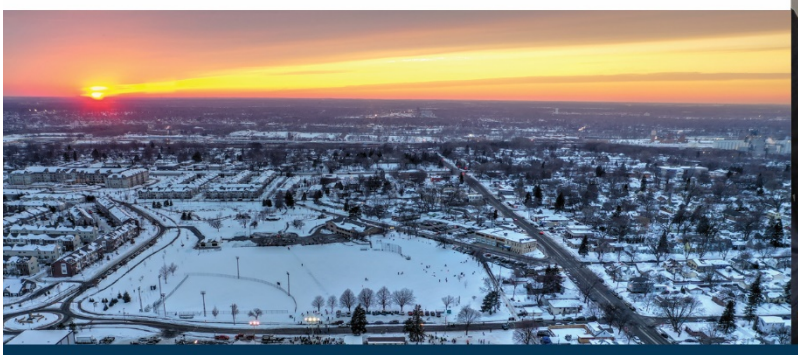
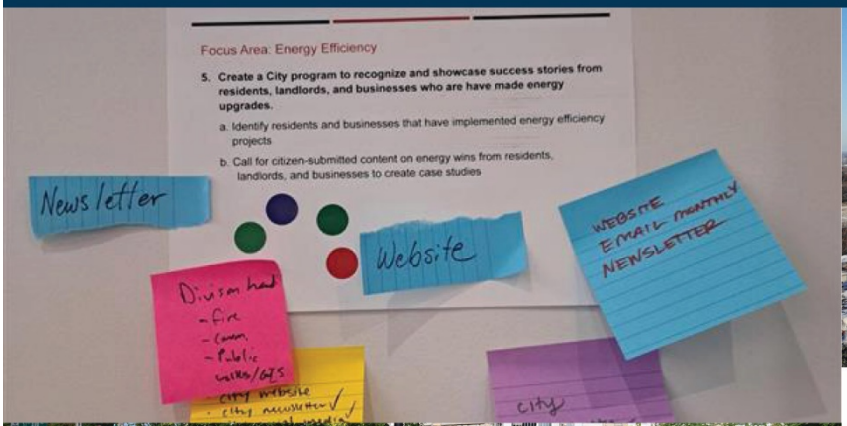


An Energy Action Plan for Columbia Heights

Draft

May 2025



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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. For more information about the planning workshops, see Appendix A: The Planning Process.

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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 Columbia Heights has made modifications to the plan.

TABLE OF CONTENTS

COLUMBIA HEIGHTS ENERGY ACTION PLAN

This Energy Action Plan was created by Columbia Heights' community members and staff in collaboration with Xcel Energy's Partners in Energy. Together, the team developed goals and strategies to guide the community toward a more energy efficient and sustainable future.

Our Vision

Columbia Heights strives to be a leader in energy efficiency, equity, and sustainability. This plan guides the community to increase energy efficiency and renewable energy, save money, and strengthen community connections through education and outreach to improve energy resilience while reducing our carbon footprint.

Our Goal

Columbia Heights will increase energy program participation by at least **30%** between 2025 and 2030. This will save the community an estimated **$4.6 million** dollars and increase energy savings **63%** by 2030.

Energy Action Plan Impacts

Estimated Savings:
$4.6 million

Energy Program Participation:
7,742 households

Increase Energy Savings:
Up 63%

Kilowatt-hours Saved:
36 million

CO_2 Avoided:
7,172 $MTCO_2e$

Therms Saved:
1.8 million

That's like removing
over 1,600 gas-powered cars
from Columbia Heights for a year!

How We'll Get There

The City of Columbia Heights with support from Partners in Energy will take actions identified in this plan to achieve our goal. These actions center on four focus areas:

Energy Efficiency

Strategy Highlight:
Create a broad outreach campaign with multilingual engagement to educate and encourage residents, HOAs, and landlords to become more energy efficient and learn about programs, rebates, and approved contractors.

Strategy Highlight:
Create a City program to recognize and showcase success stories from residents, landlords, and businesses who have made renewable energy upgrades.

Renewable Energy

Strategy Highlight:
Educate renters and business tenants about renewable energy subscription programs and community solar gardens as a way to access renewable energy.

Beneficial Electrification

Strategy Highlight:
Design and execute a business outreach campaign to encourage businesses to make beneficial electrification improvements.

Reducing Energy Burden for Low-Income Residents

Strategy Highlight:
Create a multilingual outreach campaign to educate residents and promote residential energy efficiency programs, home energy audits, rebate information, and low-income energy assistance.

The content of this plan is derived from a series of workshops hosted by Xcel Energy's Partners in Energy. Thank you to the Columbia Heights Energy Action Team for their many hours of service.

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INTRODUCTION

Why an Energy Action Plan?

The City of Columbia Heights recognizes the need to adopt strategies that enhance resilience to climate change related challenges. As a participant in the MN GreenStep Cities program, the City is already taking steps toward sustainability, with a focus on advancing equitable opportunities outlined in its comprehensive plan. Developing an energy action plan would provide targeted solutions to save energy, improve housing conditions, and lower utility costs for residents, while aligning with broader environmental and social equity goals.

By implementing energy efficiency programs, supporting solar energy adoption, and leveraging financing methods, the City can build a foundation for long-term resilience. Additionally, promoting energy conservation practices and renewable energy development can bolster the local economy by attracting new residents and businesses and mitigating environmental impacts. Pursuing a structured energy action plan will enable Columbia Heights to address pressing issues while advancing its vision of sustainability, equity, and community well-being for generations to come.

About This Plan

This Energy Action Plan is a roadmap to strategically guide Columbia Heights' action in a manner that supports the community goal to save $4.6 million on energy and increase energy savings by 63% by 2030.

The goals and strategies outlined in this plan were developed collaboratively with a group of stakeholders, referred to as the Energy Action Team, through five planning workshops conducted between October 2024 and January of 2025 The Energy Action Team included representatives from commission organizations, faith organizations, city council, and building managers and landlords (see Acknowledgements for full list of participants). Team members coordinated throughout the process to share information and identify potential opportunities for

partnership during implementation. See Appendix A for more information about the planning process and Xcel Energy Partners in Energy.

Columbia Heights joined over 40 other Minnesota communities that have developed Energy Action Plans through Xcel Energy's Partners in Energy, an offering that provides resources for community energy planning. Partners in Energy also supports 18 months of plan implementation in the form of marketing and communications, data tracking and analysis, program expertise, and project management.

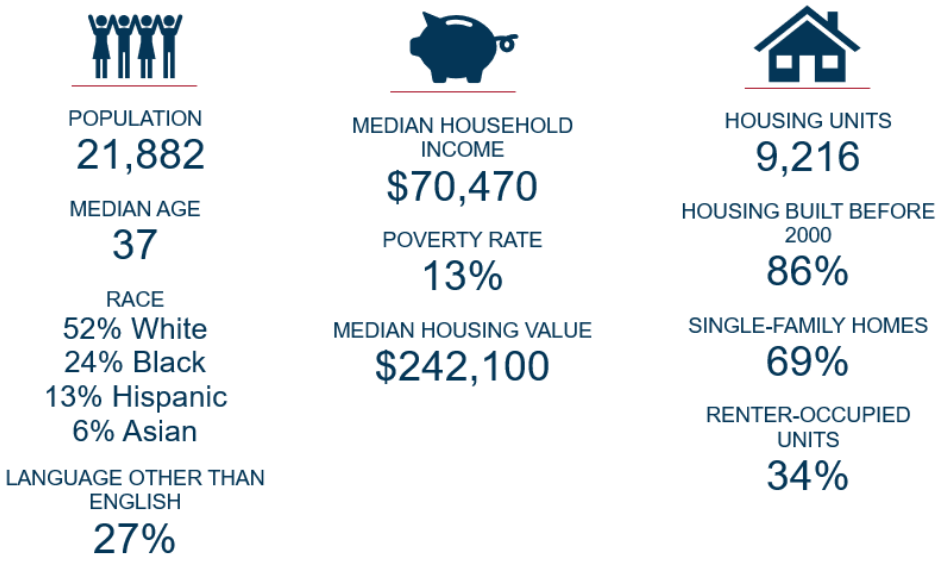
WHERE WE ARE NOW

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

Community Demographics

As of 2022, Columbia Heights' population of almost 22,000 residents lived in approximately 9,200 housing units. With higher levels of diversity compared to the Twin Cities metro area, 27% of residents speak a language other than English, 24% of residents identify as Black and 13% identify as Hispanic. The poverty rate of 13% is relatively high compared to the overall metro area rate of 8%. Similarly, the median household income of approximately $70,000 is 30% lower than the median income for the overall metro area. With 86% of housing built before 2000, most Columbia Heights residents live in homes with significant opportunity for energy efficiency improvements given the lower energy efficiency standards and general wear and tear on older buildings. Additionally, 34% of units in Columbia Heights are renter-occupied, presenting unique opportunities for energy efficiency measures that target rental units. Figure 1 displays the community demographic profile.

