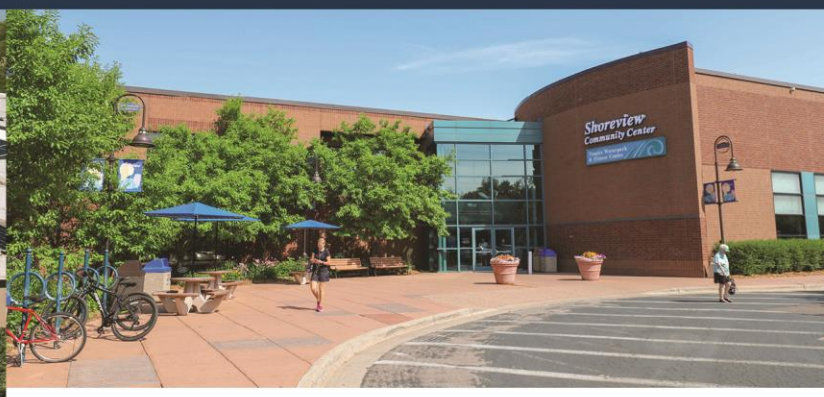
SHOREVIEW

City of Shoreview

Energy Action Plan

August 2024



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Acknowledgements

Thank you to the following individuals who contributed many hours of service to developing this Energy Action Plan.

The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Xcel Energy is the main electric and gas utility serving Shoreview. Partners in Energy is a two-year collaboration to develop and implement a community's energy goals. For more information about the planning workshops, see *Appendix 4: Xcel Energy's Partners in Energy Planning Process*.

NAME	AFFILIATION
Krista Billerbeck	Natural Resources Coordinator, City of Shoreview
Jeff Bartlett	Environmental Quality Commission Member
Mary Flanagan	Shoreview Estates Board President
Paul Gardner	Resident
Carly Gatzlaff	Churchill Street Restaurant
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Mark Kolasa	St. Odilia Church
Joe Kuntz	City of Shoreview
Jamie Meyer	City of Shoreview
Chris Paquette	Mounds View Schools
Jerald Peterson	Resident
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This Energy Action Plan was funded by and developed in collaboration with Xcel Energy's Partners in Energy. Partners in Energy shall not be responsible for any content, analysis, or results if Shoreview has made modifications to the plan.

Table of Contents

SHOREVIEW ENERGY ACTION PLAN

Our Energy Action Plan, designed by Shoreview community members, in collaboration with Xcel Energy through the Partners in Energy program, provides immediate opportunities to save energy and money, increase renewable energy, and reduce fossil fuel use.

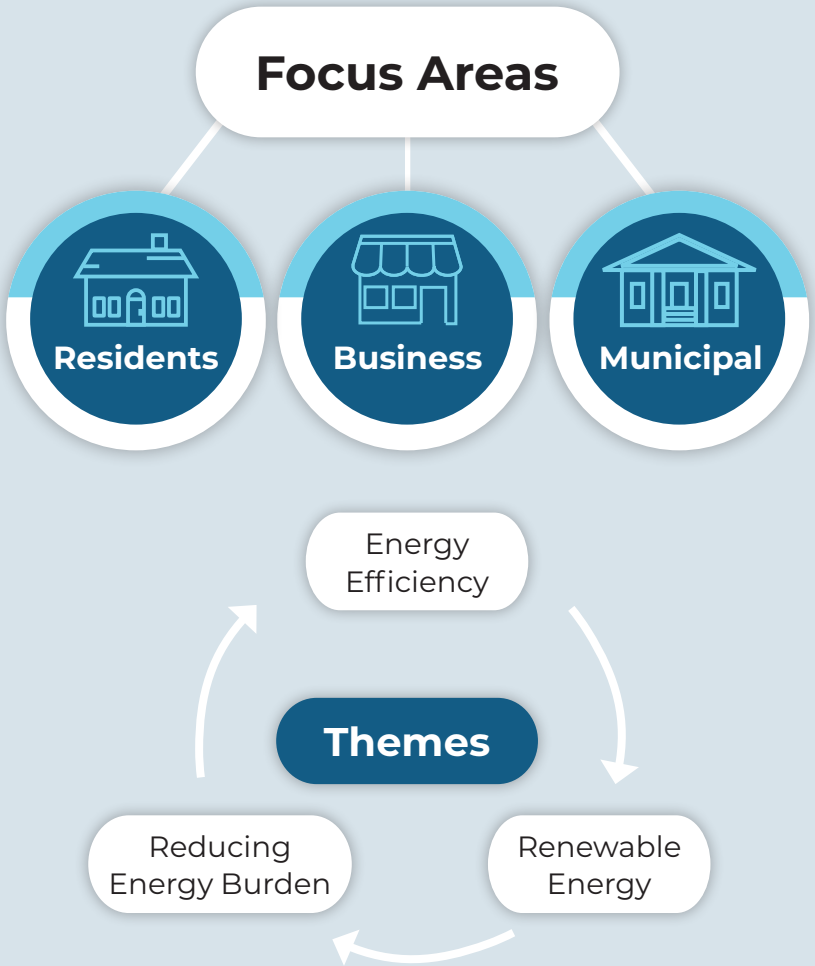
Our Energy Vision

Shoreview strives to be a leader on energy, the environment, and climate. This plan provides community-based actions and energy goals that offer opportunities to reduce fossil fuel use, save energy and money, and increase renewable energy to make the community more resilient and sustainable across all buildings and budgets.

Our Goal

Shoreview will save 170,000 MMBtu by 2030. This will save the community $2.3 million through energy efficiency projects by 2030.

Shoreview will increase renewable energy participation 30% by 2030.



The content of this plan is derived from a series of planning workshops hosted by Xcel Energy's Partners in Energy. Thank you to the Shoreview Energy Action Team who contributed many hours of service to creating our vision, goals, and strategies for this plan.

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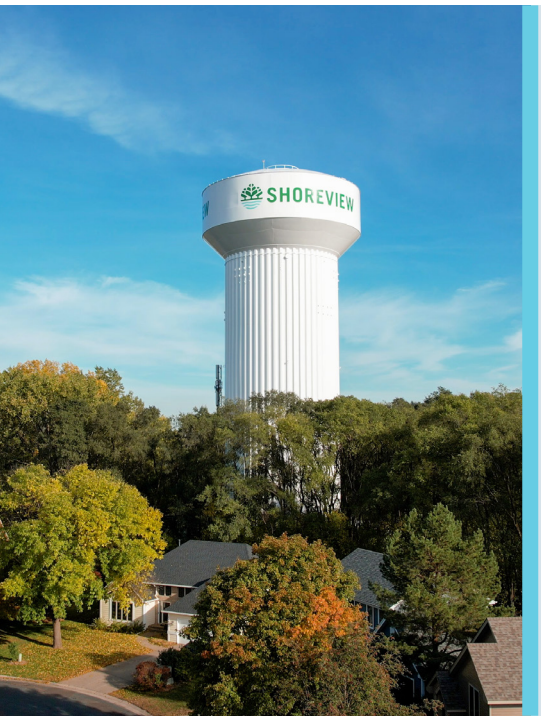
Energy Action Plan Impact

Saving **16.1 million kWh** and **1.2 million therms** by 2030, which is equivalent to removing 3,000 passenger vehicles from the road for a year.

Estimated savings of **$2.3 million** community-wide by 2030 through participation in utility programs.

Increasing renewable energy support to help **reduce fossil fuel use**.

Equitably serving all residents and businesses with **community-based energy actions**.



Actions

- Foster an environment for energy savings, renewable energy, and economic growth to coexist and thrive.
- Collaborate with community groups, social service organizations, and businesses to encourage participation in energy conservation opportunities.
- Support residents who may be experiencing high energy burden with energy assistance and resources.
- Increase energy efficiency and renewable energy in Shoreview municipal buildings and community institutions.
- Organize funding resources and incentives for the businesses to complete energy projects that can result in a high return on investment.

Get Involved

Visit **shoreviewmn.gov** to read more about the Energy Action Plan and find ways you can get involved.

To learn how you can help Shoreview achieve our energy goals, please contact Natural Resources Manager Krista Billerbeck at **kbillerbeck@shoreviewmn.gov**.

Introduction

Shoreview is a northern Twin Cities community with a natural setting of lakes and open spaces, vibrant residential communities, and strong local businesses. The city is known for its community center, parks, and high quality of life.

Our Energy Action Plan connects community members with opportunities to save energy and money to help reduce fossil fuel use and make our community more resilient and sustainable.

Who are we talking about?

We, Our and **the city** refer to the City of Shoreview.

Community refers to the broader Shoreview community, including residents, businesses, and other stakeholders.

Energy Action Team is the group of individuals whose input created our Energy Action Plan.

Energy Action Plan refers to this document for the City of Shoreview.

Why We Want an Energy Action Plan

Shoreview has made progress toward sustainability and energy initiatives in multiple areas such as energy efficiency, renewable energy, and water related projects. The city has attained Step 5 in the GreenStep Cities program for multiple years, which is the highest ranking of the program. This ranking demonstrates Shoreview completed a variety of actions for sustainability and annual improvements. The city's park lighting has been converted to LEDs and streetlights are in the process of being completely converted to LEDs, which are much more efficient and longer lasting. The city's maintenance center was renovated in 2010 to be a LEED Gold certified building. In 2020, solar arrays were installed on the maintenance center and produce approximately 50% of the building's annual electricity. Two level 2 EV charging stations installed in the community center parking lot offer EV drivers a public space to charge. A fleet analysis of the city's

vehicles was conducted to assess suitability and feasibility for converting to electric in the replacement schedule.

The Shoreview Environmental Quality Committee provides input to the council on environmental topics and educational opportunities for residents. It hosts an annual speaker series that often includes presentations on energy efficiency and renewable energy for residents. The Green Community Awards program is an annual recognition program for residents, businesses, organizations to be commended by the mayor and council for environmental projects they've completed on their property.

Shoreview prioritizes innovative ways to reduce and treat stormwater runoff such as installing permeable pavement in road projects throughout the city. A city park with ballfields is irrigated using a water-reuse system from a stormwater pond. Rain gardens are located throughout the city to improve water quality of nearby lakes. Annual watering restrictions are in effect to reduce water use, and rebates are available to residents for water efficiency upgrades.

Shoreview staff were interested in participating in the Partners in Energy program to focus and expand energy efforts in the city and to use the technical assistance and guidance provided by the program. Staff sought to connect with different groups in the city to work toward common goals, and succeeded in pulling together residents, business owners, city staff, corporate professionals, and representatives of housing and nonprofit organizations to form the Energy Action Team.

Our Engagement & Outreach Process

The creation of this Energy Action Plan was a six-month process to help our community characterize its energy use, identify energy-related goals, and develop engaging strategies to guide change toward our energy future. Starting in October 2023, the Energy Action Plan was driven by a series of planning workshops held in the community with a planning team committed to representing local energy priorities in collaboration with City of Shoreview and Xcel Energy Partners in Energy. See *Appendix 4: Xcel Energy's Partners in Energy Planning Process* for more information about the planning process and Xcel Energy Partners in Energy.

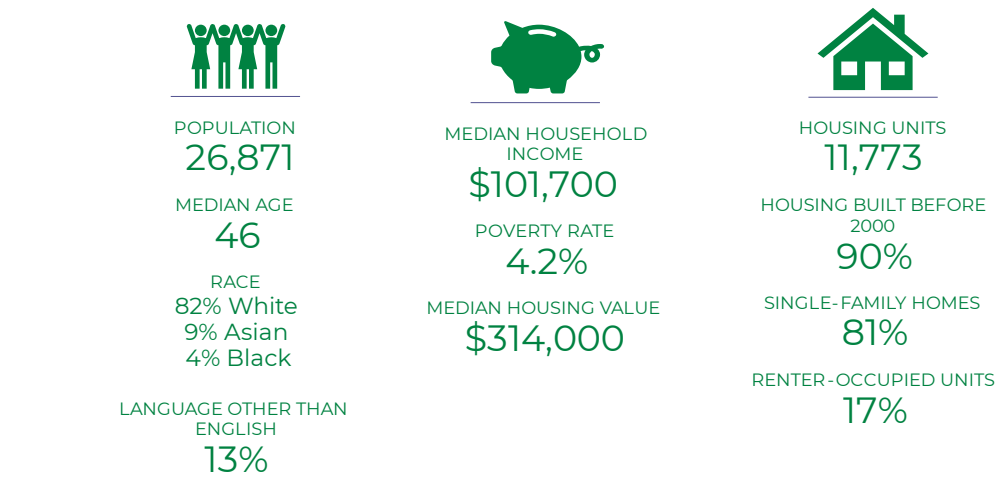
Where We Are Now

An integral part of the Partners in Energy planning process is reviewing historical energy data that informs our community's energy baseline. Xcel Energy provided data on energy use, program participation counts, and utility energy conservation program savings for Shoreview, as detailed in the following sections. See *Appendix 2: Baseline Energy Analysis* for a comprehensive picture of Shoreview baseline energy data.

