral goal. If one additional business per year subscribes to an average of 8,000 kWh annually through Windsorce®, 1.5 percent of small and medium-

size business electricity use will be covered by renewables by 2025. Combined with reductions from improving energy efficiency, this will result in a 29 percent reduction in small and medium-size business carbon emissions below a 2016 baseline by 2025.

Combined Impact of Energy Action Plan

The combined goals and strategies outlined here will have a significant impact on decreasing energy use and reducing Winona's carbon footprint. Overall, achieving the goals laid out in this plan will result in an estimated 12 percent reduction in energy use below 2016 baseline by 2025 (Figure 34). This represents an incremental increase in savings of 14.2 million kWh and 683,000 therms (Figure 35). The Business-As-Usual scenario represents a presumed slight increase in energy demand based on residential population growth of about 0.5 percent per year. It is assumed that commercial energy demand will stay relatively flat in future years.

Figure 34: Cumulative impact of Energy Action Plan compared to historic average energy savings

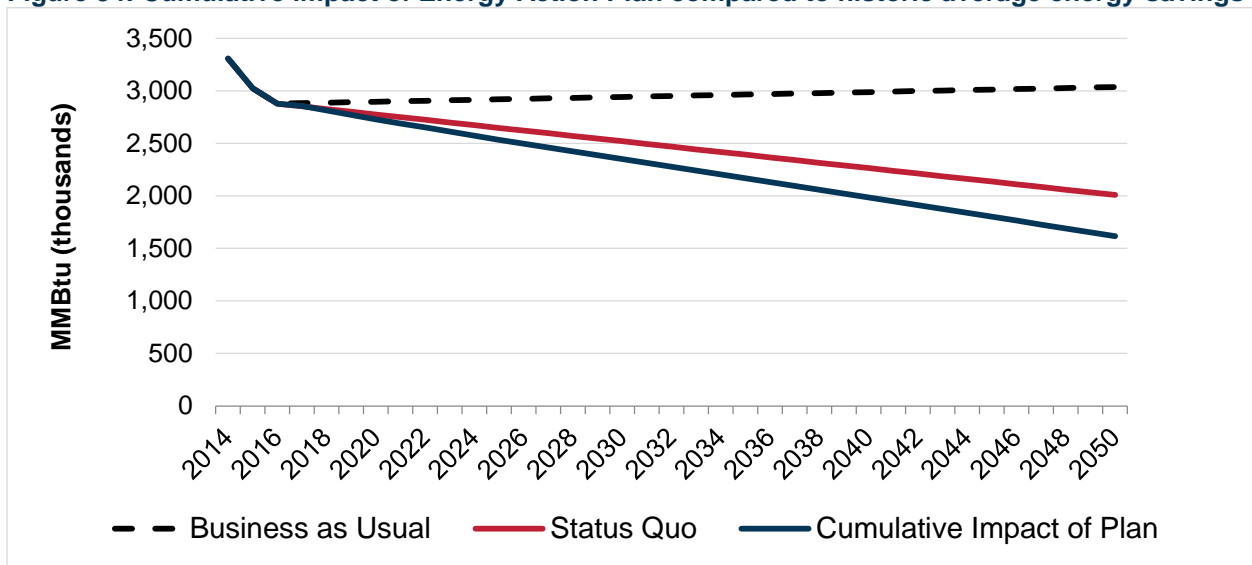


Figure 35: Projected incremental kWh and therm savings

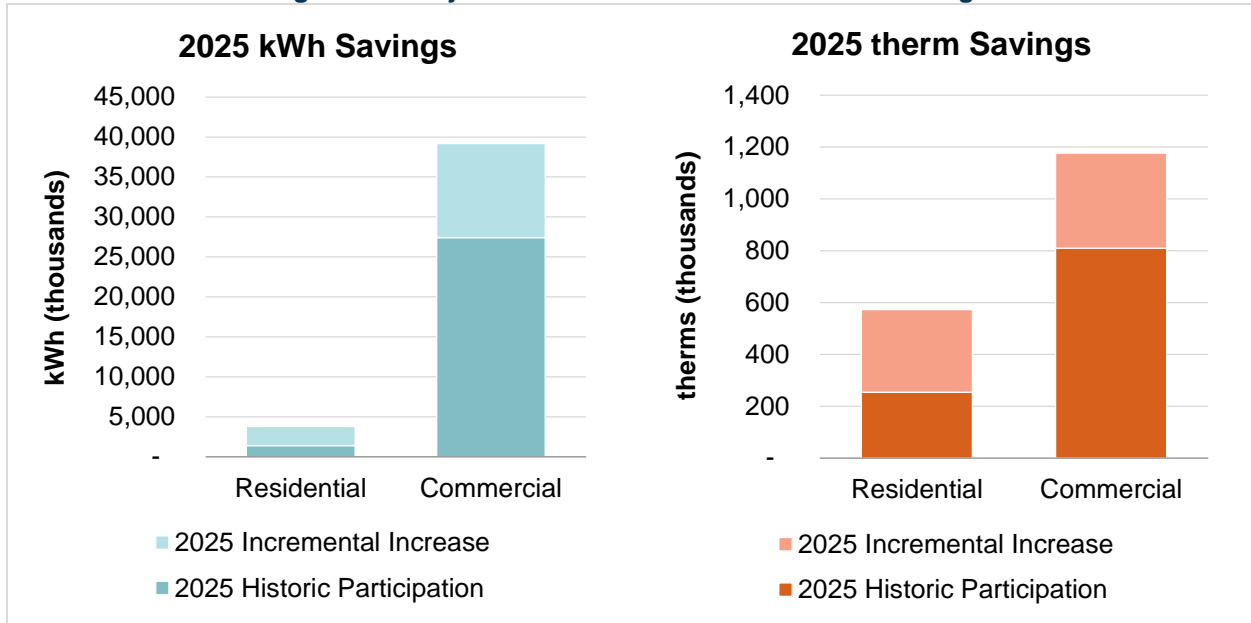


Figure 36 shows the estimated combined impact of each focus area on energy savings. Actions taken by the large commercial and industrial sector will have the greatest long-term impact, though ongoing energy conservation by institutions and the residential sector also make important contributions over time.

Figure 36: Combined impact of focus areas on energy savings, 2014-2050

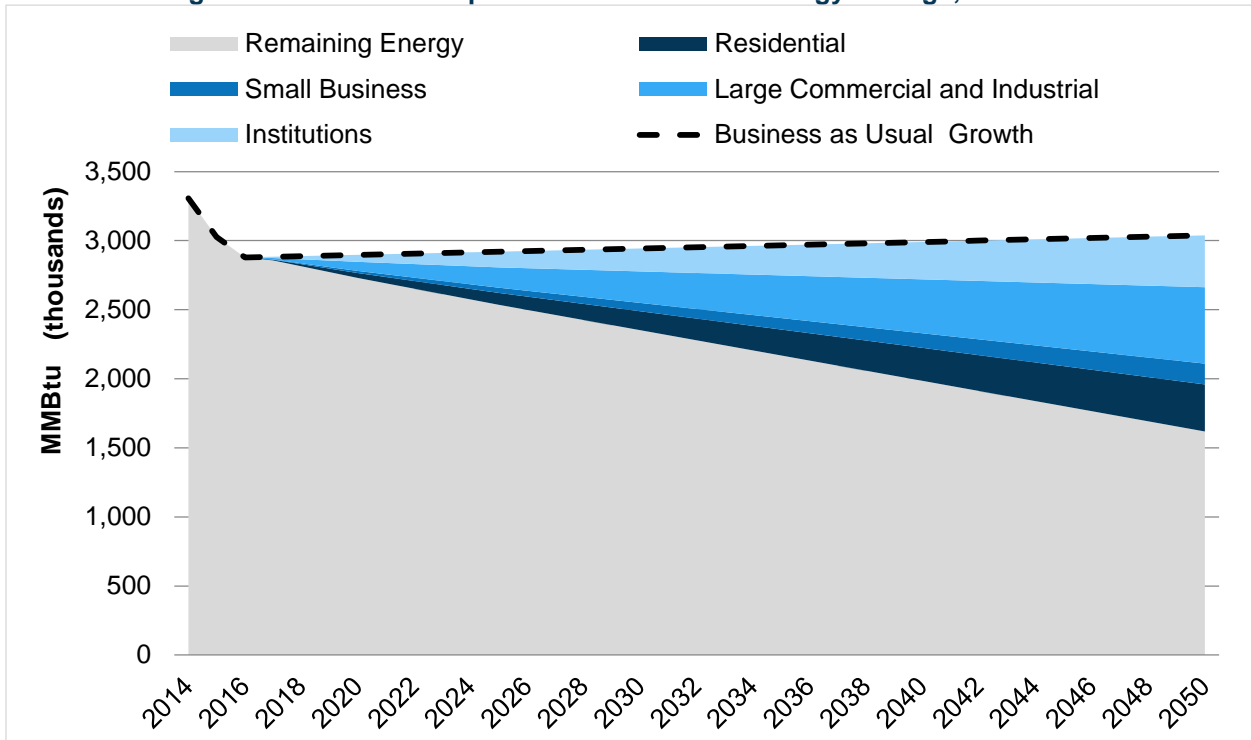
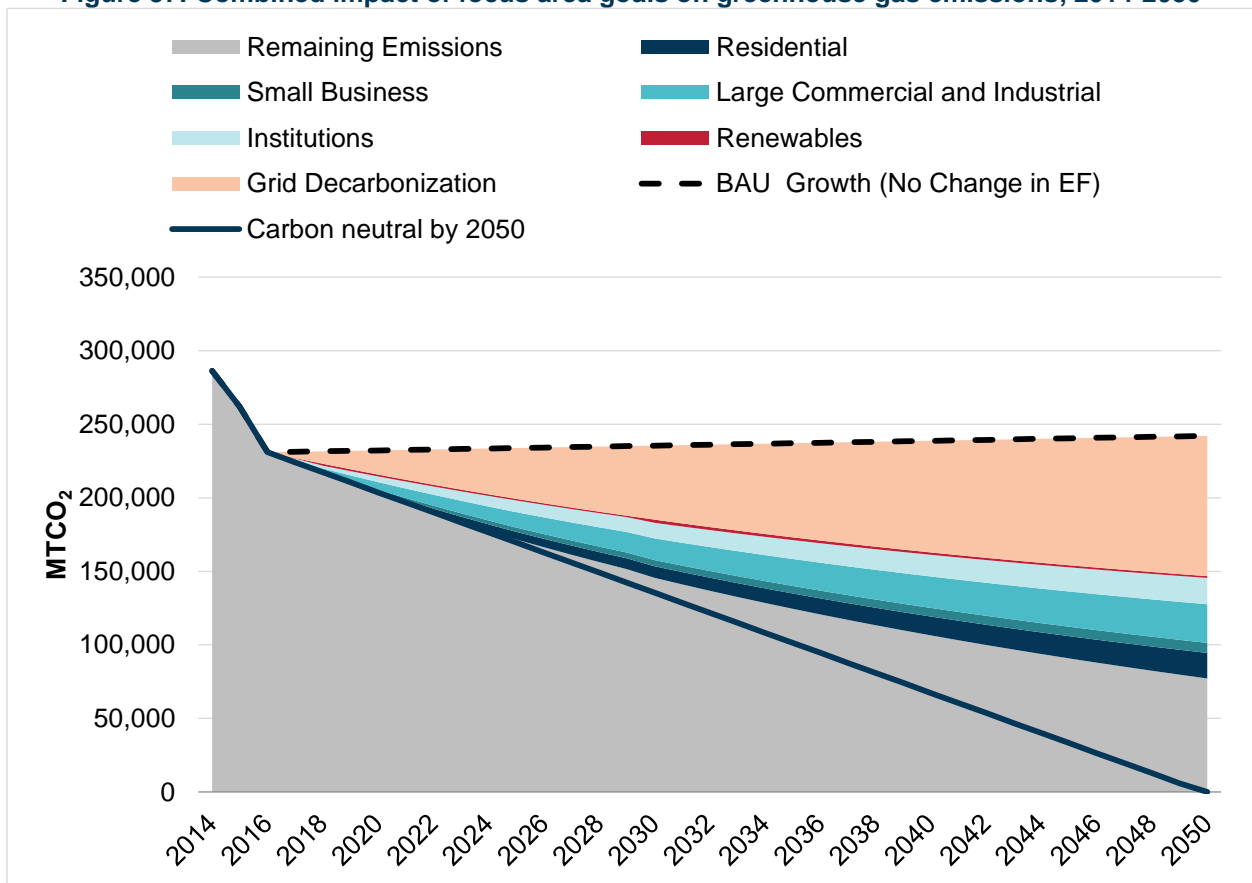


Figure 37 shows the combined impact of energy conservation and achieving the renewable energy goals on greenhouse gas emissions. Overall, achieving the goals laid out in this plan will result in a 34 percent reduction in energy related greenhouse gas emissions below a 2016 baseline by 2050. Combined with emissions reduction from the decarbonization of the electricity grid, the total impact will get Winona 72 percent of the way toward the energy-related component of its carbon neutral goal. Winona will need to pursue additional energy use reduction and renewable generation options to achieve the remaining emissions reductions goal, with a priority on adopting new, carbon-free technologies.

Figure 37: Combined impact of focus area goals on greenhouse gas emissions, 2014-2050



Implementation

Following approval of this plan, Winona will begin the process of implementation. The Partners in Energy team will work with Winona for the first 18 months, providing marketing, project management, technical, and data tracking support. Both the City of Winona and the Energy Action Team also have important roles in carrying forward this plan's goals and strategies. Figure 38 outlines the roles and responsibilities in supporting the first 18 months of implementation. In addition to committing its own staff resources and the volunteer resources of the Energy Action Team, the City plans to host a launch event in the fall 2017 to build momentum and recruit community volunteers to support plan implementation.