Figure 1. Overview of Columbia Heights community demographics (Source: U.S. Census Bureau American Community Survey, 2022 five-year estimates)

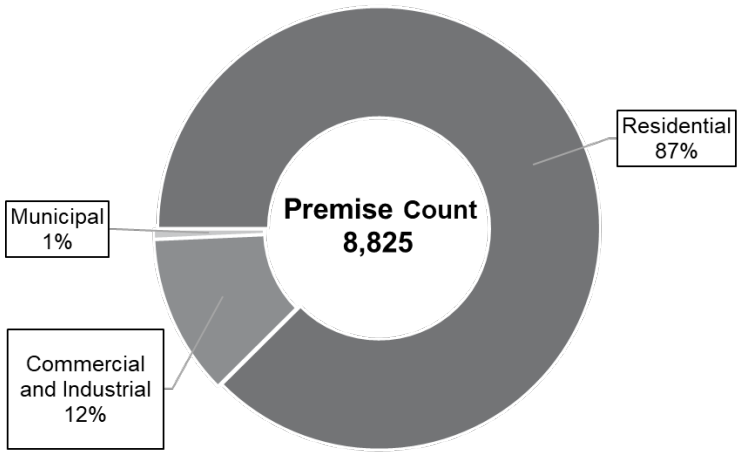


Energy Use and Savings

Premises

Xcel Energy provides electricity to Columbia Heights residents and businesses, while CenterPoint Energy provides natural gas. In 2023, Columbia Heights consisted of 8,825 distinct electric premises, which are a unique combination of service address and meter. For residential customers, this is the equivalent of an individual house or a dwelling unit in a multi-tenant building. For business customers, a premise is an individual business, but for a larger business it is a separately metered portion of the business' load at that same address. Most Columbia Heights 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).

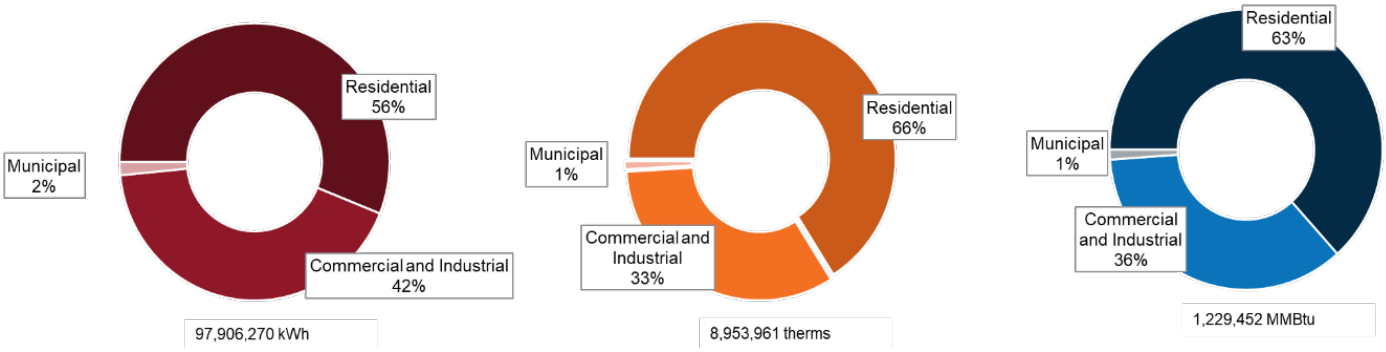
Figure 2. Total premises by sector, 2023



Grid Energy Use

On average during the 2021–2023 baseline period, the Columbia Heights community consumed nearly 98 million kWh of electricity and almost 9 million therms of natural gas across all sectors per year (Figure 3). To compare energy use between 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 (MMBtu). Although the commercial and industrial sector only makes up 12% of premises in Columbia Heights, it accounts for over one-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 Columbia Heights.

Figure 3. Average annual energy consumption by sector, 2021–2023



During the three-year baseline period (2021–2023), Columbia Heights's overall electricity consumption decreased slightly by 0.6%. Electricity consumption in the residential sector decreased 3.0% during the three-year baseline, while commercial consumption increased by 2.7% (Figure 4). Columbia Heights' natural gas consumption increased by 5.2% overall during the baseline period, driven by a 7.4% increase in the commercial and industrial sector and a 4.0% increase in the residential sector (Figure 5). Total energy consumption during the baseline period varied in each sector consistent 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, Columbia Heights' natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

Figure 4. Electricity Consumption by Sector, 2021–2023

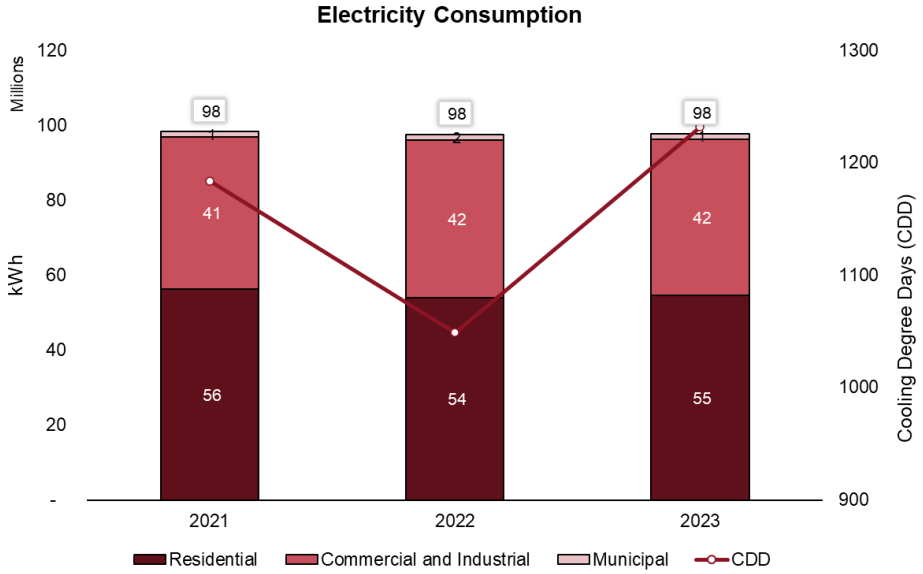
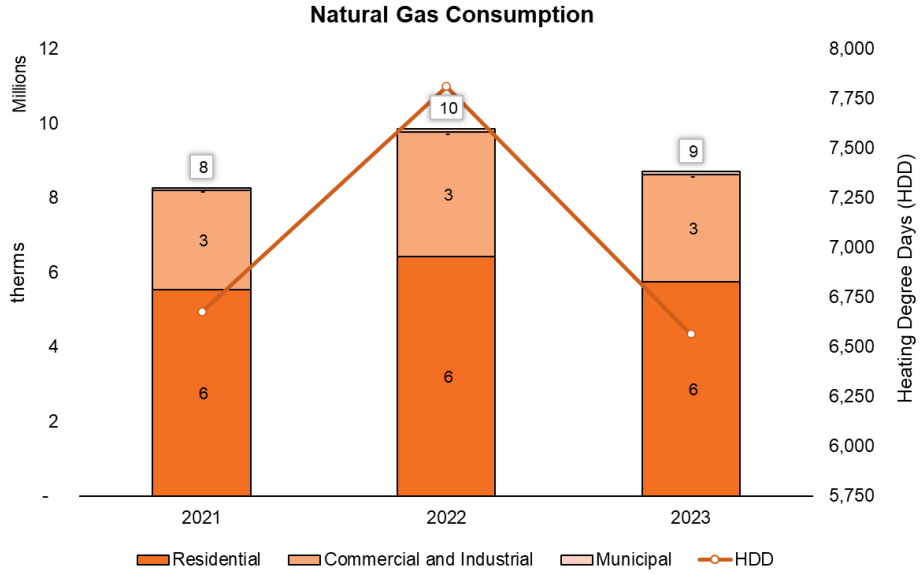


Figure 5. Natural Gas Consumption by Sector, 2021–2023



Energy Costs and Energy Burden

During an average year over the three-year baseline period, Columbia Heights spent an estimated $21.7 million on fuel costs for both electricity and natural gas (Figure 6). Two-thirds of these costs were paid by residents, with total annual average fuel costs at $14.2 million. A residential premise spent an average of $1,722 annually on electricity and natural gas. The commercial sector averaged $7.2 million annually in fuel costs. While costs vary greatly for

commercial and industrial premises based on size and industry, on average these premises spent almost $12,284 annually.

