

COMMITTEE OF THE WHOLE MEETING

The Common Council of the City of Ashland will meet as the Committee of the Whole on September 8, 2020 immediately following the City Council meeting which begins at 5:30 PM To Immediately Follow the City Council Meeting via GoTo Meeting .

The following items will be considered:

1. Roll Call
2. Council President's Report
3. Administrator's Report
4. Approval of Agenda
5. Discussion Items
 - A. **Presentation, Discussion and Possible Action Regarding Xcel Partners in Energy Program** (*Mayor*)
 - B. **Presentation, Discussion and Possible Action Regarding City Priorities for Paving of Roads and Paving Costs** (*Councilor Moore*)
6. Adjournment

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NOTE: Upon reasonable notice, the City of Ashland will accommodate the needs of disabled individuals or individuals with limited English proficiency through auxiliary aids or services. For additional information or to request this service, contact Denise Oliphant at 715-682-7071 (not a TDD telephone number) or FAX: 715-682-7048

SUBJECT: Presentation, Discussion and Possible Action Regarding Xcel Partners in Energy Program (*Mayor*)

RECOMMENDATION: As the Council desires.

DEPARTMENT OF ORIGIN: Mayor

CLEARANCES: City Administrator, City Council President

EXHIBITS:

1. Energy Action Plan for St. Cloud, MN
2. Partners in Energy FAQ
3. Energy Action Plan for Mahtomedi, MN with Appendices

SUMMARY STATEMENT:

Xcel Energy will be offering a Partners in Energy (PIE) program in Wisconsin in 2021 to two communities and the City of Ashland has been approached by Xcel to consider participation in the program. This discussion is intended to have Council members learn more about this program and give a sense of the interest of the Council in having the City apply.

Attached is a program description and FAQ for your information. In addition, there are examples from two communities in MN that have participated in the program. Approximate cost of the program is \$30,000 but Xcel Energy would cover half the cost up to \$15,000.

An Energy Action Plan for **The St. Cloud Community**



March 2017

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- Appendix A: Glossary of Terms**
- Appendix B: Planning Workshop Meeting Notes**
- Appendix C: Supplemental Baseline Energy Data & Comparison to Other Communities**
- Appendix D: Planning Phase Memorandum of Understanding between City of St. Cloud & Xcel Energy**
- Appendix E: Xcel Energy Programs & Rebate Summary**
- Appendix F: Energy Action Plan Overview & Infographic**

Executive Summary

Our Vision:

We are energy leaders through voluntary, inclusive, and sustainable approaches that result in measurable, environmental, and economic benefits.

How We Will Get There:

The community will focus on actions and impacts over a 10-year period. Near-term goals and strategies will focus on early efforts to lay a strong foundation for long-term, community-wide achievement.

Education

Goals:

- Near-Term & Long-Term: Increase energy awareness for individuals regarding actions and behaviors that reduce energy use and benefit future generations.

Strategies:

- Engage primary or secondary school age students through an annual school energy challenge.
- Hold events to educate residents about energy resources and best practices.
- Hold events to educate small and medium-sized businesses about home energy resources and best practices.
- Launch an online resource library for residents and businesses.

Conservation

Goals:

- Near-Term: Double utility conservation program participation for both residential and small to medium-sized businesses in year 1.
- Near-Term: Save \$638,000 in energy costs community wide in year 1.
- Long-Term: Maintain program participation at 70% above business as usual after year 1.

Strategies:

- Host 1 to 3 events for residents to learn about and sign up for conservation programs and services.
- Create a handout on return on investment for key small to medium-sized business conservation capital and non-capital improvements.
- Host 1 to 3 events for small to medium-sized businesses to learn about and sign up for conservation programs and services.
- Launch a clean energy community action campaign that promotes healthy and efficient businesses and homes.

Renewable Energy

Goals:

- Long-Term: Help institutions and industrial businesses replace 21.8 million kWh of electricity with renewable electricity by 2026 via installation, purchase, or subscription.

Strategies:

- Create case studies of businesses that have completed conservation projects in preparation for future renewables.
- Hold renewable energy education workshops for institutional and industrial businesses.
- Launch a challenge program to get all institutional and industrial businesses to pledge to reach 5% renewable electricity by 2025.

Introduction

The purpose of this Energy Action Plan is to develop an Energy Vision for the community and outline a set of goals and recommended strategies to achieve that vision. The intent of this report is to document the character of the vision and goals with a focus on three themes: education, conservation, and renewable energy. This plan will serve as a reference for community members and a road map for implementation.

In May 2016, the City of St. Cloud signed a Memorandum of Understanding with Xcel Energy to participate in Partners in Energy (see Appendix C). The City identified the community leaders that would ultimately make up the 10-person Community Planning Team that developed the contents of this Energy Action Plan. This team participated in a series of planning workshops over the course of five months between June and November. The committee was comprised of residents, neighborhood organizers, business owners, institution facility leaders, sustainability leaders, and city staff.

Although St Cloud has always valued sustainability and made considerable efforts toward sustainability, there was not a formal action plan focused specifically on community-wide energy usage. This Energy Action Plan is intended to fill that void and create a more synergistic approach to sustainability by drilling deep into the community's energy opportunities. The process to develop the plan brought new stakeholders to the table and identified both near-term and long-term energy goals. The planning process was facilitated by Xcel Energy's Partners in Energy program and co-hosted by the City of St. Cloud's Public Utilities Department and Planning and Zoning Department. The City pursued Partners in Energy as a way to renew and advance the energy related goals outlined in their 2010 Sustainability Framework Plan. The Partners in Energy planning process helped the Community Planning Team develop goals and strategies rooted in comprehensive, place-based energy data and on-the-ground campaign and capacity building.

The following plan provides an overview of the St. Cloud community's baseline energy use, a vision for energy action, targeted themes and audiences for each of the goals, and recommended strategies that reflect the spirit of the goals and best practices shared during planning. Throughout the plan and in the appendices, the planning process is documented for community reference during implementation.

Community Background

Business, Industry, and Jobs

The greater St. Cloud area is the fourth largest metro area in Minnesota. In 2015, St. Cloud's population was estimated to be 67,056.¹ The surrounding communities of St. Augusta, St. Joseph, Sauk Rapids, Sartell, and Waite Park have a combined population of over 111,000.² The St. Cloud

¹ US Census Bureau. (2015). *Quick Facts*. Retrieved from www.census.gov/quickfacts/table/PST045216/2756896,2767612,2757130,2758612,2758684,00

² The St. Cloud Metropolitan Statistical Area (MSA) is estimated to be even larger, at 189,000 people.

area is a destination for central Minnesota residents' retail and recreational needs, and it also provides entertainment opportunities for the community. St. Cloud is large enough to attract business yet small enough to attract those looking for a quiet place to live, and it has seen persistent population growth over the last 15 years with continued growth projected at a slow and sustainable rate. St. Cloud's central location and proximity to both major highways and a regional airport makes it a desirable location for business and institutions.

St. Cloud is located at the intersection of three counties and is the county seat for Stearns County. St. Cloud provides job opportunities in social services and public administration for both county government and state and federal government institutions.

St. Cloud is also a notable hub for healthcare and education. St. Cloud State University (SCSU) is one of the largest colleges in the Minnesota State Colleges and University (Minnesota State) system, with a student body of 19,186.³ SCSU is located adjacent to downtown St. Cloud and provides the community with opportunities for arts, culture, and athletics. It also offers noteworthy programs in management and finance, criminal justice, communications, and medical and clinical research.

In addition to SCSU, St. Cloud Technical and Community College has a student body of 6,000⁴, and the neighboring community of St. Joseph is home to the College of St. Benedict and St. John's University, which have a combined student population of approximately 3,600.⁵

Healthcare is another highly visible industry with the CentraCare headquarters located in the St. Cloud community. CentraCare is the major healthcare provider in central Minnesota and includes over 30 facilities in central Minnesota from hospitals to clinics and senior housing.⁶ CentraCare is a business leader in St. Cloud — it is a Top 100 Hospital (named this for the 10th time in 2015) and a sustainability leader.⁷ Because of CentraCare and others, St. Cloud attracts medical professionals from around the country.



Credit: St. Cloud Downtown Council

Combined, 25% of St. Cloud's jobs are in the education, medical, or social assistance sectors.

Retrieved December 21, 2016 from the City of St. Cloud website: www.ci.stcloud.mn.us/1261/Demographics

³ Retrieved December 21, 2016 from Minnesota State's website:

www.mnscu.edu/college-search/public/institution/institutionProfile?search=college&rcId=0073

⁴ Retrieved January 3, 2017 from St. Cloud Technical & Community College website: www.sctcc.edu/about

⁵ Retrieved December 21, 2016 from College of St. Benedict and St. John's website: www.csbsju.edu/about/at-a-glance

⁶ Retrieved December 30, 2016 from Centra Care Health website: www.centracare.com/about-us/

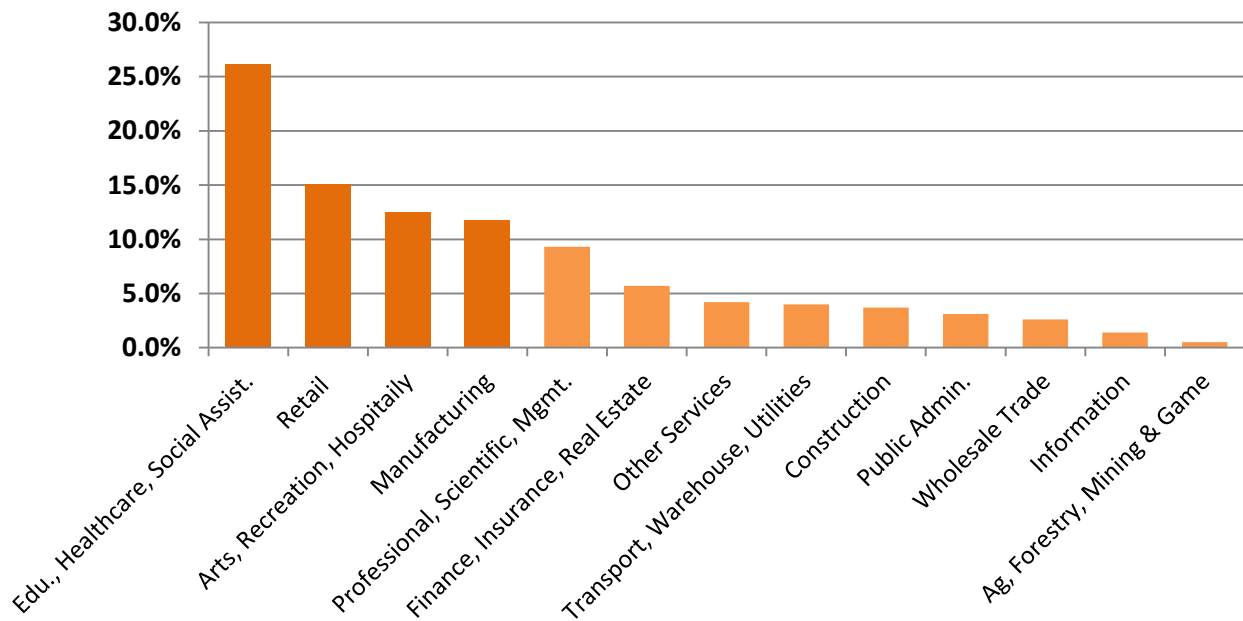
⁷ Retrieved December 30, 2016 from Centra Care Health website: www.centracare.com/locations/st-cloud-hospital/top-100-hospital/

Manufacturing, distribution, and wholesale business account for a large portion of the remaining employment sectors in St. Cloud. The St. Cloud Chamber of Commerce has over 1,000 members, 45 of which identify as one of these business types.⁸ Of note are Pan-O-Gold, DeZURIK, Electrolux North America, New Flyer of America bus manufacturer, and the Granite Supply Company.

St. Cloud also has significant workforce in retail, arts, recreation, and hospitality. The St. Cloud mall is anchored by four large retailers: Macy's, Target, Sears, and JC Penny's. The St. Cloud Rivers Edge Convention Center is the largest conference facility in central Minnesota, and hotels and restaurants are used by both residents and visitors.

Figure 1: St. Cloud Employment by Industry (2010-2014)⁹

Twenty-six point two percent of St. Cloud jobs are in the areas of education, healthcare, or social assistance.



Community, Population, and Housing Demographics

St. Cloud residents enjoy a close proximity to the Twin Cities metropolitan area as to take advantage of big city amenities without the hustle and bustle right in their backyard. In 2016, Forbes ranked St. Cloud as the 14th in the US for the “Best Small Place for Businesses and Careers.” The cost of doing business in St. Cloud is ranked 115th, and the city is ranked 75th in education and 44th in job growth. The cost of living is calculated to be 9.4% below the national

⁸ Retrieved January 4, 2017 from St. Cloud Area Chamber website:

<http://chambermaster.stcloudareachamber.com/list/ql/manufacturing-production-wholesale-16>

⁹US Census Bureau. (2014) *American Community Survey*. Retrieved from

thedataweb.rm.census.gov/TheDataWeb_HotReport2/profile/2014/5yr/np01.html?SUMLEV=160&state=27&place=56896

average with an unemployment rate of 3.7%, which is also lower than the national average of 4.9%.¹⁰

As a hub for healthcare and education, and with industrial and agricultural roots, St. Cloud is a hybrid of small-town and big-city thinkers with values rooted in pragmatism, conservation, and innovation.

Since 2000, St. Cloud's population has been gently increasing at a rate just over 1.0%.¹¹ At 70.1%, the largest wedge of the population is made up of young adults and working families, those in their primary working years. Over 92% of all residents have a high school diploma or equivalent, and 28.4% of residents hold a bachelor's degree or higher, compared to the 2015 national average of 36%.¹² The average household income in the city is \$45,437, which is lower than the state average. More than 40% of households have an income of \$35,000 or less, and 28% of residents live in poverty (in Minnesota as a whole, 11.5% of residents were living in poverty in 2014¹³).

Figure 2: St. Cloud Household Income (2014)

Total Per Household	25,279	100.0%
Less than \$35,000	10,112	40.0%
\$35,000-\$49,999	3,855	15.2%
\$50,000-\$74,999	4,727	18.7%
\$75,000-\$99,999	2,880	11.4%
\$100,000 or more	3,705	14.7%
Median (2014 \$'s avg'd)	\$44,485	

Figure 3: St. Cloud Race Distribution (2014)

Race	Count	%
White non-Hispanic	54,969	83.20%
Of Color	11,069	16.80%
Asian	1,737	2.60%
Black	5,592	8.50%
Hispanic (any race)	1,557	2.40%
Other races		<1%
Total population	66,462	

St. Cloud has seen significant growth in their immigrant population over the last 15 years. Lutheran Social Services of Minnesota, the largest of six primary service providers to refugees in the state, has relocated 1,000 refugees in St. Cloud since 2008. Because of this and the moderate cost of living, immigrants from other parts of the US have moved to the St. Cloud area, particularly from Somali communities.

The city was established in the 1850s and thus the housing stock is fairly old. The average house age is 50, and the median year built is 1969.¹⁴ The oldest homes are those closest to downtown and the river; these were primarily built between the 1880's and post-World War II. In 2015, 67% of

¹⁰ Retrieved December 28, 2016 from: <http://www.forbes.com/places/mn/st-cloud/>

¹¹ This is higher than the national average of 0.7%, according to the US Census, 2013 estimate.

¹² National Center for Education Statistics, <https://nces.ed.gov/fastfacts/display.asp?id=27>

¹³ Minnesota State Demographic Center. *Estimated Percent of all people that are living in poverty as of 2011-2015*. Retrieved from: <https://mn.gov/admin/demography/data-by-topic/income-poverty/>

¹⁴ City of St. Cloud. GIS Boundary Map. (M. Hoyer, personal communication, May 16, 2016).

housing consisted of single-family homes, with homeownership estimated to be 52%. Since 2013 the primary growth in housing stock is in the multifamily sector at 2.5% in 2014, compared to 0.6% in single-family homes.

Figure 4: Residential Housing Unit New Construction/Growth in St. Cloud

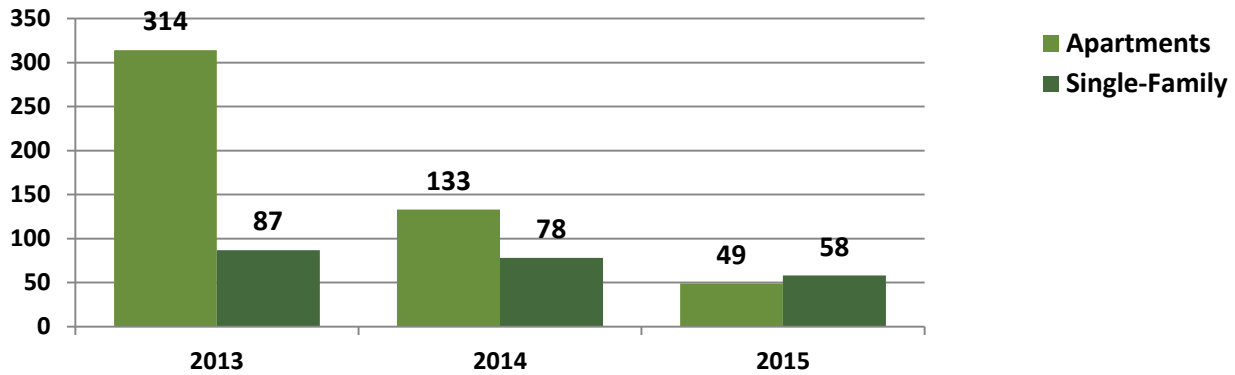
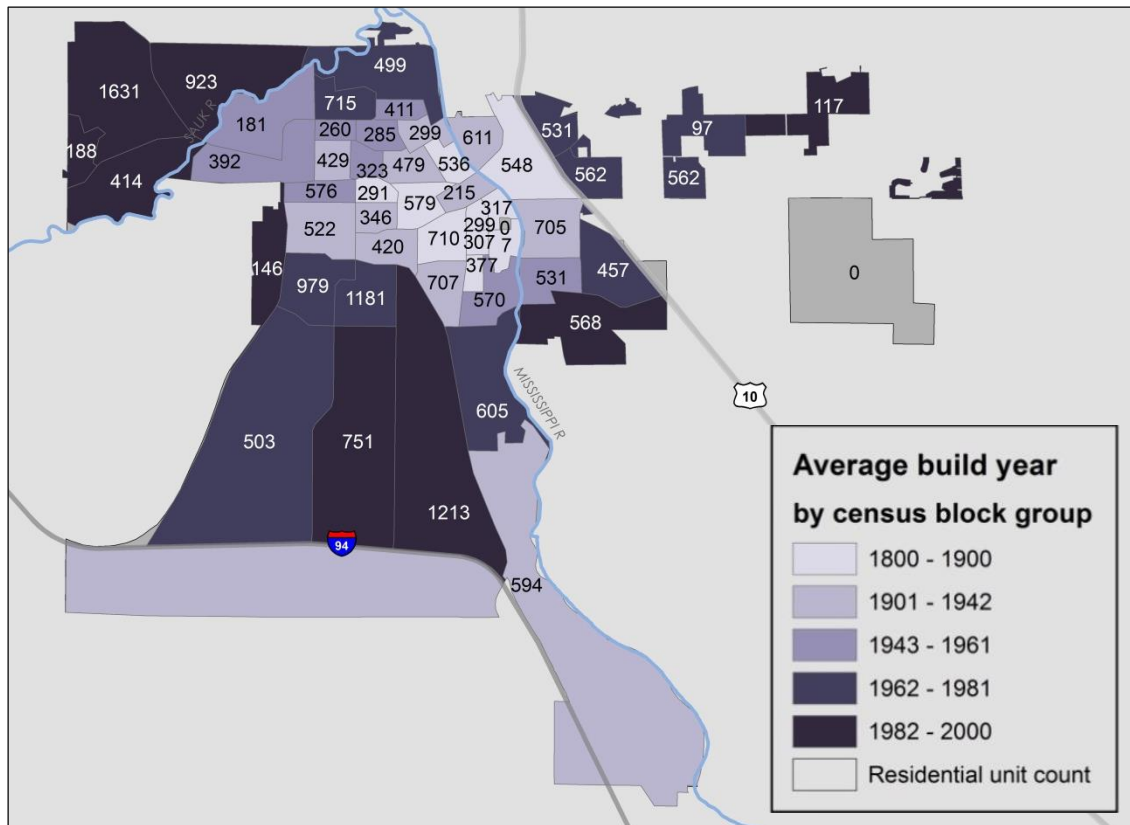


Figure 5: Average Year Built | St. Cloud Residential Building Stock



Community Leadership and Assets

Early on, the City and the Community Planning Team identified possible community networks and assets to use as channels and tools in meeting energy goals. The following table includes a summary that can be used as a reference for advisors and future implementers. It is not meant to serve as an exhaustive list.

Figure 6: Community Resources & Assets

City	Business	Community
GreenStep Cities	Medical institutions	St. Cloud Neighborhood Coalition
Renewable Energy & Efficiency Initiative	Universities and technical and business colleges	Festivals: Summer by George; Wings, Wheels, and Water Festival
Streetlight Improvement Project (LED retrofit)	St. Cloud Chamber of Commerce & neighboring chambers	Public school channels & PTA
Mayor's weekly radio show	Business Central Magazine	St. Cloud Area Somali Salvation Organization
	Central Minnesota Builders Association	St. Cloud Times newspaper
	Other energy utilities	St. Cloud Library

Commitment to Sustainability

The City of St. Cloud has a long history of strong city planning practices, bringing leadership to the area to help guide future development, smart land use, and economic development opportunities. Community-based planning efforts are an embedded tradition in the Planning and Zoning Department, which has a core purpose of *“providing professional assistance in creating and administering city policies, plans, and regulations with community stakeholders to enhance livability and sustainability.”*¹⁵

Since about 2008, the St. Cloud community has shown leadership in sustainability to guide durable economic development and local quality of life. The creation of the Sustainability Framework Plan in 2010 was a landmark event for the City. The plan was created by the St. Cloud Area Planning District

ST.CLOUD
GREATER
Sustainability

***The City of St. Cloud
is committed to
protecting & enhancing
environmental quality
today & for future
generations.***

¹⁵ Retrieved January 4, 2017 from City of St. Cloud website: <http://ci.stcloud.mn.us/88/Planning-Zoning>

Sustainability Committee, a group of community, business, and city representatives. The group met with the goal of helping manage and preserve the region's natural resources including air, water, green space, and farmland.¹⁶ The plan envisioned a future for St. Cloud that leveraged significant energy efficiency, renewable energy, and district infrastructure and systems.

The Sustainability Framework Plan is still recognized today, overseen by the St. Cloud Area Sustainability Committee. However, some of the goals have exceeded their useful life.

St. Cloud has taken additional steps beyond the Sustainability Framework Plan toward deeper local government sustainability. The City became one of the initial cities to participate in GreenStep Cities, a voluntary tool from the Minnesota Pollution Control Agency (MPCA) to help city governments become more environmentally sustainable. Participating in this program has helped the City accomplish many action items, including some related to energy efficiency (such as replacing streetlights with LEDs and benchmarking all City facilities in the State's B3 Benchmarking) and renewable energy (such as adopting a Minnesota Solar Challenge land use best practice to encourage solar development). However, the City has taken steps forward on all but four of the possible 65 actions for GreenStep Cities, so it is unclear how much longer it will be an effective tool.¹⁷

The City of St. Cloud applied to Xcel Energy's Partners in Energy to update their energy-related sustainability goals and create a launching pad from recent energy conservation and renewable efforts (see the Community Background section). In their application, the City noted their interest to work with a wide array of local stakeholders to create a shared vision and improve community health and sustainability. The City also sees this effort as a way to save residents and businesses money on their energy bills and provide community services as cost-effectively as possible.



¹⁶ This group became formally known as the St. Cloud Area Joint Planning District Sustainability Committee.

¹⁷ St. Cloud has earned at least 1 of 3 stars for all 65 actions (5 action categories), in many cases achieving a higher than minimum level of recommended practices (earning 2 or 3 stars). As of July 2016, St. Cloud is noted as being "Inactive" on the GreenStep Cities website.

Recent City Leadership, and Energy Initiatives

The City of St. Cloud has offered a number of initiatives in the last decade that provide a robust jumping-off point for community action on energy and sustainability goals:

2009/2010 — The City developed the Sustainability Framework Plan, which included energy efficiency and renewable energy goals, initiatives, best practice guidance, and action steps.

2011 — The City became a member of MPCA's GreenStep Cities program, achieving Step 2 Status in 2011.

2015 — City Council adopted a resolution supporting the implementation of renewable energy from solar generation facilities.

2015 — City Council signed a resolution supporting large energy efficiency improvements at the St. Cloud Wastewater Treatment Facility and construction of the Biofuel Recovery Project that will generate ~5,000 MWh of renewable energy annually (E2B Project).

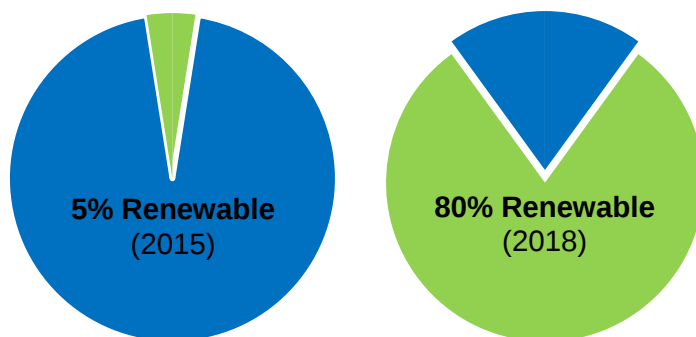
2016 — The City completed the Street Light Improvement Project (SLIP) by retrofitting all existing streetlights with LED technology, which resulted in energy savings estimated at 2,800 MWh annually.

2016 — The City's first rooftop solar array was installed at the Wastewater Treatment Facility and became operational in January 2016. A second ground-mount solar array was installed at the facility and became operational in December 2016. These two systems combined will generate approximately 342,000 kilowatt-hours of electricity annually. Two additional solar rooftop arrays were installed at St. Cloud Police Headquarters and St. Cloud Fire Station No. 2 and became operational in December 2016.

The recent energy efficiency improvements and the biofuel upgrades at the wastewater treatment facility show significant energy savings for the City and its residents.

Figure 7: City of St. Cloud Renewable Energy & Efficiency Initiative (REEI)

The City of St. Cloud has an initiative to increase energy efficiency and the use of renewable energy in city operations. The two charts show 2015 status and the 2018 goal for renewables.



St. Cloud is the only one of 22¹⁸ wastewater treatment facilities in the state to take this step. This work is part of the City's Renewable Energy and Efficiency Initiative (REEI), which started in 2014. This initiative has targeted energy improvements in the facilities and sectors that use the most energy; the top three are wastewater services, drinking water services, and street lighting.

REEI activities will conserve energy and produce enough renewables on-site to make all city government operations and services 80% renewable by 2018 (compared to 5% renewable in 2015).

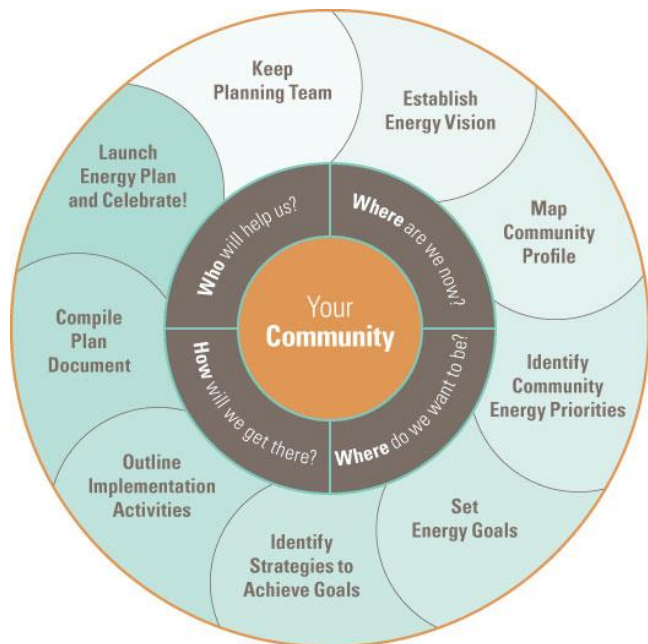
Xcel Energy's Partners in Energy

Partners in Energy is a service created for Xcel Energy communities in Minnesota and Colorado. The program provides support in the development and implementation of a customized energy action plan. St. Cloud was chosen as the **eighth Minnesota community** to participate since the program's launch in 2014. Other participating Minnesota communities at the time of writing are the Lake Street/Midtown Greenway Corridor in Minneapolis, Ramsey County Parks and Recreation, and the cities of Maplewood, Red Wing, St. Louis Park, Edina, Faribault, and Saint Paul. There are also seven Colorado communities currently participating.

The objective of the Partners in Energy planning process is to allow communities to develop actionable plans that advance their goals while being supported by Xcel Energy's technical expertise, facilitation process, and program knowledge. After six months of planning, Xcel Energy continues their support by providing 18 months of plan implementation assistance.

In addition to planning workshops, communities participate in joint learning opportunities with three to five other Partners in Energy communities, forming an "Exchange." Exchanges meet for office hour calls, webinars, and peer-to-peer conversations developed around topics that support planning and implementation tasks. The goal of these interactions is to allow for collaboration between communities and access to experts in the field.

Figure 8: Xcel Energy's Partners in Energy Planning Process Diagram



¹⁸ Bilek, A. Minnesota Biogas: Overview, Status, Opportunities and Trends [pdf document]. Retrieved from presentation slides pdf online: <http://www.leg.mn/2014/091614BilekPresentation.pdf>

Community Planning Team

This Energy Action Plan was created through a community-based planning process that incorporated local insights, concerns, and aspirations. The Community Planning Team is the group of community leaders brought together by the City of St. Cloud to help shape the plan. The team included an array of neighborhood and business leaders as well as city government staff. They were supported by Xcel Energy program, account, and community relations managers, as well as the Xcel Energy facilitation team that helped guide the group through the planning process.

See appendix A for more information about the planning process, individual workshops, and additional data shared.¹⁹

Figure 9: List of Community Planning Team & Xcel Energy Collaboration Representatives

St. Cloud Community Planning Team (pictured above)

Business & Community Representatives

1. Bryan Brown — District 742 Schools, Buildings & Grounds Supervisor*
2. Nick Barth — Beaver Island Brewing, Business Owner
3. Jane DeAustin — Central MN Builders Association
4. Joan Jaye — St. Cloud Neighborhood Coalition, Executive Director
5. Dustin Maddy — CentraCare, Sustainability Program Specialist
6. Phil Moessner — St. Cloud State University, Facilities Management, Assistant VP

City Government Representatives

1. Jim Flaaen — Senior Planner (City contact during implementation)
2. Matt Glaesman — Community Development Director
3. Tracy Hodel — Assistant Public Utilities Director (City contact during planning)
4. Emma Larson — Utilities Water Quality Coordinator
5. Patrick Shea — Public Services Director

Xcel Energy Representatives

1. Tami Gunderzik — Partners in Energy Program Manager
2. Yvonne Pfeifer — DSM Community Manager
3. Mark Osendorf — Community Relations and Economic Development Manager
4. Megan Hoye, Center for Energy and Environment — Facilitator Lead
5. Jenny Edwards, Center for Energy and Environment — Facilitator
6. Elena Foshay, Center for Energy and Environment — Facilitator

**Participated during Workshop 1, but was not able to participate throughout the full planning process.*

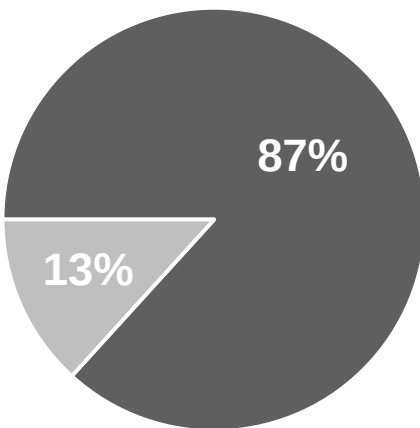
¹⁹ Data disclaimer: The cost data provided in this report considers only the energy and demand costs, not additional costs such as taxes or local fees that might be incurred indirectly, but which may appear on an energy bill. Additionally, in accordance with Xcel Energy's data privacy policies in the state of Minnesota, all data used in the planning process and reported in this Plan comply with the rule commonly called 15 x 15. This means that no data has been shared for customers that account for 15% or more of a segment of energy described, and all aggregated data includes data for a minimum of 15 customers.

Community Energy Use Baseline

This section provides a look at how the St. Cloud community currently consumes and saves energy. The most recent data covers the years 2013, 2014, and part of 2015. This information was presented to the Community Planning Team during planning as a starting point for conversations and a resource for determining where to focus the efforts and goals outlined in this plan.

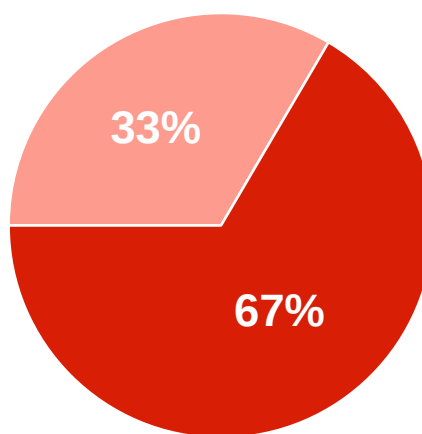
Figure 10: 2015 Energy Baseline Snapshot

Chart 1: Premise Count
29, 783 premises



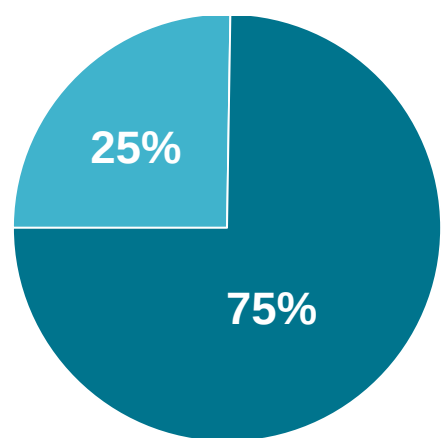
- Residential
- Commercial and Industrial

Chart 2: Natural Gas Use
38 million Therms



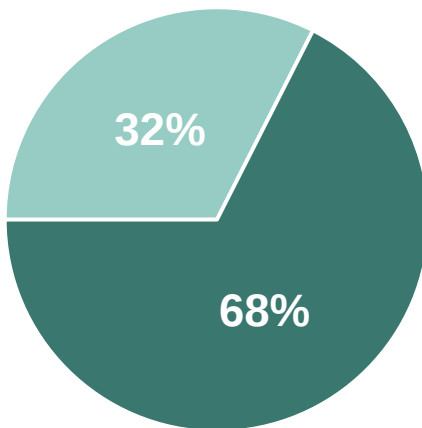
- Residential
- Commercial and Industrial

Chart 3: Electricity Use
668 million kWh



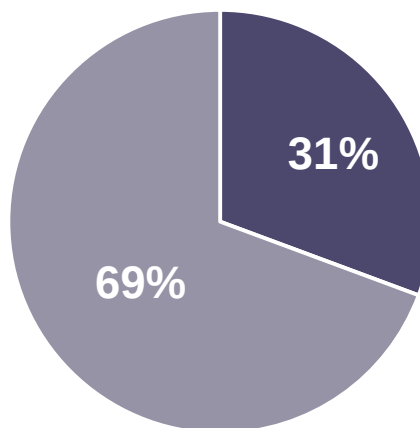
- Residential
- Commercial and Industrial

Chart 4: Total Energy Cost
\$87.17 million spent



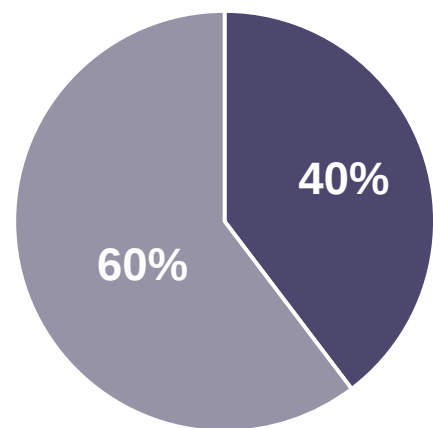
- Residential
- Commercial and Industrial

Chart 5: Residential Fuel
1.9 MMBtu's consumed



- Electricity
- Natural Gas

Chart 6: Commercial Fuel
4.3 MMBtu's consumed



- Electricity
- Natural Gas

As of 2015, there are 28,783 premises within the Xcel Energy St. Cloud territory divided between 3,813 commercial premises and 24,969 residential premises. A premise is the area served by a single electric or natural gas meter. Most houses have just one meter each, while large businesses often have more than one. While premise count is not necessarily representative of how many businesses or homes are in the community, it is the unit on which utility data is based.