Figure 38: Implementation roles and responsibilities

Implementation Roles and Responsibilities
City of Winona <i>Serves as overall lead on implementation</i>
Residential Energy Use: <ul style="list-style-type: none">• Lead citywide marketing campaign.• Co-host with CERTs workshops for builders and the Housing Task Force.• Host training workshop for building permit/inspection staff and code enforcement officials.• Identify builders interested in BPI certification and coordinate planning and logistics of BPI training.• Promote energy efficiency programs through the Housing Redevelopment Authority.• Seek out additional funding to buy down the cost of Home Energy Squad visits.• Conduct outreach to local congregations.• Build partnerships with local organizations serving low-income residents.• Coordinate rollout of energy education kits with school district.
Business/Institutions Energy Use: <ul style="list-style-type: none">• Co-host with the Chamber of Commerce a business kickoff event.• Lead business outreach and engagement efforts, including hosting annual business meeting and providing follow-up.• Convene and support the Mayor's Green Ribbon Commission.• Conduct phone survey of businesses.• Identify residential and business case study candidates.• Sponsor business recognition program and host annual business recognition event.• Host business and institutions energy financing workshop.• Support businesses interested in renewable energy by connecting them with information and project implementation resources.• Co-host with the County workshops on energy efficiency and renewable energy for institution facility managers, and provide follow-up to workshop attendees.• Host contractor training workshop.
Municipal Energy Use: <ul style="list-style-type: none">• Reduce energy use in City-owned buildings.• Continue to pursue renewable energy options for City buildings.• Continue energy benchmarking and analysis of energy saving opportunities.• Host benchmarking "data jam."• Engage City building inspectors in sharing energy information.

Energy Action Team

- Identify employers willing to host workplace-based campaign and assist in outreach to workers.
- Assist with outreach to residents, local organizations, businesses, and congregations.
- Create and lead a business outreach subcommittee and recruit additional business outreach volunteers.
- Support roundtable luncheons, business workshops, and annual business meeting, including recruiting attendees.
- Support annual business recognition event.
- Identify businesses interested in renewable energy.
- Assist with door-to-door business outreach.
- Assist with outreach to contractors.

Xcel Energy Support

- Assist in designing community-wide marketing campaign.
- Support BPI certification for local Winona contractors.
- Assist in coordinating rollout of energy education kits.
- Present information about business and residential programs at meetings and workshops, as available.
- Draft case studies and other targeted resources for residents, businesses, and institutions.
- Assist in designing workplace-based campaign.
- Engage the Key Account Manager in supporting business outreach by presenting at meeting of large commercial/industrial customers.
- Develop phone survey questions.
- Train community outreach volunteers on available Xcel Energy conservation programs.
- Develop informational resources about renewable energy options.
- Provide brief initial consultations with technical experts on energy efficiency and renewable energy programs and projects, as available.
- Develop a one-page information sheet about performance contracting.
- Provide technical assistance with energy benchmarking at “data jam.”
- Share information about trade ally with interested contractors.
- Assist in designing business recognition program.
- Develop business efficiency tool kit.
- Look in to providing Turn Key Services walk-throughs and promotional discount.

At the end of the planning process, the Energy Action Team completed an analysis of strengths, weaknesses, opportunities, and threats to help identify potential barriers to success. One real weakness is the limited volunteer resources available to help

implement the plan. Another is the challenges related to “selling” the idea of efficiency. The Energy Action Team sought to address these weaknesses in a number of ways. As stated above, the launch event is a key opportunity to recruit additional volunteers for implementation. Going forward, barriers to action and how to overcome them will be an ongoing conversation and an important piece of designing messaging that resonates with community members.

SWOT Analysis	
<i>The Energy Action Team was asked to assess the strengths, weaknesses, opportunities, and threats related to implementing this Energy Action Plan</i>	
<p>Strengths</p> <ul style="list-style-type: none"> • City and County engagement • Solid metrics • Strong talking points • Team is knowledgeable about energy, able to speak to community • Number of events and venues where information can be disseminated • Engaged and connected community • Support from City leadership • Support for the goal of making Winona a desirable place to live • Low cost to the City 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Small Energy Action Team — need more volunteer support • Limited community participation in planning • Difficult to articulate the “why: • Hard to understand “What’s in it for me?” • Struggling with how to sell programs • Need to identify source for additional funding • Gap in time between planning and implementation — risk losing momentum • Have not yet identified barriers to action or what is needed to overcome them
<p>Opportunities</p> <ul style="list-style-type: none"> • Low baseline participation in energy efficiency programs • Help businesses and residents save money • Train the workforce locally in energy — keep money for local contractors • Engaged community — tap into volunteerism • Engaging community networks • Early wins are available — especially renewables • Frame plan around improving quality of life • Serve as a real success story • Local action in light of national/state politics 	<p>Threats</p> <ul style="list-style-type: none"> • Apathy • Lose momentum due to lack of early wins • Barriers to accessing BPI training/certification • Insufficient staff time/funding required for implementation • Unknown/uncertain political climate • Energy Action Team burnout • Delayed plan approval • Failure to achieve energy reductions

Operational Actions and Tracking

To monitor progress, the City and Energy Action Team will review bi-annual reports of identified metrics to assess progress toward achieving goals. At this time it will be determined whether a change in course is necessary. The Energy Action Team may decide to revise goals, update strategies, or add new strategies based on implementation progress as needed. Bi-annual reports will be posted on the City website and available for public review.

Conclusion

With this Energy Action Plan, Winona establishes itself as a regional leader in reducing energy use, expanding renewable energy generation, and shrinking its carbon footprint. In doing so, Winona residents and businesses will save money on energy costs, helping to improve the overall strength of the economy. With a bold goal of carbon neutrality, Winona will have to take aggressive steps to improve energy efficiency in both residential and commercial buildings. At the same time, Winona residents, businesses, and institutions will pursue all available renewable energy options and invest in those that are the most cost effective. Looking to the future, Winona will continue to engage in conversations around energy and seek out additional actions and technologies that will help achieve its carbon neutral goal. Pursuing these efforts will not only create opportunities for community engagement that build on Winona's strong volunteer base, it will also improve the overall quality of life for all community members.

Appendix 1: Planning Memorandum of Understanding



PARTNERS IN ENERGY
An Xcel Energy Community Collaboration

Memorandum of Understanding Phase 1 – Plan Development

Mr. John Howard
Natural Resource Sustainability Coordinator
City of Winona

Congratulations on being selected to participate in Xcel Energy's Partners in Energy program. This program is designed to provide your community with the tools and resources necessary to develop and implement an energy action plan that reflects the vision your community has for shaping energy use and supply in its future. Program participation is intended to span 24 months with the initial 4-6 months dedicated to developing of a strategic energy action plan and the remaining time focused on the implementing that plan.

The intent of this Memorandum of Understanding is to confirm the City of Winona's intent to participate in the initial plan development phase of the Partners in Energy program and outline the commitment that your community and Xcel Energy are making to this collaborative initiative. The primary objective of this phase of the program is to develop your energy action plan.

In order to achieve this Xcel Energy will provide:

- Consulting support to assist in identifying potential community stakeholders, and constructing or delivering an invitation or informational announcement regarding the planning process.
- Data analysis of community energy use and Xcel Energy program participation to the extent that it is legally and technically prudent and feasible. The results can be used to identify potential opportunities to implement plan strategies. Xcel Energy will attempt to integrate data provided by the City of Winona into the analysis if feasible.
- Professional facilitation of 3-5 plan development work sessions with the community stakeholder group to develop the energy action plan's vision, focus areas, goals and implementation strategies.
- Assistance as needed in synthesizing the community and program data collected with the vision of the community to identify attainable goals that align with suitable strategies and tactics.

- Development of the documented energy action plan that will incorporate inputs from the stakeholder planning team and will be accessible to the community.
- Commitment to delivering an actionable and complete energy action plan within seven months of the City of Winona and Xcel Energy signing this MOU.

Although participation in the Plan Development phase of Partners in Energy program requires no monetary contribution, the community, the City of Winona, does agree to provide:

- A single contact point to work with recruiting stakeholders, coordinating planning meeting logistics, and coordinate distribution of deliverables and lead participation of the community.
- Meeting facilities to host the stakeholder group during development of the plan.
- Identification of existing community energy plans or programs that could be leveraged in successful development and delivery of this plan.
- Good-faith evaluation of the recommendations and analysis provided and fair consideration of the potential strategies and tactics identified that align with the community's goals.
- Commitment to delivering an actionable and complete energy plan within six months of the City of Winona and Xcel Energy signing this MOU.
- Public distribution of the work products developed with the support of the Xcel Energy's Partners in Energy program.

**Resource Commitment Summary
Plan Development Phase**

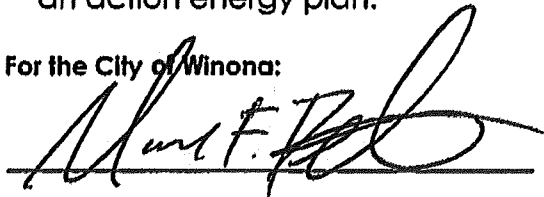
City of Winona	Xcel Energy
<ul style="list-style-type: none">• Single point of contact• Meeting facilities• Access to existing energy-related plans and programs• Involvement in developing implementation strategies• Commitment to completing the plan development• Agreement that the energy plan resulting from this work will be available to the public	<ul style="list-style-type: none">• Assistance identifying and recruiting stakeholders• Analysis of community energy use and program participation• Facilitation of planning sessions• Training and guidance developing goals and strategies• Documentation and delivery of the energy action plan• Commitment to completing the plan development

The Memorandum of Understanding for the Implementation Phase of the Partners in Energy program will be developed upon completion of your energy action plan and will outline your goals and the resource commitment from Xcel Energy and the City of Winona.

All communications pertaining to this agreement shall be directed to John Howard, on behalf of the City of Winona, and Tami Gunderzik on behalf of Xcel Energy.

Thank you again for your continued interest in Xcel Energy's Partner in Energy program. We look forward to assisting the City of Winona in the development of an action energy plan.

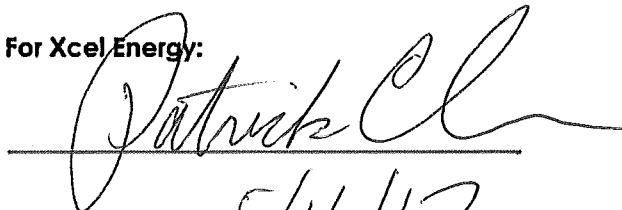
For the City of Winona:



Date:

2/21/17

For Xcel Energy:



Date:

5/16/17

Appendix 2: Glossary of Terms

Carbon Neutrality: No net release of carbon dioxide to the atmosphere through emissions reductions, renewable energy generation, and carbon offsets such as planting trees.

Community Data Mapping: A baseline analysis of energy data in a geospatial (map) format across the community.

Demand Side Management (DSM): Modification of consumer demand for energy through various methods, including education and financial incentives. DSM aims to encourage consumers to decrease energy consumption, especially during peak hours or to shift time of energy use to off-peak periods such as nighttime and weekend.

Energy Action Plan: A written plan that includes an integrated approach to all aspects of energy management and efficiency. This includes both short- and long-term goals, strategies, and metrics to track performance.

Goals: The results toward which efforts and actions are directed. There can be a number of objectives and goals outlined in order to successfully implement a plan.

Greenhouse Gas Emissions: Gases in the atmosphere that absorb and emit radiation and significantly contribute to climate change. The primary greenhouse gases in the earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone.

kWh (kilowatt-hour): Standard unit of electricity consumption.

MMBtu (million British thermal units): A unit of energy consumption that allows both electricity and natural gas consumption to be combined.

Premise: A unique identifier for the location of electricity or natural gas service. In most cases it is a facility location. There can be multiple premises per building or multiple premises per individual debtor.

Recommissioning: An energy efficiency service focused on identifying ways that existing building systems can be tuned-up to run as efficiently as possible.

Renewable Energy Credits (RECs): A third-party certified currency used to measure the renewable energy produced and applied to meet renewable energy goals. These credits represent the environmental attributes associated with renewable energy and

Quick Energy Unit Conversions

See the glossary in Appendix 1 for definitions of common energy terms.

MMBtu: Million British Thermal Units

kWh: Kilowatt Hour

Thm: Therm

can be kept together with electricity or sold separately from that electricity. RECs purchased on the market or retired by Xcel Energy on a customer's behalf through a program such as Xcel Energy Windsource[®] or Renewable*Connect[®] can be used to meet renewable energy and carbon reduction goals. RECs owned or purchased by Xcel Energy are used to meet the utility's renewable energy goals and requirements.

Therm: Standard unit of natural gas consumption.

Appendix 3: Community Background

Geography and Overview

The City of Winona is located in the southeast corner of Minnesota along the Mississippi River and about 100 miles south of Minneapolis. The iconic Mississippi is central to the community, with much of the city nestled between the river to the east and Lake Winona to the southwest. Much of Winona’s industrial and commercial development is located along the river.

Southeastern Minnesota is known for its natural beauty so it is no surprise that the county is home to three state parks: Great River Bluffs, John A. Latsch State Park, and Whitewater State Park.¹⁴ The river bluffs, which give the first park its name, are known throughout the region as a recreation destination.

Figure 39: Winona Facts and Figures (2015)¹⁵

	City of Winona
Size ¹⁶	18.84 square miles
Population	27,213
Population Density	1,464.4 people per square mile 597 housing units per square mile

Population and Demographics

The population of Winona is less diverse than the population of Minnesota as a whole. Nonwhites make up about six percent of the population and 5.5 percent of residents use a language other than English as the primary language spoken at home.

The effects of a large student population can be seen in the population’s age distribution. The city’s median age is 28.8 years, and 20.7 percent of the population is between the ages of 20 and 24 years.

¹⁴ Winona County, *Parks and Trails*, <http://www.co.winona.mn.us/page/3127>

¹⁵ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city*.

¹⁶ U.S. Census Bureau, 2010 Census.

Figure 40: Winona Demographics (2015)¹⁷

City of Winona	
Total Population	27,213
Racial Breakdown	
White	93.8%
Black	2.3%
Asian	2.3%
Hispanic	0.9%
Native American	0.4%
Age Distribution	
Under 18 years	13.1%
19-24 years	20.7%
25-44 years	19.1%
45-64 years	21.4%
65 years and older	15.0%
Median Age	28.8 years

Winona has seen a slowly declining population over the past few years. Between 2010 and 2015 the population declined 1.8 percent. However, the City’s comprehensive plan estimates population growth of about eight percent between 2016 and 2031, which will add another 444 households to the community.

Income

Despite supporting diverse economies, Winona’s median income is 33 percent lower than the statewide median income, and the poverty rate is substantially higher. Half of households earn less than \$50,000, which is just above poverty for many families.

Figure 41: Winona Income and Poverty (2015)¹⁸

City of Winona	
Median Income	\$41,023
Poverty Rate	20.4%
Households Below 50 percent SMI	37%
Households Earning Less than \$50,000	50.1%
<i>Earn less than \$15,000</i>	38.9%
<i>Earn \$15,000-\$34,999</i>	8.1%
<i>Earn \$35,000-\$49,000</i>	3.8%

The poverty level is affected by the large student population in Winona. In the U.S. Census, students who reside in the community are counted towards population statistics, and income and poverty statistics and, because students often work part time

¹⁷ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: ACS demographic and housing estimates*.