Community Demographics

As of 2021, Shoreview's population of almost 27,000 residents lived in approximately 11,800 housing units. With moderate levels of diversity, 13% of residents speak a language other than English, 9% of residents identify as Asian, and 4% as Black. A poverty rate of 4.2% and a median household income of $102,000 make them a wealthier community compared to some peer cities. With 90% of its housing built before 2000, most Shoreview residents live in housing stock with significant opportunity for energy efficiency improvements because of aging buildings and equipment. Additionally, 17% of units in Shoreview are renter-occupied, presenting unique opportunities for energy efficiency measures targeted at renter-occupied units. *Figure 1* shares the community demographic profile.

FIGURE 1. OVERVIEW OF SHOREVIEW COMMUNITY DEMOGRAPHICS[1]



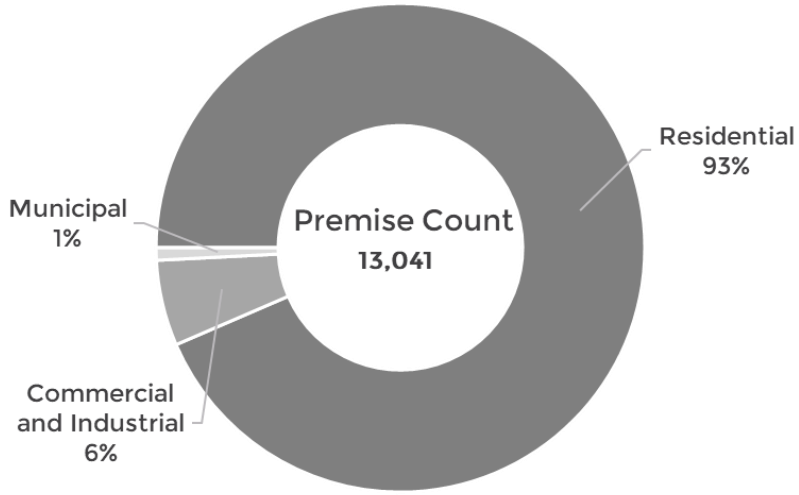
Energy Use and Savings

Premises

Xcel Energy provides electricity and natural gas to Shoreview residents and businesses. In 2022, Shoreview consisted of 13,041 distinct utility premises, which are a unique combination of service address and meter. For residential customers, this is the equivalent of an individual house or dwelling unit in a multi-tenant building. For business customers, it is an individual business, or for a larger business, a separately metered portion of the business' load at that address. Most Shoreview premises are residential, with a small number of commercial and industrial premises and a smaller portion of municipal premises rounding out the total (Figure 2).

[1] Source: U.S. Census Bureau American Community Survey, 2021 five-year estimates

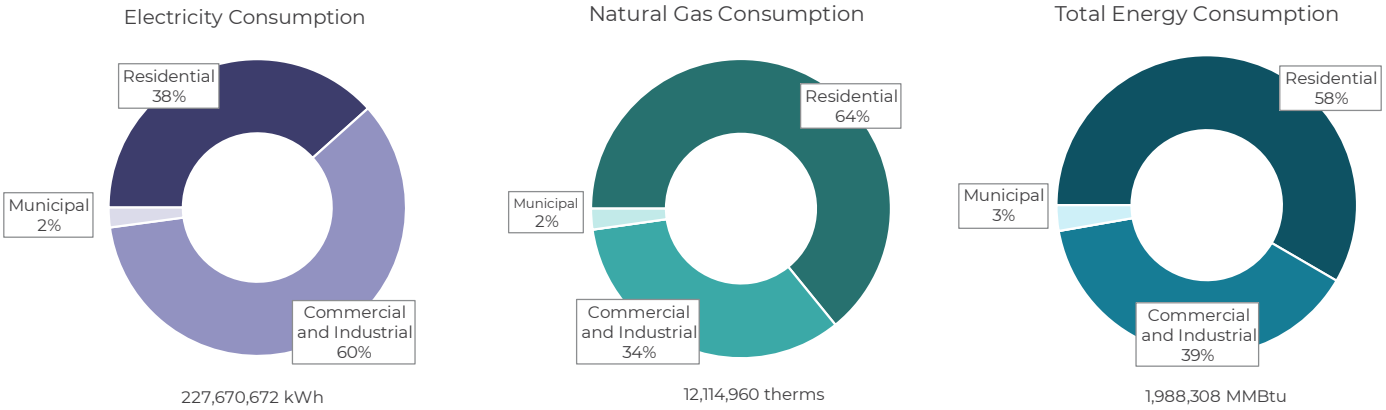
FIGURE 2. TOTAL PREMISES BY SECTOR, 2022



Grid Energy Use

On average over the baseline period (2020–2022), the Shoreview community consumes 228 million kWh of electricity and 12.1 million therms of natural gas across all sectors per year (Figure 3). To compare electricity and natural gas consumption on a common measure of energy savings potential, total energy consumption was calculated using both electricity and natural gas consumption converted into British thermal units. Although the commercial and industrial sector only makes up 6% of premises, it accounts for over a third of total energy consumption. Commercial and industrial premises use significantly more energy on average per premise than residential premises, a typical pattern for cities like Shoreview.

FIGURE 3. AVERAGE ANNUAL ENERGY CONSUMPTION BY SECTOR, 2020–2022



During the three-year baseline period (2020–2022), Shoreview's overall electricity consumption increased 2%. Electricity consumption in the residential sector decreased slightly by 1% during the three-year baseline, while commercial consumption increased by 3.6%, driving the overall increase (Figure 4). Shoreview's natural gas consumption increased across all sectors during the baseline period, with a total increase from 2020 of 10.4% (Figure 5). This correlates with an increase in heating degree days in 2022, indicating a colder winter and a greater demand for natural gas for space heating. The COVID-19 pandemic occurred during this baseline period, but using the average of these three years is still a useful baseline for measuring goals.

FIGURE 4. ELECTRICITY CONSUMPTION BY SECTOR, 2020–2022

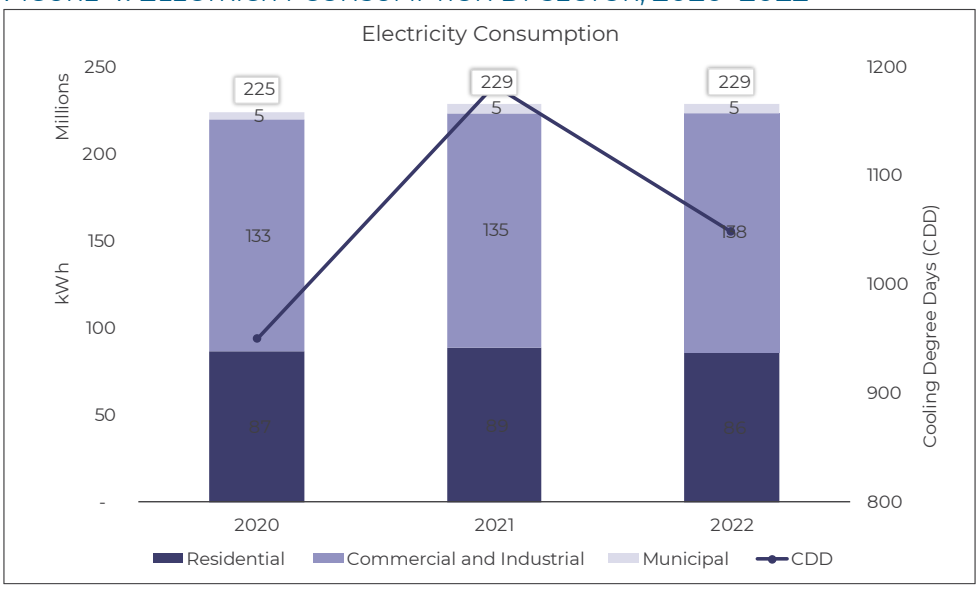
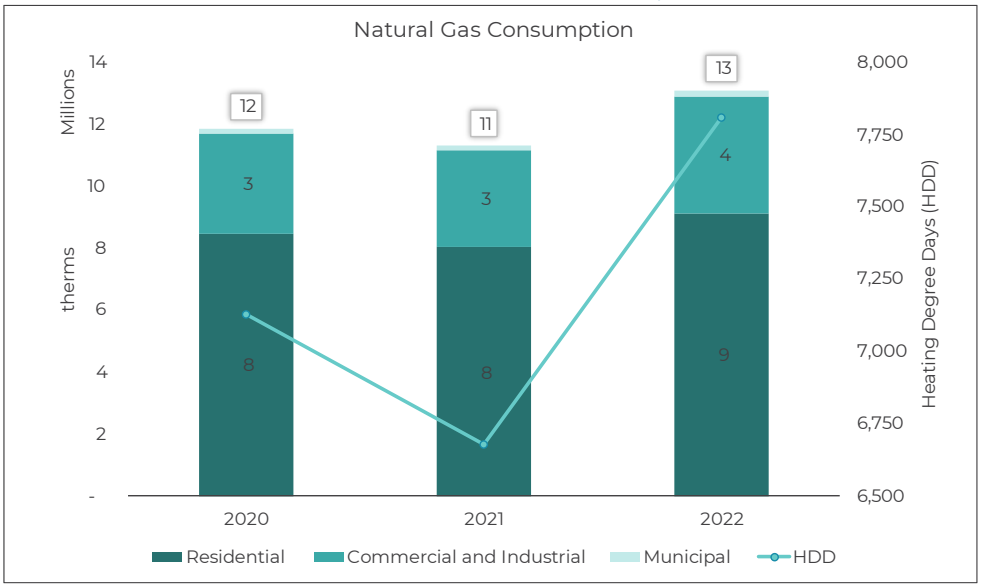


FIGURE 5. NATURAL GAS CONSUMPTION BY SECTOR, 2020–2022



Energy Costs and Energy Burden

During an average year, Shoreview spends an estimated $35 million on fuel costs for both electricity and natural gas (Figure 6). More than half these costs are paid by residents, with total annual average fuel costs at $21.6 million. A residential premise spends an average of $1,500 annually on electricity and natural gas. The commercial and industrial sector averages $16.1 million annually on fuel costs. While costs vary greatly for commercial and industrial premises based on size and industry, on average these premises spend almost $22,000 annually.

FIGURE 6. TOTAL AVERAGE ANNUAL ENERGY COSTS BY SECTOR, 2020–2022

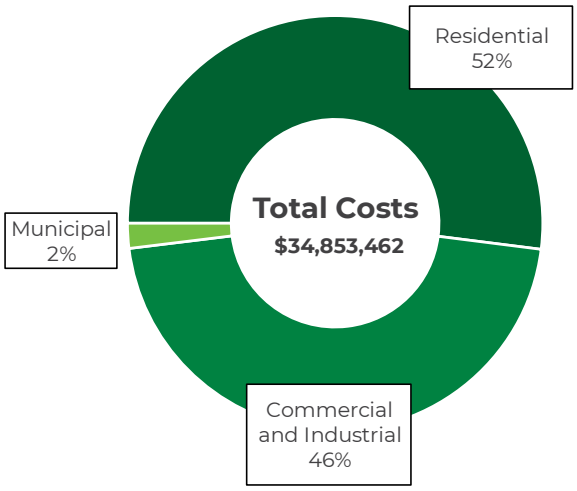
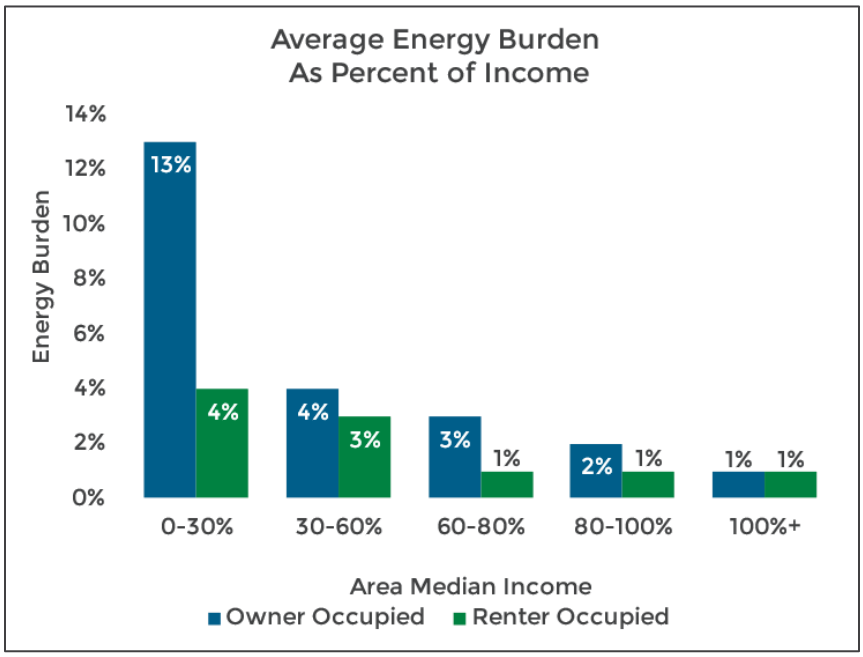