In 2015, the average total energy cost per year for a residential customer was \$1,134 and \$15,436 for commercial customers. Figure 10 provides a range of charts that show a breakdown of thermal energy and electric energy use as well as cost by commercial and residential customers in 2015. Just over half (51%) of all the energy consumed by Xcel Energy customers in St. Cloud is natural gas energy while 49% is electricity, which comes from a variety of fuel types including natural gas, nuclear, coal generation, wind, and solar.

Commercial and industrial (C&I) customers consume the most energy. The 50 largest users of consume 52% of all C&I natural gas and 56% of all C&I electricity (according to 2015 data). These largest users have the greatest potential to influence total energy use and savings even though many often already engage with utility conservation programs, working directly with an Xcel Energy customer representatives. These businesses often include large institutions, manufacturers, and buildings that provide specialty services.

Figure 11: Total Energy Use (MMBtu) by Fuel & Customer Type (2015)

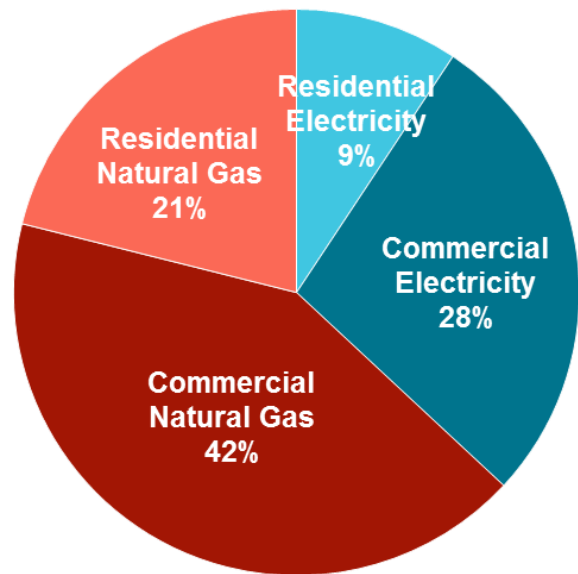
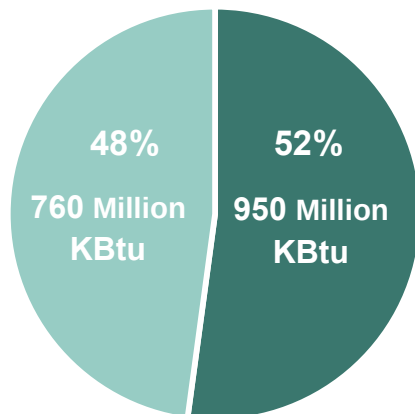


Figure 12: Energy Use from 50 Largest Users by Fuel Type (based on 2015 energy consumption)

Natural Gas Consumption (2015)



Electricity Consumption (2015)

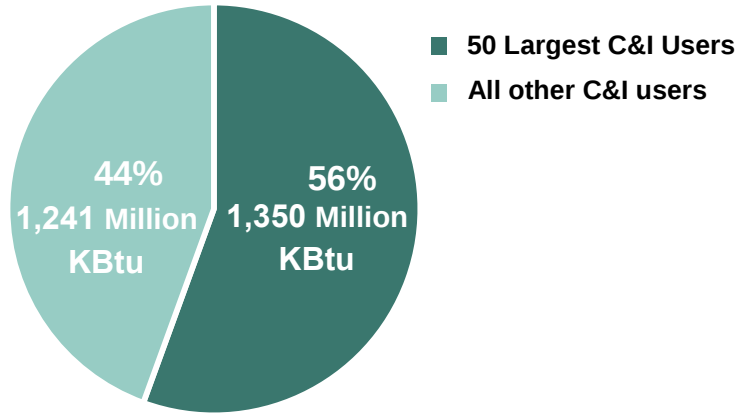
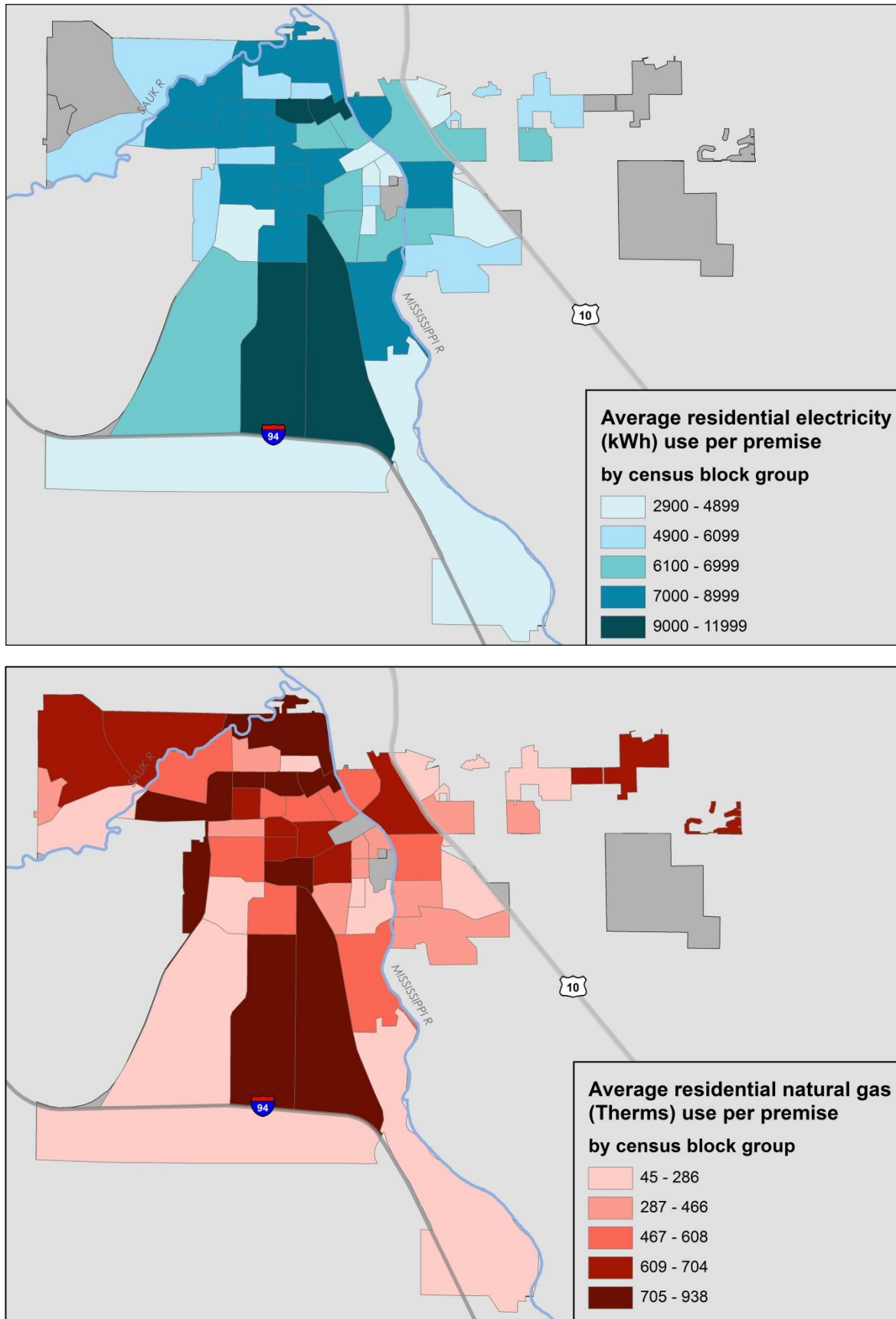


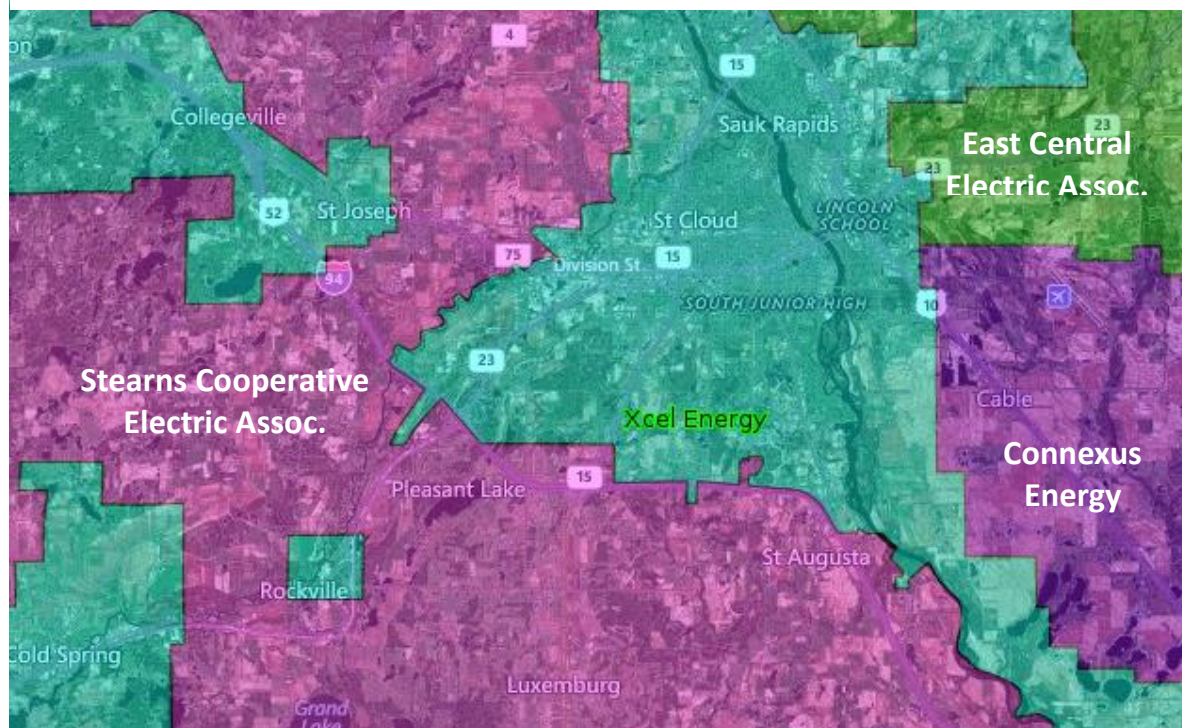
Figure 13a & b: Average Residential Electricity Use and Natural Gas Use by Premise (2015)
Included in these maps are all residential premises, including apartments and condos.



Energy usage by geographic area does vary within the city. The maps in Figure show annual average electricity and natural gas usage by census block group (a geographic unit of area) based on 2015 data. Residential premises are defined as those buildings or houses that have four or fewer living units. The parts of the city with a lower density of buildings are darker in color either because of the higher energy usage by a small number of businesses or because the average energy use per home is higher in that area.

Xcel Energy is the sole provider of natural gas to St. Cloud businesses and residents, and it is one of three electricity providers with the city limits and surrounding area. As an Xcel Energy service, Partners in Energy was only able to provide data about customers that fall within Xcel Energy's service area. Businesses such as BlueStem, New Flyer, Wapicada Golf Course, and the St. Cloud Airport, along with residential customers in the Kenwood neighborhood, are all examples of customers for which Xcel Energy is not able to provide data.

Figure 14: Xcel Energy Service Territory | St. Cloud Area



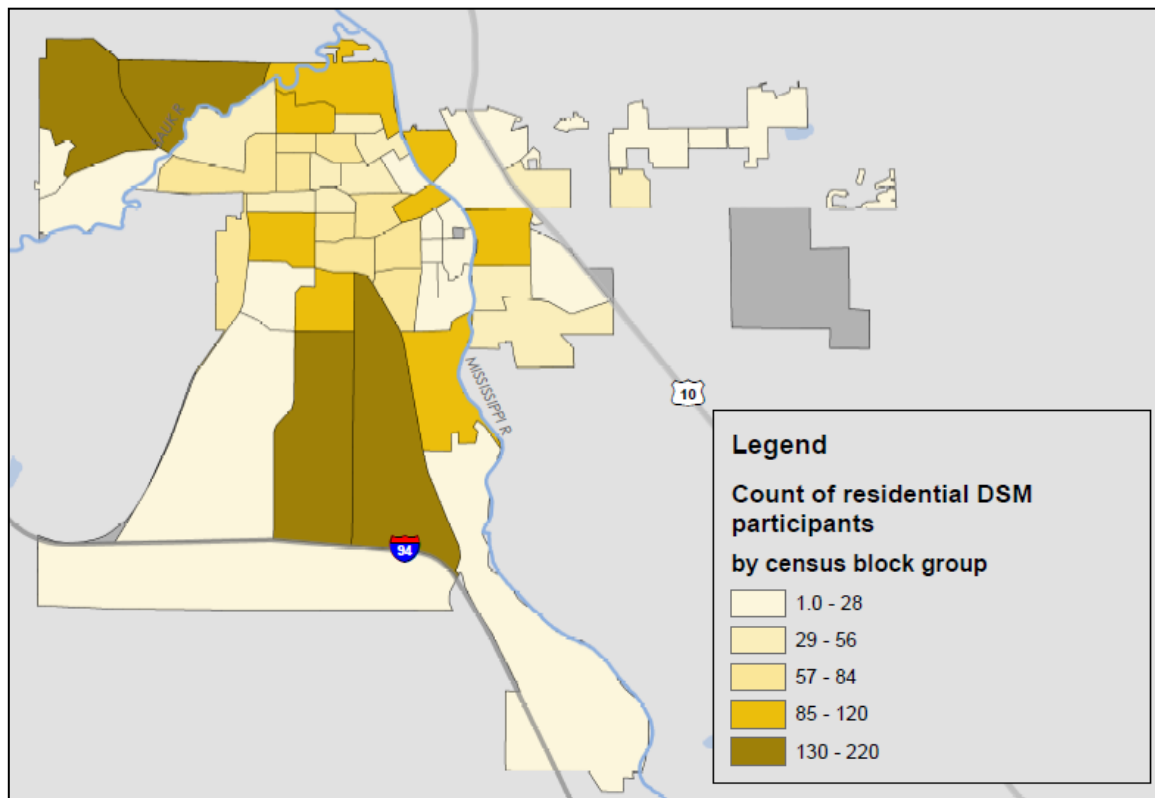
The Community Planning Team was thoughtful in considering how customers outside of this boundary could and should be served by this Energy Action Plan. Collaborating and communicating with Stearns Cooperative Electric Association, East Central Energy, and Connexus Energy about how these customers can access programs and services will help reach the goals laid out in this plan.

Base Participation in Conservation Programs and Services

Between 2013 and 2015, 26.8% of Xcel Energy's residential premises within the City of St. Cloud either participated in an energy efficiency program or received a rebate at least one time. The programs and rebates most commonly used by St. Cloud residents were the heating system rebate, cooling efficiency rebates, and home energy audits or assessments. The map below (Figure 15) shows which neighborhoods within the city have the highest absolute participation in a program or rebate. Most neighborhoods have an annual average participation of 85 to 120 customers. The highest participation in the last three years (2013-2015) has been in the outer neighborhoods where the homes are newer and incomes tend to be higher. These neighborhoods are also highly residential and have the greatest potential for residential participation (absolute counts).²⁰

Over a nearly three-year period, participation counts equaled approximately 9% of all residential premises and, coincidentally, 9% of all commercial premises. In some instances, a homeowner or business participated in more than one program in a year so this map does not represent that quantity of the premises that participated. Rather, it is an approximation of the fraction of businesses and residents that can be engaged within a few years.

Figure 15: Residential Baseline | Average Annual Program & Rebate Participation (2015)



²⁰ Participation counts in Figure 15 and Figure 16 do include all program and service participation. These totals vary from the participation counts used as a basis for setting conservation program participation goals.

Similarly, Figure 16 shows commercial premise participation in conservation programs and rebates. These are described per premise, and it is not uncommon to have a business that has participated in more than one program or service within a year, as customers often make improvements in batches.

Figure 16: C&I Baseline | Average Annual Program and Rebate Participation (2015)

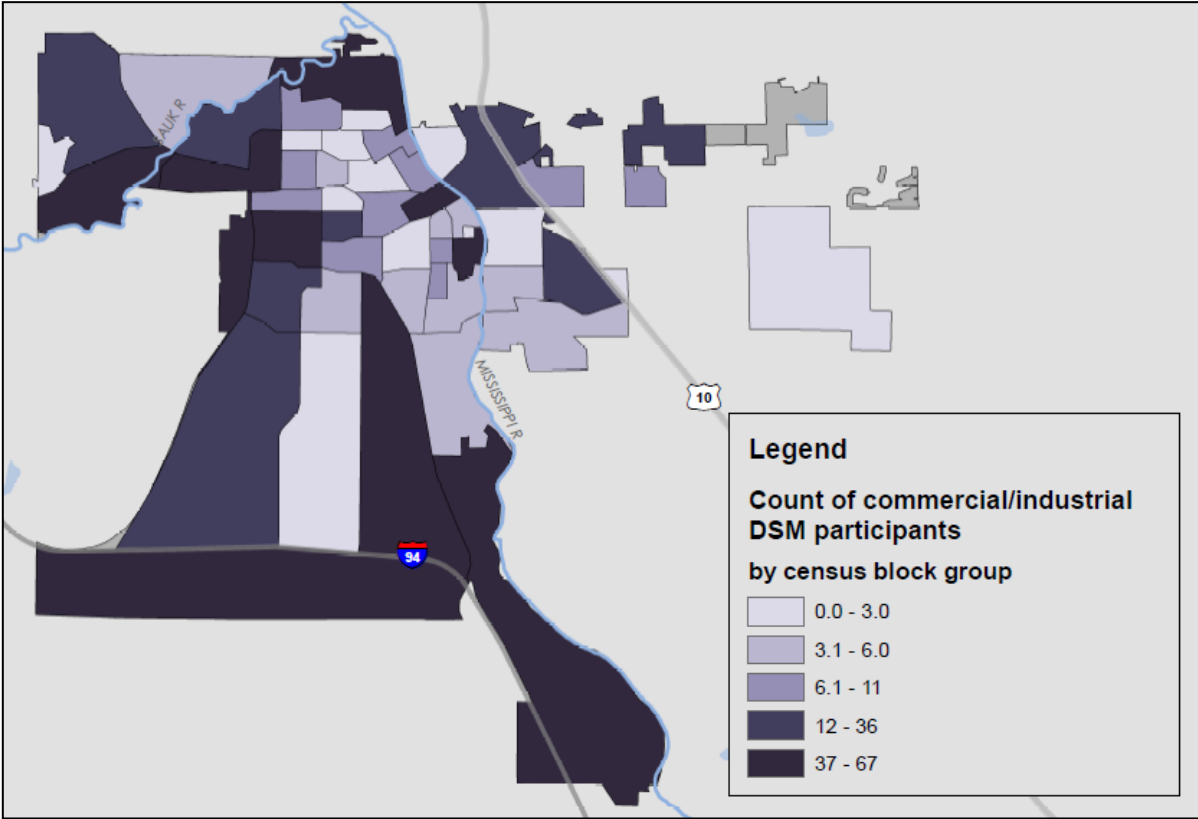
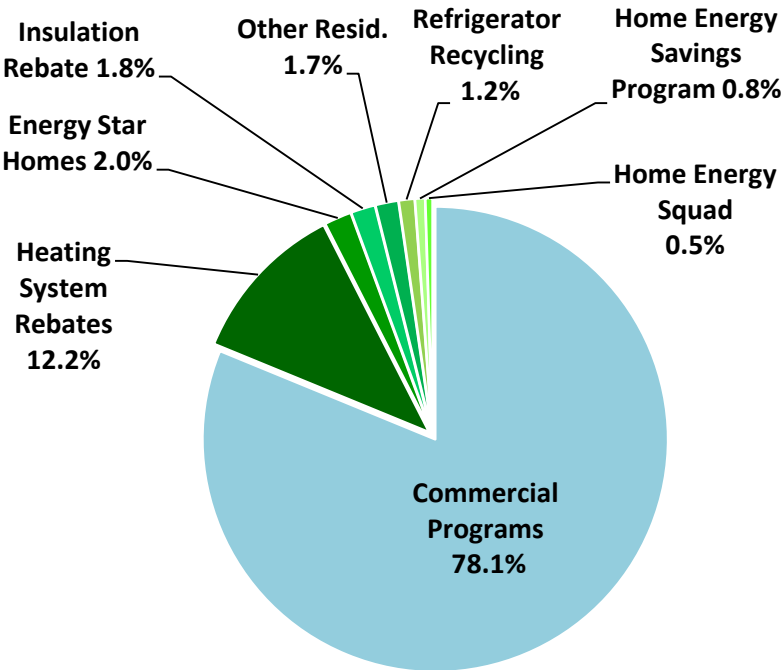


Figure 17: 2013-2015 Instances of Program Participation (%)

Looking at all St. Cloud program participation from 2013 to 2015, 78.1% are from commercial premises, even though there are far fewer of them. Within residential programs, heating system rebates have the highest rate of participation.

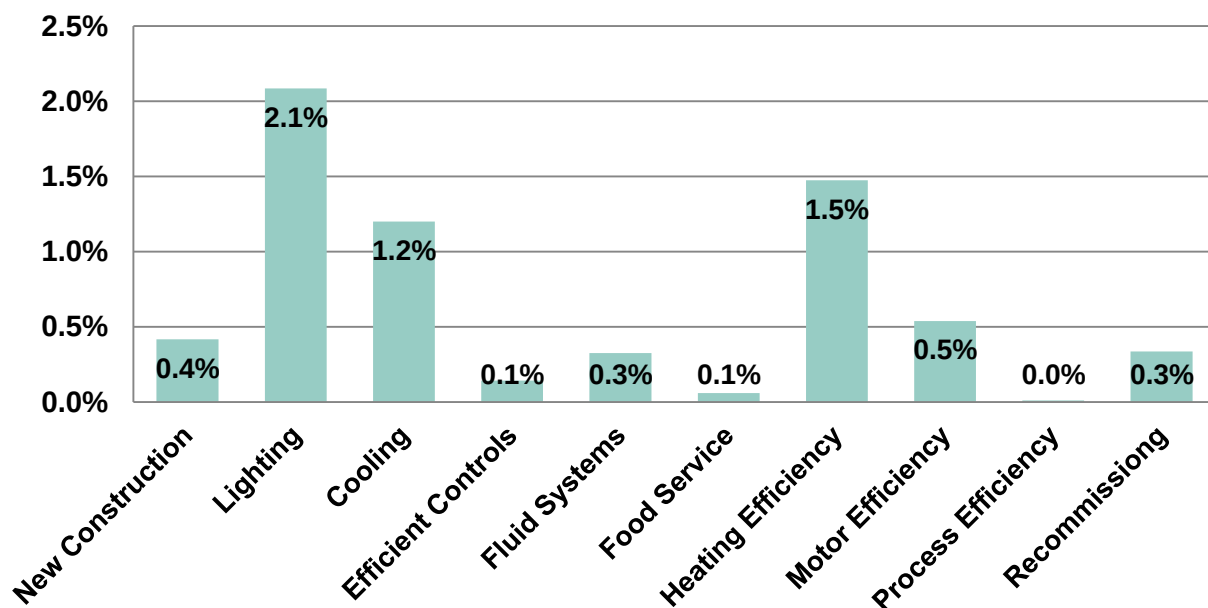
Figure 17 and Figure 18 provide snapshots of the



types of residential and commercial conservation programs that have the highest and lowest rates of participation. Those with the highest rates of participation often have the greatest name recognition within the community and can boost efforts to increase engagement with a program. On the other hand, programs with lower rates of participation may indicate an opportunity to increase participation and service businesses that may not be utilizing a potentially valuable service.

Within commercial program participation, some types of programs have higher participation than others. This chart shows the percentage of commercial premises in St. Cloud that have participated in conservation, or demand-side, savings programs in the last 3 years.

Figure 18: Commercial Program Participation (Annual Average Across 3 Years, 2013-2015)



Where Are We Going? | The Energy Vision and Goals

In June 2016, the City of St. Cloud worked with Partners in Energy to assemble a group of community leaders that would provide guidance and input for the creation of the Energy Action Plan. The group, called the Community Planning Team, consisted of ten individuals representing nonprofits, businesses, institutions, and the City. The team met monthly from July through November to walkthrough a community-based energy planning process.

After discussing a common planning purpose, the Community Planning Team was asked to share community insights and begin to put a critical eye towards baseline energy data shared in workshops. The team participated in an Energy Vision drafting process which consisted of individual surveys, group conversations, and small group work. The Energy Vision is meant to guide action toward St. Cloud's energy goals.

As part of the process, team members were asked to describe what, how, and the extent to which the City should carry out the actions. These became the guiding principles for drafting the Energy Vision and are included here as they convey the spirit and intent of the plan. In workshops 3, 4, and 5, the Community Planning Team returned to the Energy Vision to help guide the creation of strategies and course correct the refinement of goals. Key principles point to community values such as making opportunities voluntary and embedding opportunities for impact within the community so that they become durable. Creating goals that are measurable is not only good practice, it is important to the planning team to hold the community accountable to goals. Discussed at nearly every workshop was the trickle up and down potential of education; the team carefully considered how individual education and action can have ripple effects at home and work. Lastly, the team identified early on that they wanted to take a balanced approach to both short-term and long-term impact.

These key principles appear in the Energy Vision statement and throughout the Energy Action Plan. The Community Planning Team felt strongly that the Energy Vision should speak to St. Cloud residents and local government and serve as a call to action for the community.

Figure 19: Energy Vision and Principles

St. Cloud Community Vision Statement: We are energy leaders through voluntary, inclusive, and sustainable approaches that result in measurable environmental and economic benefits.

What	How	To What Extent
Be leaders	Embed	Durable & Sustainable
Energy awareness	Include	Long-Term
Cost-effective benefits	Educate	Short-Term
Enhance economic vitality	Voluntary	Residents & Neighborhoods
Reduce city energy footprint	Measure	Businesses & Institutions
Environmental quality for future generations	Leverage tools & services	

Three Themes for Impact

To focus and prioritize conversations around the goals, the Community Planning Team identified three themes that became the framework that drove discussion in workshops 3, 4, and 5 and helped identify the types of impact that should be delivered and who the recipients should be. The themes provided a layer of guidance for both goals and strategies, beyond the overarching vision and principles.

As a method for moving from action themes to more specific goals and implementation ideas, the Community Planning Team shared, discussed, and voted on additional energy data relevant for the themes and possible action. Energy data and example actions from other communities were used to highlight potential impacts and barriers for various activities and provide directions for what could be possible. Ultimately, the team was tasked with identifying key audiences or types of actions that should be targeted within each of these themes summarized in Figure 20.

Figure 20: Impact Themes Summary Table with Target Audiences for Each

THEME 1 Education	THEME 2 Conservation	THEME 3 Renewable Energy
Youth & All Individuals	Small Businesses & All Individuals	Institutions & Industrial Businesses

The theme of education focuses on increasing individual awareness about energy, the impacts of energy consumption, and individual or collective actions that can make a difference. The hope is that education will lead to further actions that fall under the conservation or renewable energy themes, and that it will be a vehicle for changing the way a community thinks and talks about energy. Helping make energy information more digestible and accessible will make conversations between individuals easier and help grow a proactive culture that cares about taking action and is aware of the importance of conversations within their own social network.

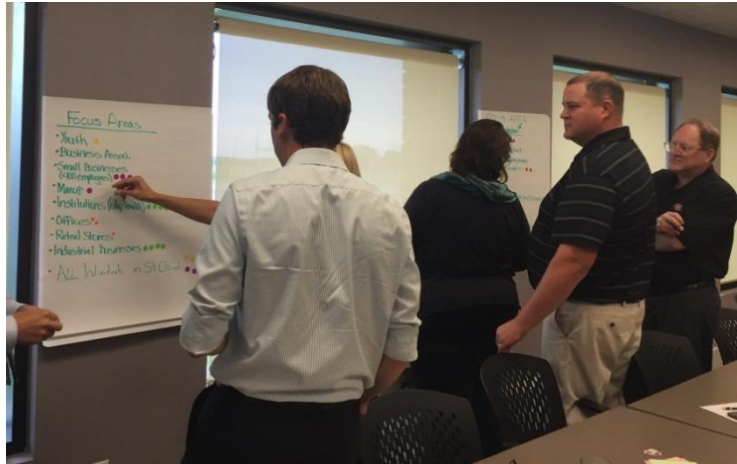
The theme of conservation focuses on individuals and businesses taking specific actions to save energy at home or work. One of the most direct and cost-effective ways to do this is through utility programs offered by Xcel Energy and the other local utilities. These may include programs such as the Multifamily Building Efficiency Program, which offers free on-site assessments, data reporting, direct installation of efficient lighting and showerheads, and help to guide building owners to whole-building energy savings opportunities. The theme of conservation is focused on program participation as well as incentives for achieving energy efficiency goals.

Renewable energy options are changing as services offered through Xcel Energy and outside providers diversify. The renewable energy theme focuses on increasing the use of renewable energy in the community, either through direct installation or purchase, and the Community Planning Team called out a combination of industrial businesses and institutions as primary targets for engagement. A small working group within the team developed a list of the types of businesses and institutions that could be targets. The list is comprehensive, though not all inclusive (see page 35 for this list).

Some of the audiences specified within a theme are very specific while others are broad (such as “all individuals”). The notion of “all individuals” was maintained throughout the planning process and draws the principle of education and the ability of information to trickle up, down, and laterally

across a community. Youth, small business owners, and staff are sub-sets of “all individuals” that were specifically called out by the Community Planning Team, but the team also wanted to leave open opportunities for information to be shared across audiences, particularly in the education and conservation themes. This could be valuable in many ways, such as a homeowner learning about the benefits of a high-efficiency furnace then telling a friend who owns a business to consider a boiler tune-up.

When asked whether the community goals should be “achievable” or “aspirational” 83% of Community Planning Team members answered “achievable.”



Community Energy Goals

In the earliest planning workshops, the Community Planning Team identified the need to consider both long-term and short-term impacts. The intent of this Energy Action Plan is to provide the St. Cloud community with energy action guidance for the next 10 years. The goals laid out here are community-wide goals that are guided by the three impact themes and target audiences, and will engage and benefit a wide array of residents and businesses.

The combination of near-term and long-term goals will simultaneously set a foundation for early community action and drive long-term engagement. The plan contains strong, short-term goals that will ask the community to dive in early through involvement in workshops, programs, events, and school initiatives. Then these early, hard-earned accomplishments will pay dividend in achieving the long-term goals of 70% higher participation than between 2013 and 2016. The 10-year term of this plan will particularly benefit the renewable energy theme as institutions and industrial businesses will be asked to learn about renewable energy options and consider options that both suite their needs and contribute to the community-wide goals.

Through Partners in Energy, Xcel Energy will provide close partnership and support for the first 18 months of implementation to boost early action and establish durable collaborations that will span the life of this plan.

A survey of the Community Planning Team indicated that 83% team members recommended that goals should err on the side of being achievable rather than aspirational. While some goals are

defined to make the community reach, all of the selected goals meet the team's standard of being within the realm of achievable.

Part of making goals achievable involves identifying metrics that will resonate with the audience. Embedded in the goals of each theme are the metrics that the Community Planning Team determined would be most meaningful to the community. For education, success will be measured by the quantity and breadth of people engaged directly through events, competitions, or campaigns. For conservation activities, achievement will be calculated in the quantity of people participating in programs and incentives and in the dollars saved by the community through lower energy bills. For renewable energy, the metric will be the increase in kilowatt hours of electric energy used or purchased.

Figure 21 summarizes the Energy Action Plan's goals by theme.

Figure 21: Summary of Energy Action Plan Goals

Education	Goal: • <u>Near-Term & Long-Term:</u> Increase energy awareness for individuals regarding actions and behaviors that reduce energy use and benefit future generations.
Conservation	Goals: • <u>Near-Term:</u> Double utility conservation program participation for both residential and small to medium-sized businesses in year 1. • <u>Near-Term:</u> Save \$638,000 in energy costs community wide in year 1. • <u>Long-Term:</u> Maintain program participation at 70% above business as usual after year 1.
Renewable Energy	Goal: • <u>Long-Term:</u> Help institutions and industrial businesses replace 21.8 million kWh of electricity by 2026 with renewable electricity via installation, purchase, or subscription.

Near-Term Impact

Achieving the near-term goals laid out in this plan will engage and educate a few hundred residents on the impacts of energy on our environment and the ways that they can reduce their individual and collective impact.

Conservation efforts in year one will result in approximately double the energy savings achieved by the community compared to baseline energy saving improvements. Exactly which programs homeowners, renters, and businesses select for participation will be determined by the strategies and individuals engaged in these efforts.

Between 2013 and 2015, there was an average of 849 instances²¹ of participation in Xcel Energy residential programs (including rebates earned).²² During that same period, there was an average of 204 instances of participation in commercial and industrial programs.²³ However, only 127 of the 204 instances were from programs directed at small to medium-sized businesses, as defined in the planning process.²⁴

Goal participation counts may vary as implementers consider which programs and services to target given their potential impact, cost, and accessibility. Given this variation, the goal range for the first 12 months of implementation is 1,065 to 1,698 counts of residential program or rebate participation. For small business participation, scenario planning pointed towards a more specific goal of 242 counts of participation. (See Figure 25, Figure 26, and Figure 27 for scenario visualizations). Overall, the community is aiming for 1,392 points of participation in the first 12 months of implementing this Energy Action Plan.