¹⁸ Maxfield Research and Consulting. *Comprehensive Housing Needs Assessment: City of Winona Housing Study* (November 15, 2016).

or don't work at all, this impacts Winona's poverty rate. Removing the student population from the poverty data decreases the poverty level, as illustrated in Figure 42.

Figure 42: Student Impact on Winona poverty levels, 2009-2011¹⁹

City of Winona	
Poverty level, overall	22.7%
Poverty level, without students	11.8%
Percent change	-10.9%

Housing

There are a total of 11,429 housing units in Winona. Two thirds of these are single-family homes, 14 percent are in two- four-unit unit buildings, and 22 percent are in multifamily buildings of 5 or more units.²⁰ Just over 60 percent of housing units are owner-occupied and just fewer than 40 percent are renter-occupied. Housing in Winona is affordable compared to statewide averages — median rent is \$574 and median home value is \$137,300, 26 percent below the median for Minnesota. The majority of owner-occupied homes, which are primarily single family, are heated with utility natural gas (Figure 43). In contrast, more than half of renter-occupied units, most of which are in multifamily buildings, are heated with electricity. Close to 10 percent of owner-occupied homes use other fuel sources for heat such as propane, fuel oil, or other fuels such as wood stoves.

Figure 43: Winona heating fuel by source (2015)²¹

City of Winona	
Utility natural gas	81.7%
Electricity	10.2%
Bottled, tank, or LP gas	4.6%
Fuel oil, kerosene, etc.	2.4%
All other fuels	1.1%
No fuel used	0.0%

Business and Economy

Winona is home to a diverse economy. The City's principal employers represent a variety of sectors, including education, manufacturing, industry, and health care. Figure 44 shows the principal employers in Winona as of the end of 2015. The largest employer was Fastenal Company.²² According to the City of Winona Comprehensive Annual Financial Report for 2016, the following three largest employers at the end of

¹⁹ Bishaw, Alemayeh, *Examining the Effect of Off-Campus College Students on Poverty Rates* (U.S. Census Bureau, Social, Economic & Housing Statistics Division, Poverty Statistics Branch, 2013), Table 8, https://www.census.gov/content/dam/Census/library/working-papers/2013/acs/2013_Bishaw_01.pdf

²⁰ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: Selected housing characteristics*.

²¹ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona city: Housing characteristics for occupied housing units*.

²² Fastenal website, Accessed July 3, 2016, <https://www.fastenal.com/>

2015 were Winona State University, the public K-12 school district, and Saint Mary's University.²³

Figure 44: Primary Employers in the City of Winona (2016)²⁴

Employer	Type of Business	Number of Employees	Percent of Total County employment
Fastenal Company	Commercial/Industrial	1,618	10.7%
Winona Health	Health Care	1,200	7.9%
Winona State University	Post-secondary education	1,150	7.6%
Independent School District No. 861	K-12 Education	683	4.5%
Saint Mary's University	Post-Secondary Education	600	4.0%
Wincraft	Promotional materials	500	3.3%
TRW Automotive Electronics	Industrial	400	2.6%
RTP Company	Industrial	400	2.6%
Peerless Chain	Industrial	315	2.1%
Wal-Mart	Commercial	300	2.0%

Unemployment in Winona is relatively low at 4.1 percent in 2016.²⁵ A large proportion of workers are employed in manufacturing and education industries (Figure 45).

Figure 45: Employment by industry for Winona and Minnesota (2015)²⁶

Industry	City of Winona	State of Minnesota
Age 16 and over - Not in labor force	30.0%	30.0%
Education and health care	28.0%	24.8%
Manufacturing	17.4%	13.5%
Retail	15.3%	11.3%
Professional services	4.3%	9.8%
Construction	2.8%	5.5%
Public administration	2.8%	3.4%
Agriculture	1.1%	2.3%

Winona also boasts a lively small business community, highlighted by the bustling downtown filled with small shops and restaurants. As part of its commitment to its small

²³ City of Winona, Minnesota, *Comprehensive Annual Financial Report for the Year Ended December 31, 2016*, 186.

²⁴ Ibid.

²⁵ Maxfield Research and Consulting. *Comprehensive Housing Needs Assessment: City of Winona Housing Study* (November 15, 2016); University websites; MN DEED

²⁶ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates. *Winona city: Industry by sex for the civilian employed population 16 years and over*.

business community, Winona is a participant in the Main Street Program, “committed to Historic Downtown Winona being the heart of [the] community and region, a vibrant hub of commerce, arts and culture, recreation, and residential life.”²⁷ Supporting downtown businesses is a key long-term priority for the City.

Education

As home to three higher education institutions, Winona is often referred to as a college town. With over 9,000 students between the three institutions, the universities have a substantial influence on the city.²⁸

Figure 46: Winona higher education student enrollment (2016)²⁹

Total Winona Student Population	9,060
Winona State University	6,573
Saint Mary’s University	1,171
Southeast Technical Institute	1,316

It is important to note that, despite being a college town, not everyone in Winona is involved in higher education. Of Winona’s population 25 years and over, only about one-third of residents have received a bachelor’s, graduate, or professional degree (Figure 47).

Figure 47: Winona educational attainment (2015)³⁰

Highest Educational achievement, Population 25 and over	City of Winona
Less than high school	8.8%
High School Graduate	26.6%
Some College, no degree	21.0%
Associate’s degree	10.0%
Bachelor’s degree	20.4%
Graduate or professional degree	13.1%

Local Outreach and Communication Channels

Engaging the community is critical to reaching the Energy Action Plan goals. Below are some of the ways that residents and businesses currently receive information and will be helpful during implementation efforts.

²⁷ Winona Chamber of Commerce website, <http://www.winonachamber.com/page/2526>, accessed August 8, 2017.

²⁸ Maxfield Research and Consulting. *Comprehensive Housing Needs Assessment: City of Winona Housing Study* (November 15, 2016)

²⁹ Ibid.

³⁰ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates. *Winona city: Educational attainment*

Figure 48: Local outreach and communication channels

Winona Local Outreach Channels	
Digital and Print Communications	
<ul style="list-style-type: none"> • School district newsletter • County and school district websites • <i>Winona Daily News</i> • <i>Winona Post</i> • Facebook • Winona parks and recreation newsletter 	
Community/University Groups	
<ul style="list-style-type: none"> • Neighborhood groups • WSU Student Senate • WSU student emails • Student newsletters <ul style="list-style-type: none"> ○ <i>The Winonan</i> (Winona State University) ○ <i>The Cardinal</i> (Saint Mary's University) 	
Selected Community Events	
<ul style="list-style-type: none"> • Sporting events <ul style="list-style-type: none"> ○ Flood Run, Tri-nona • Winona Farmer's Market • Midwest Music Fest • Minnesota Beethoven Festival • Great River Shakespeare Festival • Ride the Ridges • Frozen River Film Festival • Boats and Bluegrass Festival • Brew n Que BBQ • Page Series 	
Community Spaces for Collateral Distribution	
<ul style="list-style-type: none"> • Bluff Country Co-op bulletin board • Blue Heron bulletin board • Winona Community Center 	

Appendix 4: Summary of Sustainability Initiatives

Comprehensive Plan Updates

The City of Winona has long incorporated energy and sustainability into its comprehensive plans. Energy first appeared in the 1995 Comprehensive Plan as a priority to “create public awareness of environmental quality issues...the effects of fossil fuel combustion, emission control updates...” and “establish incentives for alternative energy efficient lifestyles such as solar and wind energy...”

The 2007 Comprehensive Plan update provided specific direction that “current initiatives should focus on educating residents, businesses and the development community on how to utilize conservation techniques and renewable energy resources.” One particular emphasis was on renewable energy for city facilities.³¹ The City of Winona is currently in the process of updating its Comprehensive Plan and intends to incorporate aspects of this Energy Action Plan into the updates to further emphasize the importance of energy conservation and renewable energy generation.

Citizen’s Environmental Quality Committee

The Citizens’ Environmental Quality Committee was established by the 1995 Winona Comprehensive Plan. The committee’s purpose is to act as advisors to the City Planning Commission, and it “is responsible for the attainment of environmental goals and implementation of environmental policies, of the Winona 1995 Comprehensive Plan along with modifications of the plan as they occur.”³² Energy Action Team member Chris Meyer is a member of Winona’s Citizens Environmental Quality Committee.

Mayor’s Climate Protection Agreement

The City of Winona signed the U.S. Conference of Mayors Climate Protection Agreement in 2007, demonstrating its ongoing commitment to combating climate change by reducing greenhouse gas emissions.³³ The agreement included a commitment to reduce energy use in City buildings, reduce emissions from City fleet vehicles, increase recycling and renewable energy generation, maintain healthy urban forests, and engage the broader community in greenhouse gas reduction actions.

Sustain Winona

Sustain Winona is a collaboration between Winona’s largest public and private institutions, including Winona State University, the City of Winona, the County of Winona, Winona Area Public Schools, Minnesota State College-Southeast Technical, and Saint Mary’s University of Minnesota.³⁴ The organization has a vision of “working together to encourage sustainable practices throughout Winona County.” Sustain

³¹ Howard, John, *Presentation to the Energy Action Team* (April 3, 2017).

³² City of Winona, *Citizens’ Environmental Quality Committee*, <https://www.cityofwinona.com/city-services/planning-zoning/citizens-environmental-quality-committee/> .

³³ City of Winona, *Resolution 2007-20: Support for signing the US Mayors Climate Protection Agreement* (Signed February 20, 2007).

³⁴ Sustain Winona, *Sustain Winona*, <https://sustainwinona.org/>

Winona meets regularly to set tasks and review progress and will serve as a key source of accountability for implementation of the institutions focus area outlined in this plan.

Winona Engaged: Climate Resilience through Community Engagement and Action

In March 2016, as part of the Rural Climate Dialogues the Jefferson Center for New Democratic Processes led a group of 18 Winona County residents through a three-day process of identifying challenges and opportunities related to climate change. The group was tasked with deciding how Winona could remain a healthy, resilient, and prosperous community while address climate change and extreme weather events. A parallel process was held with high school students to ensure youth voices were incorporated.

The dialogues resulted in the formation of a new collaborative called Next Step Partners, which includes Sustain Winona members, local and regional organizations, and the Jefferson Center. A Minnesota Pollution Control Agency grant was awarded to support Next Step Partners in implementing the actions identified by the dialogue process. The goal of the grant-funded project is to motivate climate adaptation and climate change awareness in Winona County by engaging 7,500 different Winona County residents and workers in climate resilience education and implementation activities. The group also hopes to strengthen climate policy and public engagement processes among public institutions in Winona County. Specific tasks as part of the project include:³⁵

1. Increase adoption of rain gardens and other storm water best practices in Winona County through educational workshops and a rain garden grant.
2. Increase energy efficiency among low- and fixed-income households in Winona County to help residents prepare for extreme heat events by completing energy audits on 30 households and providing funding for low-income weatherization.
3. Establish an energy conservation contest among Winona County households and small businesses to encourage adoption of energy efficiency technology and behavior changes that lower energy consumption.
4. Review opportunities for energy efficiency improvements in public buildings in Winona County cities and townships.
5. Reduce household storm water runoff by encouraging adoption of rain barrels and other rainwater harvesting tools.
6. Establish a water conservation contest among Winona County households and small businesses to encourage adoption of less water-intensive technology and behavior changes that lower water consumption.
7. Establish a challenge for maintaining and sustaining rain gardens and other storm water best management practices to encourage creative partnerships and build greater community capacity for ongoing stewardship.
8. Evaluate and document lessons learned.

³⁵Jefferson Center for New Democratic Processes, *Winona Engaged: Climate Resilience through Community Engagement and Action: Project Work Plan*.

9. Reporting.

Tasks two through four directly fit into the Partners in Energy framework, particularly as it relates to residential energy efficiency. This Energy Action Plan will take these actions into consideration when shaping energy efficiency goals and actions.

Building Blocks Technical Assistance

In January 2017, Winona elected officials, City staff, community leaders, other key stakeholders, and staff from the U.S. Environmental Protection Agency participated in a two-day process that included a tour of the city, workshop, and community meeting.³⁶ The outcome of the process was the identification of four goal areas:³⁷

1. A Thriving Downtown
2. Safe Streets for All
3. Improve Air and Water Quality
4. Reduce Carbon Footprint

For each goal, a series of actions were identified with a plan for moving forward on each. One of those actions was to develop an Energy Action Plan and establish a baseline of community energy use that could be monitored over time. Additional energy-related priorities included solar power generation on parking structures and the installation of solar-powered electric vehicle charging stations.

GreenStep Cities

Winona joined GreenStep Cities in March 2017.³⁸ Minnesota GreenStep Cities will help guide Winona through a series of best practices to reduce energy use and improve sustainability and quality of life. GreenStep Cities is a voluntary challenge, assistance, and recognition program of the Minnesota Pollution Control Agency. The goals and strategies outlined in this plan will assist Winona in moving forward through its building energy action steps.

³⁶ United States Environmental Protection Agency, *Next Steps Memorandum for Winona, Minnesota: Sustainable strategies for small cities and rural areas building blocks technical assistance* (March 2017).

³⁷ Ibid.

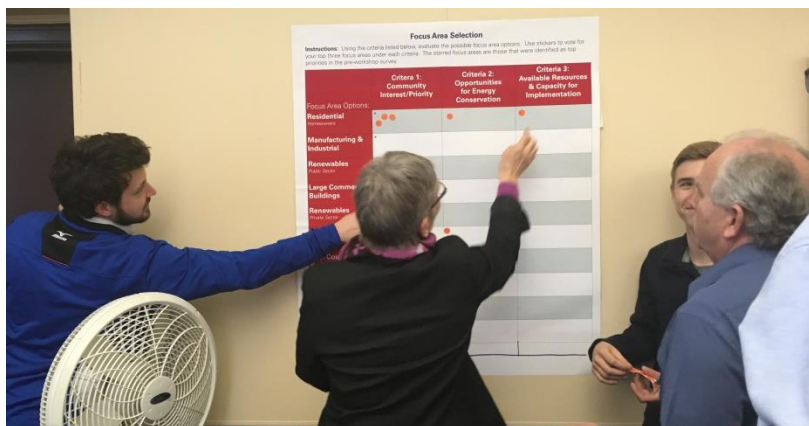
³⁸ City of Winona, *Resolution 2017-19* (Signed February 21, 2017).