TABLE 1. AVERAGE ANNUAL FUEL COSTS BY SECTOR AND FUEL TYPE, 2020–2022

Sector	Annual Electricity Costs	Annual Natural Gas Costs	Annual Cost per Premise
Residential	$11,645,008	$6,481,276	$1,517
Commercial & Industrial	$13,723,480	$2,327,177	$21,769
Municipal	$545,811	$130,710	$6,362
Total	$ 25,914,299	$8,939,163	

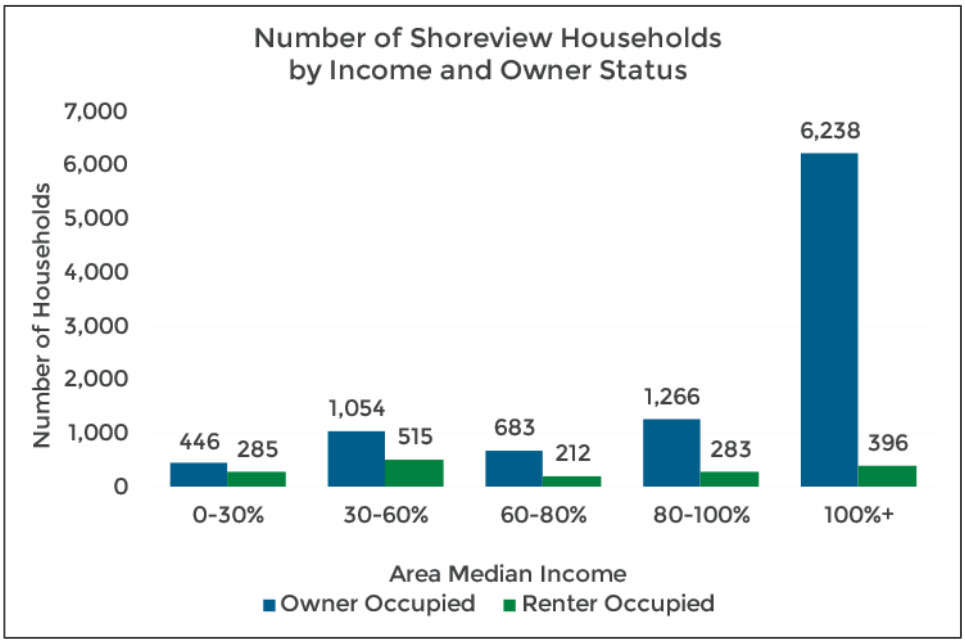
Energy burden is the percentage of income that community members spend on energy. A high energy burden is defined as spending more than 6% of household income on energy, while a severe energy burden is greater than 10% of income.[2] The group of Shoreview residents with the largest energy burden are those who own their homes and make 30% or less of the median income. This group spend up to 13% of their income on energy costs. The household data in *Figure 8* show that 4% of residents fall in this category, while 55% of residents are homeowners who make more than the area median income, a group with a 1% energy burden.

FIGURE 7. ENERGY BURDEN BY INCOME AND OWNER STATUS



[2] APPRISE (Applied Public Policy Research Institute for Study and Evaluation). 2005. LIHEAP Energy Burden Evaluation Study. Washington, DC: HHS (Department of Health and Human Services). www.acf.hhs.gov/sites/default/files/ocs/comm_liheap_energyburdenstudy_apprise.pdf.

FIGURE 8. HOUSEHOLD COUNT BY INCOME AND OWNER STATUS[3]



Greenhouse Gas Emissions

Greenhouse gas emissions are calculated for both electricity and natural gas consumption for all sectors in Shoreview (Figure 9). Shoreview's energy-related greenhouse gas emissions in 2022 amount to more than 133,000 metric tons of carbon dioxide equivalent (MTCO2e). Like total energy consumption, Shoreview's residential sector accounts for 54% of energy-related greenhouse gas emissions. Emissions have risen by 7% between 2020 and 2022, with increases in every sector. *Figure 10* breaks out the 2022 energy-related emissions by sector and fuel type. The largest proportion of emissions (36%) comes from natural gas in the residential sector, and in total, the residential sector generated 54% of Shoreview's energy-related greenhouse emissions while the commercial sector generated 44% of the emissions. Natural gas consumption made up the largest proportion of total emissions, adding up to 52% of all energy-related emissions. The proportion of energy-related emissions from natural gas is expected to increase over time as grid decarbonization results in cleaner electricity.

FIGURE 9. ENERGY-RELATED GREENHOUSE GAS EMISSIONS, 2020–2022

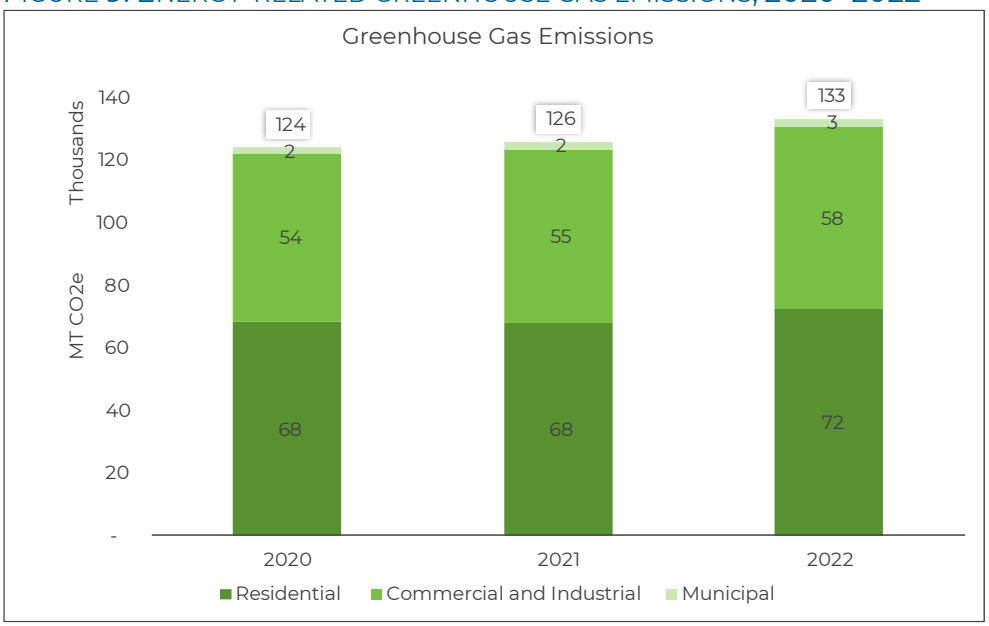
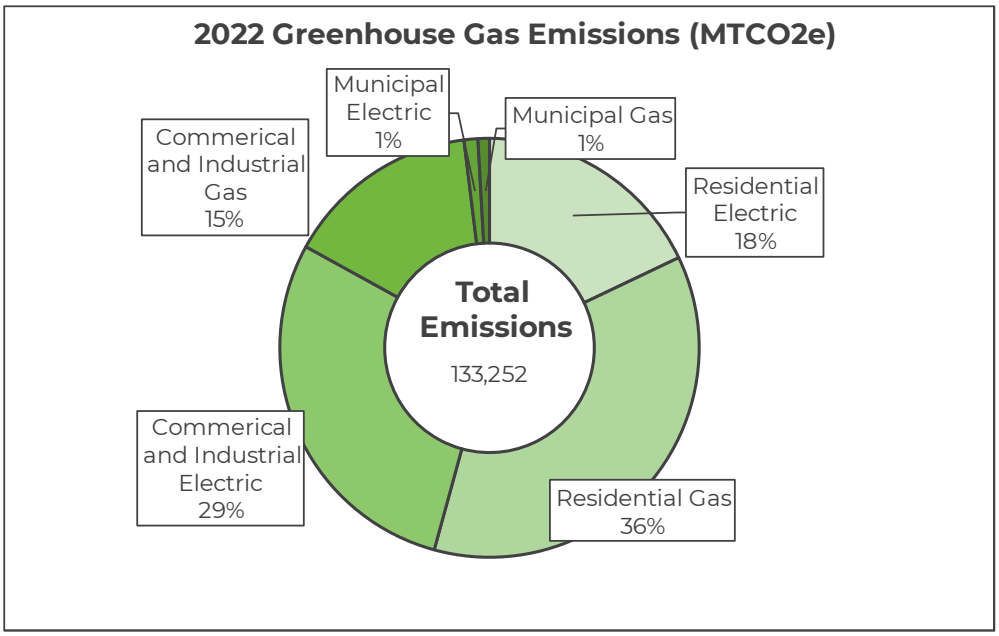


FIGURE 10. ENERGY-RELATED GREENHOUSE GAS EMISSIONS BY SECTOR AND FUEL TYPE, 2022[3]



[3] Electricity emissions are calculated using Xcel Energy's preliminary and certified emissions factors for their Upper Midwest Fuel Mix for 2020, 2021, and 2022. Emissions factors used during the planning process may change as Xcel Energy completes third-party verification for its emissions intensities. See Table 11 for the emissions factors used to calculate Shoreview's energy-related emissions.

Renewable Energy

Shoreview residents and businesses use subscription programs and on-site options to support renewable energy (Table 2 and Table 3). In Shoreview, most renewable energy support is in the residential sector, where 929 residents receive renewable energy through subscription programs for a combined total of 3.4 million kWh, equivalent to taking 337 gas-powered cars off the road for a year.[4] 113 residents have on-site solar installations. Fewer commercial and industrial customers participate in renewable energy offerings than residents, with 10 renewable energy program subscribers totaling 328,000 kWh and 11 on-site installations. Overall, there is potential to increase renewable energy use in Shoreview, with only about 1.6% of the community's electricity coming from renewable energy programs. The total excludes generation from on-site solar because those installations are behind the meter, in other words, on the customer's side of the utility meter.

TABLE 2. XCEL ENERGY SUBSCRIPTION RENEWABLE ENERGY PROGRAM SUPPORT, 2022

	Residential	Commercial & Industrial
Windsource® & Renewable*Connect Flex® (Windsource® is now Renewable*Connect Flex®)		
Subscriber Count	780	7
Total Annual Electricity Subscribed (kWh)	2,817,918	241,315
Community Solar Gardens – Solar*Rewards® Community		
Subscriber Count	149	3
Total Annual Electricity Subscribed (kWh)	575,395	87,131
Total Xcel Energy Subscription Renewable Energy Support		
Subscriber Count	929	10
Total Annual Electricity Subscribed (kWh)	3,393,313	328,446
Percent of Sector Xcel Energy Electricity Use	3.9%	0.2%

[4] Source: EPA: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

TABLE 3. XCEL ENERGY ON-SITE SOLAR PROGRAM SUPPORT, 2022[5]

	Residential	Commercial & Industrial
On-site Solar – Solar*Rewards® and Net-Metering		
Participant Count	113	11
Total Electricity Capacity (kW)	882	963

Energy Efficiency Program Participation & Savings

Both residents and commercial and industrial premises participate in Xcel Energy's efficiency programs where they can receive rebates for upgrading equipment, receive a building audit to understand their efficiency opportunities or manage their demand through rate savings programs. Participation in these programs results in energy savings for participants. Shoreview's residents and commercial and industrial premises saved an annual average of 1.9 million kWh and 121,00 therms during the baseline period by participating in Xcel Energy's efficiency programs (Table 4).

TABLE 4. AVERAGE ANNUAL PROGRAM PARTICIPATION AND ENERGY SAVINGS, 2020–2022

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential	1,337	308,507	82,284
Commercial & Industrial	60	1,595,271	39,125
Total	1,396	1,903,778	121,409

Shoreview residents and businesses rely on a few key programs from Xcel Energy to help them improve efficiency (Table 5 and Table 6). These tables are sorted by the electricity savings, with the program at the top representing the greatest total savings. The Residential Heating and Cooling rebate program, in which residents receive rebates for upgrading to more efficient equipment, had the most participants and results in the most savings, but programs like Refrigerator Recycling, a recycling rebate program, and Efficient New Home Construction, an incentive program for builders to exceed local energy efficiency codes, also resulted in significant savings. In the commercial and industrial sector, the Lighting Efficiency and Small Business Lighting programs that offer audits and rebates for businesses to upgrade to more energy efficient lighting had the most participants and highest savings. Energy Design Assistance and Energy Efficient Buildings had lower participation but were significant in their savings.