Figure 6. Total average annual energy costs by sector, 2021–2023

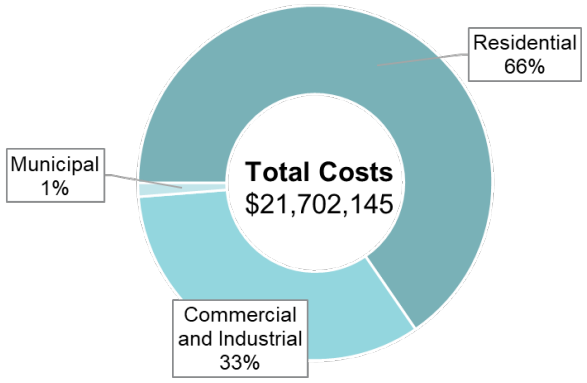


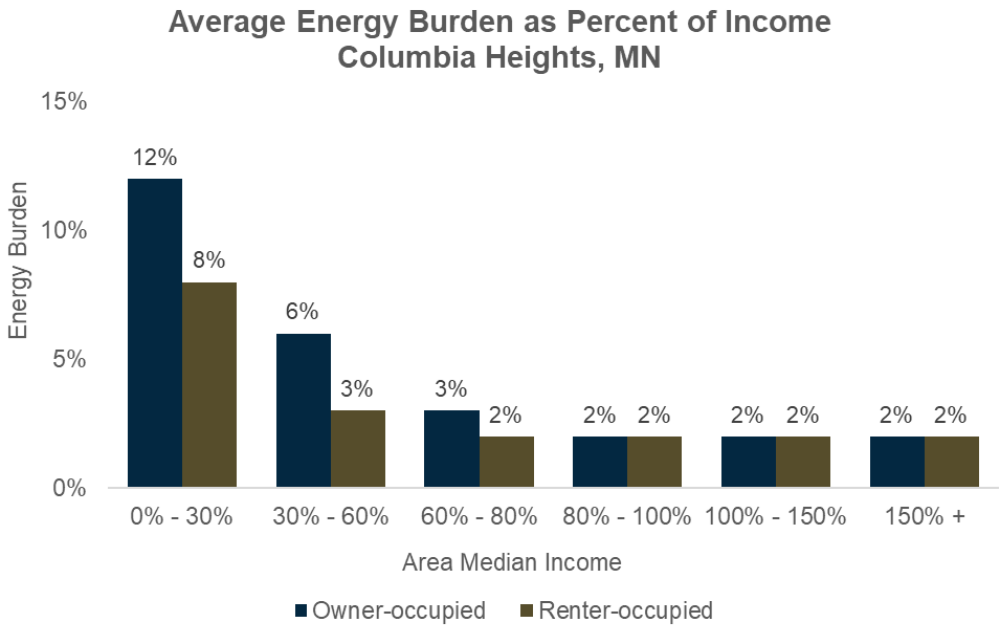
Table 1: Average annual fuel costs by sector and fuel type, 2021–2023

Sector	Annual Electricity Costs	Annual Natural Gas Costs	Annual Cost per Premise
Residential	$7,800,592	$6,400,711	$1,722
Commercial & Industrial	$4,676,592	$2,554,373	$12,284
Municipal	$187,279	$82,598	$13,494
Total	$12,664,462	$9,037,682	

Energy burden is the percentage of income that community members spend on energy. A high energy burden is defined as spending greater than 6% of a household's income on energy, while a severe energy burden is spending greater than 10% of annual household income on energy.[1]

[1] 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.

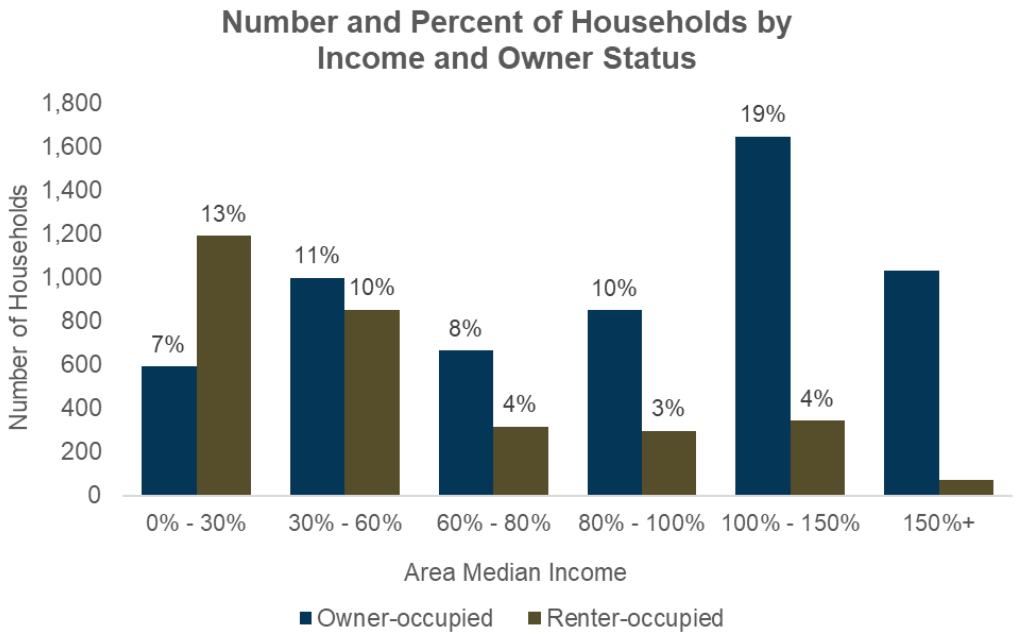
Figure 7. Energy burden by income and owner status[2]



The group of Columbia Heights households with the greatest energy burden are those who own their homes and make 30% or less of the area median income. This group spends an average of 12% of their income on energy costs (Figure 7). The household data in Figure 8 show that 7% of Columbia Heights households fall into this category. Renters who make 30% or less of the area median income and home owners who make 30–60% of the area median income also have high energy burdens, spending 8% and 6% of their incomes on energy costs (Figure 7); together, they make up another 24% of Columbia Heights household (Figure 8).

[2] Source: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. (2024). Low-Income Energy Affordability Data - LEAD Tool - 2022 Update [data set]. Retrieved from https://dx.doi.org/10.25984/2504170.

Figure 8. Household count by income and owner status[2]



Greenhouse Gas Emissions

Greenhouse gas emissions are calculated for both electricity and natural gas consumption for all sectors in Columbia Heights (Figure 9). Columbia Heights' energy-related greenhouse gas emissions in 2023 amounted to almost 71,000 metric tons of carbon dioxide equivalent (MTCO2e). Columbia Heights' residential sector accounts for 62% of energy-related greenhouse gas emissions. Overall, there is a small decline of 2% in emissions between 2021 and 2023, with a 10% increase in 2022 compared to 2021 associated with the greater natural gas use in a colder winter.

Figure 9. Energy-related greenhouse gas emissions, 2021–2023

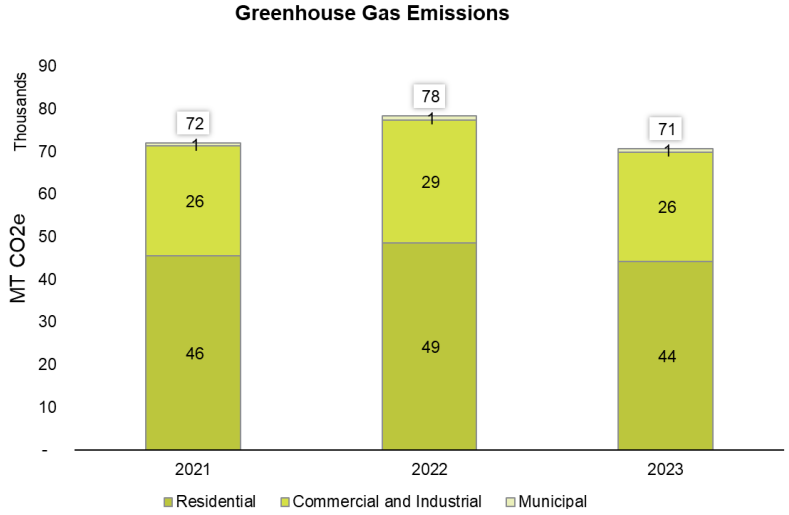
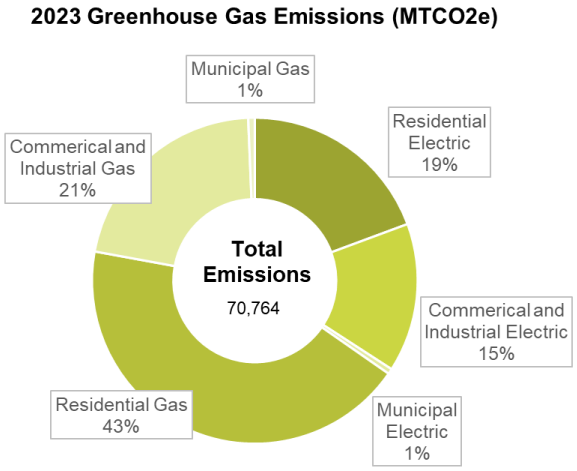


Figure 10 breaks down the 2023 energy-related emissions by sector and fuel type. The largest proportion of emissions (43%) comes from natural gas in the residential sector, and in total, the residential sector generated 62% of Columbia Heights' energy-related greenhouse emissions while the commercial/industrial sector generated 37% of the emissions. Natural gas consumption made up the largest proportion of total emissions, adding up to 64% 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 10. Energy-related greenhouse gas emissions by sector and fuel type, 2023



Renewable Energy

Columbia Heights residents and businesses use subscription programs and on-site options to support renewable energy (Table 2 and Table 3). In Columbia Heights, most renewable energy support is in the residential sector, where 575 residents receive renewable energy through subscription programs for a combined total of 1.95 million kWh. Forty-two residents have on-site solar installations. Fewer commercial and industrial customers participate in renewable energy offerings than residents, with 25 renewable energy program subscribers totaling 11.3 million kWh and 17 on-site installations. Across both residential and business premises, the total renewable energy subscribed is equivalent to almost 14% of total electricity consumption, which is equivalent to taking 1,380 gas-powered cars off the road for a year.[3] This total excludes generation from on-site solar because those installations are on the customer's side of the utility meter.