Through increased program participation, St. Cloud aims to achieve \$638,000 in shared energy cost savings for individuals and businesses in the first 12 months of implementation. This includes projected business as usual savings and additional energy savings based on this plan combined. Realized energy cost savings will be tracked and provided to the implementation team on a semi-annual basis as a way to measure progress and reflect on which implementation efforts have been most effective. Not included in this cost savings goal are the additional, ongoing cost-savings that will result after year one as individual improvements pay for themselves through lower energy bills.

Long-Term Impacts

Based on conservation program participation from 2013 to 2015, business as usual annual savings are 65,059 million BTU (for electricity and natural gas combined). By accomplishing the goals outlined in this Energy Action Plan, the community will see impacts from the savings achieved the year the improvements are made, as well as cumulative savings for 10 to 30 years after. These are considered the lifetime savings of any given improvement to a house, business, or city building. By achieving these goals, the community will save an additional 205,011 million Btu by 2026, above and beyond business-as-usual energy savings.

Figure 22 provides a comparison of what energy savings would look like with and without the goals and actions established in this plan. By achieving these goals, the community will save an additional 205,011 million Btu by 2026, above and beyond business-as-usual energy savings.

²¹ Participation count does not include passive participation programs such as the Energy Efficiency Showerhead mail-out program or Saver Switch program, a “demand response” focused program.

²² These counts represent unique instances of participation, although some participants may have participated in more than one program, which would be counted as two instances of participation.

²³ Commercial program participation counts do include services such as Saver Switch, but do not include non-conservation based programs, such as Solar Rewards.

²⁴ Small to medium-sized business program participation counts do not include Saver Switch, as these counts include both large and small commercial business participants and this type of program was not targeted in the conservation participation goals.

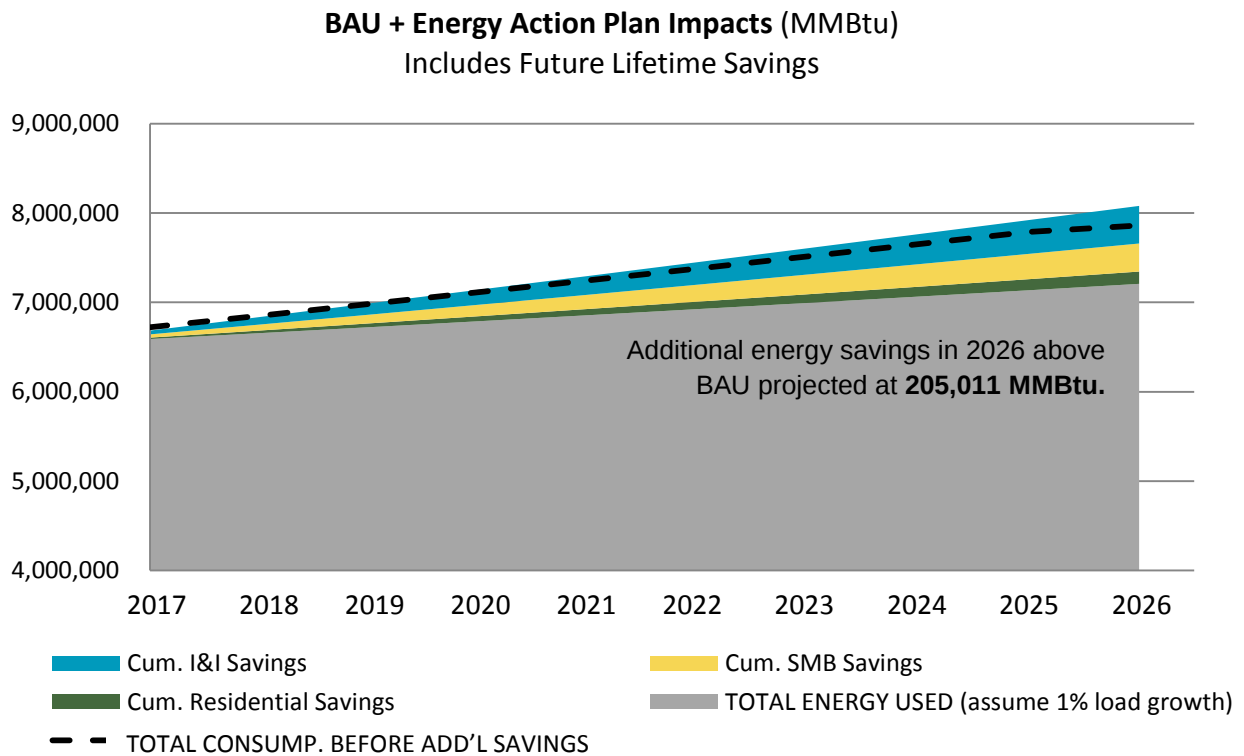
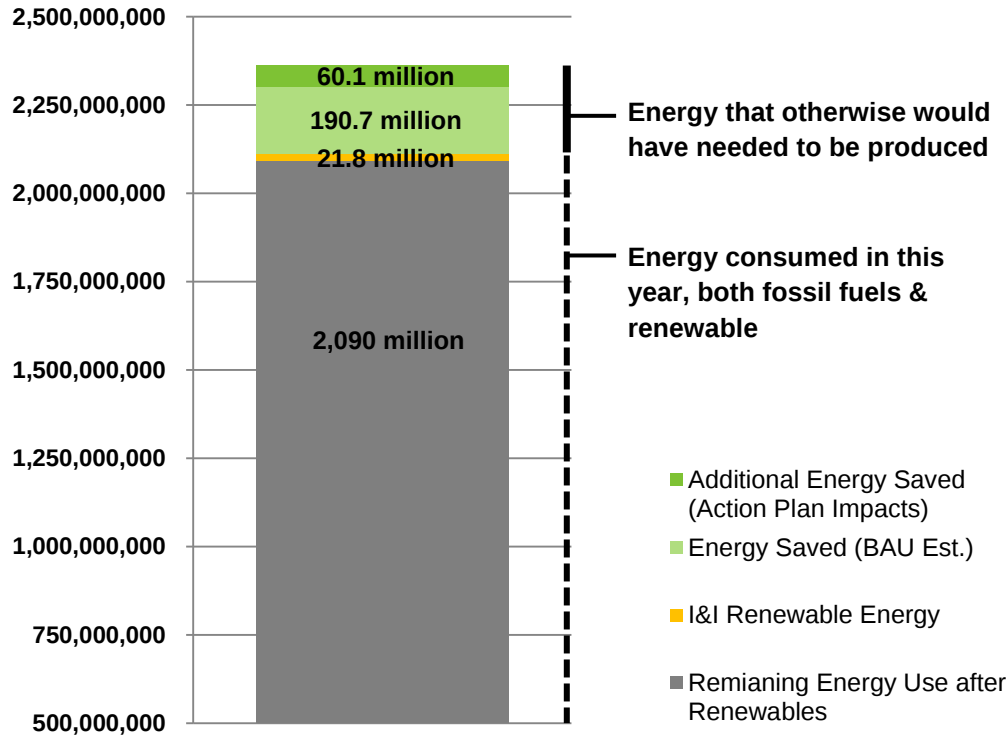
Figure 22: Business-as-Usual Energy Savings and Energy Saving Impacts of Energy Action Plan (MMBtu)

Figure 23 provides a snapshot of the energy impacts that will be realized in 2026, which will be year 10 of this plan. The chart summarizes the impacts of all business-as-usual conservation, new conservation, and the additional impacts from conservation efforts and renewable energy use. If all of the goals outlined in this Energy Action Plan are achieved by 2026, the St. Cloud community will save 205,011 MMBtu of additional energy (60,083 thousand kWh) and use approximately 21,800,000 kWh of additional renewable energy.

Beyond the positive environmental contributions, the community will also benefit financially. In the first 12 months of action, the reductions in energy use will save the community an estimated \$194,000 (based on the *Scenario B 'Preferred'* for residential conservation shown in the Strategies section). Combined with ongoing energy cost savings, the St. Cloud area would save approximately \$638,000 in year one alone (approximately \$178,000 of these savings for residents directly). By 2026 the additional savings will accumulate (due to lifetime savings) delivering local residents and businesses with total cumulative cost savings estimated at \$9.2 million above business-as-usual.

Not included in this snapshot are natural increases in installation or the use of solar or wind energy that residential customers may subscribe to or procure between 2015 (the last year of available baseline data) and 2026. The additional renewable energy that Xcel Energy will be adding to its electricity generation portfolio in the next 10 years to meet the state mandate is also not included, making positive environmental impacts even greater.

Figure 23: 10 Year Impact Summary | Conservation and Renewables (MMBtu)

How We Are Going To Get There? | Strategies

This section will discuss how the community is going to achieve the Energy Vision. The Community Planning Team spent considerable time brainstorming and evaluating the types of goals that would resonate most with the community and the strategies that will be most feasible and effective.

Strategies for Accomplishing Goals

This section lays out the strategies that the team identified for accomplishing the goals prioritized in this plan. During the planning phase, the team made great effort to study energy data and community assets and this informed the strategies that were identified as the most effective in accomplishing the goals. As part of their efforts, the team identified why and how various strategies should be used as well as the barriers and opportunities that need to be overcome.

Figure 24: Summary Table of Goals & Strategies

Education	Goal: • <u>Near-Term & Long-Term:</u> Increase energy awareness for individuals regarding actions and behaviors that reduce energy use and benefit future generations. Strategies: • <u>Year 1:</u> Launch an online resource library for residents and businesses with handouts on key improvements return on investment. • <u>Year 1-2:</u> Hold 1 to 3 events to educate residents about home energy resources and best practices. • <u>Year 1-2:</u> Hold 1 to 3 events to educate small and medium- sized business owners about energy resources and best practices. • <u>Year 1-10:</u> Engage 150 or more primary or secondary school-age students annually for at least 5 to 10 years.
Conservation	Goals: • <u>Near-Term:</u> Double participation in utility conservation programs and services for both residential and small to medium sized businesses in year 1. • <u>Near-Term:</u> Save \$638,000 in energy costs community wide in year 1. • <u>Long-Term:</u> Maintain program participation at 70% above business as usual after year 1. Strategies: • <u>Year 1-2:</u> Host 1 to 3 events for residents to learn about & sign up for conservation programs and services. • <u>Year 1-2:</u> Create a handout showing return on investment for key small to medium-sized business conservation capital and non-capital improvements. • <u>Year 1-2:</u> Host 1 to 3 events for small to medium-sized businesses to learn about and sign up for conservation programs and services. • <u>Year 1-5+:</u> Launch a clean energy community action campaign that promotes healthy and efficient businesses and homes.
Renewable Energy	Goal: • <u>Long-Term:</u> Help institutions and industrial businesses replace 21.8 million kWh of electricity by 2026 with renewable electricity via installation, purchase, or subscription. Strategies: • <u>Year 1:</u> Create 2 to 3 case studies of conservation projects businesses have completed to prepare for future renewables. • <u>Year 1-2:</u> Hold 1 to 2 renewable energy education workshops for institutional and industrial businesses to learn about their options. • <u>Year 1-3:</u> Launch a 5% challenge to get all institutional and industrial businesses to pledge to reach 5% renewable electricity by 2025.

The preferred strategies are summarized below by each of the three themes of education, conservation, and renewable energy. While some strategies serve more than one goal, each strategy is tied to the specific theme and goal to which it most closely aligns. Opportunities and needs for overlapping benefits across themes are noted throughout. Under each strategy additional information is called out regarding who should be engaged and how Xcel Energy can support specific tactics.

The tables note detailed work plans and provide a strong structure of boundaries and guidelines for those that will be implementing these efforts. More specific work plans and details on how to make the strategies successful will need to be determined during implementation and oversight. Ongoing support from the Community Planning Team will help to further guide the translation of intent to on the ground impact.

The Summary Table of Goals is presented is a visual guide with relevant goals highlighted under each theme. This visual aid will help underline the linkages between goals and strategies and the metrics by which success will be measured.

THEME 1: Education

The Community Planning Team defined **education** as increasing individual awareness about the variety of actions that can make an energy impact difference, from small behavior changes to capital improvements. This includes providing inspiration and motivation for why certain actions are worth taking.

Youth and “all community individuals” are the target audiences for education. The audience of all community individuals indicates residents, workers, and businesses. Each of the goals listed in the table are called out below.

Education

Goal:

- **Near-Term & Long-Term:** Increase energy awareness for adults around actions and behaviors that reduce energy use and benefit future generations.

Strategies:

1. **Year 1:** Launch an online resource library for residents and businesses with hand-outs showing return on investment for key improvements.
2. **Year 1-2:** Hold 1 to 3 events to educate residents about energy resources and best practices.
3. **Year 1-2:** Hold 1 to 3 events to educate small and medium-sized businesses about home energy resources and best practices.
4. **Year 1-10:** Engage 150 or more primary or secondary school age students annually for at least 5 to 10 years.

The education-based strategies and metrics include:

1. **Create and launch an online resource library.** Collect existing information and tools in one place will help residents and businesses make smart purchasing decisions when it comes to conservation improvements. Hard copy summaries may be a helpful resource for tabling events and community outreach. The city planning and permitting office can also make copies available to the trades. Summaries should include best practices and behaviors for residents (both homeowners and renters) and businesses (owners, operators, and employees).
2. **One to three resident events.** Educational workshops will increase resident (both renters and homeowners) awareness of the impacts of energy use. These workshops will introduce tools to help save energy and provide support to residents completing actions that will reduce their energy use. In support of the conservation goals, these events will also serve as an opportunity for residents to learn about targeted programs and sign up for services such as a Home Energy Squad visit.
3. **One to three small to medium-sized business events.** Educational workshops will increase business owners and operators awareness of the opportunities to cost-effectively save energy in their buildings. These workshops will include information about simple behavior and operational changes as well as return on investment information, local stories, and case studies. In support of the conservation goals around business program participation, these events will also serve as an opportunity for businesses to learn about targeted programs and to sign up for services.
4. **Engage 150+ students.** A cross-community school energy challenge in primary or secondary schools will provide energy engagement opportunities and recognition to students who are helping to save energy in their schools. The knowledge students gain through the challenge can then apply at home and used for the rest of their lives. The challenge or any other initiative should be set up to engage students each year. Early actions in 2017 and 2018 will set the groundwork for long-term engagement.

Below are details of each of the recommended education strategies.

STRATEGY 1 | Online Resource Library

Objective: Educate community members about the “best” conservation projects (i.e. the most cost-effective and popular improvements such as lightbulbs and furnaces).

How: Gather links and examples from existing resources to give an overview of a variety of improvement costs and recommendations to help people at the point of purchase.

Audience:

- Residents (homeowners & renters)
- Possibly business operators and owners

Barriers:

- The City and Xcel Energy can't be seen supporting one brand/product over another

Doers & Collaborators:

- City's sustainability webpage and/or the Building and Planning Department website
- Facilitation Team to create core content and planning team to provide feedback

Ideas for Action & Implementation:

- Neighborhood Coalition and Chamber to provide links on their webpage
- Create button on City website homepage for a promotional period of time
- Cross promotion from St. Cloud Times and Mayor

Opportunities & Assets:

- Consumer Reports® Magazine (print and distribute at neighborhood meetings)
- Websites that compare products and highlights
- Energy Star website

How Xcel Energy can support/help:

- Information to help compare products (e.g. cost, contractor familiarity, customer satisfaction)

STRATEGY 2 | Workshops for Residents

Objective: Increase residential program participation.

How: Support organizing and new neighborhood groups by building community around energy interest and education (a reason to come together).

Audience:

- Residents: single-family and multifamily, low-income and non-low income

Barriers:

- Some neighborhoods aren't organized
- Not all neighborhoods have strong leaders
- Neighborhoods are very different from each other; need to find ways to target messaging/education

Doers & Collaborators:

- St. Cloud Neighborhood Coalition (engage the active groups first)

Opportunities & Assets:

- Have Mayor host the first party
- Hands Across the World outreach to recent immigrants/refugees

Ideas for Action & Implementation:

- Create home energy party kits
- Have guest speakers talk about home energy experiences, resources, and takeaways
- Customize workshops according to neighborhood needs and resources (e.g. demographics, house age, language)

How Xcel Energy can support/help:

- Funding for materials & food (e.g. education materials & takeaway materials like LEDs)
- Xcel Energy staff and energy advisors to attend meetings

STRATEGY 3 | Small and Medium-Sized Business Owner and Operator Workshops

Objective: To increase small and medium-sized business awareness of energy programs and services.

How: Create small business-led energy coalition.

Audience:

- Small and medium-sized business owners and/or operators

Barriers:

- Getting people to attend and come back
- Need wide variety of sectors to bring forward case studies

Doers & Collaborators:

- Beaver Island Brewing to host and provide case study (Nick Barth to lead)
- Mathew Hall Lumber
- Partner with contractor expos that take place annually

Opportunities & Assets:

- Get local business owners to present to each other

Ideas for Action & Implementation:

- Hold events with food and beverage
- Provide stickers to those businesses that take action to make participation more visible
- Have case study presentations at each event

How Xcel Energy can support/help:

- Recruit those who can speak about business programs
- Bill insert/email invitations
- 15 min building walkthroughs via Turn Key

STRATEGY 4 | Cross-Community School Energy Competition

Objective: Get the right leaders at each school involved in clean energy and engage at least 150 students per year.

How: Video competitions, assemblies, and student energy committees.

Audience:

- Gifted & Talented program for teachers and students
- After-school programs like Kids at Kid-Stop
- Outside of school programs like Girl Scouts and Boy Scouts

Barriers:

- Reaching the schools
- Resources to organize & coordinate
- Buy-in from teachers
- Applicability to curriculum standards
- All around cost

Doers & Collaborators:

- MNTAP & GreenCorp spearhead
- PTA to support and champion
- Teachers who can help champion
- School district leaders who can help champion

Opportunities & Assets:

- Planning team connections within the school (e.g. school board members, PTA president)
- Boys and Girls Club
- Big Brothers/Big Sisters

Ideas for Action & Implementation:

- Science Fair
- Month long competition between schools

- City-wide events that are youth focused

How Xcel Energy can support/help:

- Funds for a prize or an intern who can organize

THEME 2: Conservation

While a number of education-focused strategies will focus on teaching residents about energy saving behaviors, programs, and rebates, the goal of those activities is aimed at making individuals more cognizant of energy use and energy impacts. Therefore the education strategies are focused on raising community awareness. [The strategies listed under the **conservation** theme focus on increasing participation in conservation programs and services](#), all of which are designed to offer cost-effective savings to customers. “Cost effective” means that the energy cost savings of an improvement are such that the improvement will pay for itself over its lifetime. Sometimes this can be in as little as one or two years and it is almost always 10 years or less.

Xcel Energy offers a wide range of services and incentives that target cost-effective energy saving opportunities and draw customers to the most effective opportunities for saving energy and money. A full list of the services and programs offered by Xcel Energy is included in Appendix D for reference. It is important to note non-Xcel Energy customers may be able to access similar programs through the other local utilities.

Conservation**Goals:**

- Near-Term: Double participation in utility conservation programs and services for both residential and small to medium-sized businesses in year 1.
- Near-Term: Save \$638,000 in energy costs community wide in year 1.
- Long-Term: Maintain program participation at 70% above business as usual after year 1.

Strategies:

1. Year 1-2: Host 1 to 3 events for residents to learn about and sign up for conservation programs and services.
2. Year 1-2: Create a handout showing return on investment for key small and medium-sized business conservation capital and non-capital improvements.
3. Year 1-2: Host 1 to 3 events for small to medium-sized business owners to learn about and sign up for conservation programs and services.
4. Year 1-5+: Launch a clean energy community action campaign that promotes healthy & efficient businesses & homes.

The conservation strategies target residents and small business owners. While in most cases strategies will directly engage these individuals, in some circumstances it may be appropriate to

engage those individuals who serve these audiences (e.g. heating contractors). The team identified small businesses as an audience that is currently not receiving as many conservation program services and benefits as some other groups and could likely be greatly impacted by targeted energy cost savings opportunities. Of particular interest in the small and medium-sized business category are retail, restaurants, and hospitality businesses.

The conservation-based strategies and metrics include:

1. **Clean energy community action campaign.** A community-wide clean energy campaign will provide pledge opportunities and recognition to individuals, neighborhoods, businesses, and community groups that participate in conservation efforts in their homes and businesses. Special recognition may be awarded to groups with the most new participants and deepest improvements. In connection with the overall goals under the education theme, the campaign will also help to raise awareness of energy tools and options.
2. **Double current residential program participation.** Residential workshops (described under the education strategies) will serve as channels for renters, homeowners, and landlords to sign up for targeted conservation programs.
3. **Return-on-investment handout for small and medium-sized businesses.** Handouts for businesses will describe the return-on-investment (ROI) for key energy efficiency improvements and services. These handouts will target retail, restaurant, and hospitality businesses in the community as cost savings will be particularly beneficial for them and they have had lower program participation than other business segments. The handout may be a helpful resource for tabling events, community outreach, and materials the city planning and permitting office can make available to the trades. This tool will be used at the workshops with businesses to help them determine which programs, rebates, or improvements are best.
4. **Double current small and medium-sized program participation.** Business owner and operator workshops will provide an opportunity for businesses to sign up for conservation programs or services. These opportunities should be education-based as opposed to sales oriented.

The intent of doubling participation is to increase the number of residents and obtain comparable energy savings. With this in mind, the Community Planning Team studied various participation scenarios that will all result in energy savings double the recent annual participation rates. The following figures provide helpful guidance as to which programs will provide the most cost-effective impact.

Figure 25: Scenario A: Residential Conservation Participation | Equivalent to 2x's BAU Participation

Scenarios such as this one are helpful tools when detailing strategies to educate and market programs to the community. This specific scenario shows how targeted outreach and participation could achieve double participation goals and also double impact goals using high impact programs that could absorb more participation. Targeting fewer programs can help streamline community messaging and marketing. The proposed scenario is also compared to commercial program participation as a reference for understanding total energy savings impact.

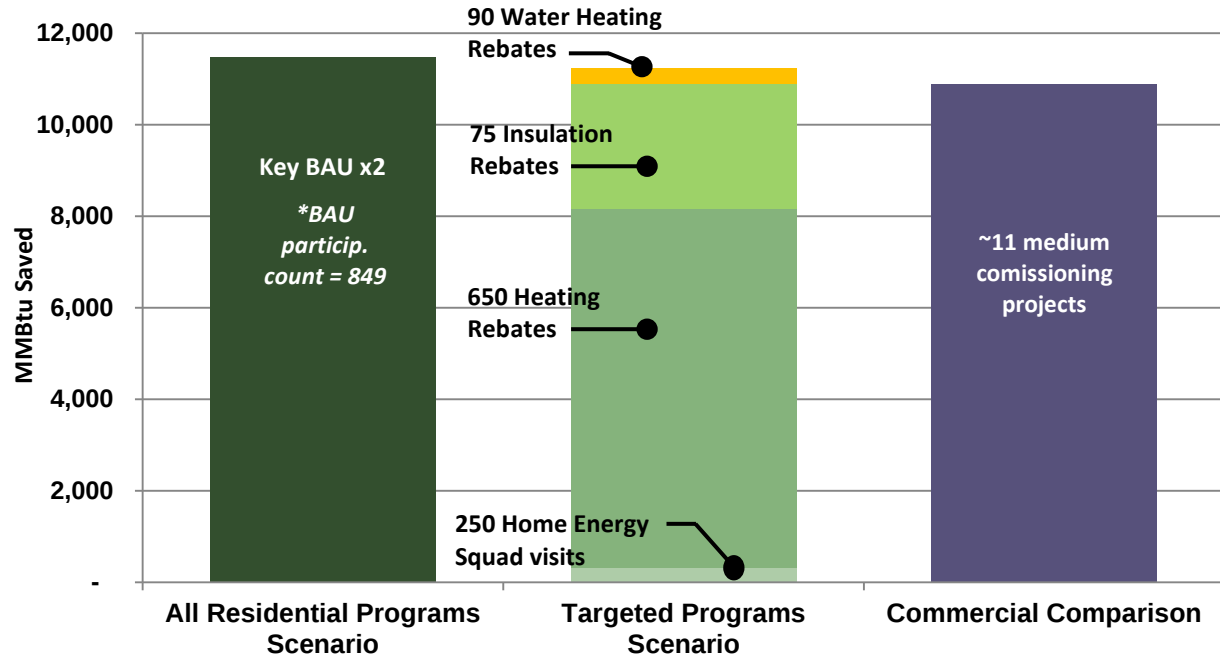
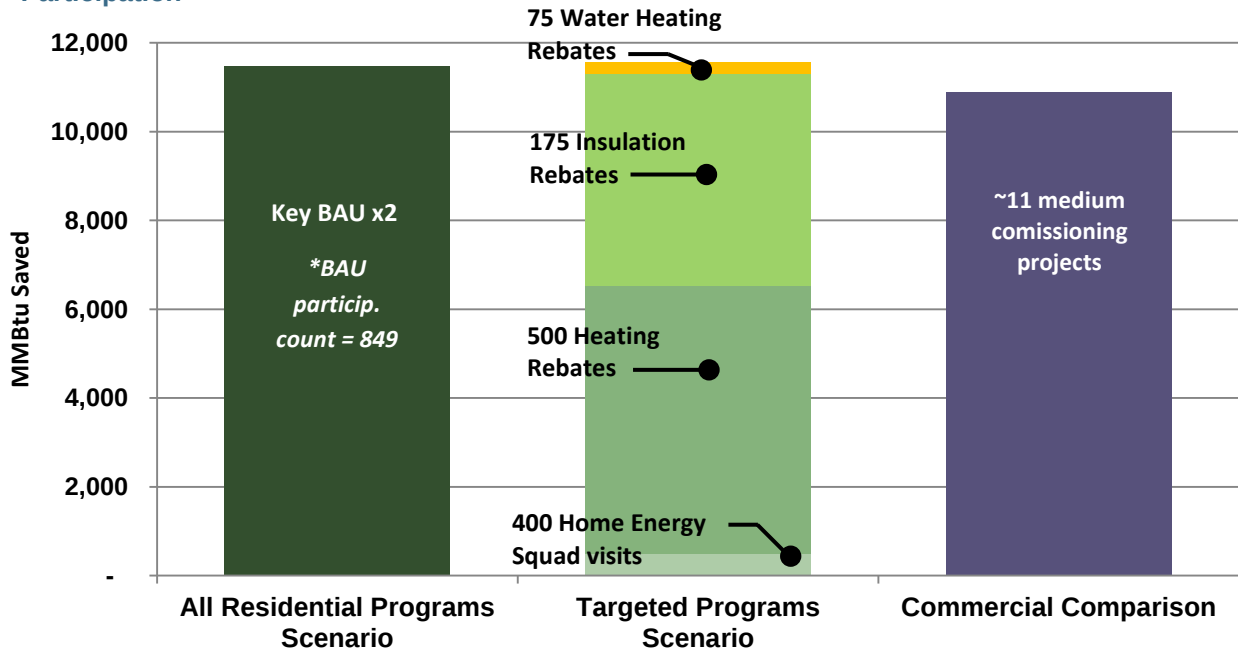
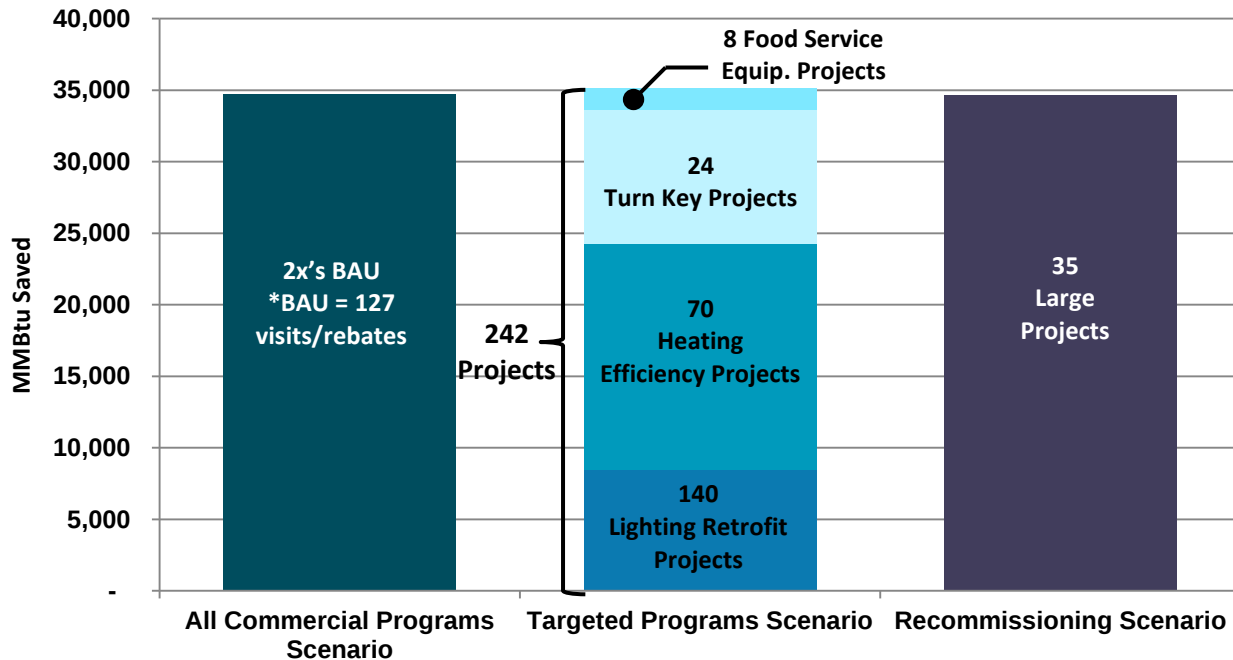
**Figure 26: Scenario B 'Preferred': Residential Conservation Participation | Equivalent to 2x's BAU Participation**

Figure 27: Small and Medium-Sized Business Conservation Participation | Equivalent to 2x's BAU Participation

This scenario provides recommendations for programs that could be targeting with educating businesses about quick return-on-investment conservation program opportunities. Some programs, such as the Food Service Equipment program, are also particularly appropriate for targeting some of St. Cloud's main small business segments.



Below are more details about the strategies identified under the conservation theme.

STRATEGY 1 | Clean Energy Campaign

Objective: Increase clean energy action by increasing program participation throughout the community and bridging knowledge gaps about product options so that lack of information isn't a barrier to action.

How: Develop a clean energy community action campaign and logo that promotes healthy and efficient environments in businesses and homes.

Audience:

- All buildings and spaces that are served by energy utilities
- Homeowners and landlords
- All business owners and employees

Barriers:

- Getting the campaign name to be a household name
- Getting the community excited about the campaign; linking the campaign to benefits and fun

Doers & Collaborators:

- The Chamber of Commerce
- Downtown Council
- Greater St. Cloud Development Corp.
- St. Cloud Neighborhood Coalition
- The City and the Community Planning Team

Ideas for Action & Implementation:

- Create time sensitive goals to help motivate
- Offer incentives or recognition (various categories) for those that take action
- Create bumper stickers, bike stickers, or garden signs to increase awareness and pride

Opportunities & Assets:

- Create a logo to help make the campaign identifiable
- Use existing City webpage as an online resource for the campaign
- Build off City's renewable energy initiative

How Xcel Energy Can Support/Help:

- Provide small rewards for participants or award winners
- Support logo and marketing campaign design

STRATEGY 2 and 4 | Workshops for Businesses

See *Strategies 2 and 3 under the education theme*. The Community Planning Team saw these events as being one in the same for the greatest impact. (See pages 31 & 32.)

STRATEGY 3 | ROI Handout for Small and Medium-Sized Businesses

Objective: To make conservation investment decisions easier and provide support at the moment when businesses are ready to make a building investment or change.

How: Develop a handout (paper and online) that provides local examples of investment costs, return on investment, and product information. Use this tool during educational events for business owners and operators and contractors.

Audience:

- Small and medium-sized business owners and/or operators
- Contractors
- Other local utilities

Barriers:

- Getting business owners to donate their time/effort to this cause
- Getting an accurate costs of some projects from local businesses so that an accurate ROI can be calculated

Doers & Collaborators:

- Beaver Island Brewing (Nick Barth)
- 2-3 other business owner champions

Opportunities & Assets:

- Get tool input from businesses who have made improvements or are planning to act
- Engage local contractors for input

Ideas for Action & Implementation:

- Get 3-4 examples of improvements locally and combine with existing Xcel Energy

How Xcel Energy Can Support/Help:

- Aggregate appropriate case studies for inclusion

- case studies and cost estimates
 - Group improvement types in cost tiers for easier use and decision-making
- Gain insights from the Business Solution Center or account representatives

THEME 3: Renewable Energy

During planning, the Community Planning Team agreed that working to increase renewable energy uptake in the institutional and industrial sectors was the most important thing to do. The team arrived at this decision after learning that 52% of St. Cloud's total commercial energy use (see Figure 12) comes from the 50 largest users of energy. These large users tend to be institutional or industrial businesses or other large commercial or public buildings. By targeting these largest users, early actions can lead to the greatest reduction of fossil fuel electricity use.

Renewable Energy

Goal:

- Long-Term: Help institutions and industrial businesses replace 21.8 million kWh of electricity by 2026 with renewable electricity via installation, purchase, or subscription.

Strategies:

- Year 1: Create 2 to 3 case studies of conservation projects businesses have completed to prepare for future renewables.
- Year 1-2: Hold 1 to 2 renewable energy education workshops for institutional and industrial businesses to learn about their options.
- Year 1-3: Launch a 5% challenge to get all institutional and industrial businesses to pledge to reach 5% renewable electricity by 2025.

With a number of local institutional and industrial facilities already setting an example, there is an opportunity to share practices and insights with others for long-term operational cost reduction, predictability, and community benefit. The team created a list of the targeted facility types, which include the following:

- City and County government buildings (e.g. County Courthouse)
- State and Federal government buildings (e.g. MN DOT, MN Correctional Facility, VA Hospital)
- School District 742 facilities
- Regional Airport
- Universities and Colleges
- Corporate Campuses
- Manufacturers and large repair facilities
- Utilities

The intent of the **renewable energy** goals is to increase the use of renewable energy, either through increased on-site generation within the community or through the purchase of renewable energy through Xcel Energy, surrounding electricity providers (for those operating in other utility service territories), subscription to renewable energy, or a third party via the purchase of renewable energy credits (RECs). Part of this goal is to inform businesses about the differences between each of these options and their differing values and benefits (e.g. REC purchases may not

increase renewable energy use in Minnesota beyond the mandated levels that Xcel Energy must meet whereas on-site generation would directly increase Minnesota renewable energy use).

These goals were drafted with the intent to leverage the knowledge of Xcel Energy and other local utilities and the hope that the private sector would inform and motivate each other to reach this goal. Making investments and operational decisions around the purchase or installation of renewables is often an action that takes time, so the goals under this theme are more long term. While action will begin in year one, the renewable energy goal benchmarks don't begin until year 5.