[5] Source: Xcel Energy Community Energy Report for Shoreview, 2022

TABLE 5. AVERAGE ANNUAL PARTICIPATION IN TOP RESIDENTIAL PROGRAMS, 2020–2022

Residential Program	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Residential Heating and Cooling	635	202,761	63,508
Refrigerator Recycling	67	53,084	0
Home Energy Squad ®	29	21,335	1,076
Efficient New Home Construction	6	10,605	2,379
Smart Thermostat	159	6,512	3,330

TABLE 6. AVERAGE ANNUAL PARTICIPATION IN TOP COMMERCIAL AND INDUSTRIAL PROGRAMS, 2020–2022

Commercial Program	Average Annual Participation	Average Electricity Savings (kWh)	Average Natural Gas Savings (therms)
Lighting Efficiency	22	677,795	0
Energy Design Assistance	1	333,603	21,453
Small Business Lighting	12	286,704	0
Energy Efficient Buildings	1	164,226	668
HVAC+R Efficiency	13	70,305	14,305

Where We Are Going

Energy Vision Statement

During the planning process, the Energy Action Team created a vision statement for this Energy Action Plan to guide the process and reflect the community's intentions.

Vision

Shoreview strives to be a leader on energy, the environment, and climate. This plan provides community-based actions and energy goals that offer opportunities to reduce fossil fuel use, save energy and money, and increase renewable energy to make the community more resilient and sustainable across all buildings and budgets.

Focus Areas

To achieve a community-wide commitment to energy stewardship, the Energy Action Team identified three focus areas and three themes to prioritize within each focus area.

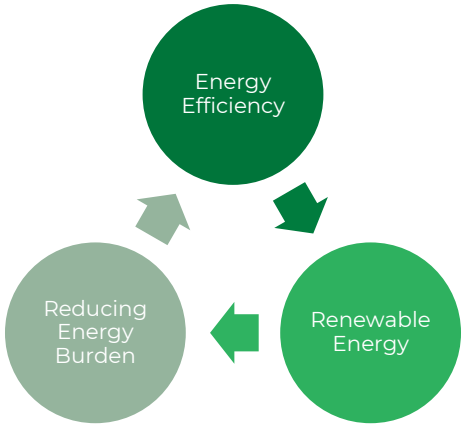
Residents | Business | Municipal

Residents
The residential focus area consists of reaching residents in Shoreview in private households, such as single-family homes, duplexes, and other housing units. This focus area includes reaching tenants of multi-family buildings.

Business
The business focus area consists of reaching business owners and leaders of commercial and industrial facilities, businesses, and other private and public organizations. Building examples include strip malls, office buildings, manufacturing, and schools. This focus area includes reaching owners of multi-family buildings.

Municipal
The municipal focus area consists of buildings owned by the City of Shoreview.

Themes
The team chose to organize the focus areas by audience, but felt it was important to highlight the type of energy actions used to engage these audiences. These themes run through each focus area and informed the development of strategies.



Energy Efficiency: We will help the Shoreview community save energy in homes and buildings through weatherization measures, equipment upgrades and behavior changes. Energy efficiency is conserving energy by using less energy to perform the same function through technology or behavior changes. For example, an energy efficient LED light bulb requires less energy than an incandescent light bulb to produce the same amount of light.

Renewable Energy: We will work to increase wind and solar energy used to power homes, businesses, and buildings in Shoreview. This can be done through subscription programs, community solar gardens, and on-site solar installations.

Reducing Energy Burden: High energy burden is defined by the American Council for an Energy-Efficient Economy (ACEEE) as spending more than 6% of your income on energy costs.[6] We will share programs and resources to help reduce the percentage of income spent on energy costs for low-income Shoreview community members.

[6] Source: https://www.aceee.org/energy-burden

Goals

The Energy Action Team set goals during the planning process by deciding which metrics were important to measure, reviewing the community's energy baseline data to discuss ambitions and feasibility, and constructing a timeline to achieve these goals.

Community-wide Goal

We will measure our success against the community-wide goal, which will guide the actions of this plan.

Our Goal

Shoreview will save 170,000 MMBtu by 2030. This will save the community $2.3 million through energy efficiency projects by 2030.

Shoreview will increase renewable energy participation 30% by 2030.

The total estimated energy savings of 170,000 MMBtu and cost savings of $2.3 million are calculated from the energy saved and costs avoided by participating in energy efficiency programs offered by Xcel Energy. The energy savings equate to saving 16.1 million kWh in electricity and 1.2 million therms in natural gas by 2030.

The impact of our community-wide goal will help our community achieve a reduction 12,500 $MTCO_2e$. It includes the greenhouse gas emissions avoided from both energy efficiency and renewable energy program participation in Shoreview and grid decarbonization by the utility. Shoreview's greenhouse gas avoidance is equivalent to removing 2,964 passenger vehicles from the road for a year or the carbon sequestered by 14,539 acres of U.S. forests in one year.[7]

Energy Action Plan Impact

To visualize the energy savings from the goal, *Figure 11* shows the business-as-usual scenario with the goal impact. The business-as-usual scenario shows what would happen in Shoreview if the city participation trends follow the same pattern as in years past. The navy-blue wedge shows the impact the Energy Action Plan would have on total energy savings in the community. As a result of energy savings, cost

[7] U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator, https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

savings would also accrue — these are shown in *Figure 12*, totaling $2.3 million by 2030. It is important to note that that these are the first-year cost savings of the energy efficiency improvements, rather than lifetime savings. We cannot guarantee what the energy savings will be in future years, but this calculation is the most conservative and we would expect lifetime energy savings to outpace this goal.

FIGURE 11. ENERGY SAVINGS FROM ENERGY ACTION PLAN IMPACT THROUGH 2030

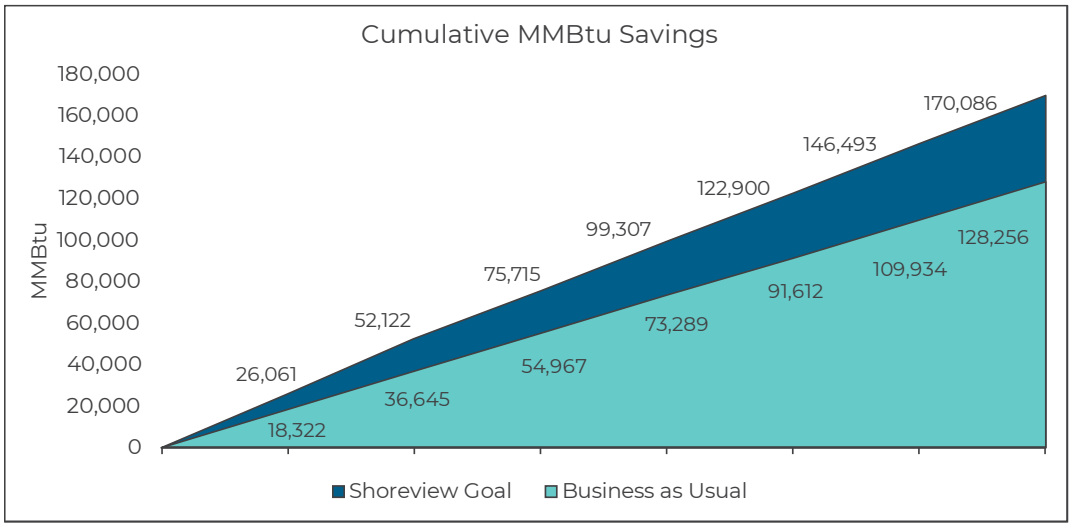
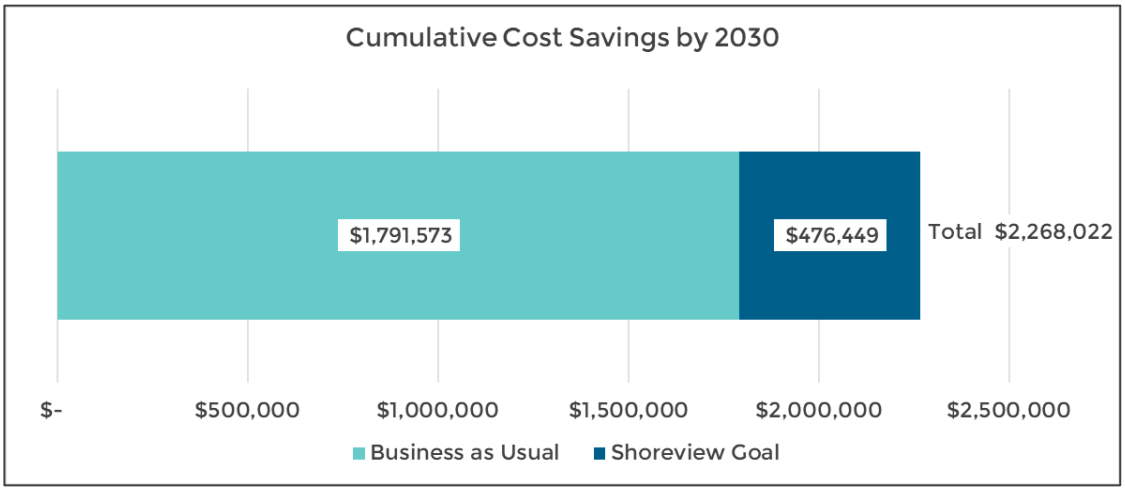
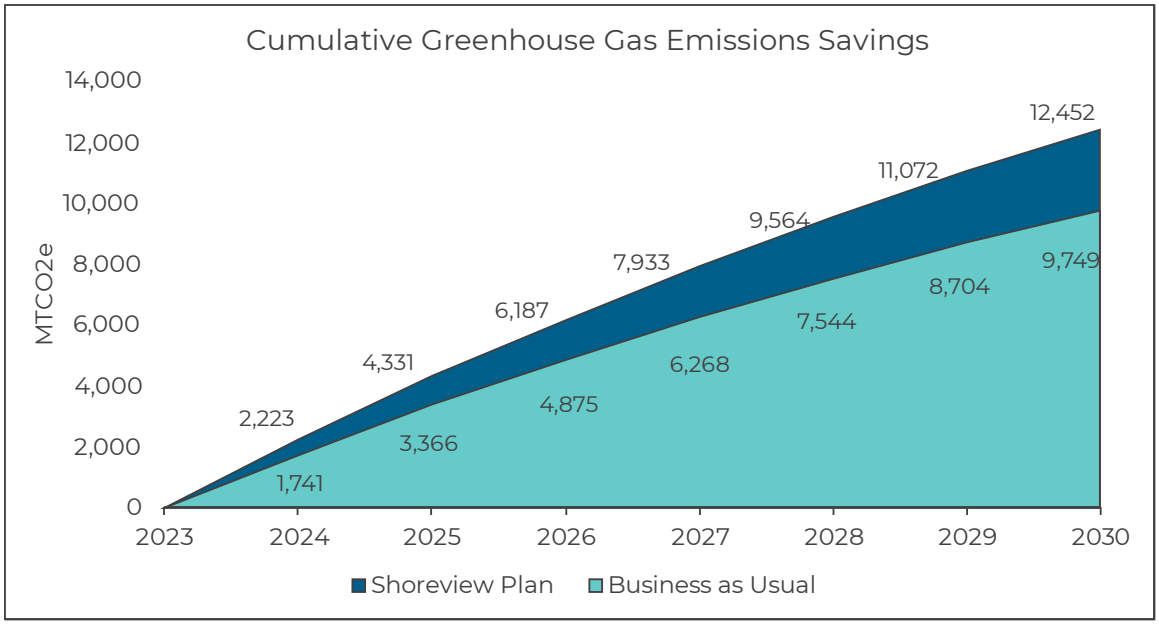


FIGURE 12. COST SAVINGS FROM ENERGY ACTION PLAN IMPACT BY 2030



Shoreview's goals will also impact energy-related greenhouse gas emissions. The plan will avoid an additional 28% of greenhouse gas emissions by the end of 2030 compared to business-as-usual. Greenhouse gas emissions savings are due to both avoided emissions attributable to participation in energy efficiency programs, as well as reduced emissions from renewable energy participation. Only renewable energy programs in which the customer retains the Renewable Energy Credit (REC) and total kWh can be measured[8] are included in *Figure 13* for the purpose of greenhouse gas emissions accounting.

FIGURE 13. GREENHOUSE GAS EMISSIONS SAVINGS FROM ENERGY ACTION PLAN IMPACT BY 2030



[8] While some customers who install on-site solar retain the RECs, the data is not available to estimate the total kWh due to behind-the-meter generation.

How We Are Going to Get There

Focus Area: Residents

Most Shoreview premises are residential, with 93% of the 12,771 premises representing households. (Figure 14) Residential premises account for 58% of total energy consumption and consume more natural gas than electricity. This presents a large opportunity for engagement in Shoreview's residential sector and will impact our energy savings goals.