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

Table 2: Xcel Energy subscription renewable energy program support, 2023

Renewable*Connect® & Renewable*Connect Flex[4]	Residential	Commercial & Industrial	Total
Subscriber Count	500	9	509
Total Annual Electricity Subscribed (kWh)	1,477,703	8,041,540	9,519,243
Community Solar Gardens – Solar*Rewards® Community			
Subscriber Count	75	16	91
Total Annual Electricity Subscribed (kWh)	473,345	3,222,730	3,696,074
Total Xcel Energy Subscription Renewable Energy Support			
Subscriber Count	575	25	600
Total Annual Electricity Subscribed (kWh)	1,951,048	11,264,270	13,215,317
Percent of Sector Xcel Energy Electricity Use	3.6%	26.1%	13.5%

Table 3: Xcel Energy on-site solar program support, 2023[5]

On-site Solar – Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial	Total
Participant Count	42	17	59
Total Electricity Capacity (kW)	327	951	1,278

Energy Efficiency Program Participation and Savings

Both residents and commercial and industrial premises participate in Xcel Energy and CenterPoint Energy's efficiency programs where they can receive rebates for upgrading equipment, arrange 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. Columbia Heights residents and commercial and industrial premises saved an annual average of almost 997,000 kWh and more than 57,000 therms during the baseline period by participating in CenterPoint Energy and Xcel Energy's efficiency programs (Table 4 and Table 5).

[4] The Windsource® program is now called Renewable*Connect Flex®.

[5] Source: Xcel Energy Community Energy Report for Columbia Heights, 2023

Table 4: Average annual Xcel Energy program participation and energy savings, 2021–2023[6]

Program Sector	Average Annual Participation	Average Electricity Savings (kWh)
Residential	684	87,157
Low-Income	9	4,883
Commercial & Industrial	39	904,510
Total	731	996,550

Table 5: Average annual CenterPoint Energy program participation and energy savings, 2021–2023[6,7]

Program Sector	Average Annual Participation	Average Natural Gas Savings (therms)
Residential	215	23,436
Low-Income	24	1,663
Commercial & Industrial	26	32,147
Total	265	57,246

Columbia Heights residents and businesses rely on a few key programs from Xcel Energy to help them improve efficiency (Table 6 and Table 7). The Residential Heating and Cooling rebate program, where 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 Home Energy Squad, a home energy assessment with some equipment installation, 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 high savings, though the highest savings were through Energy Design Assistance, energy efficiency planning assistance for new construction. Participation and savings data from 2021–2023 for all Xcel Energy and CenterPoint programs are provided in Appendix B: Baseline Energy Analysis.

[6] Home Energy Squad is a program jointly offered by Xcel Energy and CenterPoint Energy. Data in these tables counts Home Energy Squad participation separately for Xcel Energy and CenterPoint Energy. The Home Energy Squad participation counts for Xcel Energy and CenterPoint Energy are not unique residents, and in many cases overlap, but therms and kWh savings from Home Energy Squad are unique to CenterPoint Energy and Xcel Energy respectively.

[7] Participation and savings data excludes DIY energy efficiency kits, home energy reports and school kits from the residential sector, and code compliance, training and education, and benchmarking from the commercial sector.

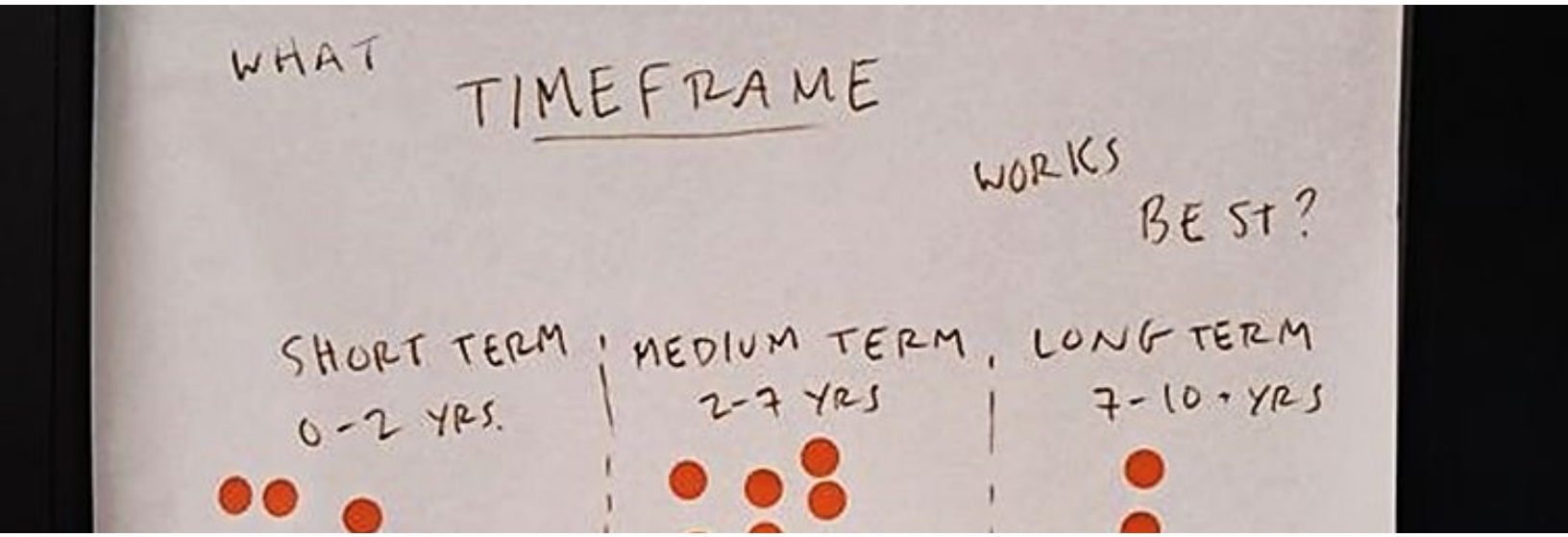
Table 6: Average annual participation in top Xcel Energy residential programs, 2021–2023

Residential Program	Average Annual Participation	Average Electricity Savings (kWh)
Efficient New Home Construction	1	1,207
Home Energy Squad	24	15,579
Refrigerator Recycling	28	23,084
Residential Heating and Cooling	157	44,042
Smart Thermostat	136	2,578

Table 7: Average annual participation in top Xcel Energy commercial and industrial programs, 2021–2023

Commercial Program	Average Annual Participation	Average Electricity Savings (kWh)
Efficiency Controls[8]	.3	61,763
Energy Design Assistance	1	460,872
HVAC+R Efficiency	5	6,862
Lighting Efficiency	9	165,703
Small Business Lighting	12	201,367

[8] This program had one participant in the three-year baseline period, which shows up in the table as .3 average annual participations but is included in the table because of the relatively high amount of electricity savings.



WHERE WE ARE GOING

Energy Vision

During the planning process, the Energy Action Team created a vision statement for this Energy Action Plan.

This statement guided the planning process and reflected the intention of the community.

Vision

Columbia Heights strives to be a leader in energy efficiency, equity and sustainability. This plan guides the community to increase energy efficiency and renewable energy, save money and strengthen community connections through education and outreach to improve energy resilience while reducing our carbon footprint.

Goal

Working together, the team created an overarching goal to guide their strategies and to serve as the headline of the Energy Action Plan.

Columbia Heights will increase energy program participation by 30% between 2025 and 2030. This will save the community an estimated $4.6 million dollars and increase energy savings 63% by 2030.