Renewable energy strategies and metrics:

1. **Conservation-first case studies.** Case studies on local businesses (preferably large commercial or industrial businesses and institutions) that have recently completed energy efficiency improvements will serve as examples of how conservation efforts can be beneficial to preparing for a future renewable energy install/purchase. This will help businesses procure the correct amount of renewable energy, ensuring they do not build or buy more than they need.
2. **Renewable energy education workshops:** Workshops will provide information to facility managers, operators, and appropriate decision-makers regarding options for purchasing or installing renewable energy. While these workshops will target industrial businesses and institutions, they will not be limited to these audiences. They will also provide participants with case studies from local businesses regarding good experiences and the pros and cons of various options. These workshops will help facilitate conversation, encouraging the sharing of experiences and will serve as a channel for engaging businesses in the 5% by 2025 challenge (see below). These events will be educational and should not include sales pitches as part of the presentation.
3. **5% by 2025 challenge:** All industrial businesses and institutions will be challenged to purchase or install renewable energy (e.g. wind and solar) equivalent to 5% of their total annual electricity use. A combination of competition, public pledges, and rewards will be used to achieve the goal of all St. Cloud industrial businesses and institutions to make the pledge and follow through on it by 2025. This strategy builds off of the City's own 80% by 2018 model, focusing on the largest energy users in the community.

Below are more details about the strategies identified under the renewable energy theme.

STRATEGY 1 | Conservation-First Case Studies (institutions and industrial businesses or other large businesses)

Objective: Get more industrial businesses and institutions ready for cost-effective renewable energy use by completing conservation projects that will reduce the amount of renewable energy needed.

How: Create at least one industrial businesses and institutions conservation project case studies that can be used at renewable energy events and as mailers.

Audience:

- Institutional operational investment decision-makers and facilities staff
- Industrial business operational investment decision-makers and facilities staff

Doers & Collaborators:

- CentraCare to provide a case study
- SCSU, CentraCare, and the City to help with initial outreach to industrial businesses and institutions regarding examples
- Partners in Energy to create case studies

Ideas for Action & Implementation:

- Keep definition of appropriate projects broad

Barriers:

- Not sure how many examples will exist (e.g. completed electricity conservation projects)
- Conservation projects can take time so new examples may take 1-2 years

Opportunities & Assets:

- Can get first hand stories and insights from case study interviews that will be helpful for events

How Xcel Energy Can Support/Help:

- Get information from account reps regarding projects completed locally
- Help disseminate information to industrial and institutional customers

STRATEGY 2 | Renewable Energy Education Workshop

Objective: Encourage institutions and industrial businesses to consider how they might invest in renewable energy by learning from other businesses and renewable energy experts.

How: Introduce the 5% by 2025 challenge as an initiative that aligns with the City's 80% by 2018 goal.

Audience:

- School district buildings
- College and vocational school facilities
- Hospitals, clinics, and senior living
- Manufacturing and distribution centers

Doers & Collaborators:

- Volunteer/appointed team of executives and facilities leaders
- Coordinators for the event(s)

Ideas for Action & Implementation:

- Need meaty content
- Get started by speaking at the Chamber (Q1 of implementation)

Barriers:

- Buy-in
- State level restrictions

Opportunities & Assets:

- Initiate at the greater St. Cloud economic level
- Leadership of large institutions that can provide examples, insights, and support

How Xcel Energy Can Support/Help:

- Bring renewable program expertise and ROI examples/info

- Maybe get a sense of how many industrial businesses and institutions participate in the Chamber
- Update decision-makers or building experts on technologies

STRATEGY 3 | 5% by 2025 Challenge

Objective: To encourage businesses and recognize those that make efforts in sustainability and greenhouse gas emission reduction.

How: Introduce the challenge as an initiative that aligns with the City's 80% by 2018 goal.

Audience:

- School district facilities
- College and vocational school facilities
- Hospitals, clinics, and senior living
- Manufacturing and distribution centers

Doers & Collaborators:

- CMBA (builders/installers)
- Chamber (help bring in institutions)

Barriers:

- Buy-in
- State level restrictions

Opportunities & Assets:

- CERTS Conference
- Camp Ripley could share their story
- Laweress may have data tools or support that could be helpful (league of graphs, competition, data viz for portal)

Ideas for Action & Implementation:

- Start challenge early 2017

How Xcel Energy Can Support/Help:

- Bring renewable program expertise
- Flyer from Xcel Energy

A Work Plan & Call for Community Engagement

While the Goals Summary Table (Figure 24) provides guidance on when goals should be achieved, it does not always correlate to when efforts should begin. There are many efforts that will have to start in the first year to set the stage for short-term and long-term goals. During the planning phase, the team highlighted early actions to consider in the beginning stages of implementation. Figure 28 illustrates the recommended action pathway for accomplishing the community's goals in a timely fashion.

Figure 28: Implementation Work Plan | Early Actions

Education	Conservation	Renewable Energy (RE)
Implementation Q1 — Foundation		
<i>First Steps: For each near-term goal, a primary point of contact needs to be defined to use, expand, and own this work plan. For each theme, building a coalition of champions is recommended as integral to Q1.</i>		
- Find volunteers to host neighborhood workshops and set up home energy assessments - Outline content for neighborhood workshops - Assemble existing resources for online resource library - District, PTA, teachers for input on school competition - Identify 1-2 small-medium businesses for case studies and hosting SMB events to increase participation	- Refine the objectives of the community energy campaign, develop branding and identify partners - Outline content for SMB events that will be effective to increase participation - Connect with SMB event outreach partners - Outline information needed for ROI handout and work with Xcel Energy to populate	- Define what it is to participate in the 5% Challenge - Launch call to action for 5% Challenge and create sign-up access - Outline content to present at RE workshop(s) - Establish relation with business coalition to build RE workshop demand
Implementation Q2 — Outreach & Refinement *Receive community progress update via Partners in Energy		
- Set dates for neighborhood workshops and get out the word - Get feedback on resource library content and refine - Design school competition with school leaders and community champions	- Finalize early marketing for community campaign and make soft launch public - Set date for SMB event(s) and line up presenters - Initiate SMB event outreach	- Find local businesses energy efficiency case studies - Outline information to collect for case studies - Set dates for RE workshop(s)
Implementation Q3 — Action & Engagement *Receive community progress update via Partners in Energy		
- Launch online library (or completed content for it) - Host neighborhood workshop(s) - Launch school competition and engage students in implementation decisions	- Host SMB event(s) - Get ROI tool out through City, community, and Xcel Energy channels - Make campaign outreach plan and sub-goals	- Finalize case studies and begin dissemination - Host RE workshop(s) - Formally announce 5% Challenge and proactively invite participation

	Utilize Mayor’s radio show and newspaper for campaign dissemination	
Implementation Q4 — Action & Recognition *Receive community progress update via Partners in Energy		
- Host neighborhood workshop(s) - Establish ongoing guidance body for competition (students and staff)	- Host SMB event(s) - Establish recognition tactics for campaign using behavior best practices	- Host RE workshop(s) - Publically recognize early 5% Challenge actions

These goals are intended to be achievable — they are not purely symbolic — and they will not happen without careful and dedicated action on the part of community, business, and local government champions, some of whom have not yet been identified. In addition to the completion of line item tasks, success will rely on outreach, planning, and ongoing feedback. Ingraining the Energy Vision into our minds and our neighbors’ minds will be essential to achieve these goals. We also need to keep thinking about small or large contributions that can be made to reduce overall energy use.

How Are We Going To Stay On Course?

A diverse group of key stakeholders participated in the development of this plan, and its implementation must be “owned” and driven by St. Cloud community members, businesses, and institutions. The City will contribute to community-based implementation and will work with the City Council, the Mayor, and other departments to ensure that the goals outlined here are achieved.²⁵

The Community Planning Team members are dedicated to achieving the goals and will advise over the first year or two of implementation. The team will come together for quarterly calls or meetings to offer insights and ideas and evaluate progress and the need for course correction. The City of St. Cloud will be among those checking in regularly, as the City’s role in communication and transparency will be important for the success of this plan. Jim Flaaen, Senior Planner in the Zoning and Planning Department, will be the lead point of contact for the city (jim.flaaen@ci.stcloud.mn.us). All Energy Action Plan related questions can be directed to him through implementation.

²⁵ In February 2016, the City published their comprehensive plan (2016-2026), thus opportunities to inform a new comprehensive plan were not a central question during the planning process.

The Partners in Energy facilitation team will continue to work with the Community Planning Team as the community transitions from planning to implementation. Support will include accountability check-ins, help identifying the most effective next steps, and advice on best practices for community outreach, engagement, and education. The facilitation team will work with the community and the Xcel Energy team to gather information for tools and help in the refining of marketing materials and tools.

SWOT Analysis

This Energy Action Plan was evaluated in brief by the Community Planning Team through a SWOT analysis. This process documents the observed strengths, weaknesses, opportunities, and threats of the plan, as these are important to keep in mind as the plan moves from planning to implementation in case course corrections are needed.

Figure 29: SWOT Analysis Summary Table

Strengths	Weaknesses	Opportunities	Threats
Community Planning Team and Xcel Energy Facilitation Team are dedicated	Broad partnership beyond the Community Planning Team doesn't yet exist	Coordinated plan release: get the word out and signal the start of something	Make sure goals go beyond year 1
Great City leadership	Unclear how much Community Planning Team involvement will drop off, although some early commitments exist	Kick-off event: invite new people who will champion or play an implementation role	Potential burn-out for Community Planning Team members and volunteers should be avoided
Community Planning Team holds many individual champions	Volunteers that will likely be primary implementers doesn't have the knowledge to education and "sell" clean energy and impacts	12-18 month start-up period or "limited time" recognition can be a source of action and urgency for the community	City budget changes annually due to outside factors (e.g. snowy winter plowing)
Many local leaders beyond those in the room	Commitments from "doers" is an element of uncertainty	Make Community Planning Team an advisory committee to move plan forward (accountability)	Federal funding opportunities may be reduced or change under new administration
Plan and action will provide the City with an opportunity for bonding		Trainings for volunteers who can continue to do them, residents, and local government staff	

Monitoring and Reporting

To assist in implementation, the Partners in Energy facilitation team will work with Xcel Energy to obtain quarterly program participation and energy savings data for the residential sector, the

commercial sector, and the industrial sector. This data will be shared with the Community Planning Team and future key implementers as a way to track progress and identify when course correction is needed. To keep this effort as transparent as possible and motivate ongoing action, this data will also be shared with the broader community by publishing progress on the City's sustainability website (likely at this URL: www.ci.stcloud.mn.us/1428/Partners-in-Energy).

Changing Course: Corrective Action

This plan outlines strategies and goals for an 18-month implementation period. It is anticipated that the success and outcomes of initial actions will impact progress towards long-term goals in each theme. Initial actions that will take place in the next three to five months are relatively clearly defined, with mid-term actions intentionally left broad to flex with the outcomes of the first few months of implementation. City staff and Community Planning Team members working on plan implementation will help to determine how and when strategies and actions need to shift course.

Once this Energy Action Plan is approved, a Memorandum of Understanding (MOU) will be developed between the City of St. Cloud and Xcel Energy. This agreement will establish short term milestones to be evaluated after six months to determine whether there is a need to change course.

Ongoing Support from Xcel Energy

Xcel Energy will continue to support the City of St. Cloud in implementing its goals. Partners in Energy service provides a community facilitator to help track and manage progress, including regular check-ins with key implementers. Support for this plan will include materials to assist with education and outreach, partnership on broader marketing opportunities, collaboration on community and school-based campaigns, and expertise on renewable energy and targeted programs relevant for workshop and event efforts. Details of ongoing support, starting with an initial 18-month implementation period, will be spelled out in the forthcoming MOU between Xcel Energy and the City of St. Cloud.

Xcel Energy will provide semi-annual program participation and energy savings data reports over the first 18 months of plan implementation to help the City of St. Cloud track progress on its goals. After the first 18 months the City and implementers will have access to a Community Energy Report produced annually by Xcel Energy.

Appendix A: Glossary of Terms

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-term and long-term goals, strategies, and metrics to track performance.

Energy Star Homes: A certification program administered by the U.S. Environmental Protection Agency, for new homes that are designed and built to defined high energy efficiency standards.

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 (GHG): Atmospheric gases that absorb infrared radiation and contribute the greenhouse gas effect, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO₂), and water vapor.

kBtu (1000 British Thermal Units): A unit of energy that can describe natural gas or electricity use and is commonly used as the common unit when referring to total energy

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

Home Energy Squad (HES): Home Energy Squad is a joint offering between Xcel Energy and CenterPoint Energy in communities where CenterPoint Energy provides natural gas service. The program helps residential customers reduce energy use in their homes by completing direct installs. The enhanced version of the program includes home energy audit with thermal imaging and an assessment of air leaks.

Metro Clean Energy Resource Teams (CERTs): A Twin Cities based organization that empowers communities and their members to adopt energy efficiency and renewable energy technologies and practices for their homes, businesses, and local institutions.

Minnesota GreenStep Cities: Minnesota GreenStep Cities is a voluntary challenge, assistance, and recognition program to help cities achieve their sustainability and quality-of-life goals.

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, and 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.

Regional Indicators Initiative: The Regional Indicators Initiative measures annual performance metrics for 22 Minnesota cities. The project tracks data on Energy, Water, Travel, Water, GHG Emissions, and Cost. To learn more, visit www.regionalindicatorsmn.com.

Windsource®: A program from Xcel Energy that allows customers to purchase blocks of wind energy as their electricity source.

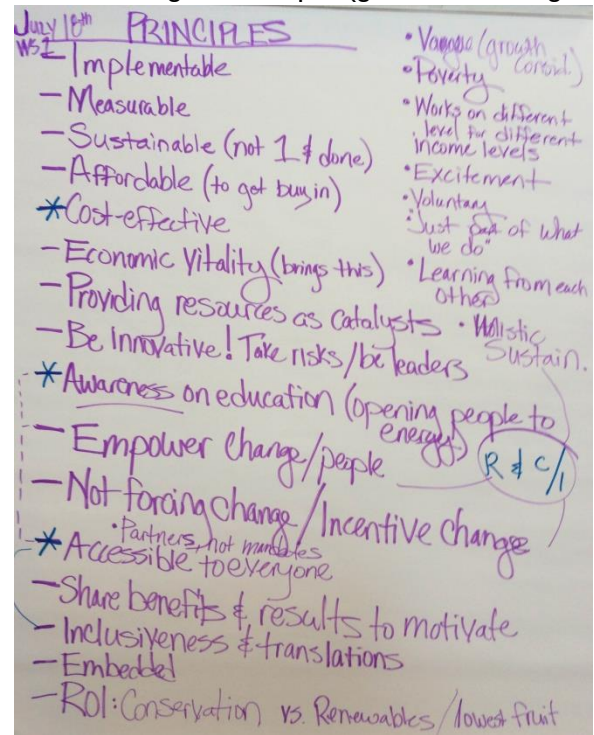
Appendix B: Planning Workshop Meeting Notes

Workshop Process Overview

Workshop 1

The facilitation team introduced the Partners in Energy program, and presented an initial set of data on Edina energy usage. The facilitation team shared Planning Team input (gathered through an *Introduction Survey*) to highlight community assets and communication channels that should be remembered during planning. Questions were raised by the Planning Team as to how the Energy Action Plan can include those not served by Xcel Energy. Individually, Planning Team members drafted two to three principles that should be reflected in the Energy Vision, and ultimately the Energy Action Plan. These were shared with the entire team, brainstormed further, and discussed. The result of this discussion was a list of principles that describe the *what*, the *how*, and the *to what extent* action should be taken in the community.

At the end of Workshop 1, three volunteers formed a small workgroup to wordsmith a draft vision statement. It was decided that awareness, cost-effectiveness, and inclusiveness were the key principles that the workgroup would work to embed in the vision.



Workshop 1 | Vision principles brainstorm

Small Visioning Group

The facilitation leader drafted two vision statement options for the small workgroup to work from. The workgroup took parts of both of these to create a third vision. One of the original statements and the third version were presented to the Planning Team in Workshop 2. From the small group, a list of considerations was outlined for the larger Planning Team to consider when selecting or refining one of the statements:

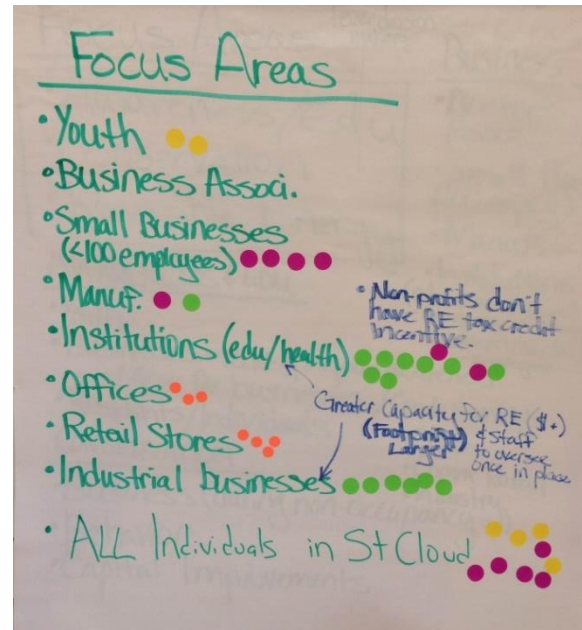
- Tone (future or present)
- Inclusion of time frames in the vision or embedded within the goals
- Complex vs. Simple
- A statement that excites the community & catches attention
- Use the word energy
- Education vs. Awareness
- Charge to the community not just the City (local gov.)
- A more action oriented/motivating statement

Workshop 2

Workshop 2 started by reviewing the agenda and reviewing the Vision Principles from Workshop 1. The facilitation team then presented a word cloud that captured all of the principles that people drafted individually in Workshop 1. Measurable, sustainable, cost-effective, implementable, and renewable were the terms that were used most frequently. A final Vision Statement was co-created during the workshop through revising one of the statements prepared by the small workgroup.

The facilitation team defined *focus areas*, *goals*, and *strategies* for the Planning Team and that was followed by a group brainstorm on focus areas for St. Cloud. The team moved to a theme based framework of three different action categories: education, conservation, and renewable energy.

Further discussion explored opportunities to hone these themes based on specific audiences, geographies, business types, etc. All ideas were recorded in real time and the Planning Team identified focus areas by dot vote. The workshop ended by discussing goal setting for the plan and asked people to individually draft three measurable goals (for any focus area) to help launch the next workshop.



Workshop 2 | Dot voting on Focus Areas

Workshop 3

The Planning Team reflected on the Vision Statement and looked at the dot vote results from Workshop 2. These results showed the focus areas of greatest interest to the team by theme (e.g. youth as a focus area audience under the theme of education). We discussed the concept of an “all individuals” focus area. It was determined to be important so that education for one audience can trickle to another audience. The team refreshed on the Vision Principles and discussed them as criteria for evaluating decisions moving forward. This primed the group to then review the draft goals from Workshop 2 and discuss goal breadth and the impact of time horizons. The team discussed what a community-level goal could look like and discussed the importance of metrics focusing on cost savings and leveraging cost-effective improvements and services (“pocketbook” benefits). The planning team as a whole sketched out different metrics for community wide goals and how to stage them over the course of five to ten years.

To help inform specific measurable components of goals, the facilitation team then presented more energy usage and cost data based on the established themes and focus areas. As a last exercise, the team broke into three groups (one per theme) to refine or draft new goals for each focus area based on the conversation around metrics.

Industrial and Institutional Small Group

A phone call was held with those team members who were in the renewable energy theme small group at the end of Workshop 3. The team discussed the definition of “institutional” to provide more clarity to the group at large and also further defined the goals drafted in that workshop.

Workshop 4

The facilitation team summarized back to the team the focus area goals as outlined by small groups in Workshop 4. The team then discussed these draft goals and suggestions for improvement. Questions discussed were: Are the metrics understandable and meaningful to the community? And, what is a measureable goal for education action? Some refinements were recommended and, after reviewing the purpose of strategies, the facilitation team shared examples of programs and public organizing. A strategies brainstorming session was then facilitated followed by a group activity to rank which strategies would be most effective in reaching the outlined goals.

The same small breakout groups (organized by theme) formed again to deep dive into the details of the top ranked strategies that would be implemented, answering: who should be a partner? How should this effort be lead? What are the barriers and opportunities within the community? And, how can Xcel Energy be helpful?



Community Energy Planning Team (not all team members pictured)

The team then reviewed two example scenarios for how various goals could be met (e.g. different bundles of conservation program participation that would have equal impact but different outreach, cost, and feasibility implications). A final discussion around goals reinforced the desire for “achievable” goals over “aspirational” (as the team also showed in a survey between Workshop 3 and 4), as well as for goals that are exciting and memorable to the community. Due to complications in varied energy use and weather, the team also found that a detailed metric and goal around energy use per resident would be too technical for it to be meaningful to individual community members. Precious metrics such as cost savings and participation were preferred.

Workshop 5

The facilitation team shared an outline of the refined goals including strategies for each as created by the small groups in Workshop 4. There was also data shared about the long-term impacts of these goals regarding energy usage and energy cost savings. Strategy scenarios for conservation were also shared by the facilitation team. The team then discussed if strategies need to be adjusted to be more aggressive or decide if goals should be made less aggressive. Final

discussion of the goals and strategies was captured for input into the draft Energy Action Plan. The team then evaluated the strengths, weaknesses, opportunities, and threats of the plan that they were creating, as considerations for those that would be helpful in implementation. Finally, the team discussed opportunities for them to stay engaged during implementation through on-the-ground support, as well as the desire to have a kick-off meeting to celebrate the planning phase and kick-off implementation with other community members.

Appendix C: Supplemental Baseline Energy Data & Comparison to Other Communities

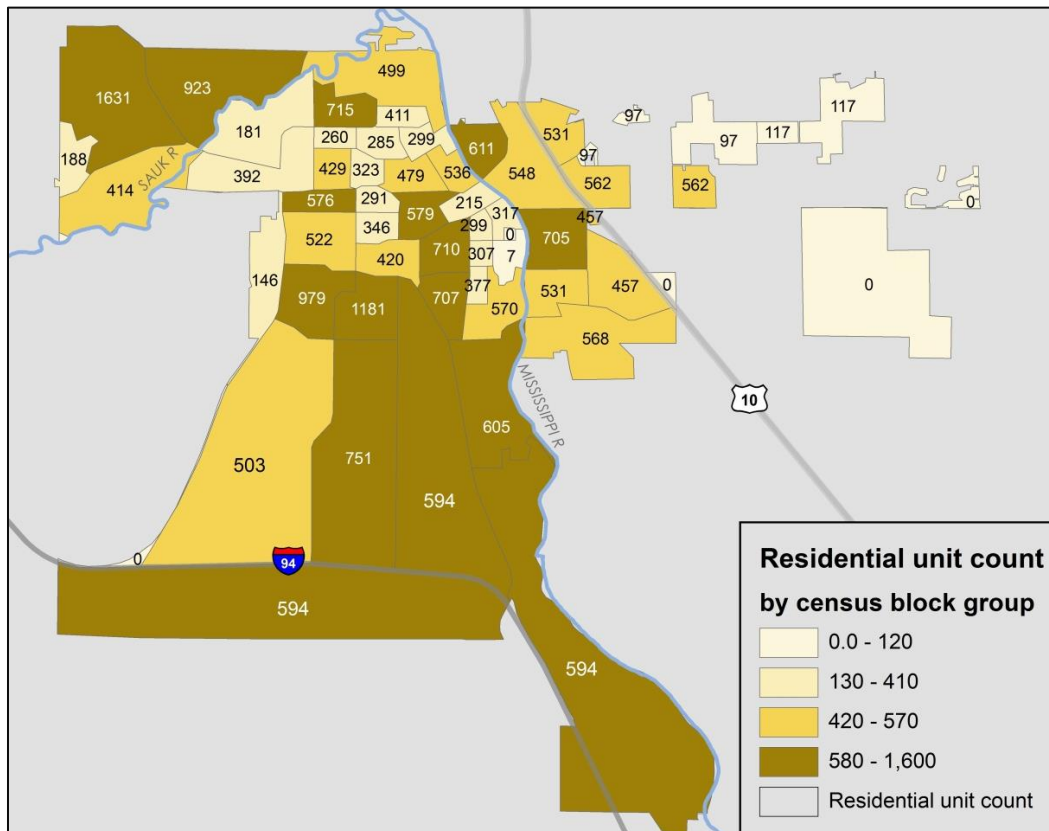
Figure A: Comparison of Communities by Population & Demographics²⁶

These points of comparison are helpful for comparing St. Cloud's average energy use, as a benchmark for improvement and goal setting.

Communities	Total Population (2015 est.)	Language Spoken at Home (% other than English)*	Median Household Income (2015 \$'s)	Median Gross Rent, Including utilities (2011-215)	Owner Occupied Housing	Poverty Rate
St. Cloud	65,842	11.40%	\$ 45,437	\$721	52.0%	23.3%
St. Louis Park	48,171	12.50%	\$ 66,432	\$990	56.8%	8.1%
Maplewood	40,567	19.60%	\$ 62,527	\$951	72.9%	9.6%
Mankato	41,044	8.50%	\$ 41,425	\$726	53.2%	26.2%
St. Paul	300,851	27.60%	\$ 48,757	\$838	49.3%	22.3%
Minnesota	5,489,594	11.0%	\$ 61,492	\$848	71.7%	10.2%

*Language spoken is based on individuals age 5 and older (2011-2015)

Figure B: Distribution of Residential Units Across the City (single-family & multifamily)



²⁶Retrieved Aug 2016: www.census.gov/quickfacts/table/PST045216/27,2740382,2757220,2739878,2758000,2756896

Figure C: Comparison of Average Electricity Consumption (kWh) per premise/meter for Residential Customers across four communities with shared characteristics.

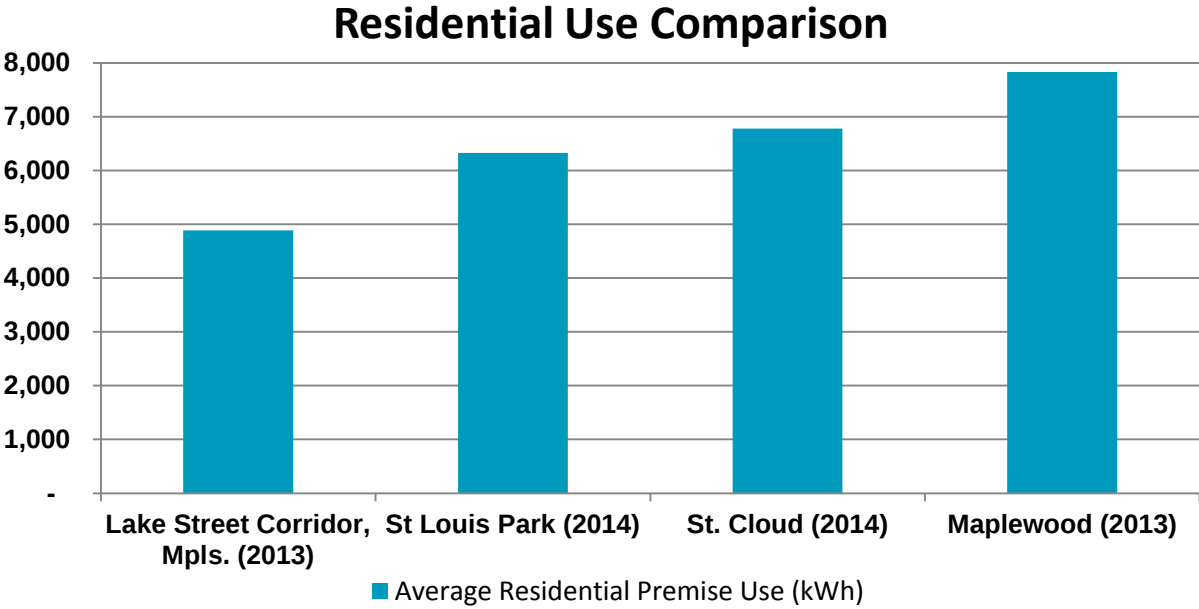


Figure D: Count of Participation in Residential Demand Side Management (conservation) programs or services, by census block group (2015).

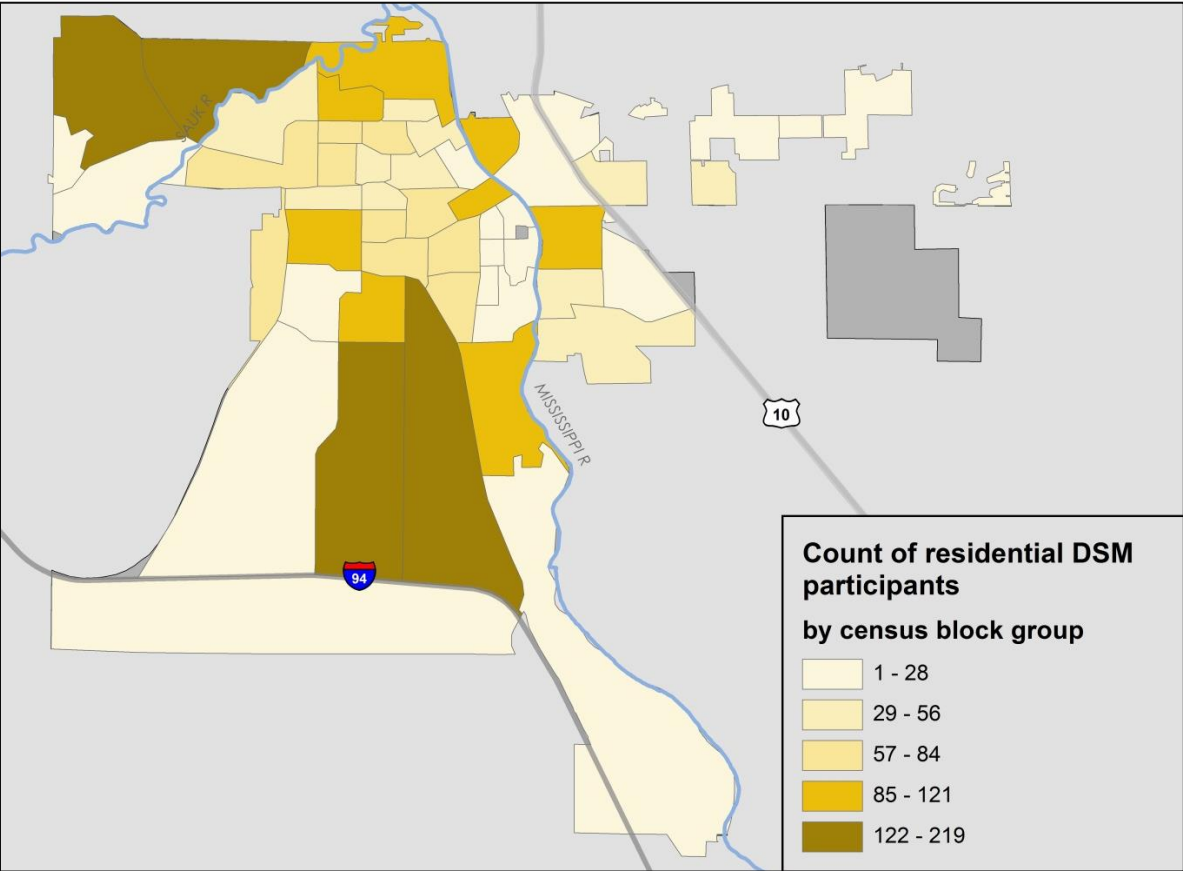


Figure E: Comparison of Average Electricity Consumption (kWh) per premise/meter for Commercial Customers across four communities with shared characteristics.

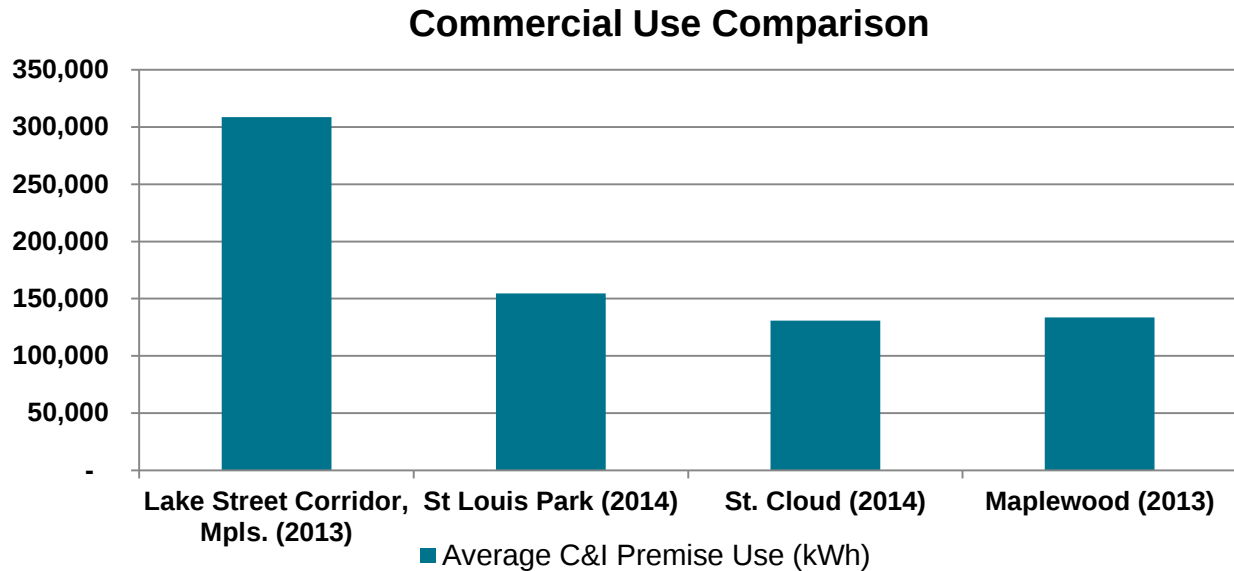


Figure F: Count of Participation in Commercial Demand Side Management (conservation) programs or services, by census block group (2015).