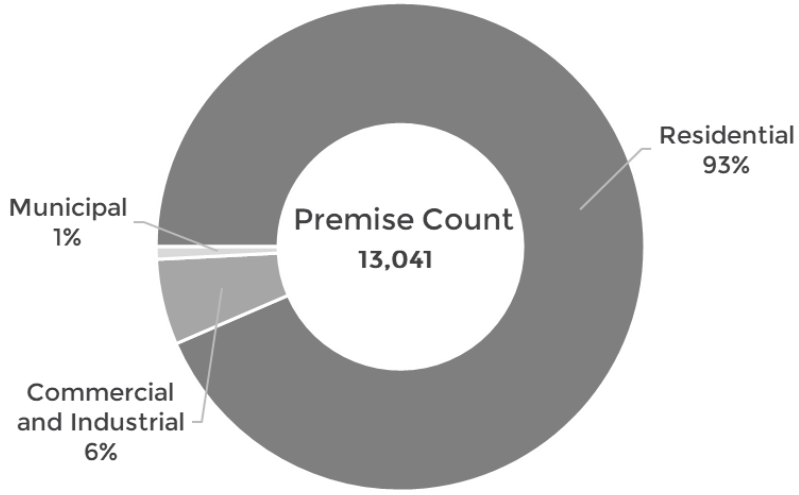
Shoreview had high participation in residential Xcel Energy programs in the baseline period, specifically in the residential HVAC rebate program. We will continue to promote that program, as it produces high energy and cost savings. The insulation rebate program provides the highest dollar savings per participant, so that will be promoted as an opportunity to reduce energy use and save money. The Home Energy Squad® program will be promoted as the first step a resident should take to understand how their home uses energy and identify the best projects to pursue.

It is important to not only reach residents who can afford energy efficient equipment upgrades and projects, but to also focus on residents in Shoreview who may not have access to resources. Reducing energy burden for households that pay a higher portion of their income on energy costs is a priority. Taking advantage of the federal tax credits and rebates from the Inflation Reduction Act will help lower the cost of energy efficiency projects. By sharing energy assistance resources and free income-qualified programs, this plan will improve individual lives, while also reducing energy use community-wide.

There are also strategies in this focus area that include encouraging residents to support renewable energy to help the environment and lower greenhouse gas

emissions. Residents can install on-site solar on their homes, making solar panels a visible social norm and a reminder of the importance of solar in the community. Renewable subscription programs are available to both renters and homeowners and enable the support of renewable energy without the need to install equipment on-site.

FIGURE 14. SHOREVIEW PREMISE COUNTS BY SECTOR



Strategy 1: Create a resource hub for residents to access energy information.

Actions	Resources/Partners
1A: Share energy resources including utility programs, behavior change tips, and success stories. Make sure getting an energy audit is the first step.	➢ City communications ➢ Utility programs ➢ IRA funding ➢ CERTs
1B: Share financial assistance opportunities like rebates, loans, grants, and tax incentives to help residents complete projects.	
Timeline: Within 6 months	

Strategy 2: Perform outreach and education to support people experiencing high energy burden.

Actions	Resources/Partners
2A: Create materials and communications to educate residents about energy assistance, income-qualified programs, and options for upgrading equipment before emergency replacement scenarios.	➢ Senior centers ➢ Cable TV ➢ Multifamily building owners and property managers ➢ Ralph Reeder Food Shelf ➢ Mounds View Schools ➢ Ramsey County CAP ➢ Faith communities ➢ Library ➢ Meals on Wheels
2B: Use Partners in Energy mapping tools to identify areas of the city with residents experiencing high energy burden, and mail materials with energy resources and opportunities.	
2C: Partner with community organizations as a trusted source to share energy information to their networks through joint communications and events.	
Timeline: 6–12 months	

Strategy 3: Create outreach campaigns for residents to support renewable energy.

Actions	Resources/Partners
3A: Create materials and communications that convey the benefits of supporting renewable energy through subscription programs or on-site installations. Share information about the reliability of renewable technologies and the benefits of visible renewable energy projects.	➢ Events: farmers markets, Nite to Unite, Slice of Shoreview, summer concerts ➢ Community Center ➢ School District ➢ Faith communities ➢ EQC
3B: Display pamphlets and flyers at Shoreview Community Center for residents to take home.	
3C: Partner with community organizations and schools as trusted messengers to share energy information with their networks.	
3D: Provide presentations to teach residents about renewable energy opportunities.	
3E: Exhibit at events to provide education, resources, and incentives to engage in renewable energy programs.	
Timeline: 12–18 months	

Strategy 4: Create outreach and education campaigns to raise awareness among residents to increase energy efficiency.

Actions	Resources/Partners
4A: Create materials and communications that share utility programs, resources, and opportunities for energy efficiency. Share success stories about the cost savings benefits, increased property value, and environmental impact.	➢ Events: farmers markets, Nite to Unite, Slice of Shoreview, summer concerts ➢ STEM school programs ➢ Community Center ➢ Multifamily building owners and property managers ➢ Homeowners Associations ➢ Library
4B: Use neighbors as trusted messengers to relay new information and create a neighborhood energy recognition campaign.	
4C: Partner with community organizations and schools as a trusted source of energy information for their networks.	
4D: Display pamphlets and flyers at Shoreview Community Center for residents to take home.	
4E: Provide presentations to residents about energy efficiency opportunities.	
4F: Exhibit at events to provide education, resources, and incentives to engage in energy efficiency.	
Timeline: 6-12 months	

Focus Area: Business

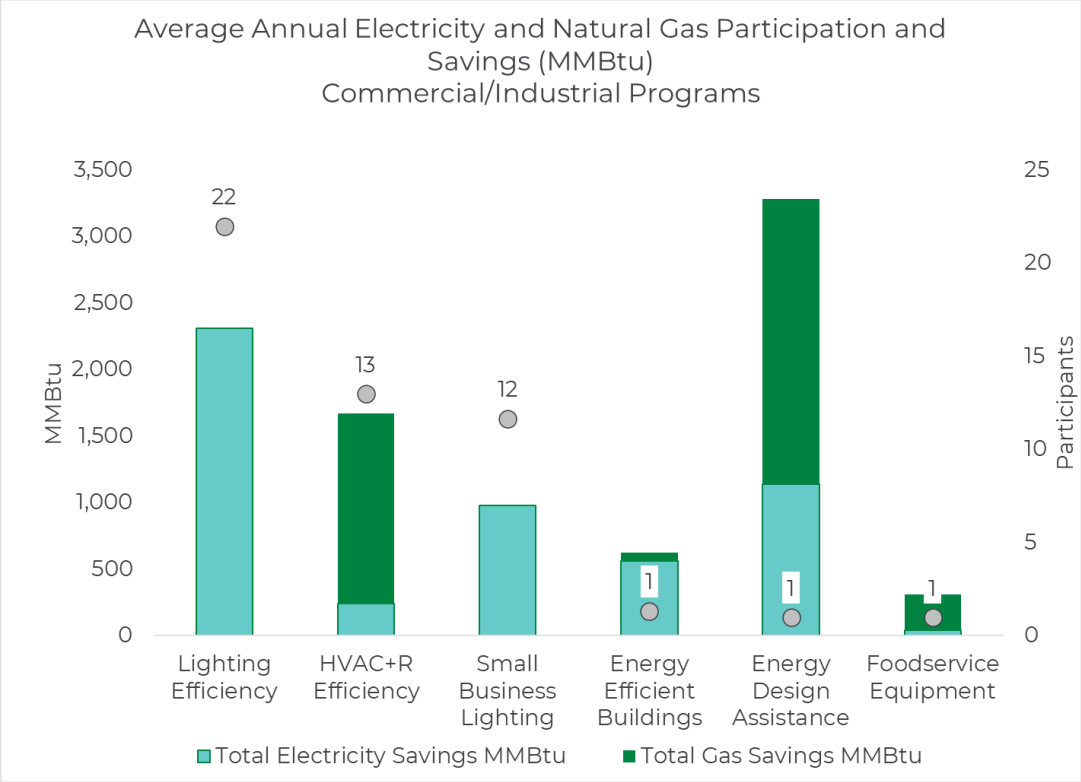
The business sector in Shoreview spends $16 million per year on energy costs. Saving businesses energy will help reduce energy costs and boost their bottom line. They can take those dollars saved and reinvest them back into their business, which can then benefit the community.

Xcel Energy programs are available for businesses to help increase their energy efficiency. Programs like Lighting Efficiency and Small Business Lighting have high electricity savings and HVAC+R Efficiency has high natural gas savings (Figure 15). When performing outreach to businesses, the messaging will include the significant potential return on investment for a business if they complete energy efficiency projects. Lighting projects can be a good entry point for a business to act.

We also want to reduce high energy burden for businesses, nonprofits, and multi-family buildings serving low-income community members. There are Xcel Energy programs that can support these specific groups depending on qualifications, and we will focus our efforts on promoting the program benefits to this audience.

Many businesses in Shoreview value sustainability. Taking action to improve energy use can attract new customers, retain existing customers, and spur investment. Supporting renewable energy can help businesses reach their sustainability goals, whether that is installing on-site solar or subscribing to a program. Shoreview already has a sustainable recognition program called the Green Community Awards. We will encourage businesses to share their sustainable energy actions as part of the Green Community Awards, highlighting them as energy champions to ignite further participation. This will show the public that the business community is increasingly aware of and concerned about environmental impacts.

FIGURE 15. SHOREVIEW COMMERCIAL AND INDUSTRIAL PROGRAM PARTICIPATION AND ENERGY SAVINGS IN AN AVERAGE YEAR



Strategy 5: Create resource hub for businesses to access energy information.	
Actions	**Resources/Partners**
5A: Share business energy resources, including financial resources like state and federal incentives, rebates, grants, loans, and tax incentives for businesses to complete energy efficiency and renewable energy projects.	➢ City communications ➢ Economic Development Commission ➢ IRA funding ➢ Utility programs
Timeline: Within 6 months	

Strategy 6: Create communications and outreach campaigns to share energy resources with businesses.	
Actions	**Resources/Partners**
6A: Create a schedule of energy topics for City communication channels and guidelines targeted for specific business types.	➢ Economic Development Commission ➢ St. Paul Area Chamber of Commerce ➢ Twin Cities North Chamber of Commerce ➢ St. Odilia Church ➢ Facilities managers group ➢ Rotary ➢ Wells Fargo
6B: Partner with local business groups to promote energy information, resources, and programs on joint communication channels.	
6C: Share renewable energy opportunities through a campaign by sharing environmental impacts and how it can help reach sustainability goals.	
Timeline: 6–12 months	

Strategy 7: Perform targeted outreach to small and medium-sized businesses to increase energy efficiency.

Actions	Resources/Partners
7A: Create a digital survey for local businesses to help understand business energy priorities.	➢ City communications ➢ Economic Development Commission ➢ St. Paul Area Chamber of Commerce ➢ Twin Cities North Chamber of Commerce ➢ Rotary ➢ Energy Smart, One-Stop Efficiency Shop
7B: Create a step-by-step process for businesses with competing initiatives to make energy efficiency an easy choice. Connect energy efficiency actions to bigger picture, including climate and how customers value sustainability.	
7C: Use local media channels to communicate key messages to businesses.	
7D: Promote energy audits through a door-to-door campaign to help businesses understand opportunities, potential cost savings from completing projects, and available rebates and incentives.	
Timeline: 6-12 months	

Strategy 8: Share success stories of business energy champions and encourage them to apply for the Green Community Awards.

Actions	Resources/Partners
8A: Promote the Green Community Awards program to businesses and nonprofits and encourage them to apply. Highlight the opportunity for businesses to be recognized as energy champions.	➢ City communications ➢ Economic Development Commission ➢ Kowalski's Market ➢ Churchill Street ➢ Mounds View Schools
8B: Identify and feature business case studies to spark more participation.	
8C: Create recognition materials to display on-site at a business.	
8D: Explore option of adding a prize for award recipients.	
Timeline: 6–12 months	

Strategy 9: Explore updating City policies to support business energy projects.	
Actions	**Resources/Partners**
9A: Evaluate City policies such as zoning, regulations, City grants and financing options to remove barriers or incentivize businesses to complete energy projects.	➢ Planning Commission ➢ City Council ➢ Utility programs
9B: Create an information packet about energy efficiency opportunities and programs for remodeling projects and connect new developments to Xcel Energy programs.	
Timeline: 12–18 months	

Focus Area: Municipal

The City of Shoreview has already made great strides in energy initiatives for municipal buildings and properties. City park lighting has been converted to LEDs and streetlights are in the process of being completely converted to LEDs. There have been installations of smart thermostats and smart irrigation controllers in park buildings. Solar panels were installed on the city's maintenance center in 2020, which is also a LEED Gold certified building. The city installed two level 2 EV charging stations in the community center parking lot in 2020 and completed an EV fleet analysis.

This focus area seeks to demonstrate the city's leadership on energy for the community by sharing the actions the city has taken to increase energy efficiency and renewable energy. We will focus on telling the story of municipal energy initiatives as motivation for the community to engage in energy opportunities. We will also continue to ensure that energy is included in budget planning, to sustain municipal projects into the future.