Figure 11: Cumulative Avoided Greenhouse Gas Emissions

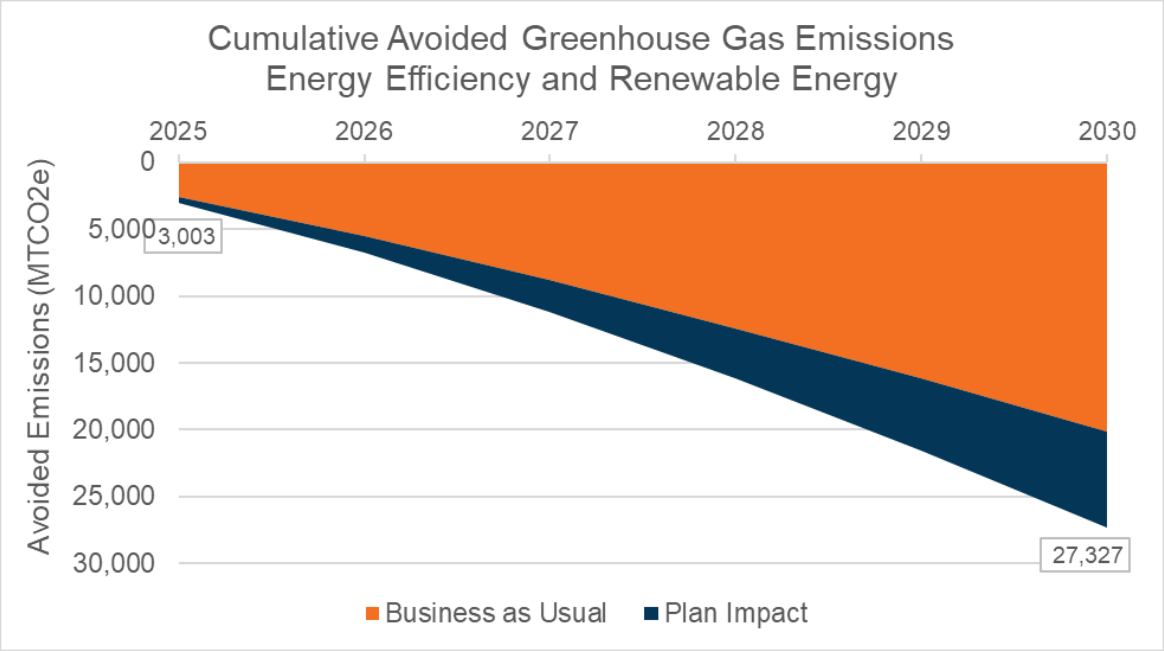


Figure 11 illustrates the cumulative avoided greenhouse gas emissions from 2025 to 2030 under two scenarios: Business as Usual and Plan Impact. The orange section represents emissions under the Business as Usual trajectory, while the dark blue area shows the additional emissions reductions achieved through the implementation of an energy action plan focused on energy efficiency and renewable energy. By 2030, the plan is projected to avoid approximately 7,172 metric tons of CO_2 equivalent ($MTCO_2e$), helping to significantly reduce the community's carbon footprint and support long-term climate goals.

Focus Areas

The Energy Action Team identified four focus areas to prioritize strategies and resources.

- **Energy Efficiency**: Focuses on strategies to help residents and businesses save energy, lower utility bills and minimize environmental impact. Includes efforts to promote energy-saving programs, encourage upgrades to efficient equipment and increase awareness of best practices.

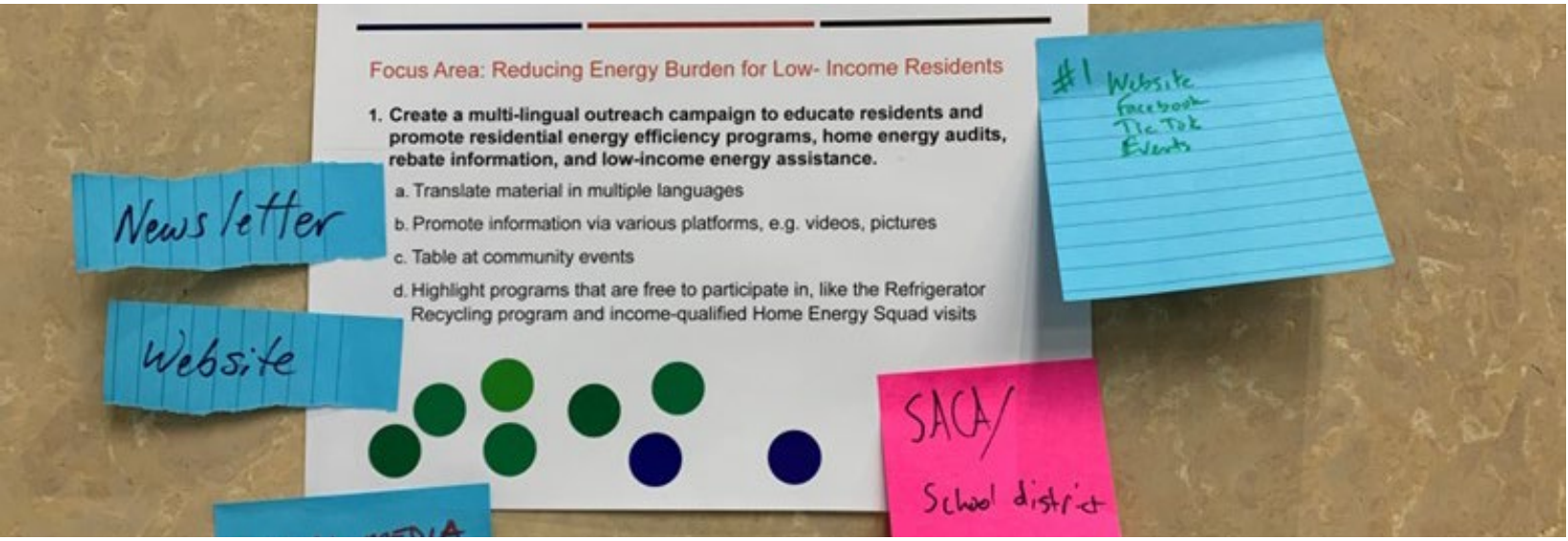
- **Renewable Energy**: The Renewable Energy focus area includes options to use both wind and solar energy to power homes and businesses in Columbia Heights. Renewable energy can be accessed through utility subscription programs, community solar gardens or on-site solar.

- **Beneficial Electrification**: Beneficial Electrification (BE) is the replacement of direct fossil fuel use that results in either lower costs, reduced emissions or more effective use of the power grid. In practice, this means replacing fossil fuel-powered appliances like gas water heaters and HVAC equipment with more efficient versions that run on

electricity. This focus area involves helping residents, businesses and the City to upgrade to efficient electric technologies and take advantage of available incentives, resources and planning support.

- **Reducing Energy Burden for Low-Income Residents**: Aims to lower the percentage of income spent on energy costs by providing access to affordable efficiency upgrades, financial assistance and educational resources. Focuses on equity-driven solutions to ensure all community members can participate in and benefit from energy initiatives.

HOW WE ARE GOING TO GET THERE



The following section outlines the focus areas, strategies and tactics that will help us reach Columbia Heights' goal. To achieve the community's energy vision and goal, the Energy Action Team identified a set of strategies. These initiatives will be a collaboration between the City of Columbia Heights, Partners in Energy, Xcel Energy and the Energy Action Team. Each focus area has background information, a few strategies and specific tactics describing the actions we will take. For a concise list of strategies and tactics with timelines, see *Appendix D: Energy Action Work Plan.*

The Energy Action Team, composed of Columbia Heights residents, commission members, members of the business community and City staff, developed these strategies by considering the unique strengths and abilities of the Columbia Heights community. These strategies are an effort to connect energy efficiency, renewable energy, reducing energy burden and electrification to increase community participation in energy programs while saving energy and avoiding carbon emissions. They offer points of access for both businesses and residents at any stage of their energy action journey. Whether someone is considering energy efficiency for the first time or installing their second bank of solar panels, this plan has something for all Columbia Heights community members.

Strategy Overview

Focus Area: Reducing Energy Burden for Low-Income Residents

1. Create a multi-lingual outreach campaign to educate residents and promote residential energy efficiency programs, home energy audits, energy equipment rebate information and low-income energy assistance.
2. Work with multicultural community connectors and trusted messengers to conduct outreach to residents on energy efficiency and cost-saving programs and opportunities.

3. Conduct outreach to rental property owners with resources to help improve their properties' energy efficiency and lower tenants' energy bills.
4. Create a targeted outreach campaign to income-qualified households identified using available data from the census and other sources.

Focus Area: Energy Efficiency

5. Create a broad outreach campaign to educate and encourage residents, homeowner's associations and landlords to become more energy efficient and learn about programs, rebates and approved contractors.
6. Create a City program to recognize and showcase success stories from residents, landlords and businesses that have made energy upgrades.
7. Support local businesses with completing energy efficiency improvements.
8. Change City ordinance to require adding energy efficiency information to the City property sales inspections.
9. Create a City program to help residents and businesses finance the upfront costs of energy efficiency improvements.