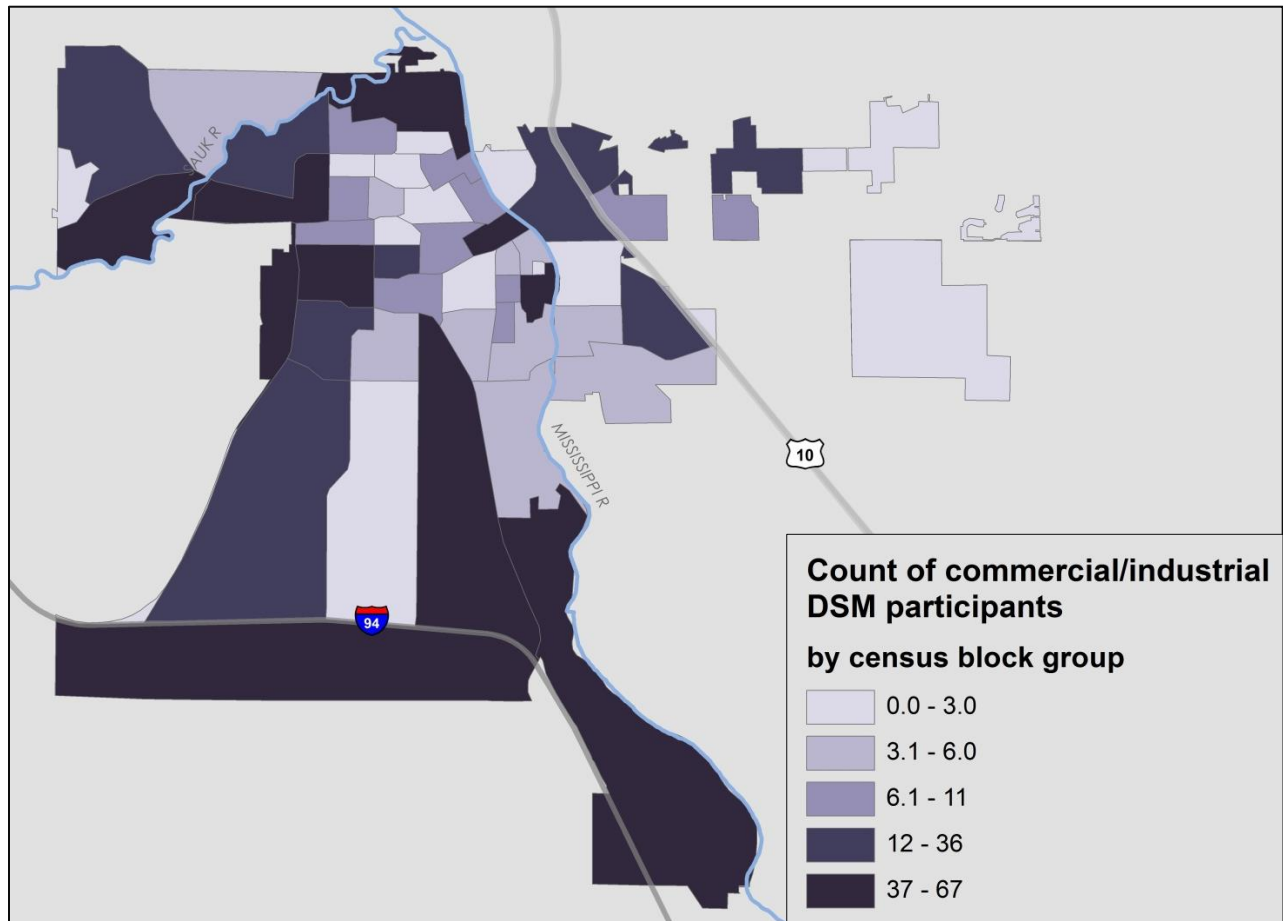
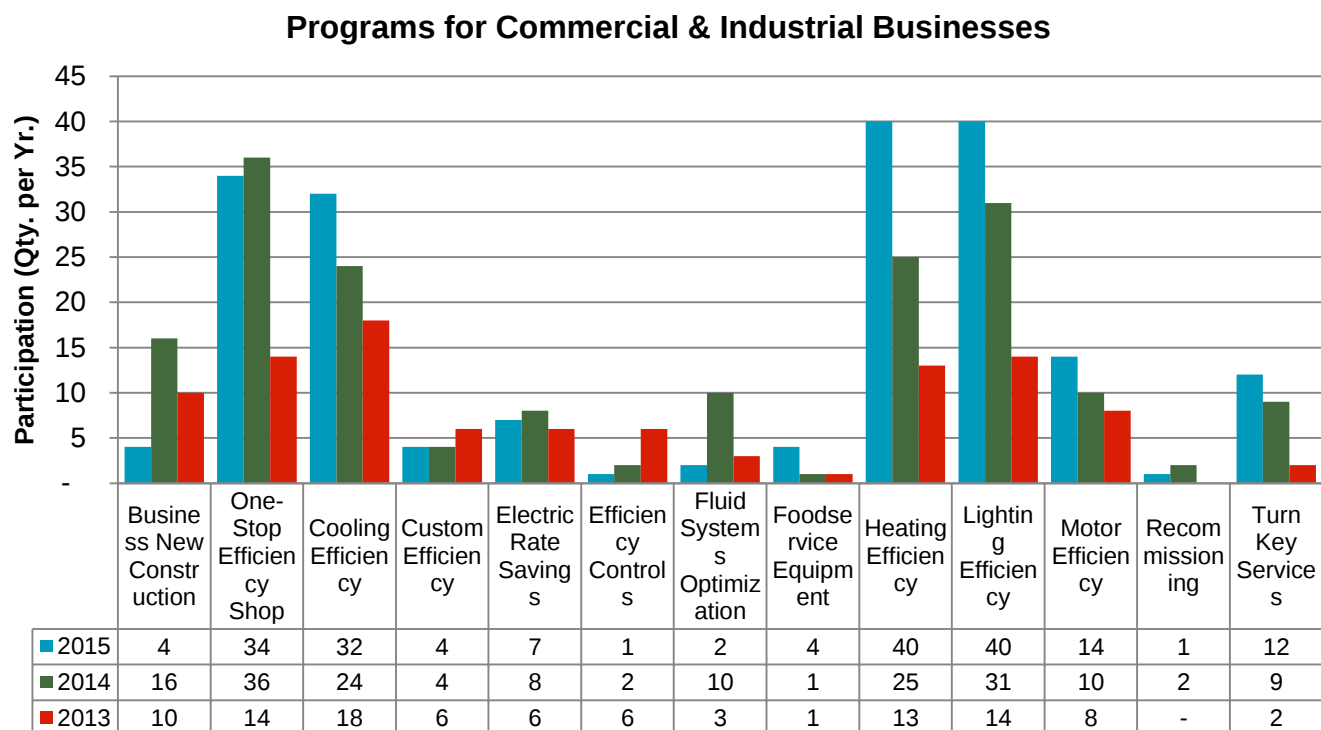
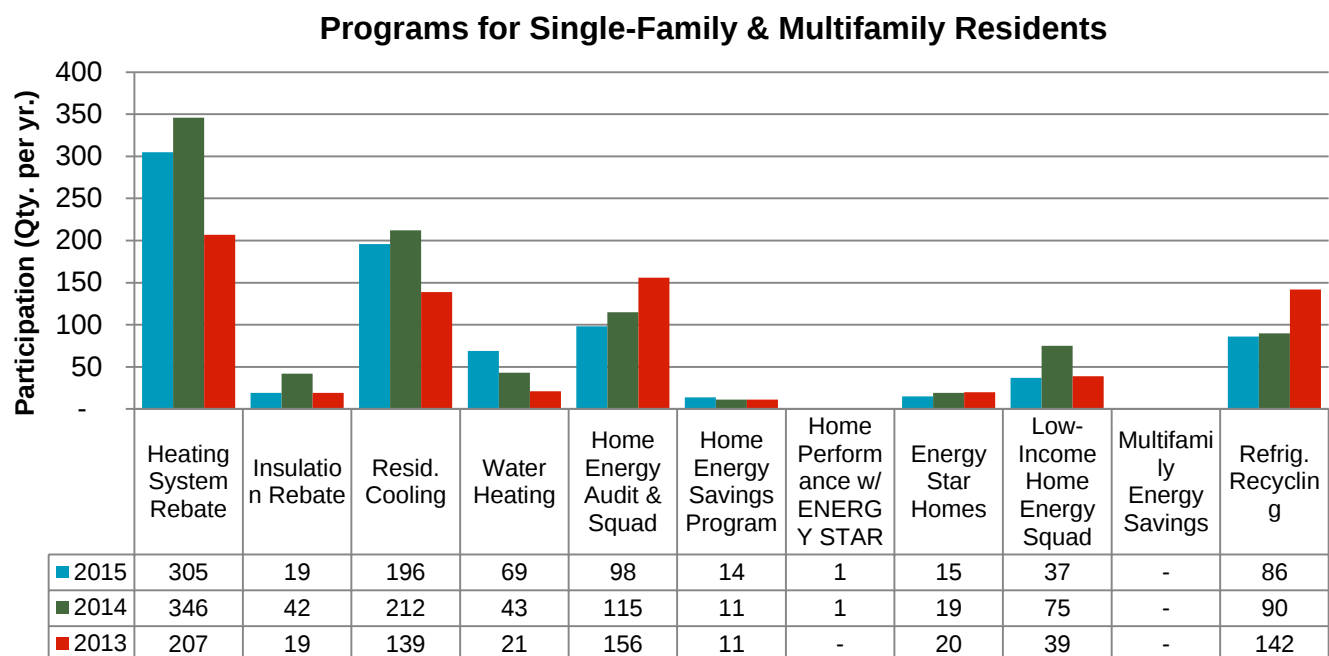


Figure G & H: Participation by Xcel Energy Conservation Service or Rebate Program



Appendix D: Planning Phase Memorandum of Understanding between City of St. Cloud & Xcel Energy

**Memorandum of Understanding
Phase 1 – Plan Development**

Mayor Dave Kleis
City of St. Cloud
400 Second Street South
St. Cloud, MN 56301

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 St. Cloud'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 St. Cloud into the analysis if feasible.

XCEL ENERGY PARTNERS IN ENERGY

Memorandum of Understanding Plan Development Phase

- 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 St. Cloud 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 St. Cloud, 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 St. Cloud 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.

XCEL ENERGY PARTNERS IN ENERGY

Memorandum of Understanding Plan Development Phase

Resource Commitment Summary Plan Development Phase

City of St. Cloud	Xcel Energy
• 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	• 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 St. Cloud.

All communications pertaining to this agreement shall be directed to Tracy Hodel, on behalf of the City of St. Cloud, 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 St. Cloud in the development of an action energy plan.

For the City of St. Cloud:

TS Don Klein

Date: 5/5/16

For Xcel Energy:

Patrick Cline

Date: 9/16/16

Appendix E: Xcel Energy Programs & Rebate Summary

Xcel Energy Program Offerings

Minnesota residential studies, audits and services				
Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Billing and payment	My Account with eBill	My Account is Xcel Energy's online account management service that provides customers with a personalized summary of their account. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center.	E G	Service
Fuel conversions	Switch from propane or fuel oil to natural gas	Convert your primary fuel in your home and save. Potential construction charge for distances from distribution gas line greater than 75 ft and one-time account set-up charge.	G (in area)	Service
Home audits	Home Energy Savings Program	After an in-home evaluation, qualifying residents may be eligible for services and equipment that include CFL bulb upgrades, insulation and weather stripping, appliance replacements and other equipment and appliances,	E G	Service
	Low-Cost Home Energy Audits	Home Walkthrough – Whole-house visual inspection and basic energy bill analysis for \$30. Standard Audit – Home Walkthrough plus blower door test for \$60. Standard audit with Infrared – Standard Audit plus an infrared camera scan for \$100 (where available).	E G	Audits
Home services	Home Energy Squad®	Low-cost service to provide and install efficient items such as compact fluorescent light bulbs, programmable thermostats, weather stripping and more. Must have natural gas service from Xcel Energy or CenterPoint Energy (\$70).	E G (CenterPoint Energy gas)	Service
	Home Performance with ENERGY STAR®	By installing multiple measures after a \$60 energy audit, natural gas customers are eligible for cash rebates.	E G	Audits
	Saver's Switch®	During peak air conditioning use days, participating residents can save 15% off of their electric energy use June through September by allowing a lowering of energy use from their AC units.	E G	Services Rebates
New home construction	ENERGY STAR Homes	Free home performance testing, inspections and consulting services to help meet the ENERGY STAR guidelines set by the U.S. Environmental Protection Agency. We conduct regular site inspections and arrange an independent inspection at completion to ensure homes meet all required builder rebates.	E G	Study

Minnesota residential rebate programs

Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Cooling efficiencies	Central air conditioning and air source heat pumps	Our Central AC Rebate program is designed to generate maximum energy savings for residents by focusing on proper installation practices. Qualifying equipment and installations may earn up to \$450 cash rebates. Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
	Ground source heat pumps	Qualifying ENERGY STAR ground source heat pumps are eligible for a cash rebate of \$150 per ton (five ton limit). Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
Environmental	Refrigerator/freezer recycling	We pick up resident's old working, second fridge or freezer and recycle it free of charge as well as give a \$50 cash rebate and two compact fluorescent light bulbs.	E	Rebate Service
	CFL bulb recycling	Compact fluorescent lights (CFLs) contain small amounts of mercury that are harmful to the environment. Because of this, they should not be disposed in household trash receptacles. Xcel Energy provides free CFL recycling at participating retailers and Minnesota county recycling centers.	E	Service
Heating efficiencies	Heating/ECM rebates	Qualifying natural gas boiler, gas furnace or factory installed Electronically Commutated Motor (ECM) are eligible for cash rebates.	E G	Rebate
	Water heating rebates	Qualifying energy-efficient water heaters can earn rebates.	G	Rebate
	Insulation rebates	Well-insulated homes can save up to 20% on heating and cooling costs. Rebates for 20% of project cost with a \$300 annual cap. Insulation upgrades existing single-family and multi-unit homes, up to four units, that professionally install insulation. Additional restrictions may apply.	G E (electric heat)	Rebate
Lighting efficiencies	Home lighting	Energy-efficient compact fluorescent light bulbs and light-emitting diodes can be purchased at a discount at participating retailers.	E	Rebate

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota residential renewable options

Deliverable	Description	Fuel type	Existing or new	Study rebate service
Solar*Rewards®Community®	A developer or a community installs a solar garden. Residents purchase or lease shares and receive credit on their monthly Xcel Energy electricity bills for their portion of solar energy produced by the solar gardens.	E	E N	Service
Solar*Rewards®	Residents receive incentives for installation of photovoltaic (PV) solar panels. The state of Minnesota may offer an additional rebate if you buy solar panels from Minnesota manufacturers.	E	E N	Service
Windsource®	Residents can purchase renewable, wind energy through Windsource. Subscriptions start at less than \$1 per month for one, 100-kilowatt-hour block*.	E	E N	Service

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota business audits, studies & services

Deliverable	Description	Gas or electric	Study rebate service
Business new construction energy design assistance*	An integrated design process that includes whole building computer modeling and verification of measures for new buildings, additions or major renovations. Finished space 20,000 sq. ft. or larger	G E	Study Rebates
Business new construction energy efficient buildings*	Free design review to identify potential rebates and energy-saving opportunities, plus rebates for making efficiency improvements to your new building, addition or major renovation. Finished space smaller than 20,000 sq. ft.	E G	Study Rebates
Commercial efficiency*	Operations and facilities analysis and support to help large commercial operations create a long-term energy management plan. (Designed for energy conservation potential of 1 GWh or 4,000 Dth)	E G	Study Rebate
Data center efficiency study*	Data center energy efficiency analysis and identification of opportunities to improve IT equipment and/or facility systems to run at peak efficiency	E G	Study Rebate
Free online assessment	For businesses unsure of investing in an on-site energy audit, we have a FREE online energy assessment tool that offers a basic report on hidden energy-savings potential: xcelenergy.com/OnlineAssessment	E G	Tool
Fluid system optimization* (compressed air, pumps, fans, blowers, vacuums)	Rebates for a study to analyze your fluid systems to discover no-cost/low-cost improvements as well as identify capital projects to increase your system's efficiency, reliability and performance	E	Study Rebate
Heating efficiency steam trap audits and rebates	Identify failed traps and benefit from cost-saving rebates to repair or replace traps	G	Study Rebate
Heating efficiency system optimization study*	Analyze all or part of heating system to uncover and/or assess natural gas savings opportunities, including no-/low-cost adjustments and/or equipment improvements	G	Study
Lighting redesign study*	A complete lighting analysis to identify ways to improve your lighting efficiency in over-lit or wrongly-lit spaces. (Not for 1-to-1 lighting retrofits; must be performed by a certified lighting professional)	E	Study Rebates
Process efficiency*	Operations and facilities analysis to help create a long-term energy management plan. Industrial manufacturing customers must have cumulative energy conservation potential of 1 GWh or 4,000 Dth	E G	Study Rebate
Recommissioning*	Energy experts conduct a Recommissioning study and provide recommendations for building tune-ups. Many measures have simple paybacks of less than one year. Choose what to implement and get rebates on both the study and implementation measure(s)	E G	Study Rebates
Refrigeration recommissioning*	Rebates for tuning up existing commercial refrigeration systems in grocery outlets, convenience stores and other facilities with refrigerated cases	E	Study Rebates
Turn key services	Low-cost, on-site assessments that identify energy-saving opportunities for community businesses. Includes free project implementation services and 30% bonus rebates on rebate-eligible improvements made within 12 months from assessment date. If businesses already have energy-saving projects identified, they can still take advantage of our free implementation services	E G	Study Service Rebates
My Account with eBill	My Account is Xcel Energy's online account management service that provides business customers with a summary of their account to help manage energy. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center	E G	Services
PERSONALIZED BUSINESS ACCOUNT SERVICES	Our efficiency specialists are your go-to support for your businesses' energy needs, available to: • Answer questions • Suggest energy recommendations tailored to your business • Help you navigate program options, requirements and documentation • Discuss different ways to get started Contact your Xcel Energy account manager, or our energy efficiency specialists at 1-855-839-4362 or energyefficiency@xcelenergy.com .		Services
Trillion BTU financing	Loan program that leverages public and private money to help businesses make improvements that lower energy costs. Delivered by St. Paul Port Authority.		Service

*Requires preapproval prior to starting the project or study.

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Rebate Programs

Deliverable	Description	Gas or Electric	Study Rebate Service
Cooling Efficiency	Rebates for energy-efficient air conditioning equipment including rooftops, chillers, water source heat pumps, zero-loss energy doors, PTACs and more	E	Rebate
Computer Efficiency	Rebates available for virtual desktop infrastructure (VDI) or PC power management software	E	Rebate
Custom Efficiency*	Rebates for energy-efficient technologies or process improvements not covered under our prescriptive programs	E G	Rebate
Data Center Efficiency Equipment Rebates*	Custom rebates for opportunities identified through a Data Center study	E	Rebate
Efficiency Controls*	Rebates for control systems that save energy by automating building systems such as lighting, HVAC and others	E	Rebate
Fluid System Optimization*	Rebates for efficiency improvements from upgraded equipment identified in a fluid system optimization study	E	Rebate
Foodservice Equipment	Cash-back rebates for purchasing and installing qualifying energy-efficient foodservice equipment such as convection ovens, broilers, demand controlled ventilation, ENERGY STAR dishwashers and more	E G	Rebate
Heating Efficiency	Prescriptive rebates for qualifying commercial heating systems used for space heating, domestic water heating and up to 30% additional process load	E G	Rebate
Lighting Efficiency Retrofit Rebates	Rebates for purchasing and installing energy-efficient lighting in an existing building	E	Rebate
Lighting Efficiency New Construction Rebates	Rebates for purchasing and installing energy-efficient lighting for new or significantly renovated facilities	E	Rebate
Motor and Drive Efficiency	Prescriptive and custom rebates for installing variable frequency drives (VFD), adjustable speed drives (ASD) and Constant Speed Motor Controllers. Motor rebates are available for NEMA Premium® enhanced new, upgrade and enhanced upgrade motors	E	Rebate

*Requires preapproval prior to starting the project or study.

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Renewable Options

Deliverable	Description	Fuel Type	Existing or New	Study Rebate Service
Solar*Rewards	Rebates based on energy production for installing solar panels on your business. Participation is limited. Additional incentive may be available through the Made in Minnesota program. Additional payment available for excess energy produced.	E	E N	Service
Windsor	Businesses can purchase renewable energy through Windsor. Subscriptions start at less than \$1 per month, for one, 100 kilowatt-hour block.*	E	E N	Service



RESPONSIBLE BY NATURE®

Appendix F: Energy Action Plan Overview & Infographic

OUR COMMUNITY ENERGY ACTION PLAN

A Tradition of Sustainability Leadership. A Path to Impact.

To enhance the livability and sustainability of the community, and to build on the City's own 80% renewable by 2018 goals, we – a group of community leaders, business owners, and institutions convened by the City – developed a Community Energy Action Plan. This 2017-2026 plan envisions how we want to live in the future. This overview outlines the specific actions that will get us there.

2017-2018 GOALS

1. **Get Smart:** Increase energy awareness for students and adults around actions and behaviors that reduce energy use and benefit future generations.
2. **Take Targeted Action:** Double residential and small/medium business participation in conservation programs.
3. **Deliver Economic Benefit:** Save the community \$638,000 in energy costs.

2019-2026 GOALS

4. **Challenge a Friend:** Maintain participation in conservation programs that is 70% above average participation levels in the years 2013-2015.
5. **Support a Business:** Help institutions and industrial businesses use 25 million kWh of renewable electricity by 2016 via installation, purchase, or subscription.

A CALL TO ACTION FOR ALL

Reducing our energy impact will require action from thousands of individuals. Here are some ways that you can contribute:

All Community Members:

- Call the City to learn how you can attend events or support community lead efforts to help fulfill your St. Cloud. Community Energy Vision.

Kids and Parents:

- Call the City to get involved in shaping a student program that will teach kids about energy and impact school energy use.

Institutional & Industrial Businesses:

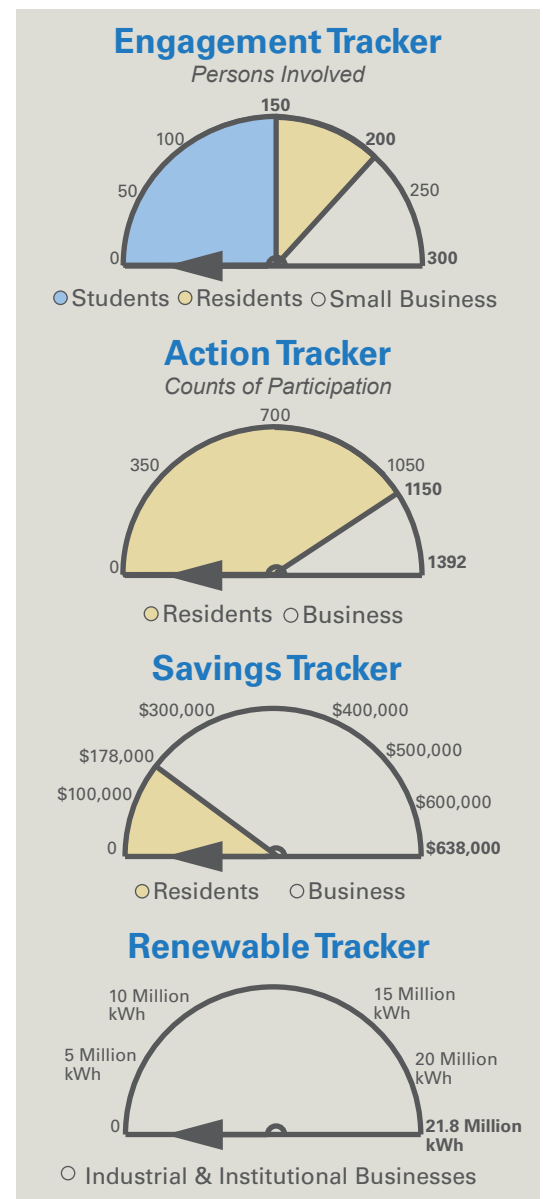
- Attend a business leaders renewable energy workshop.
- Pledge to reach 5% renewable energy by 2025.

Residents:

- Make home energy improvements and earn rebates.
- Get a Home Energy Squad visit to learn how to make your home more efficient.
- Attend a neighborhood workshop to hear personal stories about home energy conservation.

Small & Medium Businesses:

- Host or attend an educational workshop with Xcel Energy.
- Make an efficiency improvement and earn a utility rebate.



St. Cloud

ENERGY ACTION PLAN

Community Vision Statement

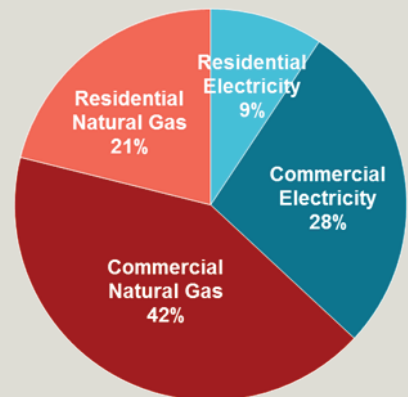
We are energy leaders through voluntary, inclusive, and sustainable approaches that result in measurable, environmental, and economic benefits.

Our Current Costs

Dollars Spent on Energy

\$87
MILLION/YR

Our Current Use



Our Future Actions



GET SMART



ACT



GET RECOGNIZED



BENEFIT

Action Plan Impacts

With individual action, by 2026 the community will:



Save 205,011 more
MMBtu of energy



Use 21,800,000 more
kWh of renewables



Save \$9.2 Million in
energy costs

PARTNERS IN ENERGY

FREQUENTLY ASKED QUESTIONS



1. What is Partners in Energy?

Xcel Energy's Partners in Energy is an offering to help communities identify and reach their unique energy goals. Partners in Energy supports the development of energy action plans formed by a team of community stakeholders and will provide resources for the first 18 months of implementation. If you already have goals or a plan, we can customize our resources to match your needs.

We also provide additional resources to help the communities we serve achieve their goals around energy. These include webinars, topic specific toolkits, and resources on Xcel Energy's programs and services.

Partners in Energy is Xcel Energy's program to support the communities we serve in achieving their energy goals their way, while leveraging our tools and resources to the greatest extent possible.

2. How can it benefit my community?

Partners in Energy offers flexibility, expertise and resources to develop and launch your energy planning. We supplement your local resources with our team of experts to guide you through the planning process by developing your plan document and supporting delivery of your unique strategies and tactics to achieve your energy goals. If you're aiming to add renewable energy, reduce electric and natural gas consumption, or lower CO₂ emissions, developing a robust Energy Action Plan will provide the first step to charting your energy course. Our team can help you outline actionable strategies that may include promotional outreach, education, events, PR and more. We help guide project implementation and bring tools and resources to help your community overcome implementation barriers. Community engagement is a key component - it provides ownership, ensures goals reflect local priorities, and positions your community as an energy-savvy, environmentally conscious trendsetter.

3. What resources are expected from a community?

Ideally, you will assign a champion from your community who will serve as our primary contact point and local lead. If you're working with us on developing an Energy Action Plan, it may require up to 100 hours of time from this person over the process of developing that plan. We will leverage your local resources such as your existing communications channels, your community website, social media, press media, newsletters or cable channels as we work together to develop and implement your plan.

Xcel Energy resources are there to support and provide tools and help throughout the process — but it is the community that ultimately owns the plan.

4. Is there a cost associated with Partners in Energy?

The cost to participate in Partners in Energy varies by state. Please contact us for information specific to your location. The amount you need to invest in implementation is driven by your needs or outreach strategies within your plan. The tactics in your Energy Action Plan may be within your current budget, or you may identify needs for a more robust energy management program.

PARTNERS IN ENERGY

5. Who is involved?

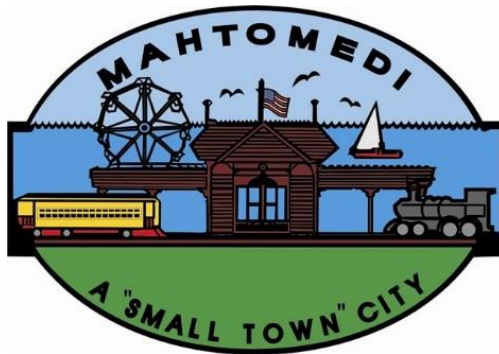
In addition to your community contributors, the Xcel Energy team will be at the table to provide resources, data and support during planning and implementation. In addition, you will have access to energy planning experts and the ability to brainstorm with representatives from other communities participating in Partners in Energy. This is done through a series of webinars and in-person and virtual workshops and summits delivered through our Exchange option.

6. How do we contact Partners in Energy?

To find out more about when additional communities can join, or to download an application to work with us on developing an Energy Action Plan, visit xcelenergy.com/PartnersInEnergy. If you have specific questions or want to request a presentation, email us at PartnersInEnergy@xcelenergy.com.



An Energy Action Plan for Mahtomedi, MN



October 3, 2017

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Acknowledgements

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

Mahtomedi's Energy Action Team

City Representatives

- Scott Neilson, Mahtomedi City Administrator

Community Representatives

- Julie Drennen, Conservation Minnesota
- Kate Edwards, White Bear Unitarian Universalist Church
- Mary Hoff, Mahtomedi Area Green Initiative
- Paul Hoff, St. Jude's Church
- Al Holcomb, Mahtomedi Area Green Initiative
- Christine Ahmann Maples, Environmental Commission
- Hannah Maples, Mahtomedi High School EcoClub
- Larry Miller, FedEx
- Julie Osterbauer, Mahtomedi School District
- Scott Peterson, Environmental Commission
- Scott Randall, Century College
- Genna Viggiano, Mahtomedi High School EcoClub

Xcel Energy Representatives

- Tami Gunderzik, Partners in Energy Program Manager
- Yvonne Pfeifer, Community Energy Efficiency Manager
- Colette Jurek, Community & Local Government Relations Manager
- Elena Foshay, Partners in Energy Community Facilitator
- Melanie Horton, Partners in Energy Community Coordinator
- Shelby Sommer, Partners in Energy Community Facilitator



Executive Summary

Our Energy Vision

Mahtomedi residents, schools, congregations, and businesses will work collaboratively to dramatically reduce our carbon footprint and position our community as a regional energy leader by engaging in activities that conserve energy, save money, and use renewable energy.

Our Goals

Overarching, aspirational goals:

- Achieve a 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050 (from a 2016 baseline).
- 1.4 percent average annual energy savings to reduce energy consumption 19 percent by 2030.

Sector-specific goals:

- **Residential:** Triple total participation in energy efficiency programs within one year, resulting in 1.6 percent annual energy use reduction and saving participating households an average of \$113 per year on their energy bills.
- **Business/Institutional:** Engage businesses and institutions in energy saving actions, resulting in a combined 11 percent reduction in energy use in targeted facilities below 2016 baseline by 2020.
- **Renewables:** Double the number of renewable energy subscribers in one year and double average subscription amount.

How Will We Get There?

To support achievement of its goals, Mahtomedi will focus on the following priority strategies:

Residential Strategies	Strategy 1: Residential Outreach Campaign Strategy 2: Energy Efficient Remodeling and Construction
Business & Institutional Strategies	Strategy 3: Congregation Energy Workshops Strategy 4: Business and Institutional Energy Efficiency Leadership
Renewable Energy Strategy	Strategy 5: Renewable Energy Adoption

Playbook for Achieving Our Goals

Ongoing Efforts

- Strategy team check-in calls/meetings
- Tracking of program participation and energy savings
- Monitoring of implementation efforts
- Sharing of success stories

Near-Term Actions

(September 2017 – December 2017)

Residential

- Campaign development workshop
- Environmental Commission review of construction topic
- Develop residential campaign materials and schedule
- Conduct train-the-trainer sessions

Businesses

- Congregation workshop planning
- Host first congregation workshop
- Identify potential institutional facility improvements

Renewables

- Coordinate with residential outreach campaign development
- Review SolSmart requirements

Longer Term Actions

(January 2018 – December 2018+)

Residential

- Conduct outreach campaign
- Update materials as applicable

Businesses

- Explore additional congregation workshop opportunities
- Implement facility improvements

Renewables

- Pursue SolSmart certification
- Explore solar array feasibility

Introduction

This plan outlines tangible steps for Mahtomedi that move the community towards its priorities of a carbon reduction ethic and a dedication to establishing realistic energy conservation goals. This Energy Action Plan (plan) builds upon other local efforts and initiatives, including the Mahtomedi Sustainability Plan, the B3 Benchmarking, GreenStep Cities, and the U.S. Conference of Mayors Climate Protection Agreement. It also leverages the momentum and expertise of myriad local and regional groups, including but not limited to the Mahtomedi Area Green Initiative (MAGI), Mahtomedi Environmental Commission, Conservation Minnesota, Mahtomedi High School EcoClub, and various individuals and congregations.

Mahtomedi hopes to achieve a plethora of benefits from participating in Partners in Energy and creating a community Energy Action Plan. From purely economic and quality of life perspectives, Mahtomedi hopes that by creating a plan it can save community members energy and money over the long term. In addition to those benefits, developing such a plan will help Mahtomedi achieve its Sustainability and Comprehensive Plan goals, keeping Mahtomedi values of environmental, social, and economic sustainability alive and thriving.

To develop the plan, the Energy Action Team convened during Spring 2017 for two, 4-hour workshops. During these workshops, and in subsequent online surveys and web meetings, the Energy Action Team worked section by section through the main components of this plan, reviewing background community and energy data, defining an energy vision, determining areas of focus, exploring and setting energy and greenhouse gas reduction goals, and detailing specific strategies to implement.

Together, these workshops and planning efforts resulted in this plan, which provides a roadmap for the Mahtomedi community to act on its energy priorities and achieve its vision and goals.

Xcel Energy Partners in Energy

Xcel Energy is the main electric and gas utility serving the city of Mahtomedi. In the summer of 2014, Xcel Energy launched Partners in Energy to support communities, such as Mahtomedi, in developing and implementing energy action plans that supplement existing sustainability plans, strategies, and tools (Figure 1). However, the content of this plan is unique to the ideas and priorities of the Mahtomedi community and the Energy Action Team.

Xcel Energy's Partners in Energy team will work with Mahtomedi to coordinate support for implementing the plan over the course of 18 months and will develop a Memorandum of Understanding (MOU) that outlines specific support Xcel Energy will provide to help Mahtomedi deploy its strategies and achieve its goals (Figure 2 and Appendix 2). Implementation of the plan will begin in fall 2017.