Appendix 5: The Planning Process

Winona's Energy Action Team convened for a series of four workshops, starting in the April 2017 and concluding in July 2017. Team members were expected to bring their own experiences and expertise as community members to the table to assess data and create actionable items and strategies for the plan. Each of the four workshops is summarized briefly below.

Workshop 1

The purpose of Workshop 1 was to build a foundation for this Energy Action Plan that could be referenced throughout the planning process. This workshop aimed to accomplish two things: first, provide an overview of Partners in Energy and, second, analyze baseline energy use data to identify the best opportunities for energy conservation. Data shared by the Partners in Energy community facilitators included housing and demographics data about the city as well as baseline electricity and natural gas use. Energy Action Team member John Howard, the City's Natural Resources Coordinator, gave an overview of the City's past sustainability efforts, with opportunities for others in the room to add actions that the City or County has taken. Planning team members were also asked to identify focus areas. The group was also asked to contribute their ideas on Winona's values, assets, and key communication channels. Finally, the planning team was asked to form a draft set of vision and principles that would be used to guide the group through the planning process and implementation.



Energy Action Team members use stickers to assess focus area priorities in workshop 1

Workshop 2

During Workshop 2, the planning team had the opportunity to refine and build off of information and ideas gathered during Workshop 1, and began to create strategies for achieving goals. After revising and approving a set of principles, the team revisited the community's baseline energy data, including examining the top energy users and reviewing energy use data and trends for the county as a whole. Next, the planning team had the opportunity to refine the focus areas, eventually deciding to focus on four distinct groups of energy users within the city: institutions, large commercial and industrial users, small businesses, and residents. It was decided that renewable energy

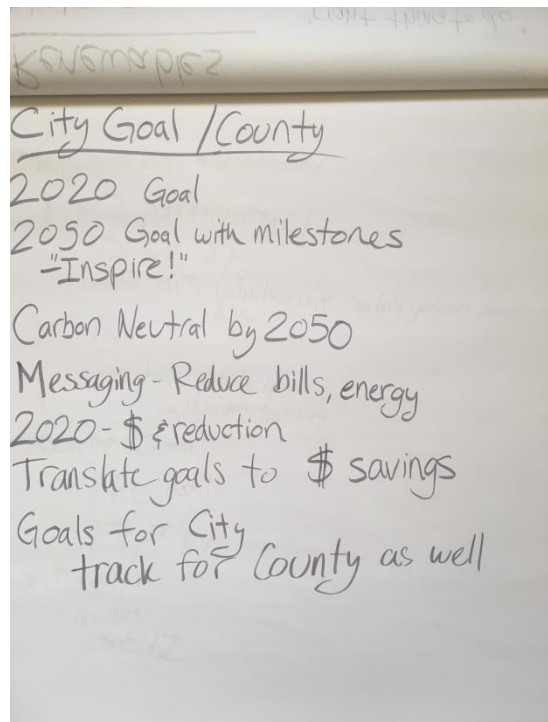
would not be its own focus area, but would be incorporated into strategies for each of the focus areas.

One of the objectives of this workshop was to create goals and strategies for the individual focus areas and Winona as a whole. Team members broke out into focus area groups to begin forming goals and strategies around their specific focus areas.

Workshop 3

The main objective of Workshop 3 was to build upon the past workshops to create actionable goals and strategies that could drive the plan forward through implementation. The workshop began with a brainstorming activity where the group was asked to imagine a marketing campaign for Winona residents and think through the barriers and challenges. The group was asked to identify other subgroups within the residents of Winona and think about how each interacts with energy and any barriers that each may face when it came to energy efficiency. The team decided to further dive into blue collar factory workers as a residential focus area and talked about how to best design a campaign targeting this audience.

Before the workshop, community facilitators created a number of goal scenarios, both top down goals for the city as a whole as well as bottom up goals with program participation targets for each focus area. With this information in hand, the team discussed possible top-down goal ideas for Winona as a whole, deciding that it was important to come up with an overarching goal for the city without excluding areas outside of city limits in strategies and progress tracking. The workshop ended with each focus area small group using these scenarios as a jumping off point to talk about what goals to establish for their focus area moving forward, and what strategies would help the groups achieve these goals.



Goal brainstorming from workshop 3

Workshop 4

During the fourth and final workshop, the Energy Action Team began with a discussion of implementation and set out a timeline for review and approval of this Energy Action Plan. The team also reviewed the projected impact of the draft goals and strategies and confirmed the community-wide goal of carbon neutrality. The group also acknowledged that the plan would only get Winona part of the way toward that goal, and future efforts would need to look for additional ways to reduce carbon emissions. The team then returned to small groups to review and finalize goals and strategies for each focus area.

The meeting concluded with an assessment of the plan's strengths, weaknesses, opportunities, and threats. The team briefly discussed how to overcome some of the barriers to the plan's success during the shift to implementation.



The Energy Action Team discusses the Energy Action Plan in Workshop 4

Appendix 6: Additional Data

Figure 49 compares average per premise residential energy use to other Partners in Energy communities.

Figure 49: Residential energy use per premise across communities

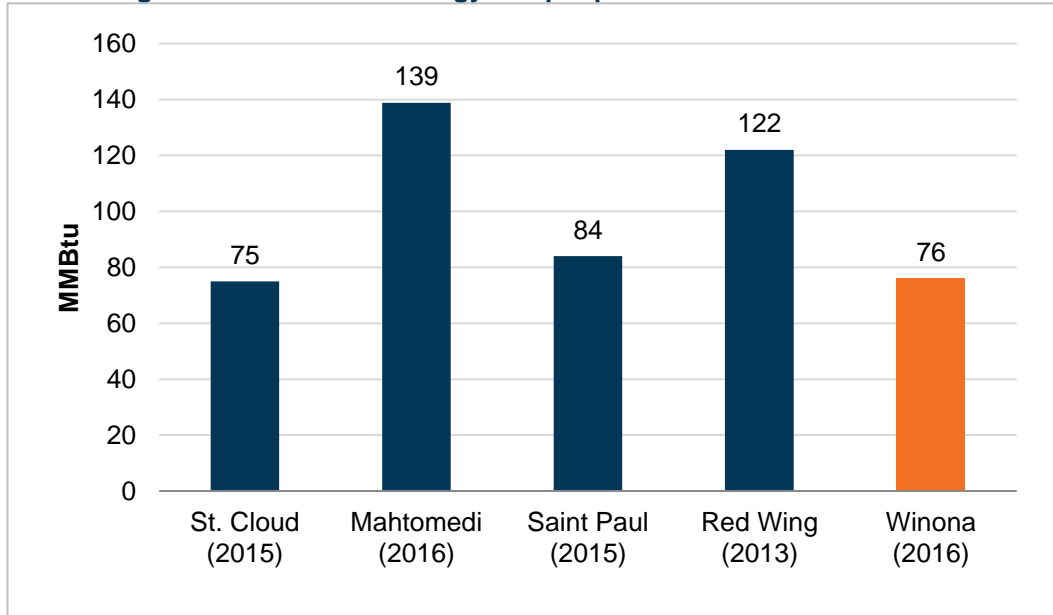
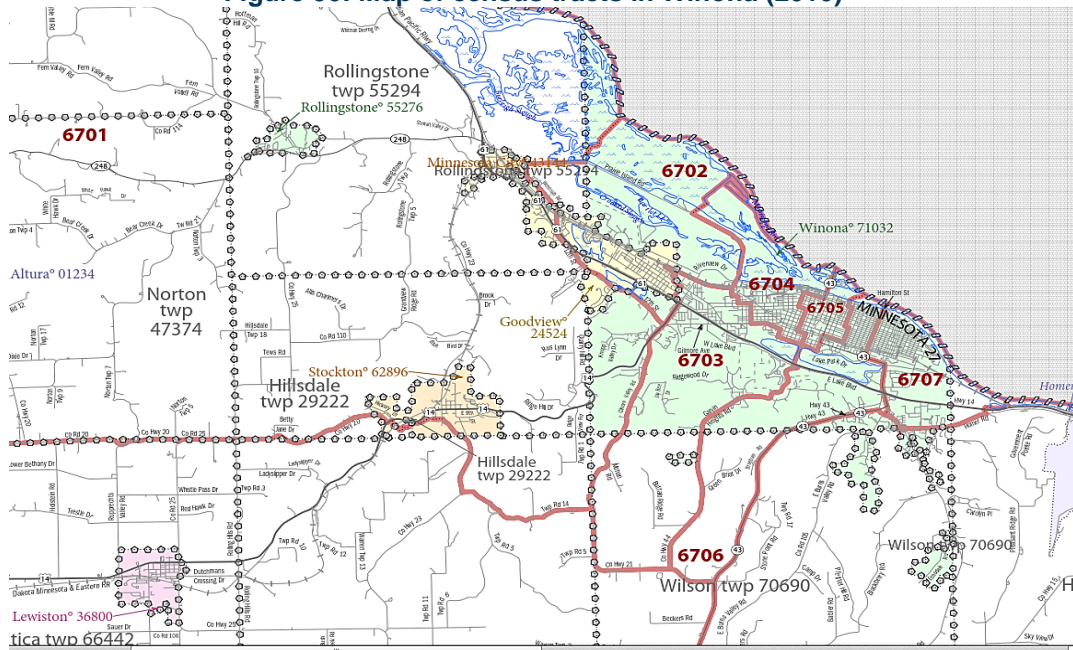


Figure 50 shows a map of census tracts for reference. Census tracts were used to create the following map of energy use and program participation for Winona.

Figure 50: Map of census tracts in Winona (2010)³⁹



³⁹ U.S. Census Bureau, 2010 Census, Census Tract Reference Map: Winona County, MN (2010)

Figure 51: Average residential electricity use per premise in Winona (2016)

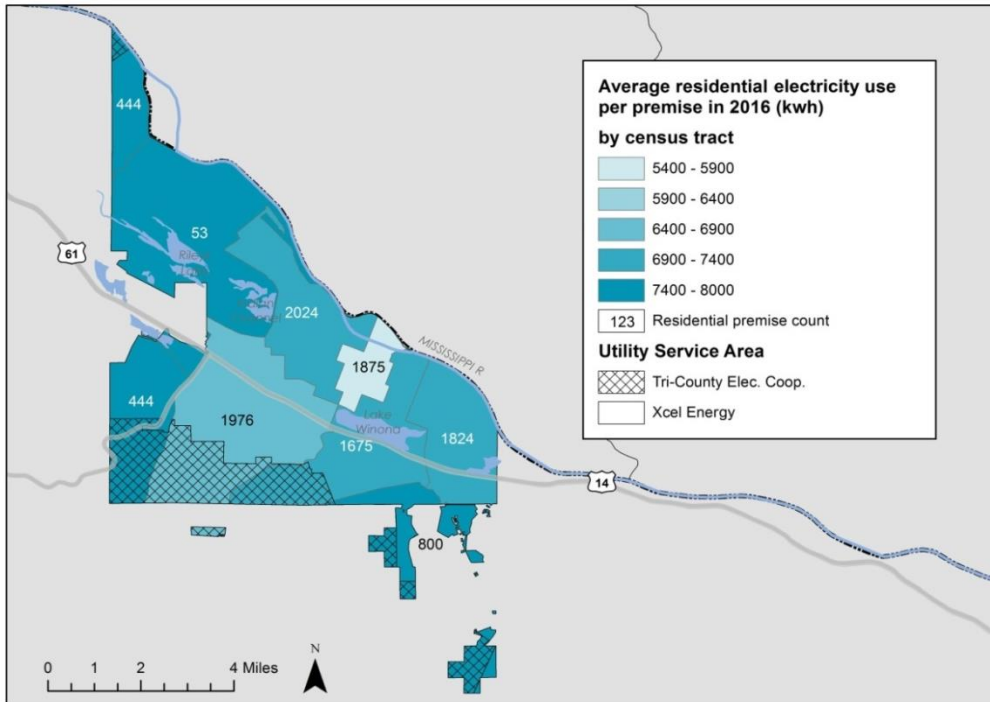


Figure 52: Average residential natural gas use per premise for Winona (2016)

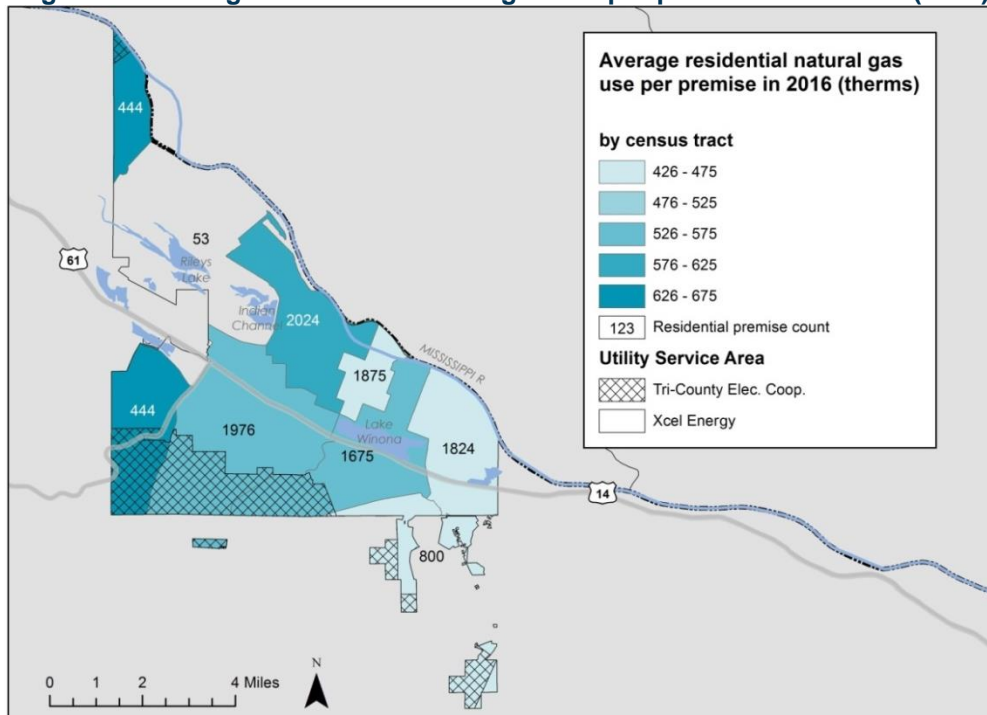


Figure 53: Count of residential conservation program participants (2014-2016)