Focus Area: Renewable Energy

10. Create a multilingual page on the City website that is a centralized hub for renewable energy resources.
11. Create a multi-lingual outreach campaign to educate residents and businesses about renewable energy programs, with an emphasis on renewable energy subscriptions and community solar gardens to access renewables without rooftop solar.
12. Educate City officials on larger-scale renewable energy projects, such as microgrids.
13. Create a City program to recognize and showcase success stories from residents, landlords and businesses who have made renewable energy upgrades.

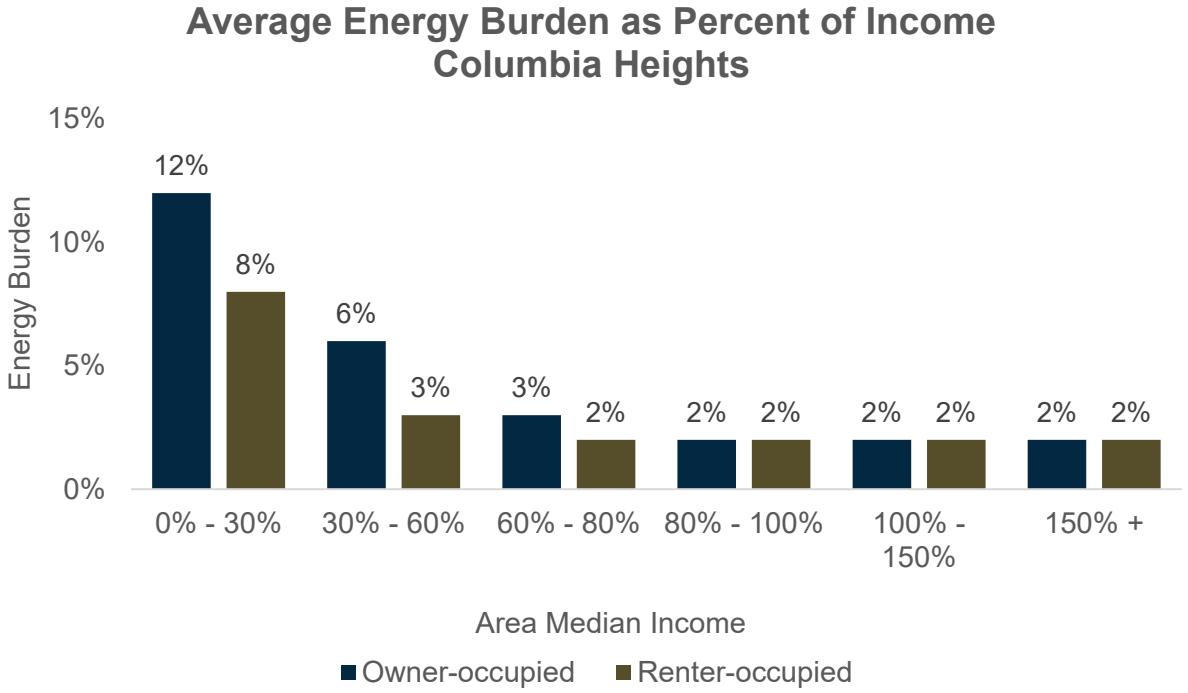
Focus Area: Beneficial Electrification

14. Design and execute a multilingual education and outreach campaign promoting the benefits of beneficial home electrification and the technologies, programs and incentives available.
15. Explore creating a City program that provides rebate matches or other incentives for residential and business electrification projects.
16. Evaluate opportunities to incentivize or require building electrification and EV charging infrastructure in City zoning and policies.
17. Design and execute an outreach campaign to encourage businesses to make beneficial electrification improvements.

Focus Area: Reducing Energy Burden for Low-Income Residents

Energy burden is the percentage of income a household spends on energy costs. A household spending 6% or more of its income on energy costs is considered a high energy burden. Team members noticed that residents at the lowest end of the income spectrum in Columbia Heights had high energy burden, as did many residents in the next-highest income bracket (Figure 12). The team set out to do what was possible to reduce this energy burden in their community.

Figure 12: Average Energy Burden as Percent of Income in Columbia Heights (source: DOE Low-Income Affordability Tool)



Strategy 1: Create a multilingual outreach campaign to educate residents and promote residential energy efficiency programs, home energy audits, rebate information and low-income energy assistance.

The team noticed that Columbia Heights residents are not broadly aware of energy efficiency and income-qualified programs that could help manage energy bills, so they wanted to focus on outreach that combined these areas and was tailored for income-qualified residents.

Tactics
1A Table at community and school events.
1B Highlight programs that offer free participation, like the Refrigerator Recycling program and income-qualified Home Energy Squad visits.

1C Partner with schools to educate students and parents about reducing energy burden and improving energy efficiency.
1D Provide energy kits for students and parents to take home. Partner with SACA to distribute energy resources to income-qualified residents.
1E Partner with nonprofits serving income-qualified residents to understand needs.
1F Translate materials into Spanish, Somali and Arabic.
1G Promote information using mediums like videos and infographics.

Strategy 2: Work with multicultural connectors and trusted messengers to conduct outreach to residents on energy efficiency and cost-saving programs and opportunities.

Team members recognized that it can often be difficult to reach income-qualified residents and individuals facing high energy burden. This strategy works with trusted community members to connect residents with resources to reduce energy burden.

Tactics
2A Work with community champions who are trusted to share information with or host workshops for specific communities.
2B Train community volunteers connected with specific communities.

Strategy 3: Conduct outreach to rental property owners with resources to help improve their properties' energy efficiency and lower tenants' energy bills.

Team members wanted to make sure that individuals who rent their homes had opportunities to reduce their energy burdens, so this strategy offers several tactics to improve energy efficiency and reduce energy burden in multi-family buildings.

Tactics
3A Include landlord resources in the City's rental permitting process.
3B Mail resources to the billing address of multifamily buildings to reach owners directly.
3C Promote the Xcel Energy Multifamily Building Efficiency Program.

Strategy 4: Create a targeted outreach campaign to income-qualified households identified using available data from the census and other sources.

Another attempt to meet the challenge of connecting with income-qualified residents, this strategy uses available data to help target outreach.

Tactic
4A Promote Energy Assistance and encourage residents to self-qualify for the Xcel Energy income-qualified automatic bill credit.

Focus Area: Energy Efficiency

As a community with a mixture of residential and business premises, Columbia Heights' energy future will rely on both individual households and commercial and industrial participation. Team members voiced strong support for community members from all sectors taking action to use energy more efficiently, accomplishing the same amount of service, manufacturing, home comfort or other needs while using less energy to do so. While there is already significant

participation from both businesses and residents, there is ample opportunity for both groups, as well as the City of Columbia Heights, to participate at higher levels.

Table 8: Xcel Energy residential per participant program impact on an average year, 2021–2023

Program	Total Participants	kWh Savings per Participant	Dollar Savings per Participant	GHG Avoided per Participant (lbs.)
Residential HVAC	157	281	$32	157
Smart Thermostat	136	19	$2	11
Home Energy Squad	24	649	$73	363
Refrigerator Recycling	28	815	$92	456
Insulation Rebate	3	121	$14	68

Strategy 5: Create a broad outreach campaign to educate and encourage residents, HOAs and landlords to become more energy efficient and learn about programs, rebates and approved contractors.

Team members felt that every sector of the Columbia Heights community had a part to play in making the city more energy efficient. This strategy imagines a multi-faceted outreach campaign to raise awareness of the many existing programs and remove barriers for residents, businesses, multi-family buildings and the City to use energy more efficiently.

Tactics
5A Set up quarterly meetings with landlords to educate and promote available programs.
5B Research and learn about where residents get their information in order to communicate more effectively (for example, newsletters, social media campaigns, or community events).
5C Promote the City's façade program for window upgrades.

Strategy 6: Create a City program to recognize and showcase success stories from residents, landlords and businesses that have made energy upgrades.

The theme of peer inspiration came up often during the planning process. Team members felt that seeing examples of energy projects that were already successful would inspire community members to undertake energy projects of their own. This strategy builds on that insight, creating a recognition program to both celebrate community members who have made improvements and inspire community members to do the same.

Tactics
6A Identify residents and businesses that have implemented energy efficiency projects.
6B Call for citizen-submitted content on energy wins from residents, landlords and businesses to create case studies.
6C Showcase the stories in the city newsletter.
6D Create yard signs or displays that recognize that person as an "Energy Champion."

Strategy 7: Support local businesses with completing energy efficiency improvements.

As part of the theme that everyone in Columbia Heights has a part to play, team members wanted to make sure local businesses could get support in managing their energy bills.

Tactics
7A Connect businesses with energy assessment programs that provide support from a project's start to finish.
7B Prioritize BIPOC- and women-owned businesses in City-supported energy projects.
7C Promote existing lists of reliable vendors for energy efficiency upgrades.
7D Share utility programs that offer energy assessments for faith communities.