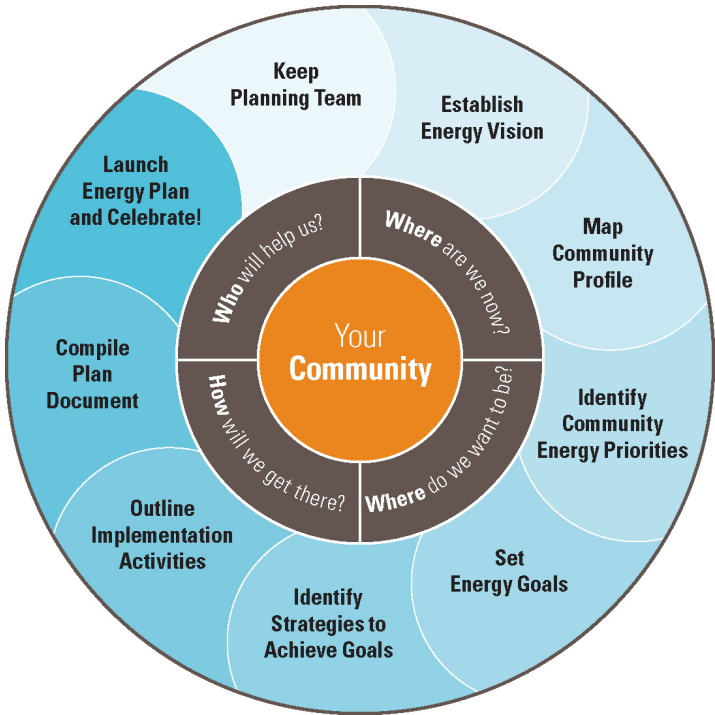


Figure 1. Partners in Energy Process for Success

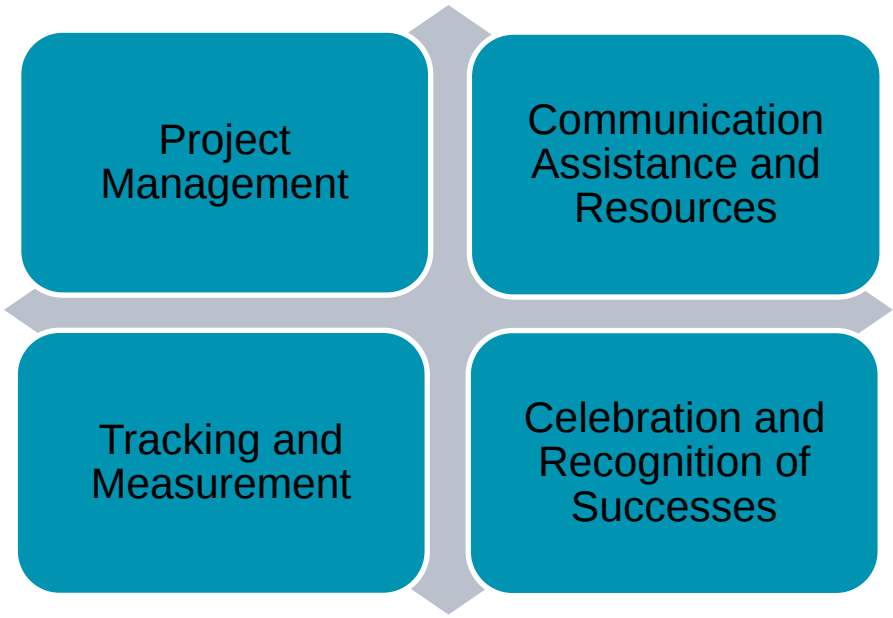


Figure 2. Resources from Xcel Energy for Implementation

Who Are We? – Community Background

Mahtomedi prides itself in being a “small town” city with cornerstone values in local business, a healthy natural environment, and strong community connections. Mahtomedi is a Saint Paul suburb located in Washington County between Saint Paul and Stillwater on the eastern shore of White Bear Lake (see Figure 3). It is surrounded by cities such as Pine Springs, Oakdale, Grant, and Birchwood while surrounding the City of Willernie.

Historically, the area that is now Mahtomedi was hunted and harvested by the Dakota and Objibway people. In fact, “The name Mahtomedi comes from the Dakota name of the lake—mató, the grey bear, and mde, a lake.”¹ Starting in the early 1800s, The U.S. Government opened access to the region to European-American settlers and in July 1883, the City of Mahtomedi was platted by the First Mahtomedi Assembly of the Chautauqua Association². However, Mahtomedi did not incorporate into a city until 1931. The City’s total area is now 5.76 square miles – 3.49 square miles are on land and 2.27 square miles of the City are water, part of which is White Bear Lake. While it closed in 1932, a unique part of Mahtomedi’s heritage is that it had its own amusement park called Wildwood Amusement Park, built in 1889.³ That draw, along with lake recreation, led to Mahtomedi being developed primarily as a seasonal lake cottage home community. Mahtomedi area residents later adapted their homes to make them more comfortable for year-round habitation. Now, as more of a year-round community, City officials are planning for the community’s future in an efficient and sustainable way.



Figure 3: City of Mahtomedi Map

¹ Washington County Historical Society. “Washington County History Guide: Mahtomedi.” <http://www.wchsmn.org/mahtomedi/> (accessed March 14, 2017).

² Ibid.

³ MNopedia. “Wildwood Amusement Park.” <http://www.mnopedia.org/place/wildwood-amusement-park> (accessed June 12th, 2017).

Population and Demographics

The population in Mahtomedi is relatively steady, with 7,676 people as of 2015.⁴ Projections from the Metropolitan Council estimate that the population will remain fairly level around 7,700 residents and 3,100 households through 2040.⁵ Age demographics will shift however, with an increase in residents over the age of 65. This transition will impact housing types, facilities, and services that Mahtomedi will need to have available.

In terms of gender, Mahtomedi is reportedly 52.3 percent female and 47.7 percent male.⁶ The median age is 43.3 as of 2015 and 18.9 percent of the population is 62 years or older. Ethnically, Mahtomedi is 94.9 percent white, 3.6 percent Black or African American, 0.5 percent American Indian or Alaska Native, 2.7 percent Asian, or 0.5 percent some other race. At home, 94.1 percent of people 5 years or older only speak English and 5.9 percent speak a language other than English.

Mahtomedi is known for its high-quality education system, and of its residents 25 years or older, only 2.1 percent have less than a high school diploma. Of the population 25 years or older, 14.7 percent are high school graduates (including those with GEDs), 29.7 percent have bachelor degrees, and 19.7 percent have a graduate or professional degree.

These trends indicate that energy-related campaigns and information will likely be suitable in English (no need to translate to other languages), and that information that is presented at a high-school reading level will be understood.

Housing

The community's housing stock is diverse, with the bulk built between 1980 and 1999. Mahtomedi's housing is predominantly single-family and owner-occupied.⁷ In 2015, Mahtomedi had approximately 3,001 housing units – 89.9 percent of were single-unit structures and 8.4 percent were multiunit. It is estimated that 16.2 percent of homes were built before 1940, 24 percent were built between 1940-1979, 46.1 percent were built between 1980-1999, and 13.7 percent were built after the year 2000.⁸ Approximately 79.9 percent of the housing units have 2 to 4 bedrooms. In terms of heating of housing units, 90.6 percent are heated by utility gas; 3 percent are heated by fuel oil, kerosene, etc.; and 4.6 percent are heated by electricity.⁹ The median house value is \$292,300. There is no significant new housing development going on at this time, but because of the age of Mahtomedi's housing stock, there is significant home renovation happening – an average of 250 single family alteration permits are issued by the City each year.¹⁰

Many of the community's older homes do not have the typical elements of energy efficiency seen in more contemporary suburban homes. Anecdotal evidence shows that Mahtomedi area residents later adapted their summer homes to make them more comfortable for Minnesota winter habitation. Updated wiring may or may not be present, depending upon the year the home was originally built. Opportunities abound in

⁴ Metropolitan Council 2016 Preliminary Population Estimate.

⁵ Metropolitan Council 2040 Forecasts, 2017.

⁶ U.S. Census Bureau 2015 American Community Survey.

⁷ U.S. Census Bureau 2015 American Community Survey.

⁸ Ibid.

⁹ Ibid.

¹⁰ City of Mahtomedi Building Permit Data, 2012-2016.

Mahtomedi to make energy efficiency improvements to older homes, and this plan can help connect such residents to rebate programs and informational resources.

Business and Economy

Mahtomedi is primarily a residential community with a few businesses populating its boundaries. Despite a relatively stable population, employment opportunities are forecasted to increase from approximately 2,100 jobs in 2010 to 2,700 jobs in 2040.¹¹ Per the 2014 American Community Survey (ACS), there is 4.4 percent unemployment in the City. The median household income is \$94,258 and 8.2 percent of all people in Mahtomedi had income below the poverty level in 2015.¹²

The largest employers in the community are FedEx, Century College, Mahtomedi School District, and Saint Andrews Church.¹³ In terms of development, 85 percent of the land in Mahtomedi is already developed, primarily as low density residences.¹⁴ Future development would likely be limited, focusing on a small amount of infill or potential redevelopment.

Given the relatively small share of commercial development in the community as compared with residential, the largest opportunities for energy efficiency improvements are most likely in the largest facilities, which align with the largest employers, as well as places of worship.

Commitment to Sustainability

As stated in the Comprehensive Plan, Mahtomedi as a community values a small-town atmosphere where residents can develop strong connections with their environment, with local businesses, and with each other.¹⁵ Using the GreenStep Cities program as a model, the City of Mahtomedi developed a Sustainability Plan¹⁶ in 2011, "...implementing environmental best practices in the City of Mahtomedi." The plan focused on conservation of resources, transportation, buildings and economic and community development.

Under its Sustainability Plan, Mahtomedi set 13 sustainability goals. Of those goals, at least four directly pertain to community energy planning. Those 4 are (1) improve efficiency of City energy usage by 10 percent by 2012 and 20 percent by 2020, (2) evaluate and maintain City buildings according to efficiency standards, (3) follow energy efficient standards for non-municipal buildings, and (4) support local efforts for renewable energy development.

Additionally, Mahtomedi has signed onto the 2006 U.S. Conference of Mayors Climate Protection Agreement. A core reason that Mahtomedi applied to participate in Partners in Energy was to reduce its carbon footprint and establish realistic energy conservation goals.

¹¹ Metropolitan Council 2040 Forecasts, 2017.

¹² Ibid.

¹³ U.S. Census Bureau 2015 American Community Survey.

¹⁴ Ibid.

¹⁵ City of Mahtomedi. "Comprehensive Plan." http://www.ci.mahtomedi.mn.us/index.asp?Type=B_BASIC&SEC={4B64B038-85EA-4F87-B561-D6B6B1BDF8F2}&DE={F7168EF7-97F5-49BF-ADF1-5F71C06C5925} (accessed June 15th, 2017).

¹⁶ City of Mahtomedi. "Sustainability Plan." [http://www.ci.mahtomedi.mn.us/vertical/sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/Sustainability_Plan\(1\).pdf](http://www.ci.mahtomedi.mn.us/vertical/sites/%7BB983F313-8CF2-4BB7-8CFD-8AC05AAF37F6%7D/uploads/Sustainability_Plan(1).pdf) (accessed June 15th, 2017).

Where Are We Now?

Baseline Energy Analysis

An early step in the Partners in Energy planning process is to develop a community energy profile. The Xcel Energy team analyzed and presented energy purchased, by fuel source, from Xcel Energy, a breakout of energy use by segment (residential, commercial/industrial, municipal, and schools), and an overlay of energy use for each segment in Mahtomedi from 2014 to 2016.¹⁷ Comparing these data helped the Energy Action Team understand how and where energy is used in the City to inform decision making. Three complete years of data (2014 through 2016) were used for trending purposes, and the year 2016 was established as the baseline for this plan.

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

1 MMBtu = 293.07 kWh

1 MMBtu = 10 thm

Mahtomedi has 3,507 total residential, commercial, and institutional premises as of 2016.¹⁸ This total includes both electricity and natural gas customers. Most premises in the city are residential (93 percent) which consumed nearly three-quarters of the community's total energy in 2016 or about 365,586 MMBtu (72 percent). Commercial and industrial premises were the minority with 257 premises (7 percent) and accounted for approximately 139,788 MMBtu (28 percent) of total energy use in 2016. Note that places of worship are considered commercial and industrial premises. Municipal and school premises were further delineated within the commercial and industrial sector, accounting for 4,798 MMBtu (1 percent) and 27,864 MMBtu (6 percent) respectively. Figure 4 shows Mahtomedi's energy use by premise type in 2016.

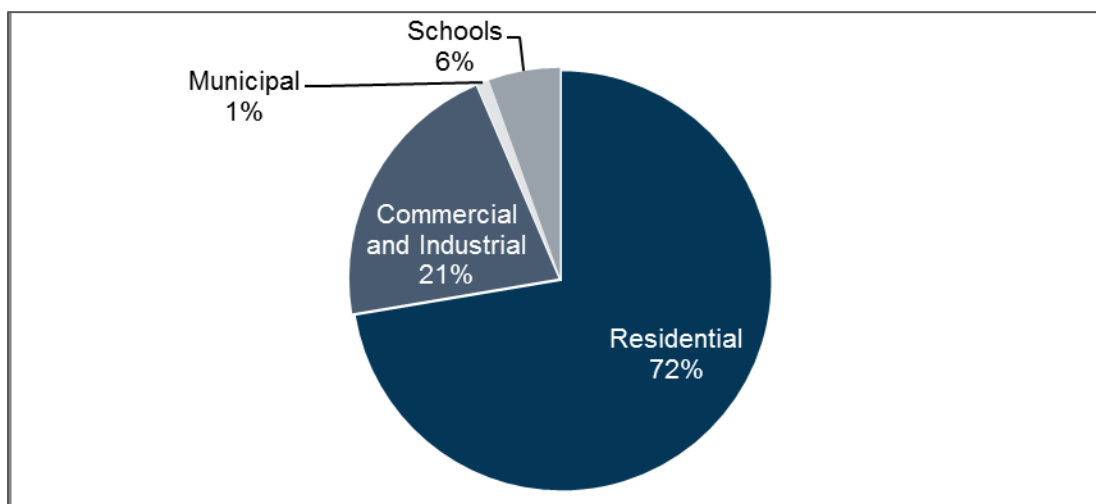


Figure 4. Energy Use by Premise Type

¹⁷ All energy data presented through this process was developed for planning purposes and may contain variations from data obtained through other sources, including census data. All energy and program data presented here comply with Xcel Energy's Minnesota data privacy policies (all summary statistics must contain at least 15 entities, and no single entity can be responsible for more than 15 percent of the total or they will be removed from the summary).

¹⁸ Energy data analyzed in this plan includes all premises within the City limits of Mahtomedi, as well as Willernie and Mahtomedi Area School District facilities.

In total, approximately 46.7 million kWh of electricity and 3.46 million therms of natural gas were consumed in 2016. The residential sector was the primary consumer accounting for more than 29.2 million kWh (62 percent) of electricity and 2.66 million therms (77 percent) of natural gas. Commercial and industrial use, on the other hand, accounted for 17.5 million kWh (38 percent) of electricity and 801,000 therms (23 percent) of natural gas. Of the total commercial and industrial electricity use, municipal premises consumed 742,000 kWh (2 percent) and 22,700 therms (0.7 percent), and school district premises consumed 3.38 million kWh (7 percent) and 163,000 therms (5 percent). Figure 6 and Figure 6 compare electricity and natural gas use by sector in 2016.

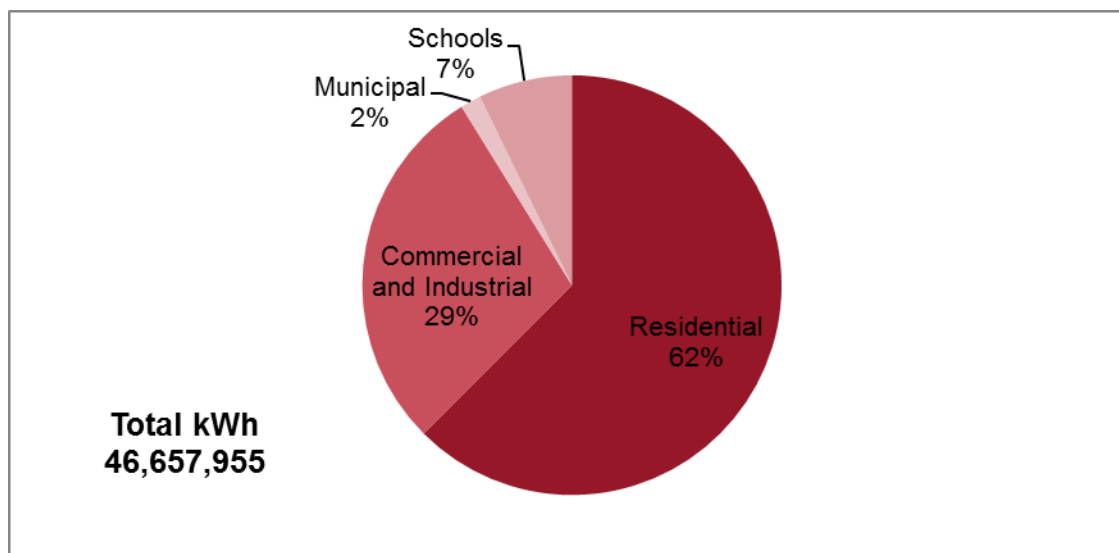


Figure 5. 2016 Electricity Use by Sector

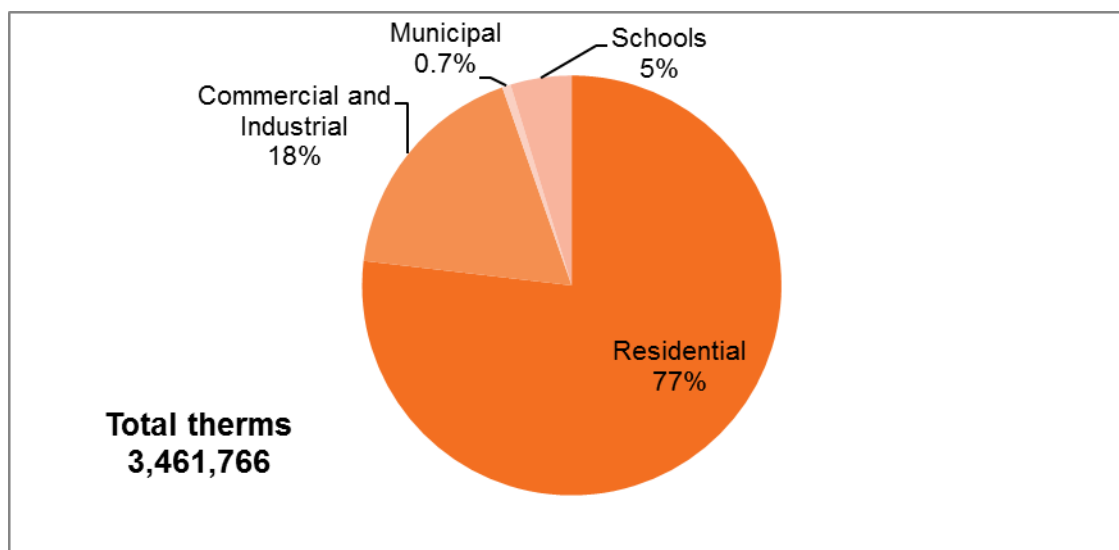


Figure 6. 2016 Natural Gas Use by Sector

Energy use in the community trended downward by 16 percent from 2014 to 2016, though this is largely driven by a 20 percent reduction in natural gas use between 2014 and 2015 that can primarily be attributed to a particularly cold year in 2014. Electricity use, comparatively, decreased only 4 percent over the same period (2014 to 2015). Similarly, in terms of greenhouse gas emissions as a ramification of Mahtomedi's energy use, the community has seen a 14 percent reduction from 2014 to 2016, due in large part to the natural gas use trend noted above, as well as a decarbonization of Xcel Energy's electricity supply. Figure 7 and Figure 8 show electricity and natural gas year-to-year trends while Figure 9 shows trends in greenhouse gas emissions from energy used.

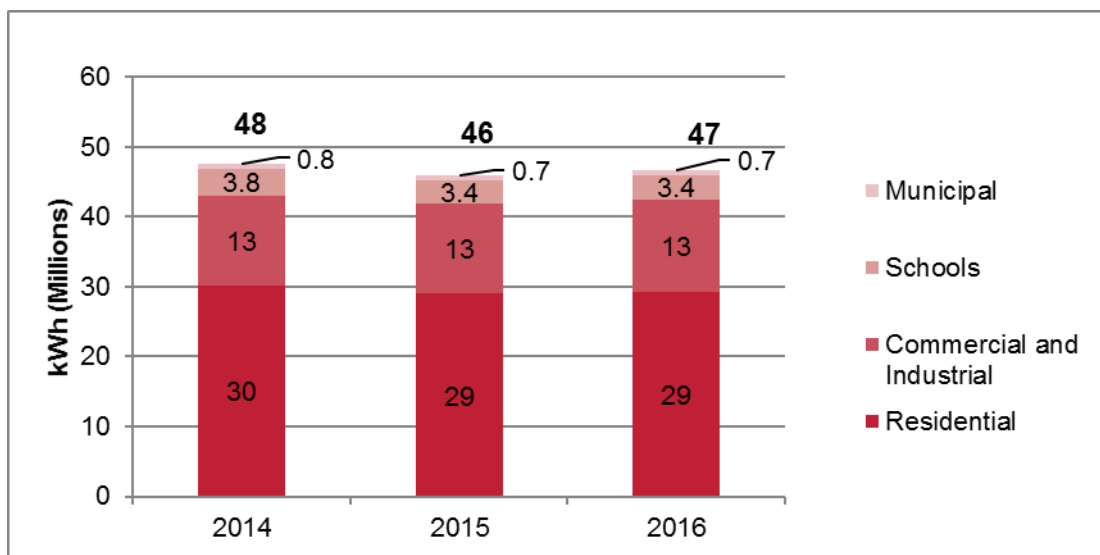


Figure 7. Electricity Consumption Year to Year

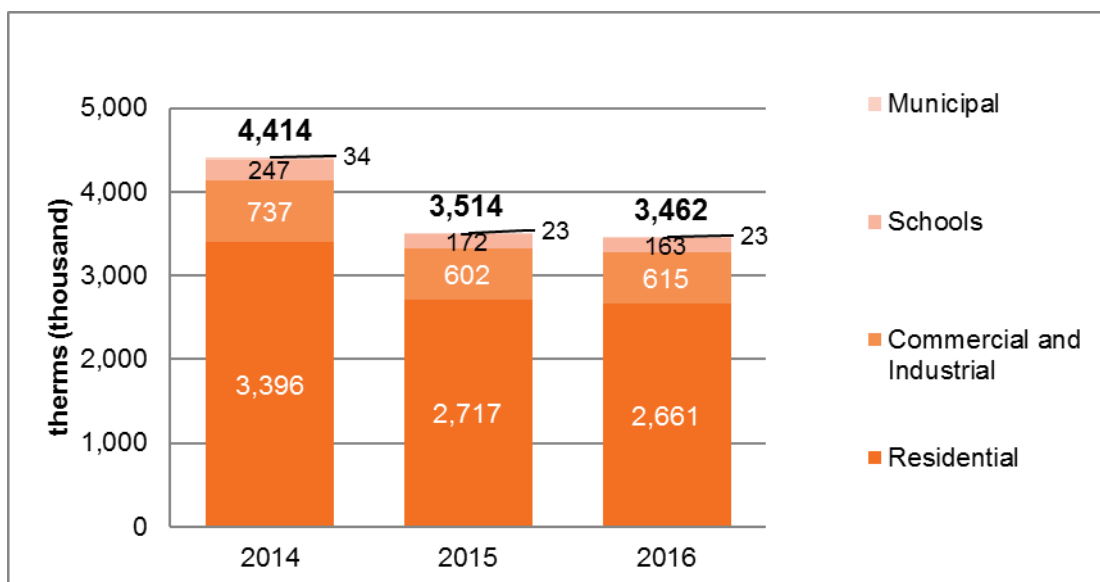


Figure 8. Natural Gas Consumption Year to Year

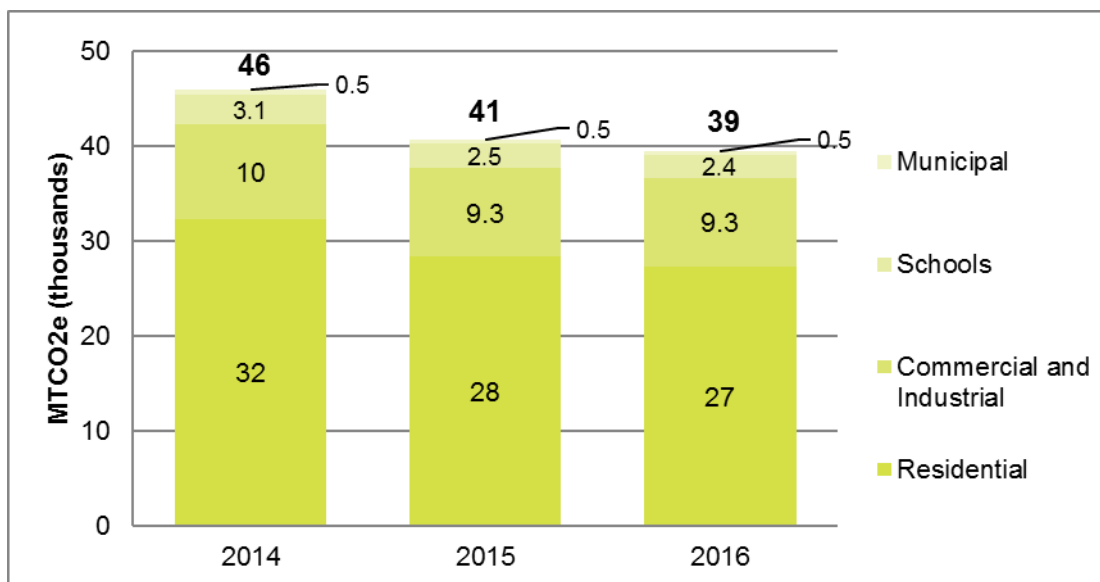


Figure 9: Energy-Related Greenhouse Gas Emissions Year to Year

Considering community total energy costs, on average in 2016, a residential premise spent \$1,577 annually while commercial and industrial premises spent \$8,657 annually. This corresponds to monthly energy costs of \$131 and \$721 for residential and commercial and industrial premises, respectively. Electricity use comprises most energy costs per premise for both residential and commercial and industrial customers. In total, Mahtomedi residents and businesses spent \$7.35 million on energy utilities in 2016. For comparison, the City of Mahtomedi's operating budget was \$5.1 million in 2016. Figure 10 shows the average dollars spent on energy per sector in 2016. Figure 11 Figure 12 shows that Mahtomedi's average residential electricity use per premise is high compared to other communities in the area, likely due to the fact that many of Mahtomedi's homes are older and may lack modern energy efficiency updates.

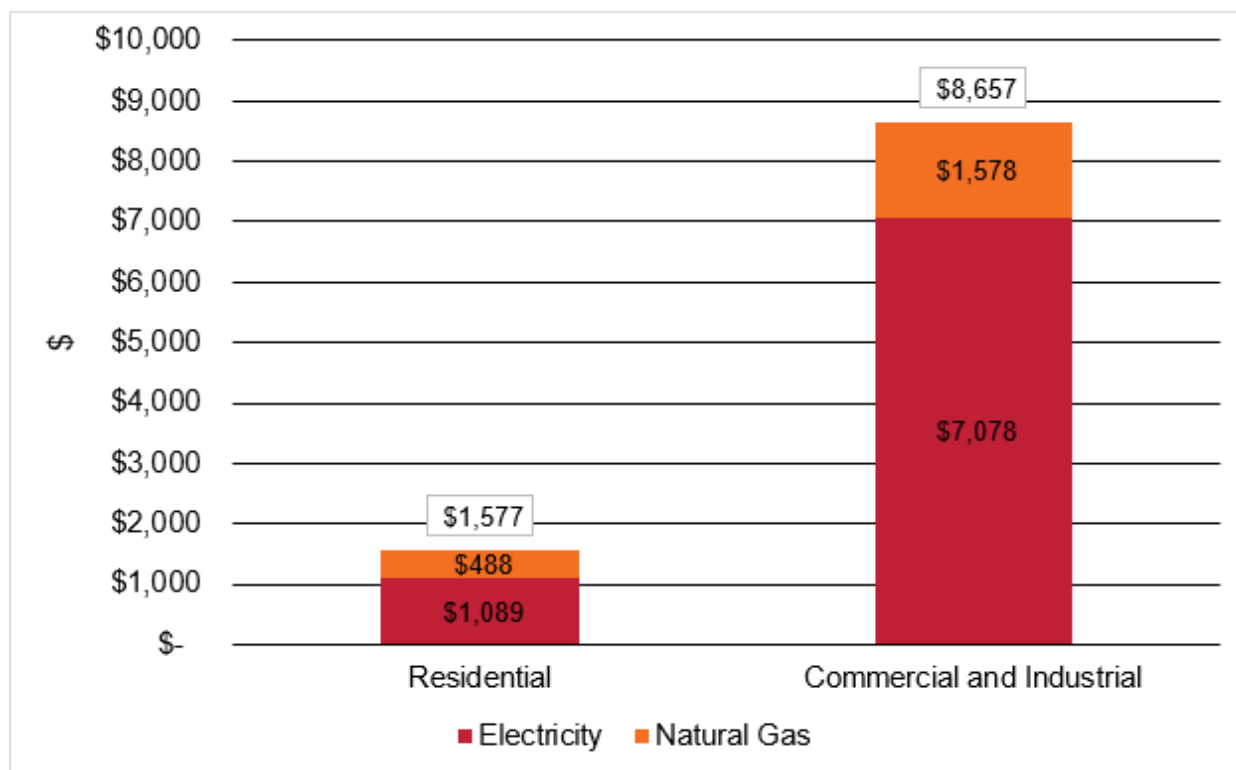


Figure 10. Average Dollars Spent on Energy per Sector in 2016

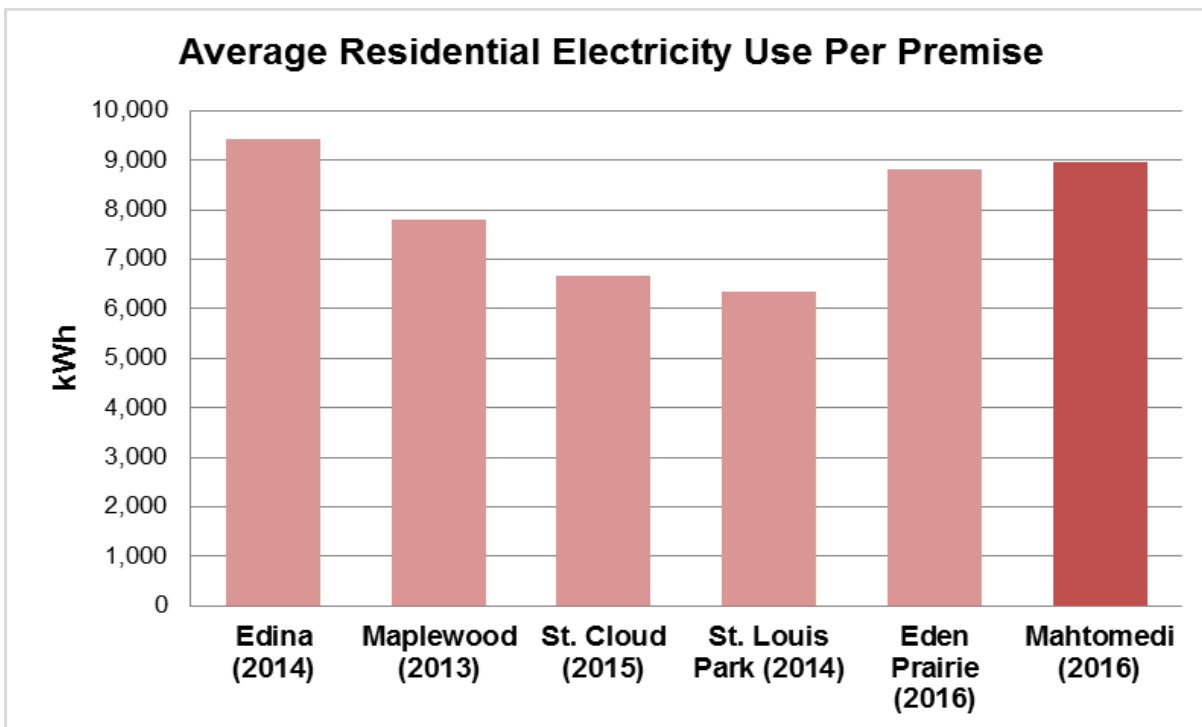


Figure 11: Comparison of Average Residential Electricity Use Across Cities

Community Efficiency Program Participation

Baseline data used to develop this plan include historic Xcel Energy Conservation Improvement Program (CIP) participation for Mahtomedi. These data provide a snapshot of what types of programs both residential and commercial and industrial customers are using and to what degree. They also show opportunities for greater participation in the available CIP offerings and the need for increased education and awareness. On average, 13 percent of residences and businesses have participated historically in CIP. In 2016, residents saved nearly 148,600 kWh and 18,200 therms by participating in CIP offerings with an average rebate of \$54 per participant. Businesses saved nearly 150,900 kWh and 3,800 therms, with a \$480 average rebate per participant. Figure 12 and Figure 13 show program participation by sector for 2014 through 2016. Aside from Saver's Switch, which is a demand reduction program, participation was greatest in the heating and cooling rebate programs on the residential side and in the heating and lighting programs on the commercial side. More information about Xcel Energy residential and commercial programs can be found in Appendix 4.

A total of 3,210 MMBtu were saved as a result of CIP participation in 2016, representing 0.6 percent of the community's total energy use. Savings in the residential sector represented 72 percent of total savings in 2016, while the commercial sector represents 28 percent of total savings. Over the past 3 years, the commercial sector has saved an average of 1 percent of energy use per year and the residential sector has saved an average of 0.7 percent per year.