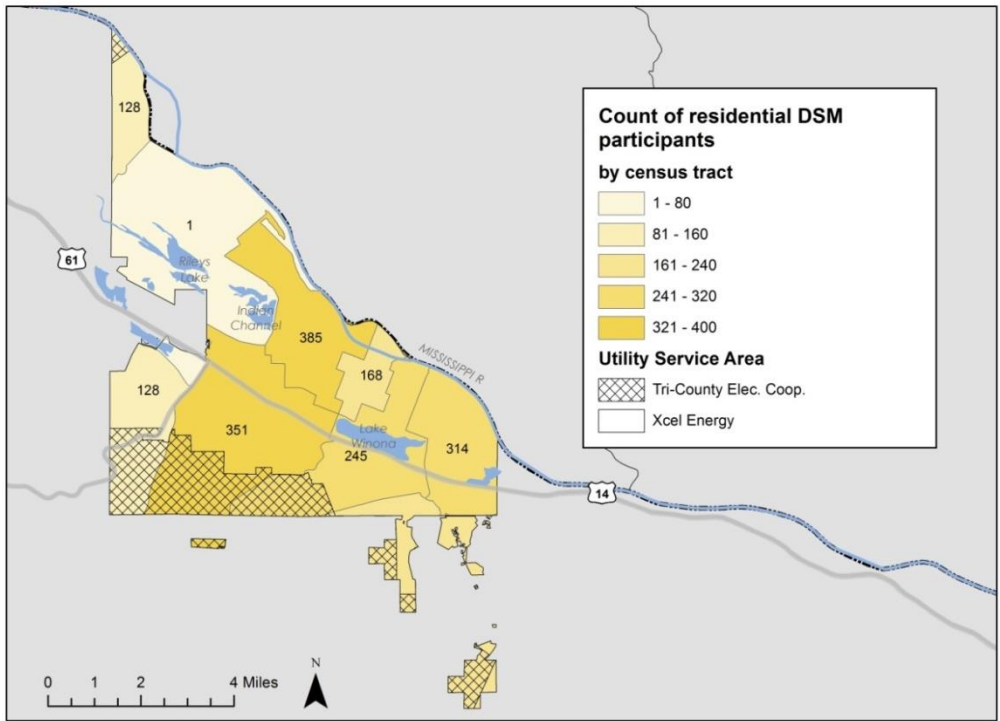


Figure 54: Count of commercial/industrial conservation program participants (2014-2016)

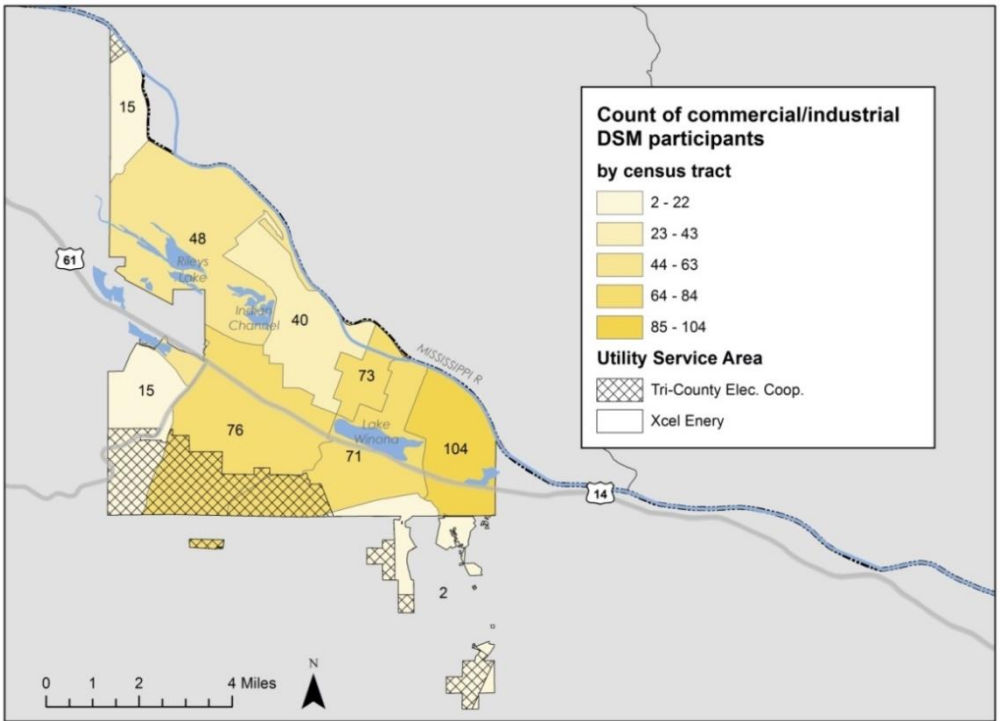


Figure 55 shows premise counts and 2016 energy use for each focus area. Because simple extraction of large commercial/industrial and institutional premises would violate

15x15 privacy rules when reporting energy use for each category, an estimate was made for energy use in each commercial and industrial category using the following methods.

The large commercial and industrial category includes approximately 293 premises. Electricity (kWh) use was estimated by taking the average kWh use for the top 25 percent of commercial and industrial premises and multiplying it by the estimated number of premises in the large commercial/industrial category. Natural gas (therm) use was estimated by taking the average therm use of the top 50 percent of commercial and industrial premises and multiplying it by the number of premises in the large commercial/industrial category.

The industrial category includes approximately 372 premises. Energy use for this category was estimated by taking overall average commercial and industrial per premise energy use and multiplying it by the number of institutional premises.

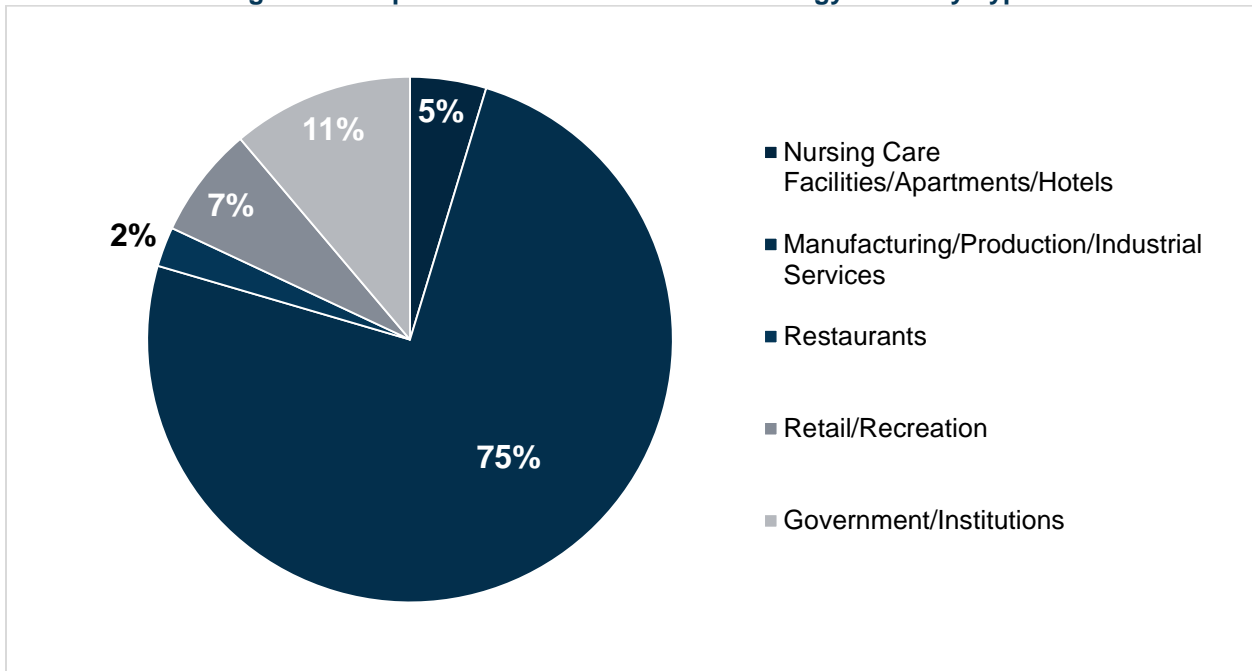
The small and medium-sized business category includes approximately 1,198 premises. Energy use for this category was estimated by subtracting estimated large commercial/industrial and institutional energy use from total commercial/industrial energy use.

Figure 55: Energy use and premise count estimates by focus area (2016)

Focus Area	Premises	kWh	therms
Residential	10,580	72,920,634	5,563,672
Institutions	372	68,299,884	3,948,620
Large Commercial/ Industrial	293	204,542,061	6,022,475
Small/Medium-size Businesses	1,198	11,828,437	1,056,073

A closer look at the top 200 energy users, which represent a little more than half of the top 20 percent, shows a variety of building types and energy needs (Figure 56), the majority of which are manufacturing/industrial premises.

Figure 56: Top 200 Commercial/Industrial Energy Users by Type



Appendix 7: Winona County Data

Winona County is much less densely populated than the City of Winona, but is similarly defined by the Mississippi River on its eastern edge. Winona County, which includes the City of Winona, was home to just over 51,000 people in 2016. The City of Winona makes up about half of the population, with many people living in smaller communities and unincorporated areas right outside of the city limits. The second largest city in Winona County is St. Charles, located along Interstate 90 and Route 14. Winona County has seen slowly declining populations over the past few years. Between 2010 and 2015, the population of Winona County declined 1.1 percent.

Figure 57: City of Winona and Winona County Facts and Figures⁴⁰

	City of Winona	Winona County
Size ⁴¹	18.84 square miles	626.21 square miles
Population	27,213	51,213
Population Density	1,464.4 people per square mile	82.2 people per square mile
Density	597 housing units per square mile	33 housing units per square mile

Population and Demographics

The population of Winona County is less diverse than the population of Minnesota as a whole. Nonwhites make up about seven percent of the population, and for just seven percent of county residents a language other than English is the primary language spoken at home .

Figure 58: Winona County demographics (2015)⁴²

	Winona County
Total Population	51,213
Racial Breakdown	
White	94.1%
Black	1.4%
Asian	2.6%
Hispanic	2.7%
Native American	0.4%
Age Distribution	
Under 18 years	18.5%
19-24 years	21.1%
25-44 years	21.3%
45-64 years	24.5%
65 years and older	14.6%
Median Age	33.9 years

⁴⁰ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

⁴¹ U.S. Census Bureau, 2010 Census

⁴² U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

Income

The Winona County median income is slightly higher than that of the city, but still below the statewide median.⁴³ The poverty rate is also higher than the state average. An estimated 30 percent of households countywide, or approximately 5,782 households, have incomes at or below 50 percent of state median income, the threshold for low-income program eligibility.

Figure 59: Winona Income and Poverty (2015)⁴⁴

	Winona County	Minnesota
Median Income	\$50,547	\$61,492
Poverty Rate	14.7%	11.3%
Households Below 50 percent SMI	17%	14%

Because the city of Winona is counted within Winona County poverty data, the presence of students has an impact. Figure 60 shows how removing students from population and poverty estimates impacts the poverty level for the county.

Figure 60: Winona County impact of students on poverty levels, 2009-2011⁴⁵

	Winona County
Poverty level, overall	16.2%
Poverty level, without students	10.2%
<i>Percent change</i>	<i>-6.0%</i>

Housing

There are a total of 20,886 housing units in Winona County. Seventy-one percent of these are single-family homes, 10 percent are in two- to four-unit buildings, and 15 percent are in multifamily buildings of five or more units.⁴⁶ Seventy percent of housing units are owner-occupied while 30 percent are renter-occupied. Housing in Winona County is affordable compared to statewide averages — median rent is \$608 and the median home value is \$153,900, slightly above median for the city of Winona. The majority of owner-occupied homes, which are primarily single family, are heated with utility natural gas (Figure 61). In contrast, more than half of renter-occupied units, most of which are in multifamily buildings, are heated with electricity. Close to 10 percent of owner-occupied homes use other fuel sources for heat such as propane, fuel oil, or other fuels such as wood stoves.

⁴³ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Minnesota: Selected economic characteristics*.

⁴⁴ Ibid.

⁴⁵ Bishaw, *Examining the Effect of Off-Campus College Students on Poverty Rates*, Table 8.

⁴⁶ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona County: Selected housing characteristics*.

Figure 61: Winona County heating fuel by source (2015)⁴⁷

Winona County	
Utility natural gas	40.3%
Bottled, tank, or LP gas	0.5%
Electricity	55.4%
Fuel oil, kerosene, etc.	1.2%
All other fuels	0.9%
No fuel used	1.7%

Business and Economy

Unemployment in Winona County is relatively low at 4.3 percent in 2016.⁴⁸ Figure 62 shows that manufacturing and education/health care are the primary industries for employment in the county.

Figure 62: Employment by industry for Winona County (2015)⁴⁹

Industry	Winona County
Age 16 and over - Not in labor force	29.6%
Education and health care	26.4%
Manufacturing	20.0%
Retail	12.3%
Professional services	4.6%
Agriculture	4.4%
Construction	3.9%
Public administration	2.6%

Education

There are 22 public schools in Winona County serving 5,343 students.⁵⁰ While high school graduation rates are slightly higher in Winona County than in the City of Winona, levels of attainment of college degrees are lower (Figure 63).

⁴⁷ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona County: Selected housing characteristics*.

⁴⁸ Maxfield Research and Consulting. *Comprehensive Housing Needs Assessment: City of Winona Housing Study* (November 15, 2016)

⁴⁹ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona County: Industry by sex for the civilian employed population 16 years and over*.

⁵⁰ Public School Review, *Winona County Public Schools* (August, 2016), <https://www.publicschoolreview.com/minnesota/winona-county>

Figure 63: Winona County educational attainment (2016)⁵¹

Highest Educational achievement, Population 25 and over	Winona County
High School Graduate	29.6%
Some College, no degree	22.4%
Bachelor's degree	18.5%
Graduate or professional degree	9.7%
Associate's degree	11.4%
Less than high school	8.3%

Winona County Baseline Energy Use

On the electric side, two additional electric utilities serve parts of Winona County and the City of Winona. MiEnergy Cooperative provides electricity to most of the areas not covered by Xcel Energy (Figure 64). People's Energy Cooperative also serves a small part of the northwest corner of the county.