Strategy 8: Change city ordinance to require adding energy efficiency information to the City property sales inspections.

City officials and staff identified that the property sales process is an opportunity to deliver energy efficiency information and help community members make informed decisions about their potential homes. This strategy uses property sales as a chance to share this information with community members.

Tactics
8A Create welcome packets for new homeowners, renters and business tenants/owners.
8B Look to existing TISH Energy Disclosure programs in Minneapolis and other cities for guidance.
8C Create a welcome packet for new residents that includes incentives and other energy resources.

Strategy 9: Create a City program to help residents and businesses finance the upfront costs of energy efficiency improvements.

The team noticed that a major barrier to making homes and businesses more energy efficient is the upfront cost of efficiency projects. To overcome that challenge, this strategy proposes a City program to defray costs, ideally by exploring state and federal funding sources for such improvements.

Tactics
9A Apply for state and national funding to support Naturally Occurring Affordable Housing (NOAH) with grants for energy efficiency updates.
9B Establish programs where the City and landlords collaborate to share costs of upgrades like insulation, efficient lighting, appliances and energy audits.
9C Share rebate scenarios to show potentials savings.
9D Continue City buy-downs of Home Energy Squad visit costs for residents.
9E Explore suppliers/ providers who could lower the cost of appliances by creating a mass order for the community.

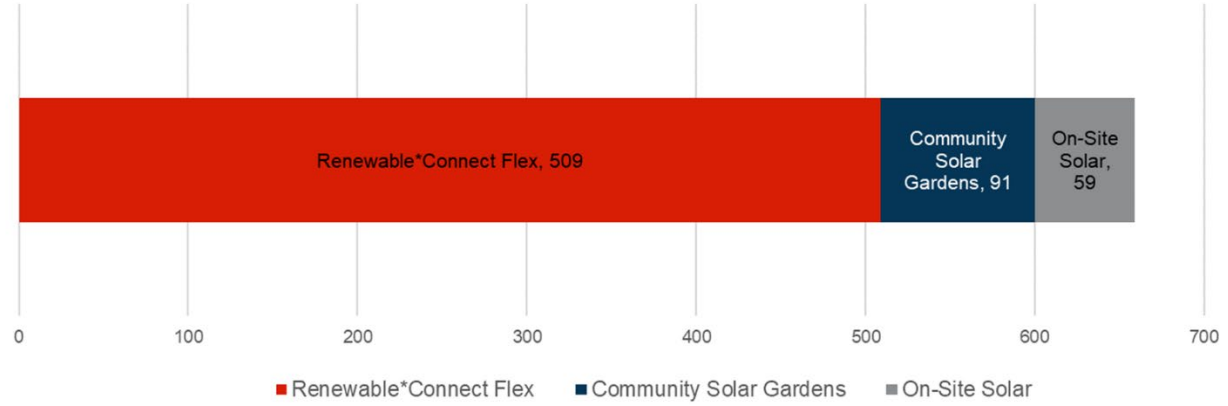
Focus Area: Renewable Energy

As a community with a diverse mix of residential, commercial and industrial properties, Columbia Heights has a unique opportunity to integrate renewable energy into its energy future. Team members voiced strong support for expanding renewable energy adoption across all

sectors, recognizing that cleaner energy sources can help residents and businesses reduce costs, improve air quality and enhance energy resilience.

By embracing renewable energy, Columbia Heights can reduce its dependence on fossil fuels, stabilize long-term energy costs, and contribute to a healthier and more sustainable future for all who live and work in the city.

Figure 13: Columbia Heights Participation in Xcel Energy Renewable Energy Offerings, 2023



Columbia Heights' participation in Xcel Energy's renewable energy programs, such as Renewable Connect Flex, Community Solar Gardens, and On-Site Solar, provides opportunities for residents, businesses and the City to access clean energy. By participating in these programs, Columbia Heights can advance its commitment to sustainability while providing accessible options for residents, businesses and City operations to transition to renewable energy.

Strategy 10: Create a multilingual page on the City website that is a centralized hub for renewable energy resources.

There are significant resources already available for residents and businesses to access renewable energy, including programs to access renewable energy via a subscription program without installing solar panels on a home or building. This strategy calls for a single source on the City's website where residents and businesses can go for information on how to access these programs.

Tactics
10A Link to programs and resources to empower residents and businesses to participate in renewable energy offerings.
10B Identify third party lists for residents to find reputable -renewable energy installers or renewable energy subscription providers
10C Educate about different types of renewable energy available, including onsite solar, subscriptions programs, and options for battery storage.

Strategy 11: Create a multi-lingual outreach campaign to educate residents and businesses about renewable energy programs, with an emphasis on renewable energy subscriptions and community solar gardens as a way to access renewables without rooftop solar.

Building on the theme of raising the profile of existing resources, this strategy would share those resources through multiple channels that team members identified during the planning process. Team members felt it was important to make renewable energy as accessible as possible, so this strategy delivers those resources in languages beyond English and emphasizes renewable programs that don't require on-site upgrades.

Tactics
11A Create simple written and video materials and translate them into multiple languages to reach all community members.
11B Connect residents with ambassadors who have already implemented solar at their home or business.
11C Table at community events and bring in installers to help answer questions and interpreters to translate.
11D Add renewable energy resources to City processes such as permitting process or the resident welcome packet.
11E Work with community connectors such as places of worship to disseminate information on renewable energy opportunities.

Strategy 12: Educate City officials on larger-scale renewable energy projects, such as microgrids.

Team members were curious about the possibility of microgrids in Columbia Heights, so this strategy invites City of Columbia Heights staff to get up to speed on this technology and consider its deployment in our community.

Tactics
12A Gather data and find potential locations for a microgrid.

Strategy 13: Create a City program to recognize and showcase success stories from residents, landlords and businesses who have made renewable energy upgrades.

Team members noted that seeing the energy actions taken by friends, neighbors and peers could inspire them to take energy action as well. This strategy leverages the many successful energy projects that have already been accomplished in Columbia Heights.

Tactics
13A Identify residents and businesses that have implemented renewable energy projects.
13B Call for citizen-submitted content on renewable energy wins from residents, landlords and businesses to create case studies.
13C Showcase the stories in the city newsletter.
13D Share GIS maps showing which census block groups have rooftop solar to make it more of a social norm.

Focus Area: Beneficial Electrification

Beneficial Electrification (BE) is the replacement of direct fossil fuel use with efficient electrically powered appliances or transportation that results in either lower costs, reduced emissions or more effective use of the power grid. This shift can happen in residences, businesses and municipal buildings. The strategies in this focus area recognize that there are many federal, state and utility incentives to promote electrification and that most are in an emergent phase. Some can be implemented and accessed immediately, while some will require further exploration and research.

Strategy 14: Design and execute a multilingual education and outreach campaign promoting the benefits of home electrification and the technologies, programs and incentives available.

Team members recognized that community awareness of electrification incentives is not high, so significant outreach will be useful to raise the profile of these opportunities.

Tactics
14A Share information about beneficial electrification in videos, infographics, social media campaigns, newsletters and mail inserts.
14B Connect with neighborhood groups and HOAs to educate and share resources about electrification.
14C Meet residents and businesses where they are on their electrification journey.
14D Create handouts with different scenarios for electrification upgrades.
14E Organize a heat pump open house where owners can show their heat pumps in their homes.
14F Create a video with the mayor in a home with a heat pump talking about how heat pumps work and their benefits.
14G Conduct data analysis to identify areas with a high number of homes heated with inefficient electric resistance heat to target with heat pump resources.

Strategy 15: Explore creating a City program that provides rebate matches or other incentives for residential and business electrification projects.

While Strategy 15 recognizes the existing opportunities to incentivize electrification, Strategy 16 builds on those opportunities by exploring how the City of Columbia Heights itself could match or support them. Team members recognized that the City has a specific role to play in the shift to electrification.

Tactics
15A Ensure program resources are available to all residents including income-qualified families and seniors.
15B Explore options such as partnering with the Economic Development Authority or adding electrification measures to home rehab loans.
15C Share information on how to stack different funding sources for electrification projects**.**

Strategy 16: Evaluate opportunities to incentivize or require building electrification and electric vehicle (EV) charging infrastructure in zoning and policies.

Building on the City of Columbia Heights' role in opening the door for electrification, Strategy 17 invites the City to incorporate electrification incentives into its zoning policies.

Tactics
16A Collaborate with organizations to expand EV carshare programs into Columbia Heights.

16B Explore incorporating electrification standards into capital improvement plans for City buildings.

Strategy 18: Design and execute a business outreach campaign to encourage businesses to make beneficial electrification improvements.

Both residents and business community team members felt it was important for small- and medium-sized businesses to be able to see themselves in this plan. This strategy includes strategies specifically tailored for businesses.