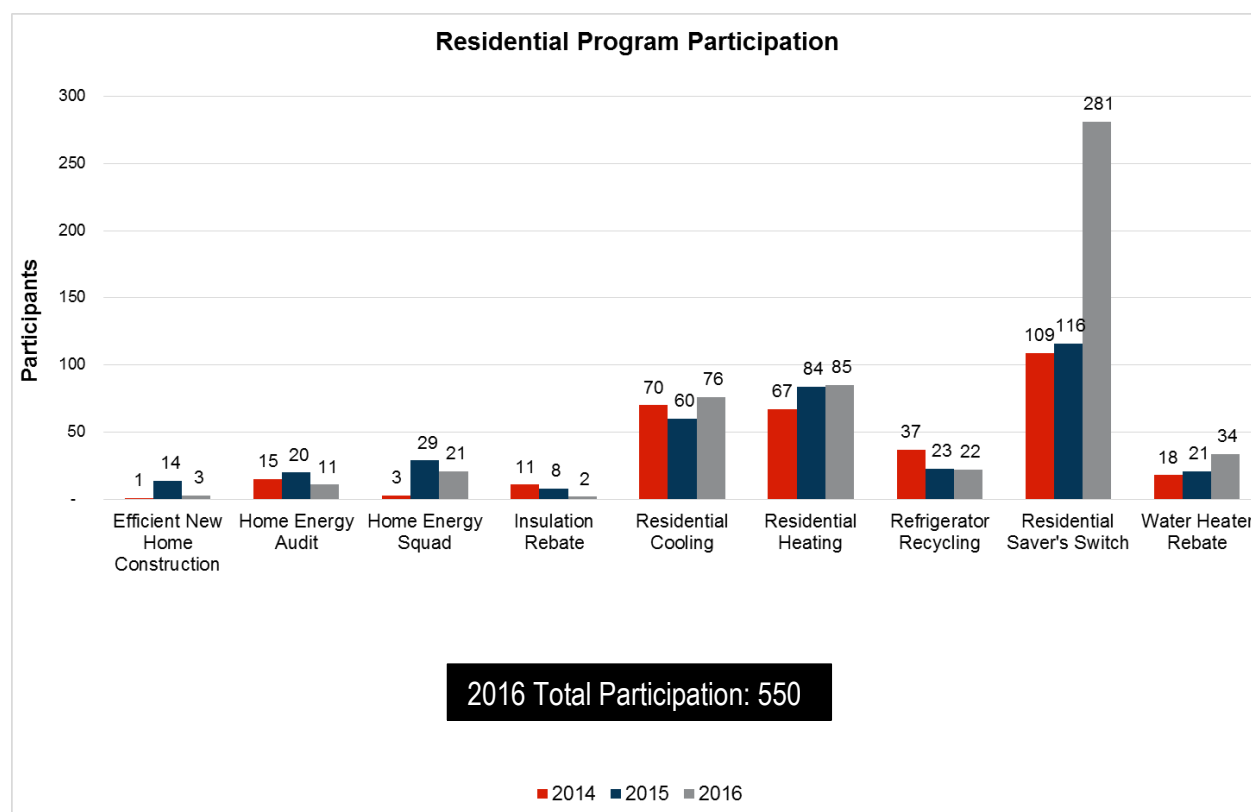


Figure 12. Residential Program Participation from 2014-2016

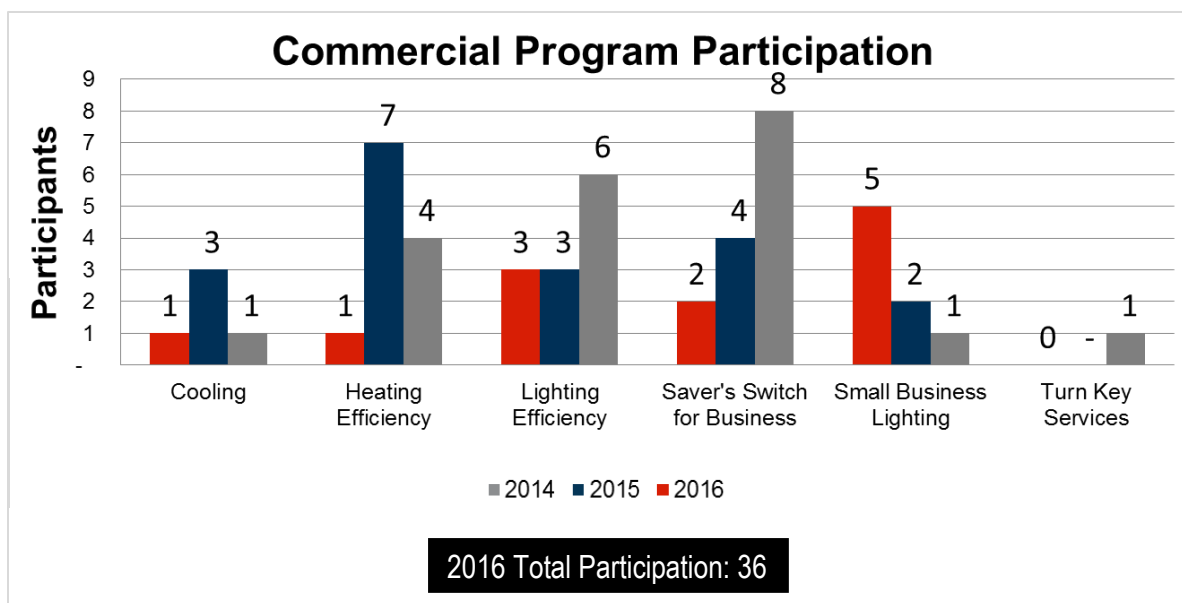


Figure 13. Commercial and Industrial Program Participation from 2014-2016

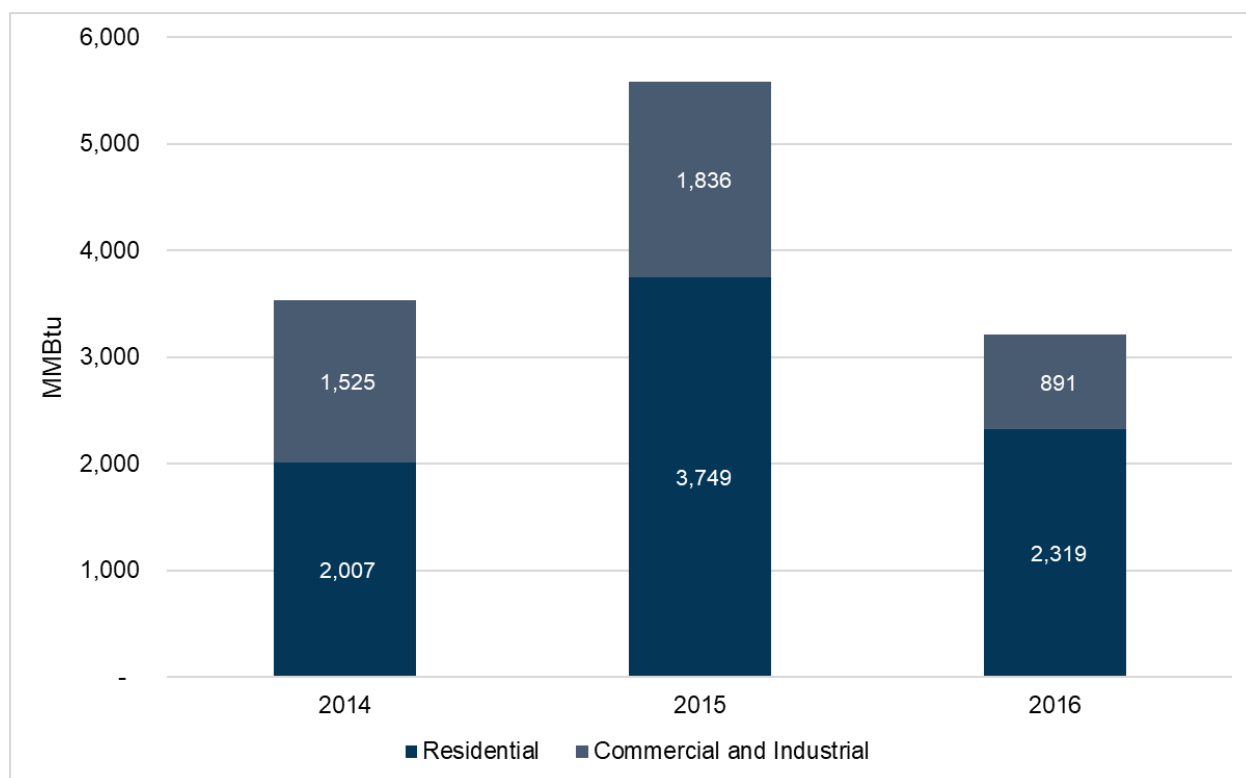


Figure 13. Energy Savings from Program Participation 2014-2016

Where Do We Want to Go?

Our Energy Vision

To establish an energy vision for the community, the Energy Action Team reviewed examples that other communities have developed and provided input via surveys and workshops to identify what elements were most important to incorporate. After several iterations and discussions, the Energy Action Team established the following vision for Mahtomedi's energy future:

Mahtomedi residents, schools, congregations, and businesses will work collaboratively to dramatically reduce our carbon footprint and position our community as a regional energy leader by engaging in activities that conserve energy, save money and use renewable energy.

Our Goals

The Energy Action Team established multiple energy goals for Mahtomedi, including an aspirational and long-term goal related to greenhouse gas emissions, as well as incremental goals against which to measure progress in the near term. The Energy Action Team determined the goals through various workshop brainstorming activities, surveys, discussions, and review of other state and regional targets. Mahtomedi's energy action goals are as follows:

- **Achieve a 30 percent reduction in energy-related greenhouse gas emissions by 2030 and a 100 percent reduction (carbon neutrality) by 2050.**
- **Achieve 1.4 percent average annual energy savings to reduce energy consumption 19 percent below 2016 baseline by 2030.**

To support progress towards achieving these overarching goals, this plan details more sector-specific goals, as follows:

Residential Goal:

Triple total participation in energy efficiency programs within 1 year, resulting in 1.6 percent annual energy use reduction and saving participating households an average of \$113 per year on their energy bills.

Business/Institutional Goal:

Engage businesses and institutions in energy saving actions, resulting in a combined 11 percent reduction in energy use in targeted facilities below 2016 baseline by 2020.

Renewables Goal:

Double the number of renewable energy subscribers in 1 year and double average subscription amount.

To calculate the impact of these combined goals, the Energy Action Team began with 2016 baseline energy use and greenhouse gas emissions data and assumed a Business as Usual (BAU) growth in energy demand of 0.3 percent across the residential and commercial/institutional sectors. If the sector-specific targets are reached, the community could achieve an additional 8 percent energy savings by 2030 compared to historic savings from program participation (Figure 14 and Figure 15).

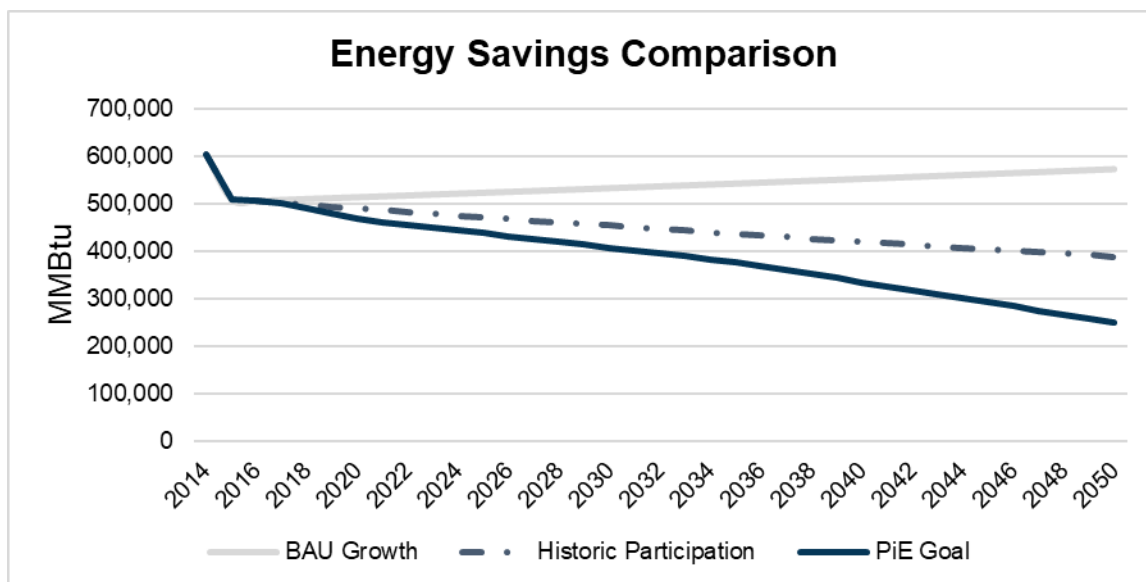


Figure 14. Energy Conservation Impact Compared to Historic Saving Trends

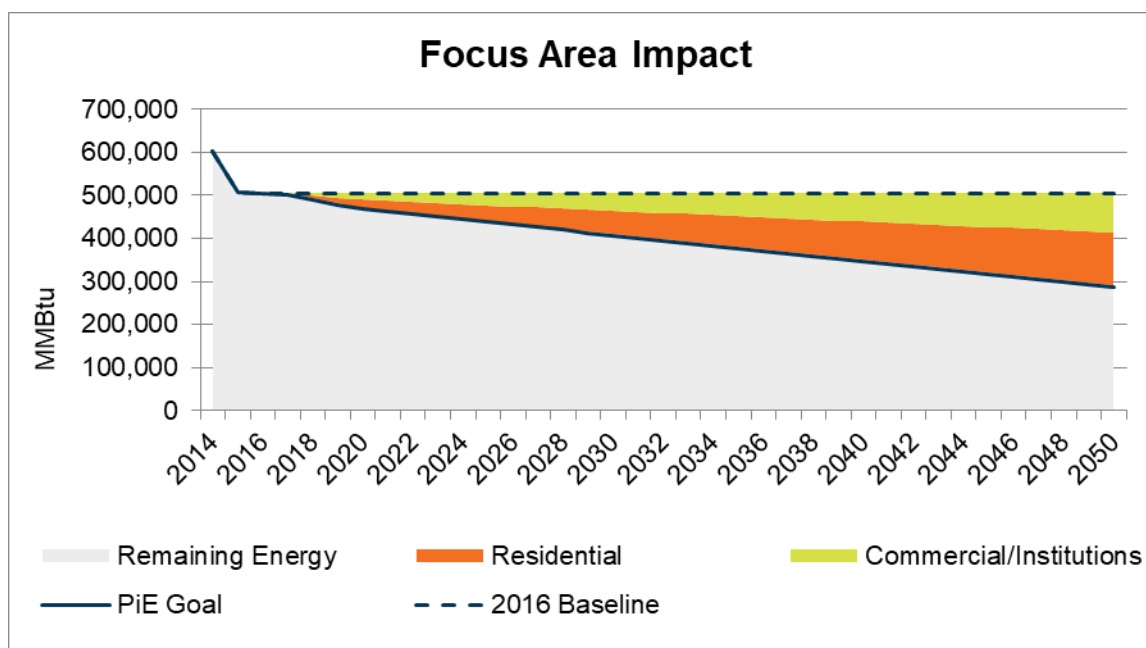


Figure 15. Combined Impact of Focus Areas on Energy Use

Hitting the city's energy reduction goals will have an important impact on decreasing greenhouse gas emissions. Achieving the goals laid out in this plan will achieve an additional reduction of 4,800 MTCO₂e by 2050, decreasing the community's total carbon footprint by **13,000 MTCO₂e** – approximately equivalent to the carbon emitted from **2,746 passenger vehicles** in 1 year. Together with Xcel Energy's efforts to decarbonize the grid by investing in renewable energy, Mahtomedi's energy-related emissions will be approximately 71 percent below the 2016 baseline by 2050 and will be close to two-thirds of the way to its aspirational goal of carbon neutrality for energy-related emissions.

Note that energy efficiency and renewable energy strategies alone will not likely allow Mahtomedi to achieve carbon neutrality. Over the next few decades, the community will continue to pursue energy efficiency and renewable energy activities that further reduce energy-related greenhouse gas emissions, as well as exploring other strategies to offset emissions and help achieve carbon neutrality, such as investing in renewable energy credits, carbon sequestration methods, and net-positive energy technologies.

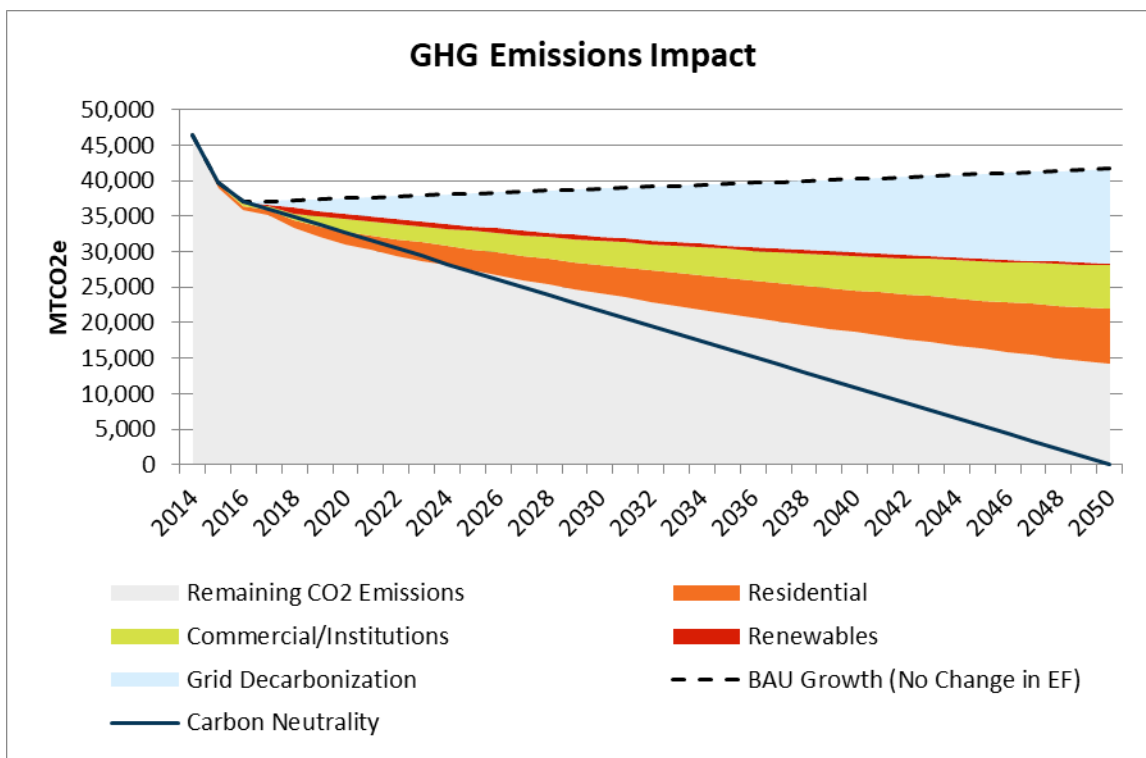


Figure 16. Combined Greenhouse Gas Emissions Impact

How Are We Going to Get There?

To achieve Mahtomedi’s energy goals, the Energy Action Team developed strategies for three focus areas: (1) residential, (2) business and institutional facilities, and (3) and renewable energy.

Land use and transportation were two additional topics discussed during the planning process, especially their relationships to energy and sustainability. It is recommended that the updated Mahtomedi Comprehensive Plan address these topics directly and include policies and strategies related to multi-modal transportation (e.g., bicycling, walking, transit, and fuel efficient vehicles), electric vehicles, alternative fuel vehicles, and efficient land use patterns since all impact and directly relate to the community’s energy usage and greenhouse gas emissions.

Within the following sections, each focus area begins with a summary of why it was selected as a priority and supporting information about the focus area. Next, the detailed strategies to support achieving the goals are organized in tables for each focus area. Each strategy includes a general description, numeric targets to keep the plan on track, strategy scope details, delineation of responsibilities, draft timeline, identification of necessary resources, and measurements of success.

Note that an early step in the implementation process that will apply to all strategies is the development of a coordinated identity for all Energy Action Plan efforts. This could include a name, logo, tagline, or other brand elements. A marketing campaign design workshop will be held to brainstorm and select concepts.

Residential Strategies

The residential focus area includes the nearly 8,000 residents, 3,000 housing units, and 3,249 residential Xcel Energy premises in Mahtomedi. The Energy Action Team focused on residential homes since approximately 72 percent of the community’s energy use is from the residential sector (see Figure 4). Furthermore, the housing stock is ripe for energy efficiency improvements, as many of the community’s homes are older and may not be taking advantage of latest technologies, such as high-efficiency heating and cooling equipment or LED lighting.

To achieve the goal of tripling participation in conservation programs (765 energy-saving actions), the Energy Action Team identified a primary strategy of a residential engagement campaign and a supporting strategy focused on energy efficiency and construction.

Strategy 1: Residential Outreach Campaign

Strategy Overview

This strategy focuses on leveraging the power of Mahtomedi Area Green Initiative volunteers, faith community representatives, and Mahtomedi’s Environmental Commission to engage residents in conservation efforts and initiatives by leveraging existing relationships. Each member of the Energy Action Team will perform outreach to their respective networks with the goal of engaging residents in energy actions. The emphasis of this strategy is on residents and residential programs and savings opportunities, but business and institutional audiences and facilities will be a secondary focus as relevant and applicable throughout the campaign.

Strategy 1: Residential Outreach Campaign

Target Behaviors

Energy Action Team members will educate and encourage people in their networks to take energy conservation actions in their homes. Note that more specific key messages, communications pathways, and target behaviors will be identified in the early stages of implementation through a marketing campaign development workshop.

Target Actions

- 765 total actions in year 1
- 250 Home Energy Squad visits in Year 1, with at least half completing enhanced visits that include an energy audit
 - Promote the Home Advisor Service to assist with follow-up
- 100 households participating in Refrigerator Recycling each year
- 25 households completing insulation upgrades in Year 1
- Continued promotion of heating, cooling, and water heater rebates
- Specific targeting of low-income households

Target Audience

- The target audiences will be segmented by housing type and demographics. For example, messaging will differ for seniors and families without children in the home vs. families with younger children. Schools and students could potentially be a trickle-up education opportunity. Church congregations are another potential target for outreach.

Communication Pathways

- City of Mahtomedi website
- Nextdoor.com neighborhood social media platform
- The City's quarterly newsletter, "Mahtomedi News"
- White Bear Press
- Community education classes
- Community events/meetings
- Yard signs/posters
- Word of mouth/neighbor-to-neighbor outreach

Potential Messaging Tactics

- Leverage networks of residents rather than canvassing
- Use post cards, live sign-ups, and/or pledge cards
- Challenge the community to reach an overall goal together (everyone must do their part)

Timeline

First Steps (months 1-2)

- Confirm team resources and roles (including MAGI, EcoClub, Environmental Commission, Conservation Minnesota, etc.)
- Confirm each target outreach group and team (e.g., seniors, families, etc.) and develop key messages and outreach tactics (through a campaign development workshop and possibly additional focus groups and/or surveys)
- Identify target group leads
- Explore opportunities and funding sources for a cost-sharing opportunity (e.g., Home Energy Squad discount for a limited number of participants) and/or internship resources

Strategy 1: Residential Outreach Campaign

Second Steps (months 3-4)

- Finalize outreach campaign game plan and schedule
- Develop marketing materials
- Conduct train-the-trainer workshops for each target group lead
- Collaborate with MAGI and other groups to promote campaign in the media
- Roll out campaign

Ongoing (monthly)

- Outreach activities and tracking
- Periodic outreach team check-in

Funding/Resource Needs

- Explore cost-sharing opportunities by City and other partners
- Explore intern support
- Support for printing costs

Responsibilities

- Overall campaign efforts
 - Partners in Energy – co-lead campaign development and outreach activities, marketing material design
 - Julie Drennen, Conservation Minnesota – co-lead campaign development and outreach activities
 - Scott Nielson, City of Mahtomedi – co-lead campaign development and lead distribution of information through City channels
 - Christine Ahman- Maples, Mahtomedi Environmental Commission – lead coordination with Environmental Commission to support campaign development and outreach activities
 - Mary Hoff, Mahtomedi Area Green Initiative – lead coordination with MAGI to support campaign development and outreach activities
- Specific outreach teams
 - Congregations
 - Kate Edwards, White Bear Unitarian Universalist Church
 - Paul Hoff, St. Jude's Congregation and Creation Care Team
 - Students
 - Hannah Maples, Mahtomedi High School Eco Club
 - Genna Viggiano, Mahtomedi High School Eco Club
 - Neighborhoods
 - Al Holcomb, MAGI
 - Scott Peterson, Resident

Measurement

Success will be measured by:

- Participation in Xcel Energy conservation programs and associated energy savings from participation
- Progress on decreased energy consumption

Strategy 2: Energy Efficient Remodeling and Construction

Strategy Overview

This strategy focuses on exploring opportunities to improve energy efficiency by improving compliance with existing energy codes and using existing leverage points to encourage builders and contractors to exceed existing energy code requirements. Mahtomedi contracts with the City of White Bear Lake for building permit review and inspections. During the permitting and inspection processes, there may be additional opportunities to ensure compliance with energy code requirements or provide more information/education about efficiency and renewable energy options such as renewable energy installation, passive solar design, net-zero or net-positive construction, or designing to more advanced energy codes. This topic is of particular interest for major remodeling/renovation projects, but opportunities also exist to ensure compliance for new construction.

Timeline

First Steps (months 1-2)

- Bring energy efficient construction/renovation to the Environmental Commission as an agenda item for discussion and recommendations.
- Meet with code officials from White Bear Lake to determine what documentation is required and what opportunities might exist to improve efficiency/compliance of projects.
- Develop a longer-term game plan based on those opportunities and conversations.

Funding/Resource Needs

- To be determined and discussed with the City of White Bear Lake.

Responsibilities

- Scott Neilson, City of Mahtomedi – coordinate with Environmental Commission and City of White Bear Lake
- Kate Edwards, White Bear Unitarian Universalist Church – support coordination with City of White Bear Lake, provide technical expertise as needed

Measurement

Success will be measured by:

- Number of permits (new construction and renovations) reviewed and approved
- Participation in relevant Xcel Energy conservation programs, including Efficient New Home Construction and Whole Home Efficiency

Business and Institutional Strategies

The business and institutional focus area includes businesses, churches, school facilities, and municipal facilities – 257 Xcel Energy premises in Mahtomedi and Willernie. To engage the community's businesses and institutions in Mahtomedi's energy efforts, the Energy Action Team identified two primary strategies: (1) congregation energy workshop and (2) business and institutional energy efficiency leadership.

Furthermore, the residential outreach campaign will support these efforts by sharing information and opportunities for the business and institutions as applicable.

Strategy 3: Congregation Energy Workshop

Strategy Overview

This strategy focuses on engaging congregations in a workshop (or possibly workshop series) focused on energy opportunities. The first workshop is targeted for Fall 2017 and will be a half-day event open to congregations within Mahtomedi and the region.

Target Behaviors

- Energy efficiency improvements at congregational facilities
- Engaged faith-based communities in energy actions (linked to residential outreach)

Target Audience

- Regional congregation leaders and facility managers (not restricted to churches within the city of Mahtomedi)

Timeline

First Steps (months 1-2)

- Confirm team roles and responsibilities
- Coordinate with Interfaith Power & Light and Conservation Minnesota
- Network and compile list of interested congregations
- Develop workshop agenda and confirm logistics (e.g., location, staffing, AV needs, etc.)
- Develop workshop invitations

Second Steps (months 3-4)

- Distribute workshop invitations/spread the word
- Host workshop in Fall 2017
- Determine if another workshop or series is of interest

Ongoing/monthly

- Conduct any post-workshop follow-up, including tracking actions taken by congregational facilities
- Check in with workshop participants as appropriate
- Draft case studies of successful efforts for future reference

Funding/Resource Needs

- Workshop space (congregation to provide?)
- Partners in Energy to cover refreshments

Strategy 3: Congregation Energy Workshop

Responsibilities

- Partners in Energy Team – co-lead workshop development and delivery
- Julie Drennen, Conservation Minnesota – lead coordination with Interfaith Power & Light
- Interfaith Power & Light – support workshop development and delivery
- Scott Nielson – support workshop development and delivery
- Kate Edwards, White Bear Unitarian Universalist Church – support outreach efforts
- Paul Hoff, St. Jude's Congregation and Creation Care Team – support outreach efforts

Measurement

Success will be measured by:

- Number of congregations that participate in workshop(s)
- Xcel Energy conservation program participation and/or efficiency projects at places of workshop
- Program participation by congregation members (linked to residential outreach)

Strategy 4: Business and Institutional Energy Efficiency Leadership

Strategy Overview

This strategy focuses on Mahtomedi's City facilities, school facilities, churches, and other commercial/institutional buildings leading by example in their adoption of energy efficiency practices. It includes facility-specific improvements and sharing success stories to the larger community as a demonstration of how every facility can contribute to achieving Mahtomedi's energy goals.

Target Behaviors

- Energy efficiency improvements at facilities, including:
 - ✓ City of Mahtomedi: Energy audits/recommissioning on all buildings, lighting upgrades on all facilities
 - ✓ School District:¹⁹ Energy audits/recommissioning and lighting upgrades on all buildings, boiler tune-ups at high school and middle school, HVAC equipment replacement at district office and two elementary schools, food service equipment upgrade at high school, and energy management system optimization
 - ✓ Century College: Recommissioning, boiler replacement, boiler tune-up, lighting upgrade in building and parking lot
 - ✓ Congregations: Turn Key assessments of church buildings, lighting upgrades
 - ✓ FedEx Ground: Building recommissioning
- Occupant engagement to reduce energy usage

Target Audience

- Facility managers and occupants (e.g., employees, students, congregations, patrons)

¹⁹ Note that in addition to energy efficiency improvements, Mahtomedi Schools is in the process of subscribing to Xcel Energy's Renewable*Connect program and plans to use the B3 Benchmarking tool to let building occupants know how well they are doing.

Strategy 4: Business and Institutional Energy Efficiency Leadership

Potential Message Elements

- If we all do our part, we can have a major impact on our community's energy consumption and carbon footprint
- Positive return on investment from energy efficiency improvements

Timeline

First Steps (months 1-2)

- Each facility to identify potential energy efficiency improvements (through energy audits as necessary) and create a prioritized list with estimated resource needs
- Present energy action plan to decision makers (e.g., School District Board) to gain buy-in and support

Ongoing/monthly

- Implement improvements as applicable and as resources are available
- Track and share energy efficiency investments, rebates, and savings information (i.e., success stories)
- Share success stories and case studies through outreach efforts (e.g., residential campaign, congregation workshop, etc.)

Funding/Resource Needs

- Varies based on facility

Responsibilities

- Julie Osterbauer, Mahtomedi School District – coordinate with School Board, identify and implement school facility improvements
- Scott Nielson, City of Mahtomedi – coordinate with City Council and City staff, identify and implement City facility improvements
- Larry Miller, FedEx Ground – coordinate with facility managers to identify and implement facility improvements
- Scott Randall, Century College – coordinate with facility manager to identify and implement facility improvements
- Kate Edwards, White Bear Unitarian Universalist Church – coordinate with facility manager to identify and implement facility improvements
- Paul Hoff – St. Jude's Congregation and Creation Care Team – coordinate with facility manager to identify and implement facility improvements

Measurement

Success will be measured by:

- Xcel Energy conservation program participation
- Energy savings among commercial and institutional facilities

Renewable Energy Strategy

The renewable energy focus area includes all efforts and activities related to solar, wind, and other renewable energy generation within and serving the Mahtomedi community. In addition to prioritizing energy conservation actions in the community, the Energy Action Team focused on renewable energy to support the community's vision for a healthier future.

Strategy 5: Renewable Energy Adoption

Strategy Overview

Energy efficiency is a top priority for the Mahtomedi Energy Action Plan, but the community also supports investment in and adoption of renewable energy to help achieve the community's carbon emissions reduction goals. Near-term, this strategy focuses on increasing subscriptions to renewable energy programs (in coordination with the residential outreach campaign and business and institutional strategies), and making sure that the City is reducing barriers for renewable energy installations. Longer-term, this strategy includes exploring the feasibility of a mid-scale solar array (either specific to an individual facility or a solar garden) installed in a prominent location to visibly showcase the community's carbon reduction ethic and energy vision.

Target Behaviors

- Make improvements to energy efficiency first and then invest in renewable energy
- Sign up and/or increase subscriptions to Windsource® and Renewable*Connect®

Target Actions

- 310 Windsource® or Renewable*Connect® subscribers
- Increase average subscription amount to 600 kWh per month

Target Audience

- All community members, especially those that are sustainability-oriented and want to "green" their energy supply

Timeline

First Steps (months 1-2)

- Confirm team resources and roles
- Coordinate with residential outreach campaign development
- Explore and confirm key message elements for renewable energy
- Begin coordination with SolSmart to determine designation requirements

Second Steps (months 3-4)

- Develop marketing materials in coordination with residential outreach campaign
- Incorporate renewable energy information into train-the-trainer workshops for residential outreach
- Roll out campaign

Ongoing (monthly)

- Outreach activities and tracking
- Periodic outreach team check-in
- Monitoring of opportunities for solar array installation

Strategy 5: Renewable Energy Adoption

Funding/Resource Needs

- Individual premises to subscribe to renewable energy programs through Xcel Energy
- Solar array investment (longer term)
- See residential outreach campaign for other details

Responsibilities

- Overall campaign efforts
 - Partners in Energy Team – co-lead campaign development and outreach activities
 - Julie Drennen, Conservation Minnesota – co-lead campaign development and outreach activities
 - Scott Nielson, City of Mahtomedi – co-lead campaign development and lead distribution of information through City channels
 - Christine Ahman- Maples, Mahtomedi Environmental Commission – lead coordination with Environmental Commission to support campaign development and outreach activities
 - Mary Hoff, Mahtomedi Area Green Initiative – lead coordination with MAGI to support campaign development and outreach activities

Measurement

Success will be measured by:

- Number of participants in Windsource® and Renewable*Connect® and average subscription amount
- Installation of community solar garden and/or other on-site renewable energy systems

How Are We Going to Stay on Course?

The Mahtomedi Energy Action Team will help the City reach its goals by maintaining consistent and clear communication among team members, community partners, and Xcel Energy's Partners in Energy community facilitators. The community facilitators will provide project management support, communications assistance and resources, and tracking and measurement to keep implementation efforts on track.

Energy Action Team

The Energy Action Team members will lead implementation of the plan, supported by the community facilitators and Xcel Energy. The success of the plan largely depends on the level of effort team members commit to implementing it; and as such, team members will likely want to recruit others to support implementation over time.

Members of the Energy Action Team will organize into strategy teams that will oversee the implementation of the strategies. Teams will meet on a bi-weekly basis during the first stages of implementation and then shift to monthly or less frequent meetings as implementation progresses. The dynamic of each group will vary based on its size and the scope of its strategies, but it is recommended that each group appoint a leader to help build and maintain momentum.

Tracking and Monitoring

On a quarterly basis, all strategy teams will review the energy action strategies and timelines to make sure everyone remains on task and has the resources needed to complete the activities identified in this plan.

Xcel Energy will provide bi-annual (twice a year) tracking and reporting of participation in Xcel Energy's programs and the associated savings from program participants. Each strategy team will be responsible for tracking supplemental quantitative and qualitative information about implementation, such as social media and website analytics, number of materials distributed, event dates and estimated participants, etc.

Changing Course: Corrective Action

An effective energy action plan is cyclical in nature. To ensure that the Mahtomedi Energy Action Plan remains on track, the Energy Action Team will review bi-annual tracking information and compare it against the supplemental strategy tracking metrics and information to assess whether the efforts are making an impact. If the strategies appear to be off-course, the strategy teams will assess their progress and make corrective actions to get back on track.

Beyond the Plan Horizon

Looking beyond the plan horizon, it is recommended that Mahtomedi integrate its energy efficiency and renewable energy goals and aspirations into the community's comprehensive plan and future plan and policy documents to ensure a legacy and commitment to these ideas. Furthermore, future updates to this plan may be necessary as goals are achieved and new energy opportunities and ideas emerge.

Appendix 1: Glossary of Terms

Use whichever appendices are appropriate. The following is a preliminary glossary.

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

Conservation Improvement Program (CIP): Established as part of Minnesota's 2007 Next Generation Energy Act, CIP is funded by ratepayers and administered by utilities to help Minnesota households and businesses use electricity and natural gas more efficiently

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.

kWh (kilowatt-hour): a unit of electricity consumption

small businesses in Xcel Energy's Minnesota service territory with an electric demand of 400 KW or less.

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, and 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.

Therm: a unit of natural gas consumption

Appendix 2: Implementation Memorandum of Understanding

Memorandum of Understanding Phase 2 – Plan Implementation

Mr. Scott Neilson
City Administrator
City of Mahtomedi
600 Stillwater Road
Mahtomedi, MN 55115

The intent of this Memorandum of Understanding is to recognize the achievement of the City of Mahtomedi in completing the process of developing an Energy Action Plan. Xcel Energy, through its Partners in Energy offering, has supported the development of this energy action plan. This document will outline how the City of Mahtomedi and Xcel Energy will continue to work together to support the community as they implement their Energy Action Plan.