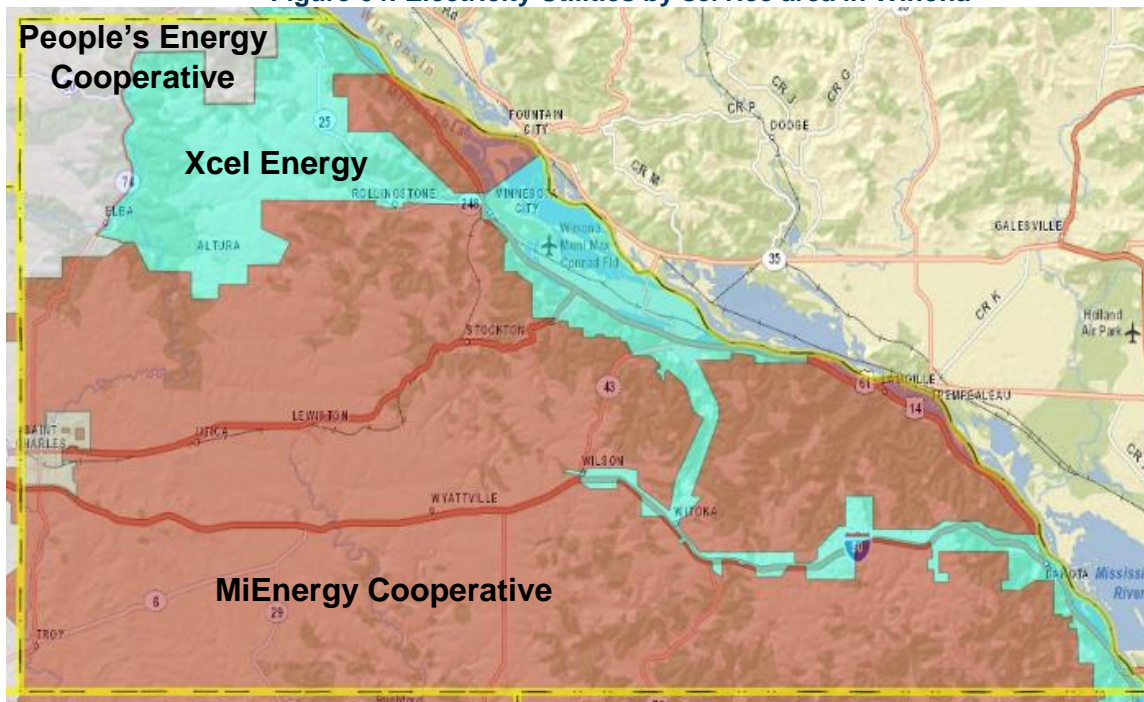
Xcel Energy is also not the only utility natural gas provider within Winona County. The cities of Lewiston, Altura, Utica, and St. Charles receive natural gas service through Minnesota Energy Resources.⁵² Additionally, 23.2 percent of Winona County residents heat their homes with a fuel source other than utility-provided natural gas or electricity. This is primarily bottled, tank, or liquid petroleum gas.⁵³

⁵¹ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona County: Educational Attainment*.

⁵² Minnesota Energy Resources, *Minnesota Cities served by Minnesota Energy Resources* (Accessed May 2017), <https://www.mncee.org/getattachment/AIC/Contractor-Resources/Minnesota-Energy-Resources-Gas-Service-Territory.pdf.aspx>

⁵³ U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, *Winona County: Selected housing characteristics*.

Figure 64: Electricity Utilities by service area in Winona⁵⁴



There were a total of 17,187 premises served by Xcel Energy in Winona County in 2016, 4,744 of which were outside the City of Winona (Figure 65).

Figure 65: Winona County premise counts (2016)

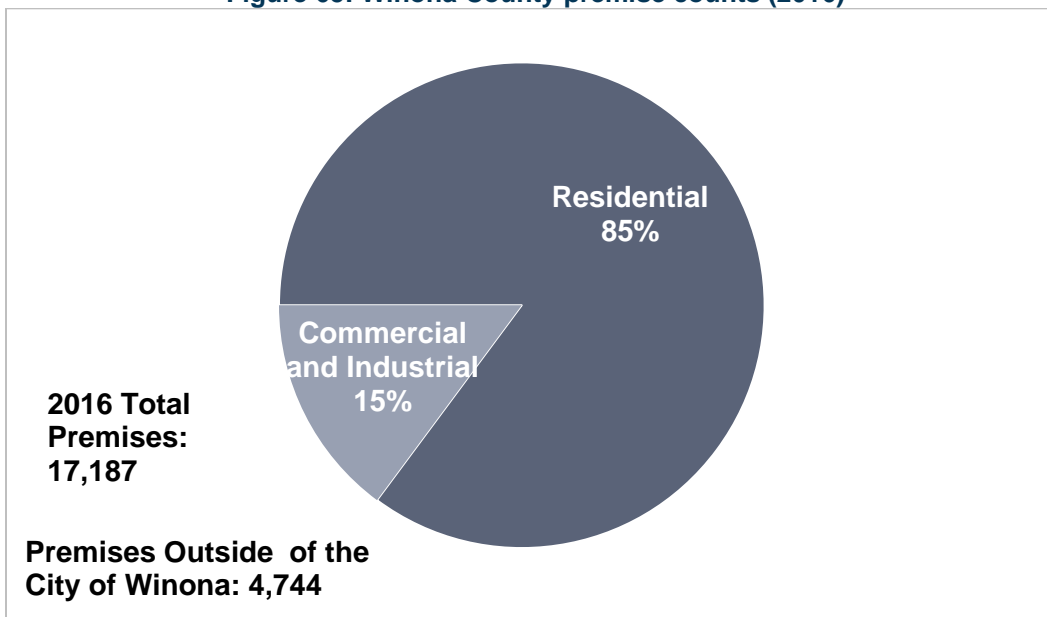


Figure 66: Premises by sector in Winona (2016) Figure 66 breaks down premises by sector and fuel source. Most residential premises and about half of

⁵⁴ Minnesota Public Utilities Commission, *Electric Utility Service Areas* (Accessed May 2017), <http://www.mngeo.state.mn.us/eusa/#>

commercial/industrial premises receive both electric and natural gas service through Xcel Energy.

Figure 66: Premises by sector in Winona (2016)

	Natural Gas	Electric
Residential	10,444	14,023
Commercial & Industrial	1,223	2,144

In total, Winona County consumed 439 million kWh and 20 million therms in 2016. Energy consumed by County buildings and facilities represents 0.5 percent of total energy use.

Figure 67: Electricity consumption by sector for Winona County (2016)

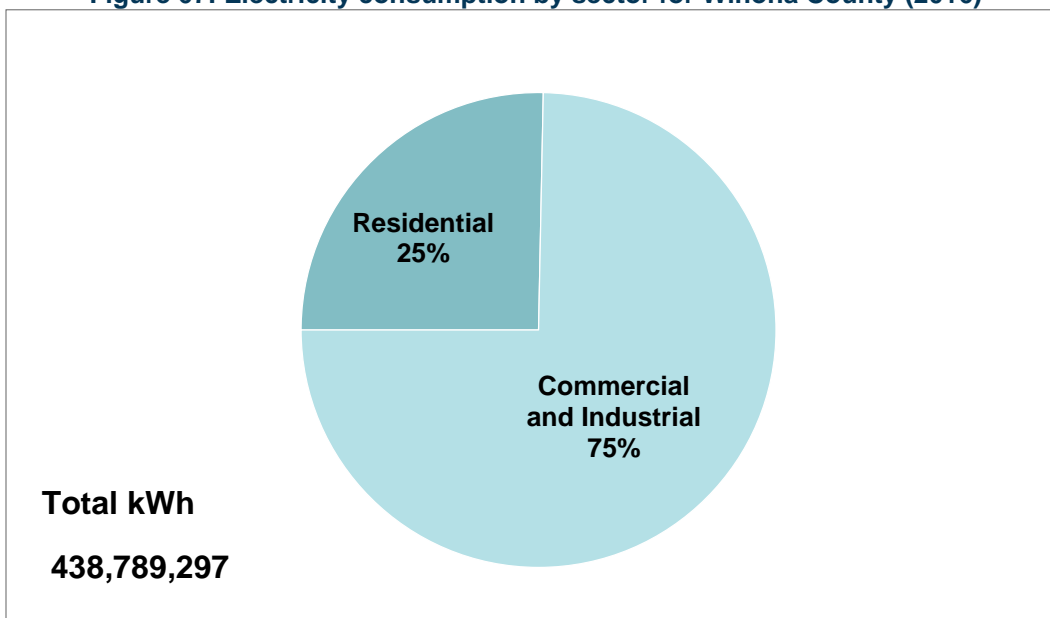


Figure 68: Winona County natural gas consumption by sector (2016)

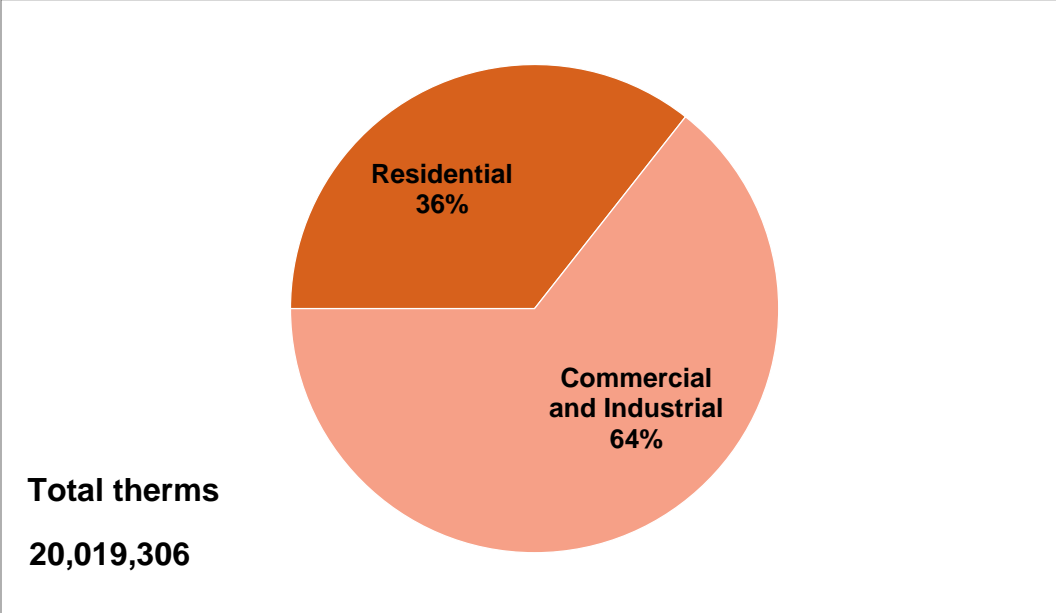
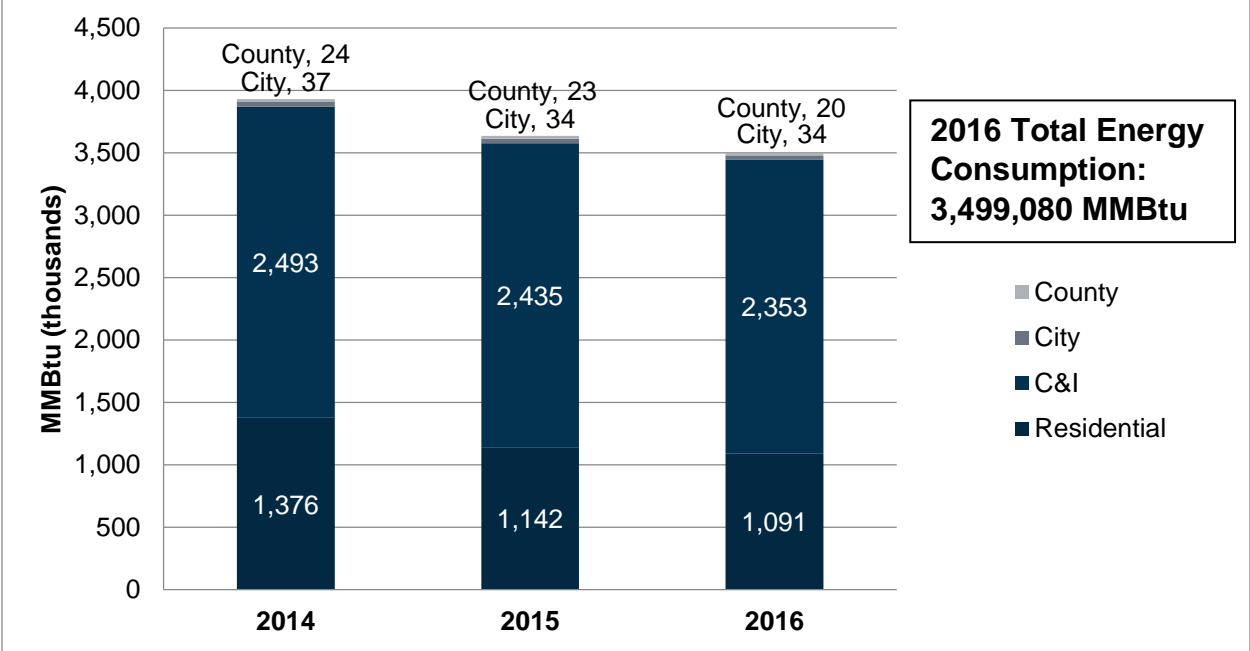
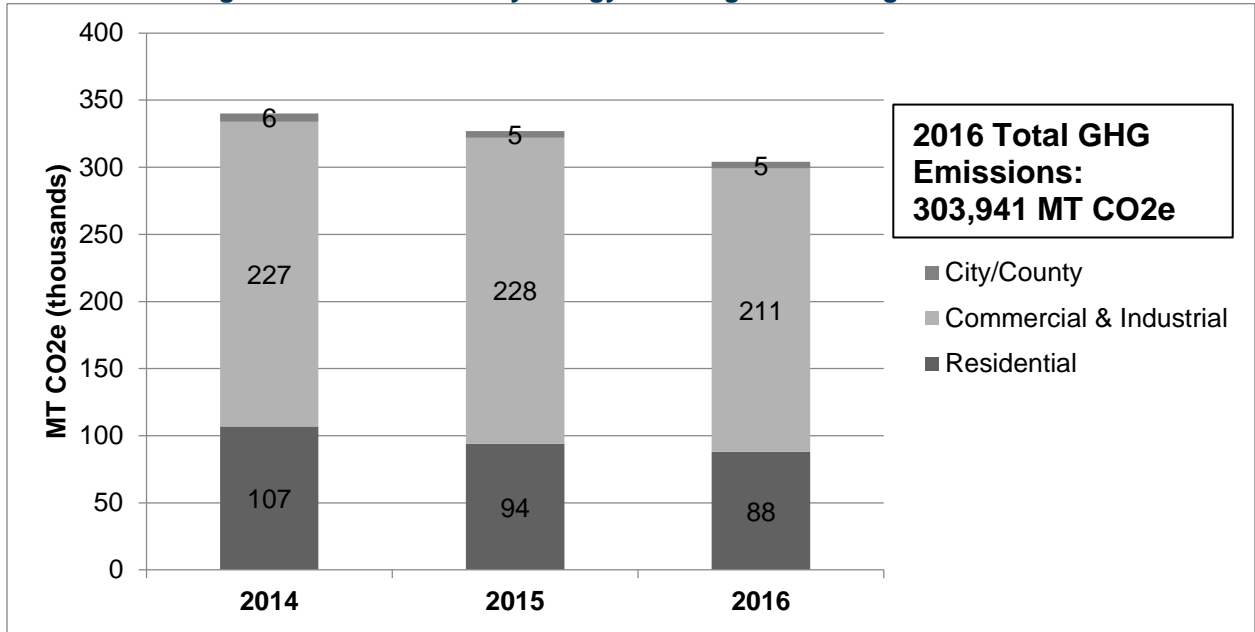


Figure 69: Winona County Total Energy consumption by sector trends, 2014-2016



Energy-related greenhouse gas emissions totaled 303,941 metric tons of carbon dioxide, the equivalent of emissions from 64,203 cars driven for a year.