Strategy 10: Plan for sustainable integration of energy projects in municipal buildings by pursuing dedicated resources and financial planning to last into the future.	
Actions	**Resources/Partners**
10A: Research the cost and maintenance of energy projects to make informed decisions on what will work best. Learn best practices from other communities.	➢ City Council ➢ Metro area communities

10B: Build energy projects into Capital Improvement Planning. Educate groups (e.g., City Council) that will be needed for buy-in and share the long-term cost savings.	➢ Utility programs
10C: Consider incorporating energy elements into any new building planning or renovations at the time of design by creating awareness within City departments about programs. Incorporate energy projects into existing building renovations or retrofits.	
Timeline: 6–12 months	

Strategy 11: Engage in programs to increase energy efficiency in municipal buildings and complete energy projects.

Actions	Resources/Partners
11A: Encourage energy assessments as a first step to understand opportunities and ensure a good return on investment.	➢ City departmental staff ➢ City Council ➢ State agencies to support benchmarking
11B: Explore benchmarking municipal buildings to understand energy use and opportunities.	
11C: Incorporate energy efficiency measures into new construction.	
11D: Educate staff about energy opportunities and refine cross-department resource sharing.	
Timeline: 12–18 months	

Strategy 12: Strive to be a leader in the community by sharing what the City has accomplished and educate others about the importance of energy efficiency and renewable energy.

Actions	Resources/Partners
12A: Share examples of projects and their energy and cost savings on City website, social media, and newsletters. Share an annual high-level summary of savings in municipal buildings and associated benefits.	➢ City communications ➢ Community Center monitors
12B: Continue investing in updating public buildings and spaces to increase efficiency and sustainability for the public's benefit.	
Timeline: Within 6 months	

How We Stay On Course

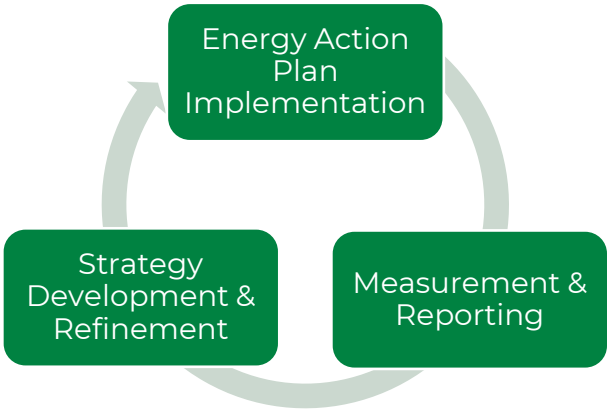
This Energy Action Plan is a living document. Goals and strategies will be assessed and refined as needed based on data and community staff capacity.

Data and Reporting

Partners in Energy will provide biannual progress reports with metrics of success and overall progress toward goals for Xcel Energy rebates and programs. These reports will be available publicly and shared with both the community and Energy Action Team.

If available, ad hoc participation reports for specific Xcel Energy programs (e.g., Home Energy Squad) can be provided to measure success of campaigns and to determine if we need to change course.

FIGURE 16. ACTIONS AND TRACKING



Project Management and Tracking

Partners in Energy will host regular project management check-in calls with staff for the first 18 months of implementation to ensure we stay on course to achieve our strategies. Partners in Energy will also support outreach to the Energy Action Team and community connectors to facilitate strategy implementation. At the

implementation midpoint, we will convene to assess progress toward goals and discuss strategy refinement.

Roles and Responsibilities

Implementing the strategies outlined in this plan will require leadership and collaboration among the City of Shoreview, members of the Energy Action Team, community representatives, and Xcel Energy.

City of Shoreview

The City of Shoreview will provide a primary point of contact for implementation and will assign staff to attend regular project management check-ins. The city commits to leverage existing communication channels and community connections to promote the Energy Action Plan. In addition, the City of Shoreview will lead strategies specific to city-owned buildings.

Energy Action Team

The Energy Action Team formed to create this plan will support implementation by serving as ambassadors to their networks, promoting Shoreview's energy vision, encouraging participation in programs and outreach campaigns, and sharing success stories. When relevant, members will serve as partners in implementing strategies. Energy Action Team members may be invited to project management calls or other check-in meetings to ensure strategies are implemented successfully.

Xcel Energy

Xcel Energy will provide data reporting, project management, marketing and communications support, and program expertise for the first 18 months of implementation. Xcel Energy will also provide a dedicated community facilitator to serve as a primary point of contact. Partners in Energy digital resources including webinars, community portal and community events will be available to the Shoreview team. After the first 18 months of implementation, Xcel Energy will continue to provide ad hoc support and data to Shoreview.

Appendix 1: Implementation Work Plan

This appendix gives additional detail for each strategy, including the lead and timeline. This appendix will serve as a work plan for the City of Shoreview and Partners in Energy.

Focus Area: Residents									
Strategy	Tactics	Lead	Support	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026 and beyond
Strategy 1: Create a resource hub for residents to access energy information.	1A: Share energy resources including utility programs, behavior change tips, and success stories. Make sure getting an energy audit is the first step.	PiE	City						
	1B: Share financial assistance opportunities like rebates, loans, grants, and tax incentives to help residents complete projects.	PiE	City						
Strategy 2: Perform outreach and education to support people experiencing high energy burden.	2A: Create materials and communications to educate residents about energy assistance, income-qualified programs, and options for upgrading equipment before emergency replacement scenarios.	PiE	City						
	2B: Use Partners in Energy mapping tools to identify areas of the city with residents experiencing high energy burden and mail materials with energy resources and opportunities.	PiE	City						
	2C: Partner with community organizations as a trusted source to share energy information to their networks through joint communications and events.	City	PiE						
Strategy 3: Create outreach campaigns for residents to support renewable energy.	3A: Create materials and communications that convey the benefits of supporting renewable energy through subscription programs or on-site installations.	PiE	City						

	3B: Display pamphlets and flyers at Shoreview Community Center for residents to take home.	City	PiE						
	3C: Partner with community organizations and schools as trusted messengers to share energy information with their networks.	City	PiE						
	3D: Provide presentations to teach residents about renewable energy opportunities.	PiE	City						
	3E: Exhibit at events to provide education, resources, and incentives to engage in renewable energy programs.	City	PiE						
Strategy 4: Create outreach and education campaigns to raise awareness among residents to increase energy efficiency.	4A: Create materials and communications that share utility programs, resources, and opportunities for energy efficiency. Share success stories about the cost savings benefits, increased property value, and environmental impact.	PiE	City						
	4B: Use neighbors as trusted messengers to relay new information and create a neighborhood energy recognition campaign.	City	PiE						
	4C: Partner with community organizations and schools as a trusted source of energy information for their networks.	City	PiE						
	4D: Display pamphlets and flyers at Shoreview Community Center for residents to take home.	City	PiE						
	4E: Provide local seminars and classes to residents about energy efficiency opportunities.	PiE	City						
	4F: Exhibit at events to provide education, resources, and incentives to engage in energy efficiency.	City	PiE						

Focus Area: Business

Strategy	Tactics	Lead	Support	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026 and beyond
Strategy 5: Create resource hub for businesses to access energy information.	5A: Share business energy resources, including financial resources like state and federal incentives, rebates, grants, loans, and tax incentives for businesses to complete energy efficiency and renewable energy projects.	PiE	City						
Strategy 6: Create communications and outreach campaigns to share energy resources with businesses.	6A: Create a schedule of energy topics for City communication channels and guidelines targeted for specific business types.	PiE	City						
	6B: Partner with local business groups to promote energy information, resources, and programs on joint communication channels.	City	PiE						
	6C: Share renewable energy opportunities through a campaign by sharing environmental impacts and how it can help reach sustainability goals.	PiE	City						
Strategy 7: Perform targeted outreach to small and medium-sized businesses to increase energy efficiency.	7A: Create a digital survey for local businesses to help understand business energy priorities.	PiE	City						
	7B: Create a step-by-step process for businesses with competing initiatives to make energy efficiency an easy choice. Connect energy efficiency actions to bigger picture, including climate and how customers value sustainability.	PiE	City						

	7C: Use local media channels to communicate key messages to businesses.	City	PiE						
	7D: Promote energy audits through a door-to-door campaign to help businesses understand opportunities, potential cost savings from completing projects, and available rebates and incentives.	PiE	City						
Strategy 8: Share success stories of business energy champions and encourage them to apply for the Green Community Awards.	8A: Target outreach of Green Community Awards program to businesses and nonprofits and encourage them to apply. Highlight the opportunity for businesses to be recognized as energy champions.	PiE	City						
	8B: Identify and feature business case studies to spark more participation.	City	PiE						
	8C: Create recognition materials to display on-site at a business.	PiE	City						
	8D: Explore option of adding a prize for award recipients.	PiE	City						
Strategy 9: Explore updating City policies to support business energy projects.	9A: Evaluate City policies such as zoning, regulations, City grants and financing options to remove barriers or incentivize businesses to complete energy projects.	City	PiE						
	9B: Create an information packet about energy efficiency opportunities and programs for remodeling projects and connect new developments to Xcel Energy programs.	PiE	City						

Focus Area: Municipal

Strategy	Tactics	Lead	Support	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025	Q1 2026 and beyond
Strategy 10: Plan for sustainable integration of energy projects in municipal buildings by pursuing dedicated resources and financial planning to last into the future.	10A: Research the cost and maintenance of energy projects to make informed decisions on what will work best. Learn best practices from other communities.	City	PiE						
	10B: Build energy projects into Capital Improvement Planning. Educate groups (e.g., City Council) that will be needed for buy-in and share the long-term cost savings.	City	PiE						
	10C: Consider incorporating energy elements into any new building planning or renovations at the time of design by creating awareness within City departments about programs.	City	PiE						
Strategy 11: Engage in programs to increase energy efficiency in municipal buildings and complete energy projects.	11A: Encourage energy assessments as a first step to understand opportunities and ensure a good return on investment.	PiE	City						
	11B: Explore benchmarking municipal buildings to understand energy use and opportunities.	City	PiE						
	11C: Incorporate energy efficiency measures into new construction.	City	PiE						
	11D: Educate staff about energy opportunities and refine cross-department resource sharing.	PiE	City						
Strategy 12: Strive to be a leader in the community by sharing what the City has accomplished and educate others about the	12A: Share examples of projects and their energy and cost savings on City website, social media, and newsletters. Share an annual high-level summary of savings in municipal buildings and associated benefits. Share an annual high-level summary of	City	PiE						

importance of energy efficiency and renewable energy.	savings in municipal buildings and associated benefits.								
	12B: Continue investing in updating public buildings and spaces to increase efficiency and sustainability for the public's benefit.	City	PiE						

Appendix 2: Baseline Energy Analysis

Data was provided by Xcel Energy for all Shoreview premises for 2020–2022. Xcel Energy provides electric and natural gas service to the community. The data helped the Energy Action Team understand Shoreview's energy use and opportunities for energy conservation and renewable energy. Data included in this section establishes a baseline against which progress toward goals will be compared in the future.

Electricity and Natural Gas Premises

Most Shoreview premises are residential. Of the 13,041 distinct premises in Shoreview in 2022, 93.5% (12,195) are residential, 5.7% (704) are commercial and industrial, and the remaining 0.8% are municipal buildings (106).

TABLE 7. PREMISE COUNTS BY SECTOR, 2020–2022

Sector	2020	2021	2022	Average
Residential	11,714	11,927	12,195	11,945
Commercial & Industrial	734	738	740	737
Municipal	107	106	106	106
Total	**12,555**	**12,771**	**13,041**	**12,789**

Electricity and Natural Gas Consumption and Trends by Sector

On average, the Shoreview community consumes 228 million kWh of electricity and 12.1 million therms of natural gas across all sectors per year. Total energy consumption increased by 7.1% over the baseline period, which can be attributed to an increase of 10.4% in natural gas consumption and a more modest increase of 2% in electricity consumption.

TABLE 8. ANNUAL ENERGY CONSUMPTION BY SECTOR AND FUEL TYPE, 2020–2022

Fuel Type	Sector	2020	2021	2022	Average
Electricity (kWh)	Residential	86,924,854	88,996,417	86,029,185	87,316,819
	Commercial & Industrial	133,292,770	135,024,801	138,069,005	135,462,192
	Municipal	4,553,230	4,995,307	5,126,447	4,891,661
	Total	224,770,854	229,016,525	229,224,637	227,670,672
Natural Gas (therm)	Residential	8,455,522	8,039,613	9,121,450	8,538,862
	Commercial & Industrial	3,277,052	3,133,911	3,775,452	3,395,472
	Municipal	154,019	166,635	221,225	180,626
	Total	11,886,593	11,340,159	13,118,127	12,114,960
Total (MMBtu)	Residential	1,142,140	1,107,617	1,205,677	1,151,811
	Commercial & Industrial	782,500	774,096	848,637	801,744
	Municipal	30,938	33,707	39,614	34,753
	Total	1,955,577	1,915,420	2,093,927	1,988,308

Total energy consumption during the baseline period varied consistently in each sector with variation in weather. Hotter summers (those with more cooling degree days) and colder winters (those with more heating degree days) had higher energy consumption. For example, of the three years considered, Shoreview's natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

TABLE 9. COOLING DEGREE AND HEATING DEGREE DAYS, 2020–2022

	2020	2021	2022
Cooling Degree Days	950	1,184	1,049
Heating Degree Days	7,128	6,678	7,812

Greenhouse Gas Emissions and Trends

Shoreview's overall greenhouse gas emissions increased from 2020–2022, growing by 7%. To calculate Shoreview energy-related emissions, preliminary and certified emissions factors from Xcel Energy's Upper Midwest Fuel Mix, and a standard emissions factor for natural gas emissions were used. As Xcel Energy completes third-party verification, the emissions factors used during the planning process to estimate greenhouse gas emissions (Table 11) may change slightly.