The term of this joint support, as defined in this document, will extend from Oct 1, 2017, until March 31, 2019. This is a voluntary agreement and not intended to be legally binding for either party.

Xcel Energy will support the City of Mahtomedi in achieving the goals of its Energy Action Plan, by area of focus, in the following ways:

Residential Focus Area:

- **Residential Engagement Campaign**
 - o Facilitate a workshop to confirm target outreach groups and support development of residential engagement campaign details (including schedule and work plan).
 - o Assist city staff with implementation of a Home Energy Squad city-buy down program.
 - o Develop outreach marketing collateral on residential programs.
 - o Support the residential campaign roll-out and outreach activities.
 - o Lead the facilitation of a train-the-trainer workshop for residential outreach.
 - Assist the Energy Action Team with drafting newsletter articles, social media posts, and website updates.
 - o Provide up to \$2,000 for printing, advertising or collateral associated with delivery of the Residential Engagement Campaign.
- **Energy Efficient Construction**
 - o Support discussions about ways to improve energy efficiency in new construction/renovation, including exploring potential policy options and/or leverage points.
- Support funded by Xcel Energy for this focus area is not to exceed 140 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Business & Institutional Focus Area

- **Congregation Energy Workshops**
 - o Assist in coordinating workshop logistics, including identifying expert presenters.
 - o Assist in workshop planning and preparation, including invitations, agenda, and promotion support.
 - o Support workshop delivery and follow-up.
- **Business & Institutional Energy Leadership**
 - o Assist with identifying municipal, institutional, and business facilities for potential energy efficiency improvements and support prioritization of needs and opportunities.
 - o Assist businesses and institutional facilities with rebate processes.
 - o Support case study development to showcase success stories.
- Provide up to \$150 for food/incidentals for the congregation workshop.
- Support funded by Xcel Energy for this focus area is not to exceed 85 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Renewable Energy Focus Area

- Share information about renewable resource options that align with the community's goals.
- Develop outreach materials to support Mahtomedi's residential engagement campaign on Xcel Energy's Windsource[®] program and Renewable*Connect offering.
- Support funded by Xcel Energy for this focus area is not to exceed 20 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

Project Management

- Facilitate bi-weekly calls.
- Provide biannual implementation tracking, data analysis, and reporting.
- Provide up to \$200 to reimburse expenses for recognition, launch or celebration events. This funding cannot be used for the purchase of alcohol.
- Support funded by Xcel Energy for this is not to exceed 110 hours. These hours will include those provided through our Partners in Energy team from Brendle Group and Center for Energy and Environment and does not include support provided by Xcel Energy internal staff.

The City of Mahtomedi commits to supporting the Energy Action Plan to the best of their ability by:

- Achieving the conservation and renewable energy impacts outlined in the Energy Action Plan are and shown in the table below.

	Electricity Impact (in kWh)	Natural Gas Impact (in therms)
Incremental Energy Savings	870,900	42,000
Continued Participation Based on Historic Activity	307,000	30,600
Total Conservation Goal (Aug 2017 – March 2019)	1,177,900	72,600

- Performing the coordination, tracking, and outreach duties as outlined in the energy action plan. These tasks by area of focus, include but are not limited to:

Residential Focus Area

- **Residential Engagement Campaign**
 - o Identify City resources available for potential Home Energy Squad discount or cost-sharing and lead logistics/approval processes.
 - o Support development of campaign logistics and collateral and approve use of City logo on outreach materials.
 - o Distribute residential marketing materials to City communications channels and post residential campaign content to City website.
 - o Recruit and coordinate community volunteers to assist with residential outreach
- **Energy Efficient Construction**
 - o Bring energy efficient construction/renovations to the Environmental Commission as an agenda item for discussion.
 - o Engage code officials from White Bear Lake in follow-up discussions and make suggestions for process improvements, per Environmental Commission recommendations.

Non-Residential Focus Area

- **Congregation Energy Workshops**
 - o Coordinate workshop logistics and delivery, including identifying expert presenters and venues.
 - o Assist in workshop planning and preparation, including invitations, agenda, and promotion support.
 - o Lead workshop delivery and follow-up, including additional workshop planning if desired.
- **Business & Institutional Energy Leadership**
 - o Identify and complete improvements at City facilities.

- o Share success stories and related data with team and community.
- o Support case study development and share with City outreach channels.

Renewable Energy Focus Area

- Support development of campaign messaging and outreach tactics regarding renewable energy options.
- Assist in developing and reviewing outreach materials and conduct outreach to promote renewable options.

Project Management

- Participate in the coordination and tracking of scheduled activities and events.
- Provide Xcel Energy an opportunity to review marketing materials to assure accuracy when they incorporate the Xcel Energy logo or reference any of Xcel Energy's products or services
- Share the collateral, plan document, supporting work documents and implementation results from the Energy Action Plan with the public. The experience, successes and lessons learned from this community will inform others looking at similar or expanded initiatives

All communications pertaining to this agreement shall be directed to Scott Nielson, on behalf of the City of Mahtomedi and Tami Gunderzik, on behalf of Xcel Energy.

Xcel Energy is excited about this opportunity to support the City of Mahtomedi in advancing their goals. The resources outlined above and provided through Partners in Energy are provided as a part of our commitment to the communities we serve and Xcel Energy's support of energy efficiency and renewable energy as important resources to meet your future energy needs.

For the City of Mahtomedi:

Date: _____

For Xcel Energy:

Date: _____

Appendix 3: Additional Data

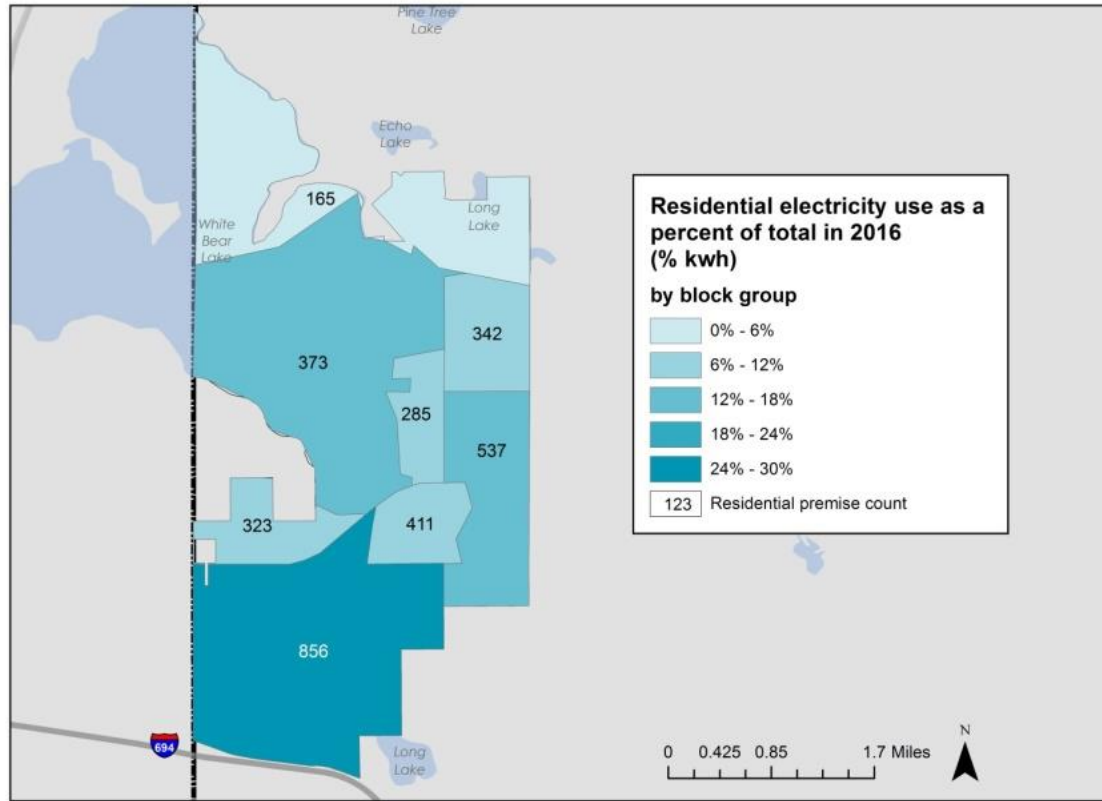


Figure A: Residential proportion of total electricity use by census block group

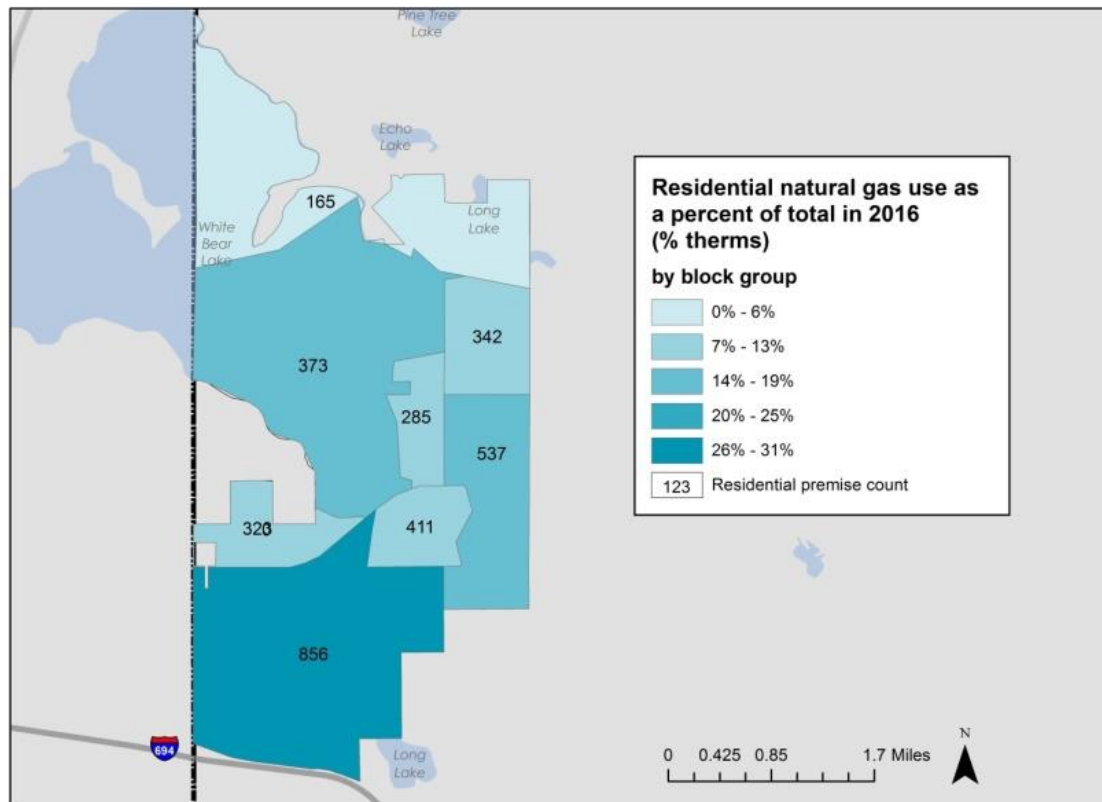


Figure B: Residential proportion of total natural gas use by census block group

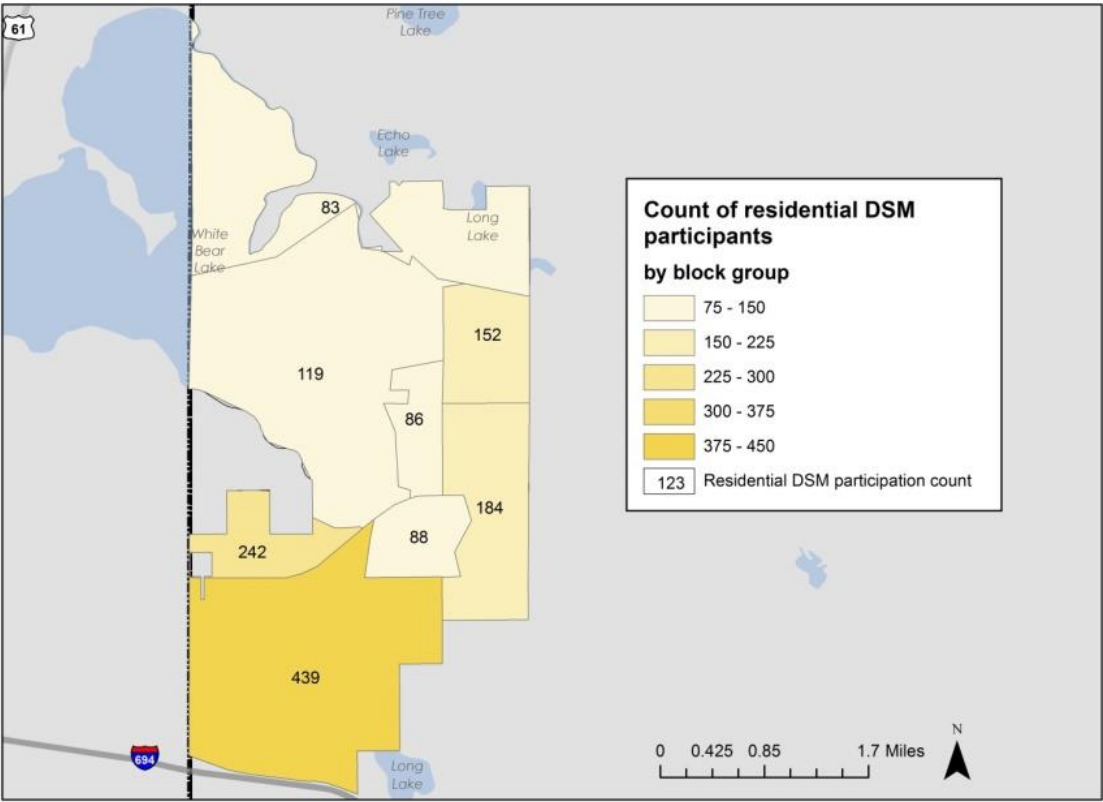


Figure C: Residential DSM program participation (2014-2016) by census block group

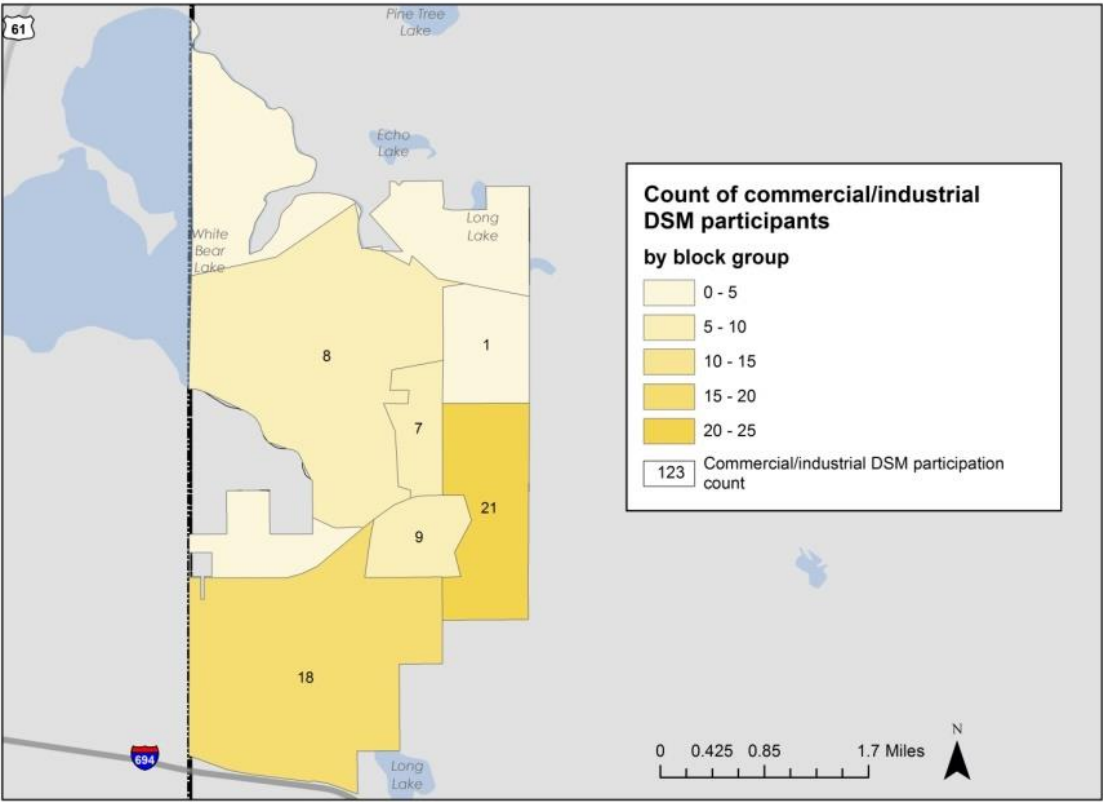


Figure D: Commercial/industrial DSM program participation (2014-2016) by census block group

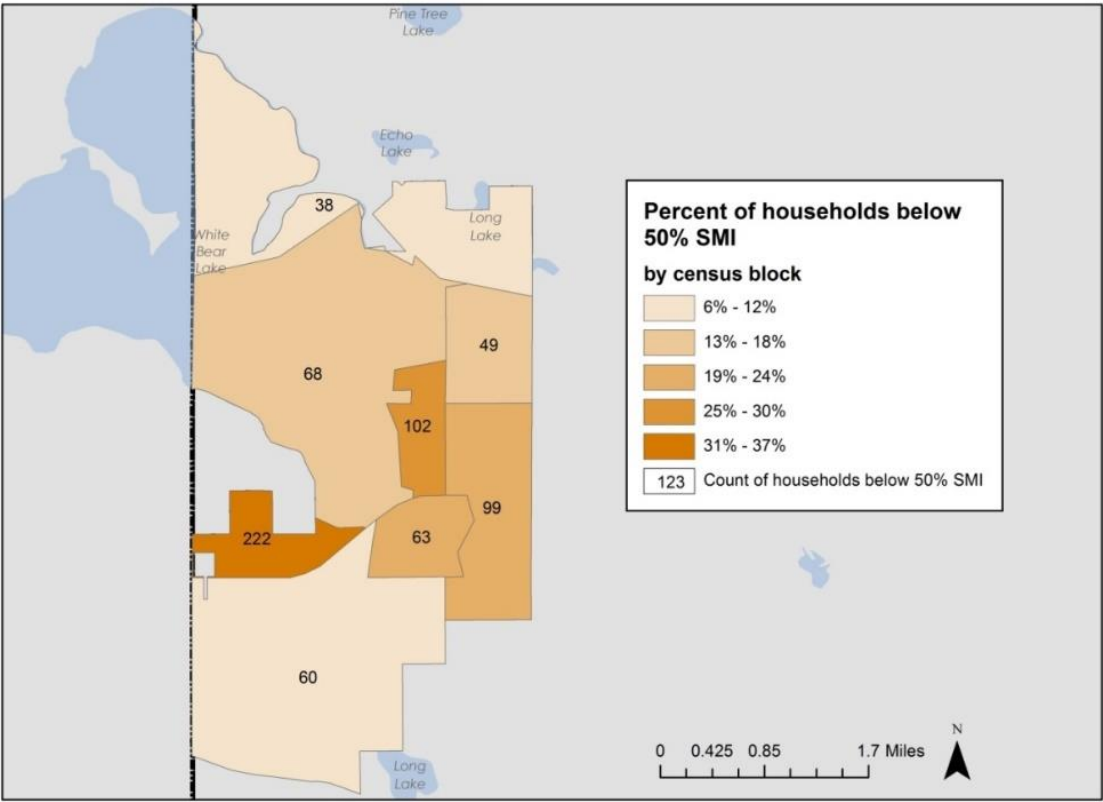


Figure E: Proportion of households below 50% of State Median Income by census block group

Appendix 4: Xcel Energy Program Summaries

Xcel Energy Program Offerings

Minnesota residential studies, audits and services				
Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Billing and payment	My Account with eBill	My Account is Xcel Energy's online account management service that provides customers with a personalized summary of their account. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center.	E G	Service
Fuel conversions	Switch from propane or fuel oil to natural gas	Convert your primary fuel in your home and save. Potential construction charge for distances from distribution gas line greater than 75 ft and one-time account set-up charge.	G (in area)	Service
Home audits	Home Energy Savings Program	After an in-home evaluation, qualifying residents may be eligible for services and equipment that include CFL bulb upgrades, insulation and weather stripping, appliance replacements and other equipment and appliances,	E G	Service
	Low-Cost Home Energy Audits	Home Walkthrough – Whole-house visual inspection and basic energy bill analysis for \$30. Standard Audit – Home Walkthrough plus blower door test for \$60. Standard audit with Infrared – Standard Audit plus an infrared camera scan for \$100 (where available).	E G	Audits
Home services	Home Energy Squad®	Low-cost service to provide and install efficient items such as compact fluorescent light bulbs, programmable thermostats, weather stripping and more. Must have natural gas service from Xcel Energy or CenterPoint Energy (\$70).	E G (CenterPoint Energy gas)	Service
	Home Performance with ENERGY STAR®	By installing multiple measures after a \$60 energy audit, natural gas customers are eligible for cash rebates.	E G	Audits
	Saver's Switch®	During peak air conditioning use days, participating residents can save 15% off of their electric energy use June through September by allowing a lowering of energy use from their AC units.	E G	Services Rebates
New home construction	ENERGY STAR Homes	Free home performance testing, inspections and consulting services to help meet the ENERGY STAR guidelines set by the U.S. Environmental Protection Agency. We conduct regular site inspections and arrange an independent inspection at completion to ensure homes meet all required builder rebates.	E G	Study

Minnesota residential rebate programs

Efficiency type	Deliverable	Description	Gas or electric	Study rebate service
Cooling efficiencies	Central air conditioning and air source heat pumps	Our Central AC Rebate program is designed to generate maximum energy savings for residents by focusing on proper installation practices. Qualifying equipment and installations may earn up to \$450 cash rebates. Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
	Ground source heat pumps	Qualifying ENERGY STAR ground source heat pumps are eligible for a cash rebate of \$150 per ton (five ton limit). Must be installed by a contractor registered in Xcel Energy's Cooling program.	E	Rebate
Environmental	Refrigerator/freezer recycling	We pick up resident's old working, second fridge or freezer and recycle it free of charge as well as give a \$50 cash rebate and two compact fluorescent light bulbs.	E	Rebate Service
	CFL bulb recycling	Compact fluorescent lights (CFLs) contain small amounts of mercury that are harmful to the environment. Because of this, they should not be disposed in household trash receptacles. Xcel Energy provides free CFL recycling at participating retailers and Minnesota county recycling centers.	E	Service
Heating efficiencies	Heating/ECM rebates	Qualifying natural gas boiler, gas furnace or factory installed Electronically Commutated Motor (ECM) are eligible for cash rebates.	E G	Rebate
	Water heating rebates	Qualifying energy-efficient water heaters can earn rebates.	G	Rebate
	Insulation rebates	Well-insulated homes can save up to 20% on heating and cooling costs. Rebates for 20% of project cost with a \$300 annual cap. Insulation upgrades existing single-family and multi-unit homes, up to four units, that professionally install insulation. Additional restrictions may apply.	G E (electric heat)	Rebate
Lighting efficiencies	Home lighting	Energy-efficient compact fluorescent light bulbs and light-emitting diodes can be purchased at a discount at participating retailers.	E	Rebate

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota residential renewable options

Deliverable	Description	Fuel type	Existing or new	Study rebate service
Solar*Rewards®Community®	A developer or a community installs a solar garden. Residents purchase or lease shares and receive credit on their monthly Xcel Energy electricity bills for their portion of solar energy produced by the solar gardens.	E	E N	Service
Solar*Rewards®	Residents receive incentives for installation of photovoltaic (PV) solar panels. The state of Minnesota may offer an additional rebate if you buy solar panels from Minnesota manufacturers.	E	E N	Service
Windsource®	Residents can purchase renewable, wind energy through Windsource. Subscriptions start at less than \$1 per month for one, 100-kilowatt-hour block*.	E	E N	Service

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota business audits, studies & services

Deliverable	Description	Gas or electric	Study rebate service
Business new construction energy design assistance*	An integrated design process that includes whole building computer modeling and verification of measures for new buildings, additions or major renovations. Finished space 20,000 sq. ft. or larger	G E	Study Rebates
Business new construction energy efficient buildings*	Free design review to identify potential rebates and energy-saving opportunities, plus rebates for making efficiency improvements to your new building, addition or major renovation. Finished space smaller than 20,000 sq. ft.	E G	Study Rebates
Commercial efficiency*	Operations and facilities analysis and support to help large commercial operations create a long-term energy management plan. (Designed for energy conservation potential of 1 GWh or 4,000 Dth)	E G	Study Rebate
Data center efficiency study*	Data center energy efficiency analysis and identification of opportunities to improve IT equipment and/or facility systems to run at peak efficiency	E G	Study Rebate
Free online assessment	For businesses unsure of investing in an on-site energy audit, we have a FREE online energy assessment tool that offers a basic report on hidden energy-savings potential: xcelenergy.com/OnlineAssessment	E G	Tool
Fluid system optimization* (compressed air, pumps, fans, blowers, vacuums)	Rebates for a study to analyze your fluid systems to discover no-cost/low-cost improvements as well as identify capital projects to increase your system's efficiency, reliability and performance	E	Study Rebate
Heating efficiency steam trap audits and rebates	Identify failed traps and benefit from cost-saving rebates to repair or replace traps	G	Study Rebate
Heating efficiency system optimization study*	Analyze all or part of heating system to uncover and/or assess natural gas savings opportunities, including no-/low-cost adjustments and/or equipment improvements	G	Study
Lighting redesign study*	A complete lighting analysis to identify ways to improve your lighting efficiency in over-lit or wrongly-lit spaces. (Not for 1-to-1 lighting retrofits; must be performed by a certified lighting professional)	E	Study Rebates
Process efficiency*	Operations and facilities analysis to help create a long-term energy management plan. Industrial manufacturing customers must have cumulative energy conservation potential of 1 GWh or 4,000 Dth	E G	Study Rebate
Recommissioning*	Energy experts conduct a Recommissioning study and provide recommendations for building tune-ups. Many measures have simple paybacks of less than one year. Choose what to implement and get rebates on both the study and implementation measure(s)	E G	Study Rebates
Refrigeration recommissioning*	Rebates for tuning up existing commercial refrigeration systems in grocery outlets, convenience stores and other facilities with refrigerated cases	E	Study Rebates
Turn key services	Low-cost, on-site assessments that identify energy-saving opportunities for community businesses. Includes free project implementation services and 30% bonus rebates on rebate-eligible improvements made within 12 months from assessment date. If businesses already have energy-saving projects identified, they can still take advantage of our free implementation services	E G	Study Service Rebates
My Account with eBill	My Account is Xcel Energy's online account management service that provides business customers with a summary of their account to help manage energy. Features include eBill, eBill payment, usage history, account info, product/program offers, energy efficiency info, and the customer preference center	E G	Services
PERSONALIZED BUSINESS ACCOUNT SERVICES	Our efficiency specialists are your go-to support for your businesses' energy needs, available to: • Answer questions • Suggest energy recommendations tailored to your business • Help you navigate program options, requirements and documentation • Discuss different ways to get started Contact your Xcel Energy account manager, or our energy efficiency specialists at 1-855-839-4362 or energyefficiency@xcelenergy.com .		Services
Trillion BTU financing	Loan program that leverages public and private money to help businesses make improvements that lower energy costs. Delivered by St. Paul Port Authority.		Service

*Requires preapproval prior to starting the project or study.

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Rebate Programs

Deliverable	Description	Gas or Electric	Study Rebate Service
Cooling Efficiency	Rebates for energy-efficient air conditioning equipment including rooftops, chillers, water source heat pumps, zero-loss energy doors, PTACs and more	E	Rebate
Computer Efficiency	Rebates available for virtual desktop infrastructure (VDI) or PC power management software	E	Rebate
Custom Efficiency*	Rebates for energy-efficient technologies or process improvements not covered under our prescriptive programs	E G	Rebate
Data Center Efficiency Equipment Rebates*	Custom rebates for opportunities identified through a Data Center study	E	Rebate
Efficiency Controls*	Rebates for control systems that save energy by automating building systems such as lighting, HVAC and others	E	Rebate
Fluid System Optimization*	Rebates for efficiency improvements from upgraded equipment identified in a fluid system optimization study	E	Rebate
Foodservice Equipment	Cash-back rebates for purchasing and installing qualifying energy-efficient foodservice equipment such as convection ovens, broilers, demand controlled ventilation, ENERGY STAR dishwashers and more	E G	Rebate
Heating Efficiency	Prescriptive rebates for qualifying commercial heating systems used for space heating, domestic water heating and up to 30% additional process load	E G	Rebate
Lighting Efficiency Retrofit Rebates	Rebates for purchasing and installing energy-efficient lighting in an existing building	E	Rebate
Lighting Efficiency New Construction Rebates	Rebates for purchasing and installing energy-efficient lighting for new or significantly renovated facilities	E	Rebate
Motor and Drive Efficiency	Prescriptive and custom rebates for installing variable frequency drives (VFD), adjustable speed drives (ASD) and Constant Speed Motor Controllers. Motor rebates are available for NEMA Premium® enhanced new, upgrade and enhanced upgrade motors	E	Rebate

*Requires preapproval prior to starting the project or study.

Some restrictions apply; programs and rebates are subject to change. Please see program application forms official program details, terms and conditions.

Minnesota Business Renewable Options

Deliverable	Description	Fuel Type	Existing or New	Study Rebate Service
Solar*Rewards	Rebates based on energy production for installing solar panels on your business. Participation is limited. Additional incentive may be available through the Made in Minnesota program. Additional payment available for excess energy produced.	E	E N	Service
WindsorSource	Businesses can purchase renewable energy through WindsorSource. Subscriptions start at less than \$1 per month, for one, 100 kilowatt-hour block.*	E	E N	Service



RESPONSIBLE BY NATURE®

SUBJECT: Presentation, Discussion and Possible Action Regarding City Priorities for Paving of Roads and Paving Costs (*Councilor Moore*)

RECOMMENDATION: As the Council Desires

DEPARTMENT OF ORIGIN: Councilor Moore

CLEARANCES: Mayor, City Administrator, Public Works Director, City Council President

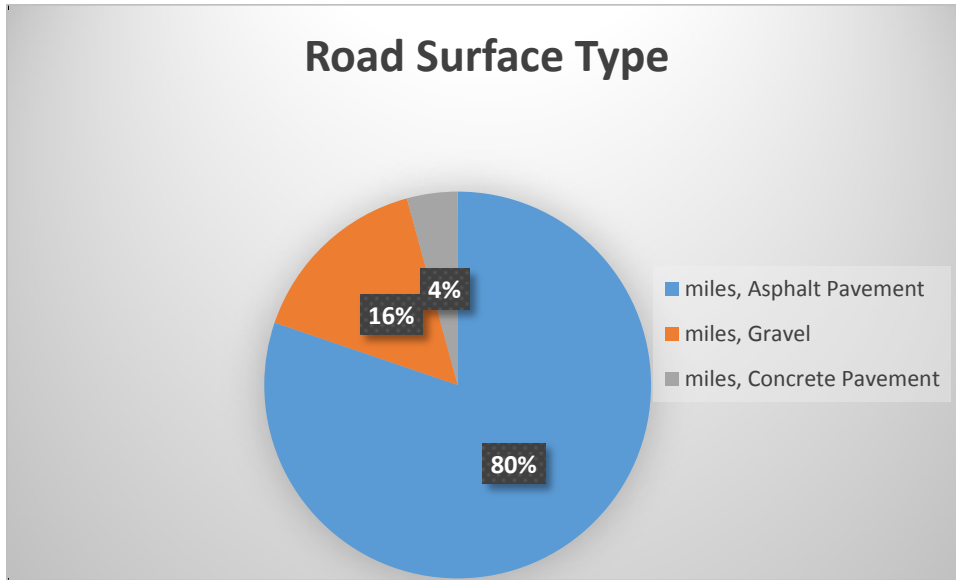
EXHIBITS: 1. City of Ashland Roads Overview

SUMMARY STATEMENT:

Councilor Moore has requested a broader discussion of existing and potential paving expenses in the City in light of the topic of paving 18th Street. raised by an area resident at the last meeting. There are a number of unpaved roads in the city limits of Ashland, especially in Ward 11, which covers a large area in the City. Attached is an exhibit by the Public Works Director which provides a City of Ashland roads overview.

City of Ashland Roads Overview

Existing Roadways



Total of 60.7 miles (excluding state highways)

48.73	miles, Asphalt Pavement
9.44	miles, Gravel
2.57	miles, Concrete Pavement
60.74	Total

Roadway Costs

Roadway costs include capital and maintenance costs. Capital costs for gravel roads are difficult to quantify but would include the cost of asphalt/concrete for paved roads and associated prep costs.

The maintenance cost of a given gravel road (1 block) is \$888 per year or \$17,760 over a 20 yr lifetime. This includes labor and equipment for grading and annual overlay of gravel and application of dust control.

The maintenance cost of a given asphalt road (1 block) is \$218 per year per year of \$4,358 over a 20 yr lifetime. This includes labor and equipment for crack sealing, misc patching, and street sweeping.

However, reducing the maintenance burden of gravel roads requires a significant capital investment, estimated to be \$15,542 per block for asphalt pavement (2019 pricing).

The cost of an asphalt road is \$20,000 (rounded) over a 20 yr lifetime compared to \$18,000 (rounded) for a gravel road over the same time period.

Gravel vs Paved Roads

- Annual cost of maintenance is easier for the City to budget for as the costs are spread across a 20 yr period.
- Capital cost of asphalt paving is more difficult for the City to budget for as the costs are required in a single year.
- Asphalt roads are more costly over a 20 yr period but provide other benefits to residents such as dust issues, perception of improved urban area, and better accommodation of bicycles/pedestrians.
- However the decision to provide the higher level of service associated with asphalt roads should be supported by required resources.

Roadway Needs vs Resources

Roadway budget recommendations from Master Plan:

- Reconstruct or improve 11.3 miles of road over 30 yr period @ estimated cost of \$19.43 million. \$648,000 annual
- \$202,000 for annual pavement preservation, \$446,000 for annual reconstruction, and \$62,000 for annual crack sealing = \$710,000 per year.

2020 budget levels

- 2020 budget includes \$135,000 for pavement preservation and \$30,000 for crack sealing = \$185,000.
- 2020 budget also includes \$985,000 for street reconstruction from City funds borrowed every 3 yrs. \$328,000 per year.
- $\$185,000 + \$328,000 = \$513,000$ per year.
- City has historically rec'd \$500,000 in CDBG funds biannually. \$250,000 per year.
- $\$513,000 + \$250,000 = \$763,000$ per year.

Pavement Condition