Figure 70: Winona County energy-related greenhouse gas emissions



Residents and businesses in Winona County spent a total of \$54.5 million on energy in 2016. Average monthly energy costs for residents were approximately \$101 and monthly costs for businesses averaged \$1,206.

Figure 71: Winona County average energy costs (2016)

Customer Type	Average Annual Energy Cost (\$/premise)	Average Monthly Energy Cost (\$/premise)
Residential	\$1,206	\$101
Commercial & Industrial	\$14,472	\$1,206

There were a total of 402 Windsource subscribers in Winona County in 2016, though the vast majority were City of Winona households. Seventy-one percent of subscribers are signed up for the minimum 100 kWh block, and about 12 percent of residential subscribers cover 100 percent of their electricity use with wind power. Total Windsource usage represents 0.2 percent of county electricity use

Figure 72: City and County of Winona Windsource subscribers (2016)

	City of Winona		Rest of County	
	Residential	Business	Residential	Business
Windsource [®] Subscribers	362	2	38	0

Winona County Energy Savings

Winona County residents and businesses saved a total of 4 million kWh and 344,000 therms in 2016, equivalent to 1.4 percent of county energy use. As a result, program participants saved more than half a million dollars in energy costs.

Figure 73: Winona County energy savings as a result of conservation program participation (2016)

	kWh	Therms
Energy Savings	4,051,115	343,768
Cost Savings	\$567,840	

A total of 2,304 Winona County residential premises have participated in conservation programs over the past three years, a participation rate of 16 percent. A quarter of participating premises are located outside the city limits. Figure 74 breaks down total program participation over the past three years by city and county. Aside from Saver's Switch, the most common programs were appliance rebates.

Figure 74: Winona County residential conservation program participation, 2014-2016

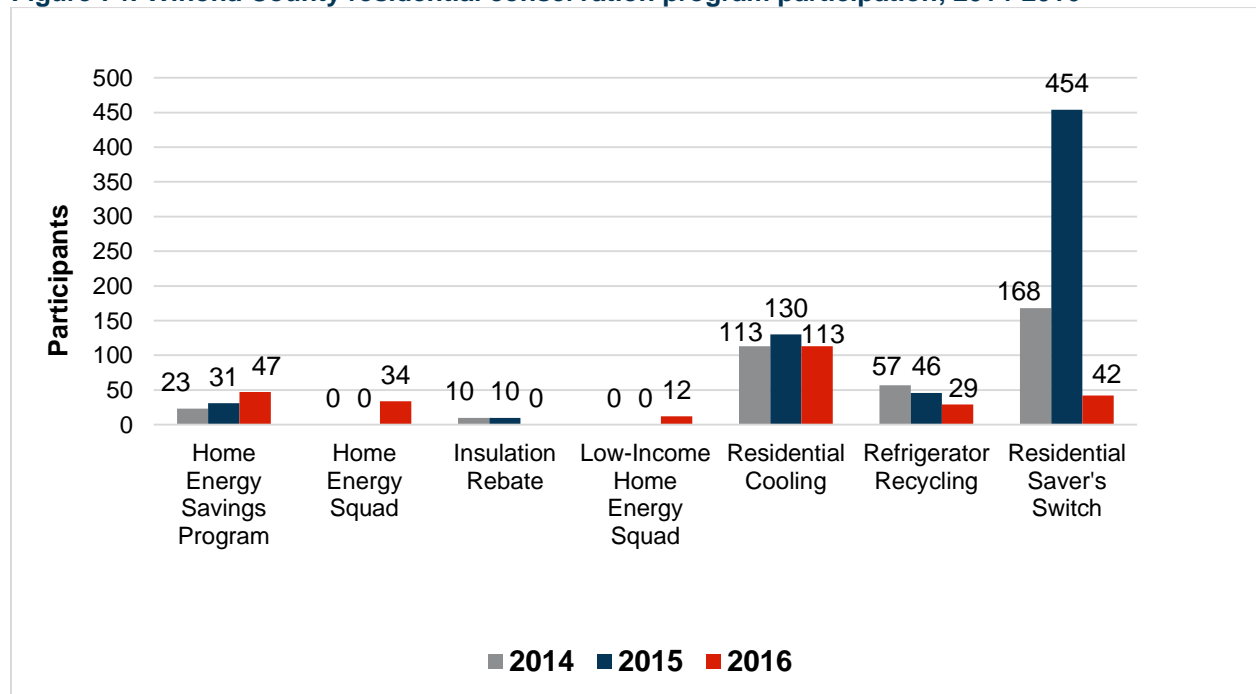
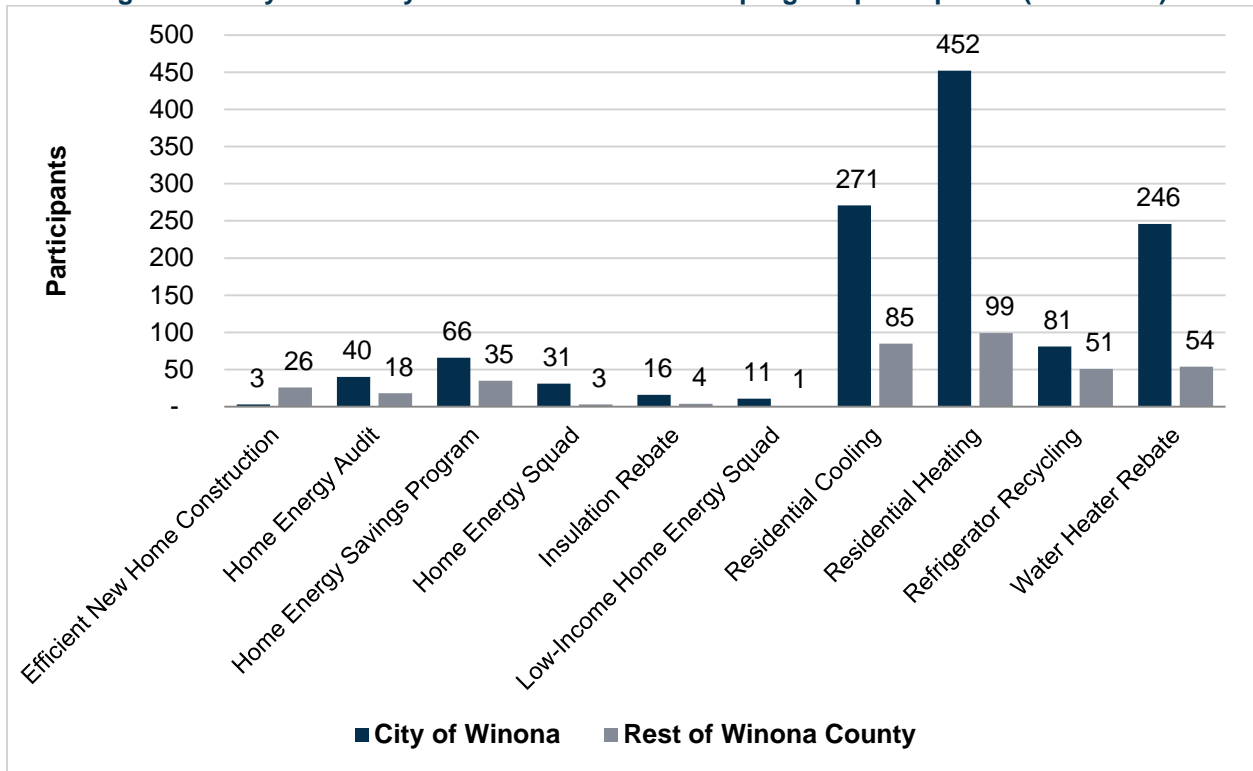


Figure 75: City vs. county residential conservation program participation (2014-2016)



A total of 483 commercial premises participated in conservation programs over the past three years, a participation rate of 19 percent. Twelve percent of commercial program participants were located outside the city of Winona. Figure 76 compared three-year total participation between commercial and industrial premises within and outside the Winona city limits. Lighting and motor efficiency had the greatest penetration among county businesses.

Figure 76: Winona County commercial and industrial conservation program participation, 2014-2016

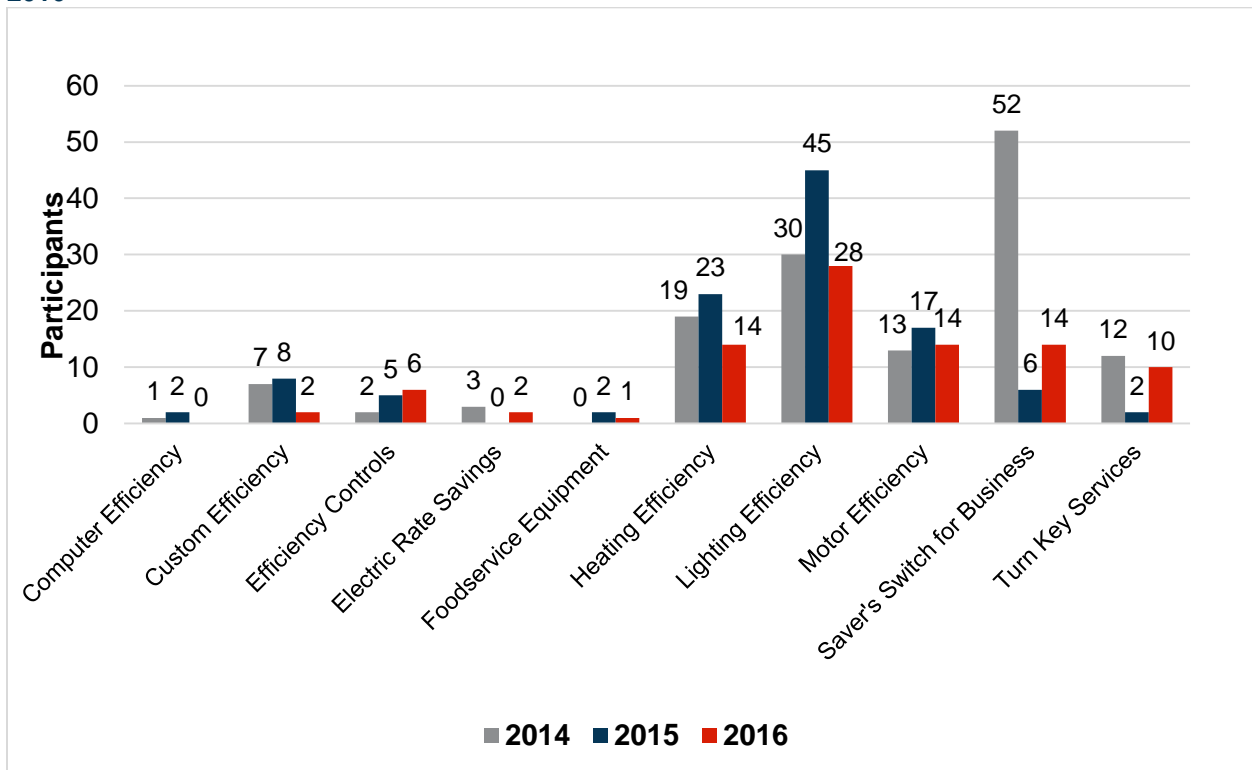
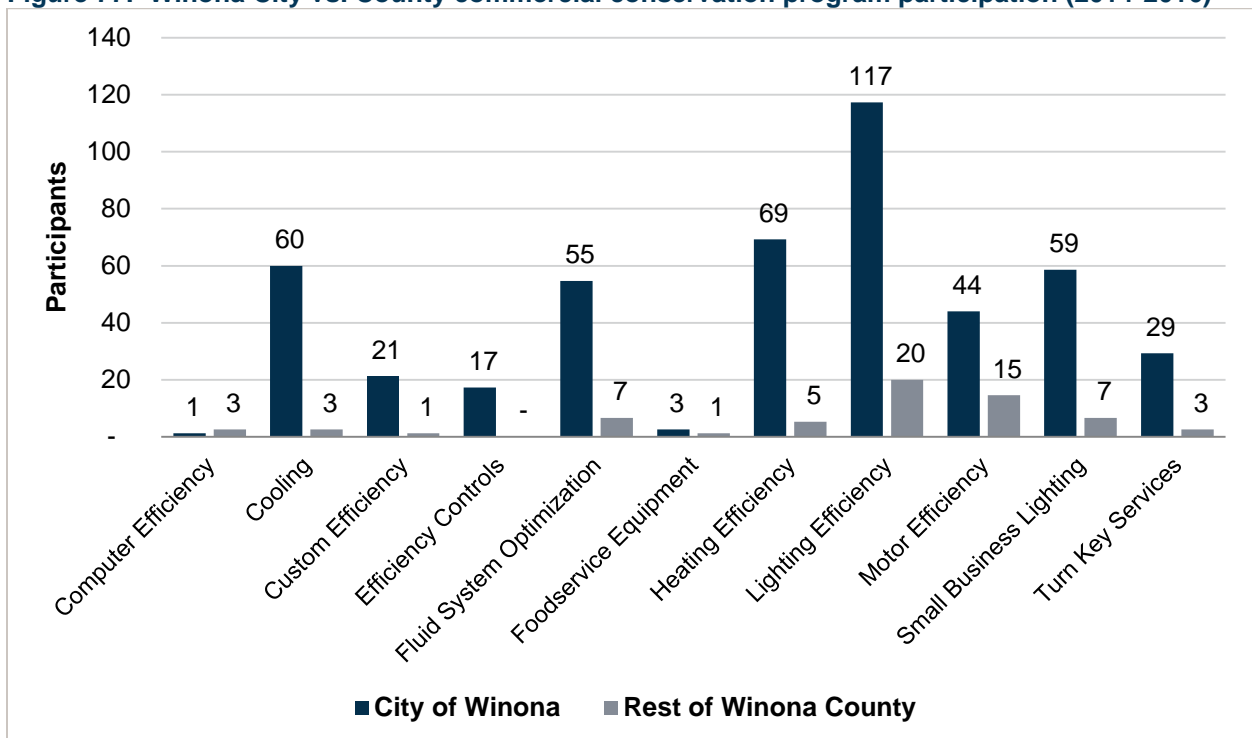