TABLE 10. ENERGY-RELATED GREENHOUSE GAS EMISSIONS IN MTCO2E, 2020–2022

Fuel Type	Sector	2020	2021	2022	Average
Electricity	Residential	23,736	25,473	23,882	24,364
	Commercial & Industrial	36,398	38,647	38,328	37,791
	Municipal	1,243	1,430	1,423	1,365
	Total	61,377	65,549	63,633	63,520
Natural Gas	Residential	44,874	42,667	48,408	45,317
	Commercial & Industrial	17,392	16,632	20,037	18,020
	Municipal	817	884	1,174	959
	Total	63,083	60,183	69,619	64,295
Total	Residential	68,610	68,140	72,290	69,680
	Commercial & Industrial	53,789	55,279	58,365	55,811
	Municipal	2,061	2,314	2,597	2,324
Total		**124,460**	**125,732**	**133,252**	**127,815**

TABLE 11. EMISSIONS FACTORS USED TO CALCULATE ENERGY-RELATED GREENHOUSE GAS EMISSIONS, 2020–2022[9]

Fuel Type	2020	2021	2022
Electricity Emissions Factor (lbs/MWh)	602	631	612
Natural Gas Emissions Factor (MTCO2e/Dth)	0.05307	0.05307	0.05307

Energy Costs

In total, Shoreview premises spent an annual average of $34.9 million on energy during the baseline period. Shoreview residential premises made up over half that spending ($18.1 million or 52%), while commercial and industrial premises made up most of the other half. A small fraction of the spending was from municipal premises. Residential premises spent an annual average of $1,517 per premise on fuel costs. Commercial premises spent much more per premise on energy with an annual average of $21,769 per premise.

[9] Xcel Energy 2022. Carbon Dioxide Emission Intensities.

TABLE 12. ANNUAL ENERGY COSTS BY SECTOR AND FUEL TYPE, 2020–2022

Fuel Type	Sector	2020	2021	2022	Average	Average Annual Cost Per Premise
Electricity	Residential	$11,141,724	$11,467,658	$12,325,641	$11,645,008	$975
	Commercial & Industrial	$11,978,059	$13,352,237	$15,840,145	$13,723,480	$18,612
	Municipal	$455,925	$546,851	$634,657	$545,811	$5,133
	Total	$23,575,708	$25,366,746	$28,800,443	$25,914,299	
Natural Gas	Residential	$4,749,974	$5,394,944	$9,298,909	$6,481,276	$543
	Commercial & Industrial	$1,544,336	$1,822,539	$3,614,656	$2,327,177	$3,156
	Municipal	$75,286	$98,003	$218,841	$130,710	$1,229
	Total	$6,369,596	$7,315,486	$13,132,406	$8,939,163	
Total	Residential	$15,891,698	$16,862,602	$21,624,550	$18,126,283	$1,517
	Commercial & Industrial	$13,522,395	$15,174,776	$19,454,801	$16,050,657	$21,769
	Municipal	$531,211	$644,854	$853,498	$676,521	$6,362
Total		**$29,945,304**	**$32,682,232**	**$41,932,849**	**$34,853,462**	

Energy Burden

Energy burden is the percentage of income that residents spend on energy. Shoreview residents who own their homes and make 30% or less of the median area income spend up to 13% of their income on energy costs. This group makes up 446 households, 4% of the total households. Notably, energy burden is higher across almost every income group for homeowners rather than renters.

TABLE 13. ENERGY BURDEN BY UNIT OCCUPANCY AND MEDIAN INCOME[10]

	Energy Burden		Household Count	
Percent of Area Median Income	Own	Rent	Own	Rent
0–30%	13%	4%	446	285
30–60%	4%	3%	1,054	515
60–80%	3%	1%	683	212
80–100%	2%	1%	1,266	283
100%+	1%	1%	6,238	396
Total	**2%**	**2%**	**9,687**	**1,691**

[10] Source: Department of Energy Low-Income Energy Affordability Data Tool.

Program Participation and Savings

Shoreview already has a significant number of participants in energy efficiency programs from Xcel Energy, resulting in energy savings for residents and commercial customers. While fewer commercial and industrial premises participated during the baseline period, their participation resulted in larger electricity savings per premise — residential premises accrued more natural gas savings over this time. In total, participation in these commercial programs saved an annual average of 1,595,271 kWh and 39,125 therms, while participation in residential programs saved an annual average of 308,507kWh and 82,284 therms.

TABLE 14. ANNUAL RESIDENTIAL SECTOR EFFICIENCY PROGRAM PARTICIPATION AND SAVINGS, 2020–2022

Residential Sector Programs	2020			2021			2022		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Efficient New Home Construction	6	6,324	2,278	8	8,986	2,840	5	16,506	2,020
Home Energy Audit	11	-	-	37	-	-	66	-	-
Home Energy Savings Program	9	5,758	122	4	3,556	107	4	2,149	333
Home Energy Squad	17	15,349	798	26	19,766	891	45	28,889	1,539
HomeSmart	92	-	-	73	-	-	70	-	-
Insulation Rebate	43	7,443	14,146	45	6,057	13,039	25	1,962	5,269
Low-Income Home Energy Squad	3	2,751	223	8	5,358	428	6	3,810	291
Refrigerator Recycling	82	58,800	-	66	46,774	-	52	53,677	-
Residential Heating and Cooling	696	318,312	45,831	689	188,383	73,474	519	101,587	71,218
Residential Saver's Switch	314	636	-	129	149	-	379	385	-
Smart Thermostat	23	2,797	1,470	227	12,393	6,815	227	4,346	1,705
Whole Home Efficiency	2	2,212	667	1	190	615	1	217	732
Total	**1,298**	**420,382**	**65,535**	**1,313**	**291,612**	**98,209**	**1,399**	**213,528**	**83,107**

TABLE 15. ANNUAL COMMERCIAL/INDUSTRIAL SECTOR EFFICIENCY PROGRAM PARTICIPATION AND SAVINGS, 2020–2022

Commercial Sector Programs	2020			2021			2022		
	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)	Count	Savings (kWh)	Savings (therms)
Custom Efficiency	1	79,094	0	0	0	0	1	34,828	0
Data Center Efficiency	0	0	0	0	0	0	1	3,975	0
Electric Rate Savings	1	-2,301	-	0	0	-	0	0	-
Energy Design Assistance	0	0	0	0	0	0	3	1,000,809	64,360
Energy Efficient Buildings	0	0	0	0	0	0	4	492,677	2,003
Fluid System Optimization	1	0	-	1	1,682	-	1	35,526	-
Foodservice Equipment	0	0	0	1	0	675	2	35,018	7,422
HVAC+R Efficiency	3	354	1,244	15	71,713	11,518	21	138,848	30,154
Lighting Efficiency	20	589,946	-	31	1,102,226	-	15	341,213	-
Multi-Family Building Efficiency	0	0	0	1	0	0	0	0	0
Recommissioning	0	0	0	0	0	0	2	0	0
Saver's Switch for Business	5	16	-	9	74	-	1	2	-
Small Business Lighting	9	157,712	0	18	426,053	0	8	276,348	0
Turn Key Services	0	-	-	2	-	-	2	-	-
Total	**40**	**824,821**	**1,244**	**78**	**1,601,748**	**12,193**	**61**	**2,359,244**	**103,939**

Renewable Energy Support

There is support for renewable energy in Shoreview with 929 residential premises and 10 commercial/industrial premises subscribing to Xcel Energy renewable programs. These premises respectively receive a total of 3.4 million kWh and 328,000 kWh of their electricity from renewable sources. Furthermore, 113 residential premises and 11 commercial premises have on-site solar generation.

TABLE 16. XCEL ENERGY SUBSCRIPTION RENEWABLE ENERGY PROGRAM SUPPORT, 2022

Windsource® & Renewable*Connect Flex® (Windsource® is now Renewable*Connect Flex®)	Residential	Commercial & Industrial
Subscriber Count	780	7
Total Annual Electricity Subscribed (kWh)	2,817,918	241,315
Community Solar Gardens – Solar*Rewards® Community		
Subscriber Count	149	3
Total Annual Electricity Subscribed (kWh)	575,395	87,131
Total Xcel Energy Subscription Renewable Energy Support		
Subscriber Count	929	10
Total Annual Electricity Subscribed (kWh)	3,393,313	328,446
Percent of Sector Xcel Energy Electricity Use	3.9%	0.2%

TABLE 17. XCEL ENERGY ON-SITE SOLAR PROGRAM SUPPORT, 2022[11]

On-site Solar – Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial
Participant Count	113	11
Total Electricity Capacity (kW)	882	963

[11] Source: Xcel Energy Community Energy Report for Shoreview, 2022.

Appendix 3: Methodology for Measuring Success

As part of implementation support, Partners in Energy will provide biannual progress reports for Xcel Energy participation and savings data for Shoreview. All goals will be measured against Shoreview's business-as-usual (BAU) scenario, which averages data from the three-year baseline of 2020–2022 data unless otherwise noted.

Community-wide Goal

Shoreview will save 170,000 MMBtu by 2030, which equates to 16 million kWh and 1.2 million therms. This will save the community an estimated $2.3 million through energy efficiency projects by 2030. Shoreview will increase renewable energy participation 30% by 2030.

Focus Area Goals

Residents Focus Area Targets

Energy Efficiency

- Engage 1,939 residents annually in programs
- Save 13,157 MMBtu annually

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from July 2024 through December 2030. *Table 18* identifies annual program participation targets to meet this goal. These targets are based on current Xcel Energy programs. If Xcel Energy offers new programs for residents, they will be included in this calculation at the discretion of the City of Shoreview and Partners in Energy.

TABLE 18. RESIDENTIAL ENERGY EFFICIENCY ANNUAL PROGRAM PARTICIPATION AND ENERGY SAVINGS TARGETS

Xcel Energy Residential Programs	Annual Business as Usual Participation	Annual Participation Target	Annual Electricity Savings (MMBtu)	Annual Natural Gas Savings (MMBtu)	Total Annual Energy Savings (MMBtu)[12]
Efficient New Home Construction	6	6	36	238	274
Home Energy Audit	38	67	-	-	-
Home Energy Savings Program	7	12	28	40	69
Home Energy Squad	29	51	127	188	316
Insulation Rebate	38	66	31	1,893	1,924
Low-Income Home Energy Squad	6	10	24	55	79
Residential Heating and Cooling Rollup[13]	635	850	927	8,505	9,432
Refrigerator Recycling	67	117	317	-	317
Residential Saver's Switch	274	480	2	-	2
Smart Thermostat	159	278	39	583	622
Whole Home Efficiency	1	2	5	117	123
Total	**1,260**	**1,939**	**1,536**	**11,621**	**13,157**

[12] The sum of annual electricity and natural gas savings measured in MMBtu might not add up to total annual energy savings due to rounding.
[13] Xcel Energy filed a new DSM plan in 2021, which resulted in some programs being reorganized and renamed. This group includes Residential Cooling, Residential Heating, Residential Heating and Cooling, and Water Heater Rebate.

Renewable Energy

- **Goal:** Participation grows annually by 4% for residents.
- **Annual Target:** Add 39 new residential participants annually.
- **2030 Target:** Add 271 new residential participants by 2030

This goal will measure program participation by residents in Xcel Energy's renewable subscription programs. The programs currently offered by Xcel Energy are Renewable*Connect Flex, Solar*Rewards Community, Solar*Rewards, and Net Metering. Annual participation targets by program are shown in *Table 19*. By 2030, the cumulative renewable energy participation target is an additional 271 residents over the 2022 baseline.

TABLE 19. ANNUAL PARTICIPATION INCREASES IN XCEL ENERGY RENEWABLE ENERGY PROGRAMS

Renewable Energy Program	Annual Participation Increase
Renewable*Connect Flex	30
Solar*Rewards Community	4
On-site Solar[14]	5
Total	**39**

Business and Municipal Focus Area Targets

Energy Efficiency

- Engage 93 participants annually 2024–2026
- Engage 68 participants annually 2026–2030

Data used to measure progress for business and municipal focus areas is taken from program participation in the commercial and industrial sector. Businesses and the City of Shoreview can take advantage of Xcel Energy programs to increase energy efficiency in their buildings. Program participation for both focus areas is combined to measure progress toward goals. Municipal sector program participation will be separated in data progress reports.