Figure 77: Winona City vs. County commercial conservation program participation (2014-2016)



Focus Area 1	Goals:	<ul style="list-style-type: none"> • Double annual participation in conservation programs • Double the average number of renewable subscribers, and double the average monthly subscription amount within one year 													
	Measuring Success	<ul style="list-style-type: none"> • Number of households participating in conservation and renewable subscription programs • Average renewable subscription amount • Number of low-income households and those just above the low income threshold participating in conservation programs • Number of participants in Energy Efficient New Home Construction • Number of contractors that receive BPI certification 													
	Strategy	Actions	Timeline							Responsible	Support	Xcel Energy Support			
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Years 2-3						
Residential	1. Residential Marketing Campaign	Increase participation in conservation and renewable subscription programs through a broad outreach and marketing campaign targeting all homeowners									City	Energy Action Team	Assist with campaign design		
		Promote use of MyEnergy, an online tool accessible through your Xcel Energy online account to track and compare energy use										City	Energy Action Team	Assist in designing informational materials about MyEnergy	
		Develop information materials comparing the various renewable energy options available to residents											City	Energy Action Team	Provide program information, develop materials
		Engage elementary school students in energy conservation through the use of Xcel Energy education kits in 5th-6th grade classroom, designating October as Energy Action Month											School District	City	Provide Education Kits to interested educators
		Encourage employers to buy down the cost of Home Energy Squad visits and/or renewable subscriptions as an employee benefit											Energy Action Team	City	Provide program information to interested employers
		Publicly recognize homes that have taken action, through methods such as yard signs or mailbox stickers											City	Energy Action Team	Assist in design of recognition materials
		Identify and partner with congregations where energy efficiency could be promoted, such as at church coffee hours											City	Energy Action Team	Assist in design of materials targeting congregations
	2. Target low-income homes and those just above the low-income eligibility threshold	Identify additional funding to buy down the cost of Home Energy Squad visits for those just above the low-income threshold										City		Assist in identifying resources	
		Partner with SEMCAC, County Veteran Services, and County Health and Human Services to promote Low-income Home Energy Squad										City	Energy Action Team	Provide informational materials about low-income programs	
		Work with Winona's Housing and Redevelopment Authority (HRA) to target all four multi-family building complexes for energy efficiency upgrades											City	Energy Action Team	Provide information about available multi-family rebates
		Partner with Winona organizations involved in the low- and middle-income communities to share information about energy efficiency programs											City	Energy Action Team	Provide informational materials about low-income programs
	3. Target blue-collar workers through a workplace-based campaign	Identify one employer to host a pilot in the first year of implementation										City	Energy Action Team	Help design pilot	
		Engage the CEO/Company President to promote energy efficiency as a company benefit										Energy Action Team	City	Help develop talking points for CEO meeting	
		Offer a free Home Energy Squad visit to one person from the shop who is willing to serve as a spokesperson; Host a brief lunch and learn where they share their experience and the benefits of participating											City	Energy Action Team	Help plan lunch and learn
		Encourage employer to buy down the cost of Home Energy Squad for employees											Energy Action Team	City	Assist in coordinating with Home Energy Squad

	Strategy	Actions	Timeline						Responsible	Support	Xcel Energy Support
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019			
Residential	3. Improve energy efficiency in residential new construction and renovation	Ensure energy efficiency and renewable energy are integrated into Winona's Workforce Housing Initiative	[Shaded]						City	Energy Action Team	Present about new construction rebate programs
		Research, identify, and pursue the best policy and enforcement options for ensuring all new construction and renovation meets or exceeds energy code				[Shaded]	[Shaded]	[Shaded]	City		Provide efficiency program and renewable energy information
		Host a workshop for local builders, the Housing Task Force, permit/building inspection staff, architects, and design engineers about available rebates and incentives for efficient new home construction and renovation		[Shaded]	[Shaded]				City	CERTS	Research policy best practices
		Provide training to code enforcement officials, architects, and design engineers to ensure compliance with energy efficiency building code requirements					[Shaded]	[Shaded]	City		Provide experts to present about available multi-family program options
	4. Address barriers to participation by providing Building Performance Institute (BPI) certification training to local contractors	Identify local insulation and home renovation contractors interested in adding energy efficiency to their services	[Shaded]						City		Assist in drafting contractor letter
		Address the lack of certified auditors/contractors eligible to access Xcel Energy rebates and incentives for customers by providing subsidized BPI certification training		[Shaded]	[Shaded]			City		Provide training scholarship for up to 20 contractors	
	Other Resources	<ul style="list-style-type: none"> Key partners in outreach to low-income households: Habitat for Humanity; Salvation Army; Restored Blessings; Meals on Wheels; Winona Catholic Worker Transitional Housing; Interfaith Council; Elder Network; Winona Health Interfaith Council and Interfaith Power and Light to assist with outreach to congregations 									

Focus Area 2	Goals:	<ul style="list-style-type: none"> • Reduce institutional energy use by 15% below a 2016 baseline by 2025 • Engage Winona institutions to support renewable energy development equal to 10% of their energy use by 2030 												
	Measuring Success	<ul style="list-style-type: none"> • Number of institutional customers participating in conservation programs • Proportion of institutional energy covered by renewables 												
	Strategy	Actions	Timeline						Institutions	Support	Xcel Energy Support			
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Years 2-3					
Institutions	1. Engage major institutions in energy conservation	Host a workshop aimed at facility managers and financial decision makers of institutions summarizing energy efficiency opportunities, with savings potential and estimated payback.									City	Sustain Winona	Provide program and technical information	
		Create an info sheet about performance contracting, explaining how it works, vendors available, and some key tips around decision making									City	Sustain Winona	Assist in developing information sheet	
	2. Reduce Energy Use in City Buildings	Identify best options for conservation at City/County buildings, develop an implementation plan with budget request, and present to County Board/City Council for approval										City	County	Provide program information
		Support energy benchmarking of city and county buildings through a B3 'data jam', where facilities staff meet up and are joined by technical experts to input data together										City	County	Provide technical support for B3
	3. Provide detailed information about financing options for energy projects	Research and summarize financing options for energy projects specifically available to institutions and non-profits										City	Sustain Winona	Assist in developing information resource
		Host a workshop targeting large energy users to discuss PACE and other financing options and provide case studies of resulting energy savings										City	Sustain Winona	Help connect to potential workshop presenters and case study examples
4. Show leadership by increasing use of renewable energy by institutions	Host a workshop providing information about available renewable energy options and available financing, including peer sharing from other institutions that have already committed to renewables.										City	Sustain Winona	Provide information about renewable energy options	
	The City of Winona will invest in renewable energy, including on-site solar on city properties										City			
Other resources	<ul style="list-style-type: none"> • Sustain Winona to add Institutions goals and strategies check-in as regular agenda item • Interfaith Power and Light to present to congregations about renewable energy project implementation process and support follow-through • Clean Energy Resource Teams (CERTs) to co-host renewable energy workshop • MiEnergy Cooperative to assist with energy conservation workshop 													

Focus Area 3	Goals:	<ul style="list-style-type: none"> Engage 90% of large commercial/industrial customers to participate in at least one conservation program within 3 years Ensure at least three large commercial/industrial customers commit to adding on-site renewable energy generation within 3 years 											
Measuring Success:		<ul style="list-style-type: none"> Number of large commercial customers participating in conservation programs Establishment and active membership of Green Ribbon Commission Proportion of large commercial/industrial energy covered by renewables 											
Strategy		Actions	Timeline						Responsible	Support	Xcel Energy Support		
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019				Years 2-3	
1. Create a Mayor's Green Ribbon Commission		Identify CEOs/Company Presidents who are leaders in energy efficiency and renewables; Invite to serve as Green Ribbon Commission members to elevate importance of issue, serve as role models, and develop effective strategies for engagement	■	■						City	Energy Action Team	Help draft outreach letter	
		Convene semi-annual Commission meetings, hosted by the Mayor, to discuss actions, opportunities, and barriers			■		■			■	City	Energy Action Team	Help develop initial meeting agendas
		Publish newspaper editorials at least once a year highlighting energy actions and opportunities		■				■		■	City		Assist in drafting editorials
		Host regular roundtable luncheons for large commercial/industrial businesses to share ideas, answer questions, and create recognition for businesses taking action			■	■	■	■	■	■	City	Green Ribbon Commission	Assist in drafting workshop agendas; Provide speakers to outline conservation program options, as available
		Host an annual recognition event to highlight businesses that show leadership in energy conservation					■			■	City	Green Ribbon Commission	
2. Targeted one-on-one outreach and engagement of large commercial/industrial customers		Conduct a phone survey to gauge interest in energy conservation and identify the right person to work with on energy action		■						Energy Action Team	City	Assist in developing questions for phone survey	
		Identify outreach volunteers and provide training on available Xcel Energy programs	■								Energy Action Team	City	Assist in training volunteers
		Conduct outreach to at least two large energy users per month through trusted messengers to encourage energy conservation, with the goal of building personal relationships with energy managers/decision makers at each company			■	■	■	■	■	■	City	Energy Action Team; Community Volunteers	Provide program information
		Provide relevant and customized information about energy saving opportunities, including case studies of successful projects and ROI calculations				■	■	■	■	■	City	Outreach volunteers	Create case studies and targeted information resources
3. Provide detailed information about financing options for energy projects, including PACE		Create informational resources summarizing financing options, including local banks, PACE, and others			■	■				City	Energy Action Team	Assist in creating informational resources	
		Distribute information about financing for energy projects at the City permit desk				■	■	■	■		City		
		Host a workshop targeting large energy users to discuss financing options and provide case studies of resulting energy savings				■					City	Energy Action Team	Identify experts able to provide information at workshop

Large Commercial and Industrial

	Strategy	Actions	Timeline							Responsible	Support	Xcel Energy Support
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Years 2-3			
	4. Increase use of renewable energy by large commercial/industrial customers	Develop and distribute informational resources highlighting available renewable energy options for businesses								City	Energy Action Team	Provide information on renewable energy options for businesses
		Develop case studies of successful renewable energy projects on large commercial/industrial buildings								City	Energy Action Team	Draft case studies
		Identify at least three large commercial/industrial customers interested in installing on-site renewable energy generation; Assist in accessing necessary information to move the project forward								City	Energy Action Team	
	Other Resources	<ul style="list-style-type: none"> Chamber of Commerce, to integrate energy into existing events targeting a similar audience Local banks, to participate in financing workshop Minnesota Technical Assistance Program (MnTAP) and Energy Intelligence to provide energy assessments and efficiency recommendations to manufacturers and industrial businesses 										

Focus Area 4	Goals:	<ul style="list-style-type: none"> Engage at least 40 small/medium size businesses to participate in conservation programs annually Double annual energy use reductions among small/medium businesses Ensure at least one small business subscribes to or installs renewable energy generation annually 											
	Measuring Success	<ul style="list-style-type: none"> Number of businesses participating in conservation programs Number of attendees at business meetings and contractor workshops 											
	Strategy	Actions	Timeline							Responsible	Support	Xcel Energy Support	
			Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Years 2-3				
Small/Medium Size Business	1. Small/medium size business outreach campaign	Gather information about business energy concerns by integrating energy-related questions onto the Grow MN Business Retention Survey and/or through a Chamber of Commerce member survey								Chamber of Commerce	City	Assist in developing energy-related questions for survey	
		Create a small/medium size business recognition program to highlight those who take action.								City	Energy Action Team	Assist in creating framework for recognition	
		Create a university student internship to conduct door-to-door outreach to small/medium size businesses; Provide individual follow-up to those businesses interested in taking action									City		Assist in developing outreach tool kit
		Partner with CERTs/EnergySmart to perform intensive door-to-door outreach promoting lighting programs to downtown businesses									City	Energy Action Team	Provide program information
		Look into offering Turn Key walk-throughs with a promotional discount for follow-through									City	Energy Action Team	Coordinate with Turn-key
		City and Chamber of Commerce to co-host annual community business meetings with presentations about energy opportunities and peer sharing									City	Chamber of Commerce	Provide experts to present on energy opportunities
		Send a co-branded email through Xcel Energy to small/medium business customers highlighting energy conservation opportunities									Xcel Energy	City	Language for email and co-branding
		Publish a quarterly spotlight/case study in local newspapers and the Main Street Program e-newsletter highlighting businesses that have taken energy action									City	Chamber of Commerce	Assist in drafting case studies/newsletter articles
	2. Create information resources targeting small- and medium-size businesses	Create a toolkit for business energy efficiency highlighting energy conservation and renewable energy options, with information on cost and Return on Investment									City	Chamber of Commerce	Assist in creating tool kit
	3. Engage electrical, HVAC, and other contractors serving the business community	Host a contractor workshop to provide information about available programs and rebates, and trade ally benefits to those who promote them									City	Energy Action Team	Provide information on programs and rebates
Other resources	<ul style="list-style-type: none"> The Chamber of Commerce and Main Street Program can play an important role in supporting this focus area, including: Conducting the annual Grow MN Business Retention Survey, Promoting energy efficiency and renewable energy options to members, Sharing case studies of businesses who have taken energy action through website and social media, Co-hosting annual business meeting with City, Assisting in creating and distributing business efficiency tool kit, Assisting in identifying and reaching out to contractors serving the business community, For businesses making strides in improving the energy consumption, recognizing and highlighting their achievements at the Business Celebration Month in May EnergySmart to assist in providing initial energy assessments CERTs to partner on door-to-door business outreach 												