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from July 2024 through December 2030. Table 20 identifies five commercial and industrial programs that will be promoted in Shoreview, and the total participation modeled by 2030 to achieve the community-wide goal. This is a snapshot of programs and does not include all programs from Xcel Energy that are available to businesses.

[14] Includes both Solar*Rewards and Non-Solar*Rewards Net Metering

Electricity savings from two lighting programs, Lighting Efficiency and Small Business Lighting, are modeled to revert to BAU levels after two years to account for market saturation.

TABLE 20. COMMERCIAL AND INDUSTRIAL PROGRAM PARTICIPATION AND ENERGY SAVINGS TARGETS

Xcel Energy Commercial & Industrial Programs	Annual Average Participation BAU	2024–2030 Total Participation	2024–2030 Total Energy Savings (MMBtu)
Business Energy Assessments	0	1	983
HVAC+R Efficiency[15]	13	159	20,463
Lighting Efficiency	22	187	19,657
Small Business Lighting	12	99	8,315
Multi-Family Building Efficiency	0	1	10

Renewable Energy

- **Goal:** Increase support for renewable energy programs by 3 businesses or municipal premises annually.
- **2030 Target:** A total of 40 businesses or municipal premises will participate in a renewable energy program, with 21 new participants added between 2024 and 2030.

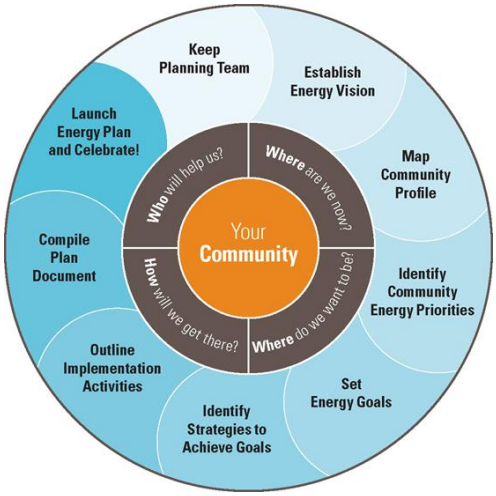
This goal will measure program participation by businesses and municipal premises in Xcel Energy's utility subscription programs. The programs currently offered by Xcel Energy are Renewable*Connect Flex, Solar*Rewards Community, Solar*Rewards, and Net Metering.

[15] Xcel Energy filed a new DSM plan in 2021, which resulted in some programs being reorganized and renamed. This group includes Cooling, Heating Efficiency, Commercial Refrigeration Efficiency, Motor Efficiency and HVAC +R Efficiency

Appendix 4: Xcel Energy's Partners in Energy Planning Process

About Xcel Energy's Partners in Energy

Xcel Energy is an electric and natural gas utility that provides the energy that powers millions of homes and businesses across eight western and midwestern states. Each community Xcel Energy serves has its own unique priorities and vision for its energy future. The energy landscape is dynamically changing with communities leading the way in setting energy and sustainability goals. To continue to innovatively support their communities, Xcel Energy launched Partners in Energy in the summer of 2014 as a collaborative resource with tailored services to complement each community's vision. The program offerings include support to develop an energy action plan or electric vehicle plan, tools to implement the plan and deliver results, and resources designed to help each community stay informed and achieve their outlined goals.



PARTNERS IN ENERGY PROCESS FOR SUCCESS

RESOURCES FROM XCEL ENERGY FOR IMPLEMENTATION

Plan Development Process

The content of this plan is derived from a series of planning workshops held in Shoreview with a planning team committed to representing local energy priorities and implementing plan strategies. The engagement process included a series of five in-person workshops from October 2023 through March 2024, as well as multiple surveys between workshops.

FIGURE 17. SHOREVIEW ENERGY ACTION TEAM MEMBERS

Workshop 1: What should Shoreview's energy future look like?
October 2023

The Energy Action Team learned about Shoreview's baseline energy use through energy consumption and program participation data. The team brainstormed what "victory" would look like if this plan was successful and used those ideas to create a vision statement for the plan. The team also discussed priorities in the community that could be possible focus areas, leaning toward using audiences as the focus areas.

FIGURE 18. TEAM MEMBERS GETTING TO KNOW EACH OTHER THROUGH A GALLERY WALK ACTIVITY

Workshop 2: How will we focus our efforts to achieve our vision?
November 2023

Workshop 2 resulted in a finalized energy vision for Shoreview and confirmed focus areas of residents, business, and municipal. The team decided that the themes of energy efficiency, renewable energy, and reducing energy burden would be woven throughout the strategies in each focus area. The team learned about Xcel Energy programs and how historic participation could be used to model their goals. The team also discussed goal metrics, timeline, and ambition level to formulate the community-wide goal.

FIGURE 19. TEAM MEMBERS DISCUSSING BARRIERS AND BENEFITS TO ENGAGING IN ENERGY ACTION

Workshop 3: How will we measure success and what are we going to do?
January 2024

The team decided on a bottom-up approach to model Shoreview's community-wide goal and solidified their decision to measure the goal with energy savings and cost savings by 2030. The team brainstormed communication channels and community resources in small groups to generate lists of people, places, and organizations in Shoreview that could support implementation. The team then finished the workshop with an activity that allowed them to brainstorm barriers and benefits to why residents, businesses, and the City would engage in energy initiatives, which helped develop the first draft strategies for the plan.

FIGURE 20. TEAM MEMBERS WORKING IN GROUPS TO DEVELOP STRATEGIES FOR FOCUS AREAS

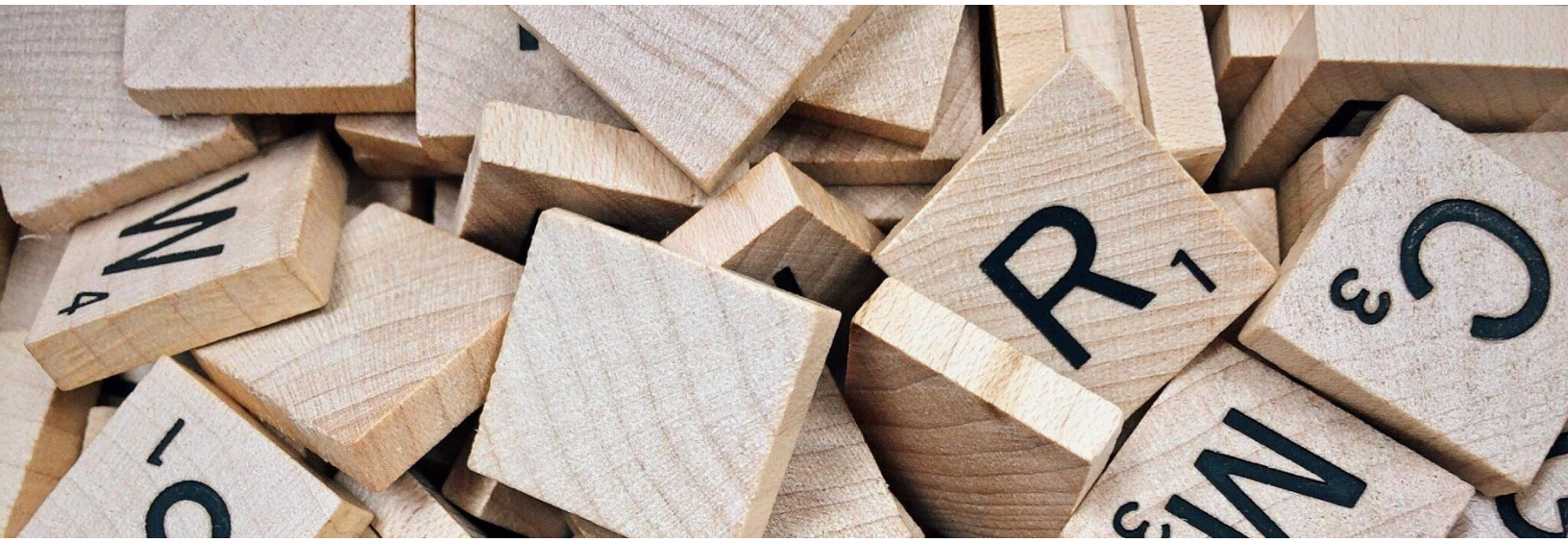
Workshop 4: What are we going to do?
February 2024

Team members worked together in small groups to generate ideas for strategies for each focus area from their unique perspectives and knowledge of Shoreview. The team decided how ambitious they wanted to be with their goal by reviewing two scenarios. The team chose to be aspirational but practical in ensuring the modeled program participation reflected the building stock in Shoreview.

Workshop 5: How are we going to do the work?
March 2024

The team learned about the elements of the Energy Action Plan and the process for providing feedback, along with reviewing the support that comes along with the plan's implementation for 18 months. Facilitators shared draft strategies and tactics for each focus area for the team to review. They prioritized strategies depending on their impact and feasibility, and provided more details on the resources and assets available to make these strategies successful. The team closed out the workshop and planning process by reflecting on what they had achieved and sharing what they were taking with them.

FIGURE 21. TEAM MEMBERS DECIDING ON GOAL AMBITION LEVEL



Appendix 5: Glossary of Terms

4 x 50: Xcel Energy's privacy rule, which requires all data summary statistics to contain at least four premises, with no single premise responsible for more than 50% of the total. Following these rules, if a premise(s) is responsible for more than 50% of the total for that data set, it is/they are removed from the summary.

British Thermal Unit (BTU): the amount of heat needed to raise one pound of water at maximum density through one degree Fahrenheit**.**

Carbon-free: Carbon-free refers to sources of energy that will not emit additional carbon dioxide into the air. Wind, solar and nuclear energy are all carbon free sources but only wind and solar are renewable.

Carbon-neutral: Carbon-neutral, also described as "net zero", could include carbon-free sources but is broader and refers to energy that removes or avoids as much carbon dioxide as is released over a set period of time. Carbon-neutral is sometimes used to describe a site that produces an excess amount of electricity from a renewable energy source, such as solar, compared to what it consumes. That excess energy is put back into the grid in an amount that offsets the carbon dioxide produced from the electricity it draws from the grid when it is not producing renewable energy.

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

Conservation Improvement Programs (CIP): Portfolio of approved utility energy efficiency and demand management programs. Minnesota electric utilities have a goal of saving 1.5% of their total energy sales each year via customer conservation

efforts. Minnesota natural gas utilities have a goal of saving 0.5% of their total energy sales each year via customer conservation efforts.

Decatherm (Dth): Quantity of energy that is equivalent to ten therms.

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.

Direct Installation: Free energy-saving equipment installed by Xcel Energy or other organization, for program participants, that produces immediate energy savings.

Energy Burden: Percentage of gross household income spent on energy costs.

Energy Reduction: The result of behavior changes that cause less energy to be used. For example, setting the thermostat to a lower temperature *reduces* the energy used in your home during the winter. Since energy reductions can be easily reversed, they are not accounted for when calculating changes in energy usage.

Energy Savings: Comes from a permanent change that results in using less energy to achieve the same results. A new furnace uses X% less energy to keep your home at the same temperature (all things being equal), resulting in energy *savings* of X%. For accounting purposes, energy savings are only counted in the year the new equipment is installed.

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

Grid Decarbonization: The current planned reduction in the carbon intensity of electricity provided by electric utilities through the addition of low- or no-carbon energy sources to the electricity grid.

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

Million British Thermal Units (MMBtu): A unit of energy consumption that allows electricity and natural gas consumption to be combined.

Metric Tons of Carbon Dioxide Equivalent (MTCO2e): A unit of measure for greenhouse gas emissions. The unit "CO2e" represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO2), based on the global warming potential (GWP) of the gas.

Megawatt (MW): A unit of electric power equal to 1 million watts.

Premise: A unique combination of service address and meter. For residential customers, this is the equivalent of an individual house or dwelling unit in a multi-

tenant building. For business customers, it is an individual business, or for a larger business, a separately-metered portion of the business's load at that address.

Renewable Energy Certificate (REC): For every megawatt-hour of clean, renewable electricity generation, a renewable energy certificate (REC) is created. A REC embodies all the environmental attributes of the generation and can be tracked and traded separately from the underlying electricity. Also known as a Renewable Energy Credit.

Resilience: The ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents.

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

Solar Garden: Shared solar array with grid-connected subscribers who receive bill credits for their subscriptions.

Solar Photovoltaic (PV): Solar cells/panels that convert sunlight into electricity (convert light, or photons, into electricity, or voltage).

Subscription: An agreement to purchase a certain amount of something in regular intervals.

Therm (thm or therm): A unit of natural gas consumption.

Trade Partner: Trade Partners, also known as Trade Allies or Business Trade Partners, are vendors and contractors who work with business and residential customers servicing, installing, and providing consulting services regarding the equipment associated with utility rebate programs. Their support for utility programs can range from providing equipment and assisting with rebate paperwork, to receiving rebates for equipment sold.