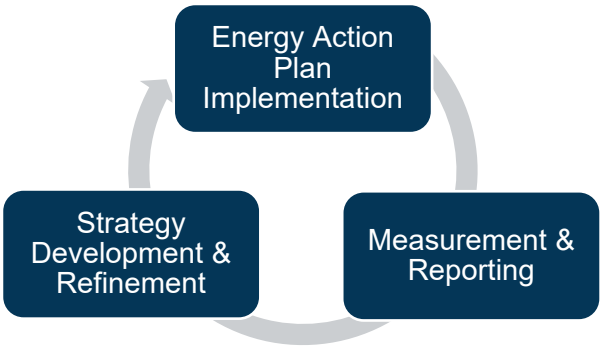
Tactics
17A Explore opportunities to partner with businesses and business councils.
17B Create targeted communication channels to landlords and businesses and highlight the different opportunities for each sector.
17C Compile existing lists of vendors, contractors, or suppliers capable of this type of work.

HOW WE STAY ON COURSE

Adapting to a Changing Landscape

This Energy Action Plan is a living document that is cyclical in nature (Figure 13). Goals and strategies will be assessed and refined as needed based on data and community staff capacity.

Figure 14: Cycle of Implementation, Measurement and Reporting, and Strategy Development



It will be important that strategies are evaluated and updated throughout implementation to reflect advancements in technology and new offerings from government entities and Xcel Energy. Throughout the planning process, we worked to build relationships between City staff and Xcel Energy staff that will foster the collaboration and cooperation required to successfully navigate the changing energy landscape.

Project Management and Tracking Progress

Partners in Energy will host regular project management check-in calls with Columbia Heights staff to ensure we stay on course to achieve our strategies.

To ensure this plan remains on track, the Energy Action Team will track metrics by the focus areas outlined in Table 9 to review progress toward stated goals and targets on an annual basis and to assess whether the efforts appear to be making an impact.

Table 9: Goals and Targets by Focus Area

Focus Area	Goal/Target	Data Source
Reducing Energy Burden	• Engage 50 income-qualified residents annually (or 298 by 2030) in energy efficiency programs • Save 160,705 kWh and 52,378 therms by 2030 through income-qualified energy efficiency programs • Save $55,872 in energy costs by 2030	Xcel Energy
Energy Efficiency	• Engage 1,108 residents annually (or 6,648 residents by 2030) in energy efficiency programs • Save 2,490,418 kwh and 790,600 therms by 2030 • Save $850,649 in residential energy costs by 2030 • Engage 88 businesses annually (or 530 by 2030) in energy efficiency programs • Save 36,247,322 kWh and 1,012,645 therms by 2030 through energy efficiency programs • Save $3,749,965 commercial energy costs by 2030	Xcel Energy
Renewable Energy	• Add 19 new residential participants annually to selected renewable energy programs • Add 2 new business participants annually to selected renewable energy programs • Save 8,649 $MTCO_2e$ through renewable energy programs by 2030	Xcel Energy
Beneficial Electrification	• 10 annual participations in Beneficial Electrification programs	Xcel Energy

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 can be provided to measure the success of campaigns and to determine if we need to change course.

It will be important to let the wider community know how things are progressing and to recognize the collaborative efforts of those involved in hitting the plan targets. At critical milestones, Columbia Heights will publish updates on progress, share successes and congratulate participants and partners.

Energy Action Team Commitment

Throughout the planning process, Energy Action Team members expressed curiosity, enthusiasm and eagerness to see the actions in the plan accomplished. While team members have already given generous time and effort and aren't required to participate in implementation, their engagement is welcome and encouraged.

Energy Action Team members can support implementation by sharing the goals of the plan with their network and community, staying responsive to occasional updates from staff and Partners in Energy facilitators, and seeking ways to participate in the strategies laid out in the plan. If each team member becomes a champion for one strategy, it is more likely that the action will be accomplished. Team members are invited to consider which strategies work best in the communities they are part of. For instance, commission members could consider folding a particular strategy into their commission work, and residents could consider doing an energy efficiency project outlined in the plan and tell their neighbors about it.

APPENDIX A: THE 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 help 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 the community 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 August 2024 through January 2025, as well as multiple surveys between workshops. This plan was drafted by Partners in Energy facilitators, then was reviewed and updated by Columbia Heights City staff, elected officials and the Energy Action Team.

Figure 15: The Columbia Heights Energy Action Team

Workshop 1: Using energy data to define our vision.
August 2024

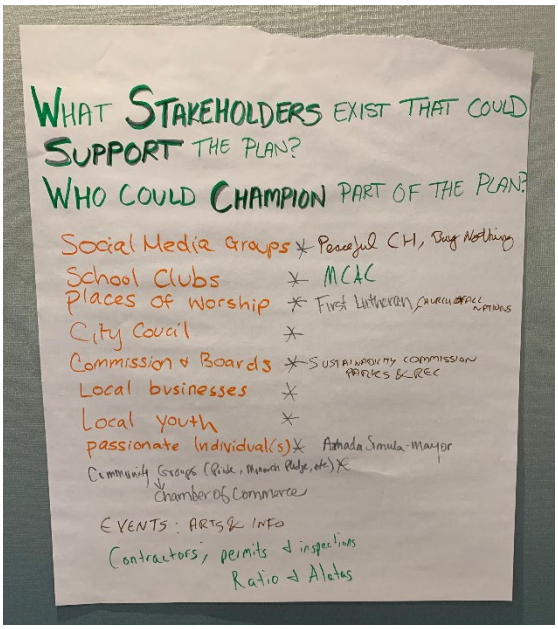
Energy Action Team members got to know each other and learned about the Partners in Energy process as well as their community's demographics and current energy use before dividing into two groups. One group drafted a statement to capture what the group envisioned for Columbia Heights' energy future, while the other brainstormed what kinds of energy action on which they would like to focus the plan. The two groups swapped to update each other's work before a brief workshop closing.

Figure 16: Team members discuss their vision for Columbia Heights

Workshop 2: How will we define success and what resources exist to help us get there? September 2024

Team members shared what institutions, resources, stakeholders and communications channels Columbia Heights has that could help to enact the Energy Action Plan. Facilitators shared information on the energy efficiency and renewable energy programs offered by Xcel Energy that can help the community achieve their goals. The Sustainability Commission joined as team members reviewed how goals are set in Partners in Energy, then defined their goal's parameters, ambitions, and timeframe.

Figure 17: Team members' ideas for groups who might support the Energy Action Plan

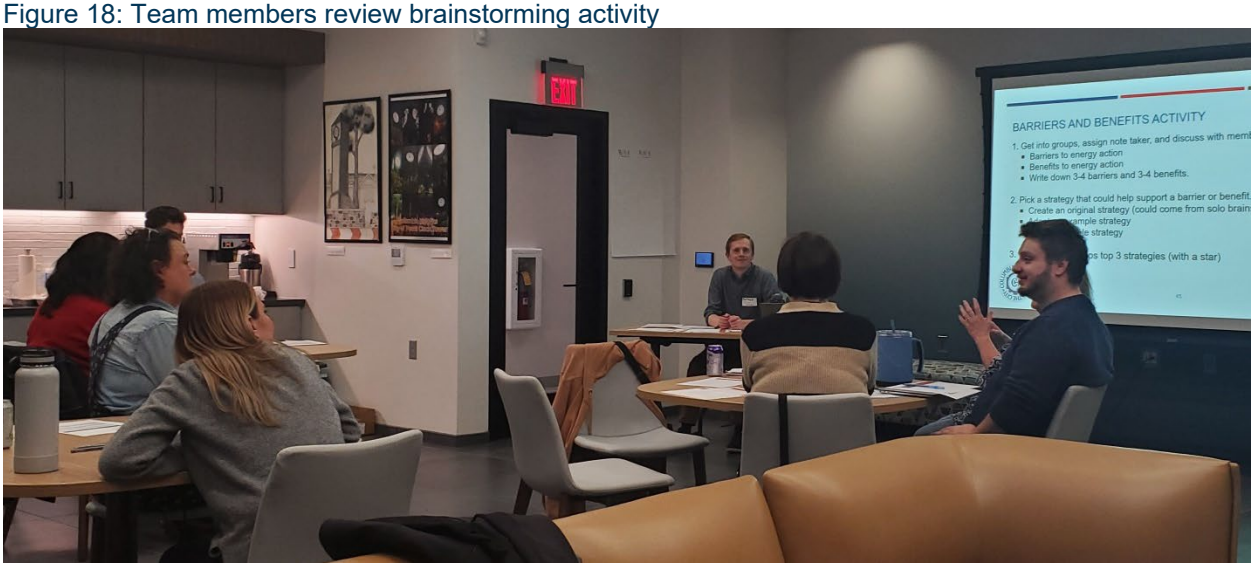


Workshop 3: What is our goal, and what might we do to achieve it?

October 2024

Team members reviewed and approved the overall goal for the plan, which was created based on their input in the previous workshop. Then, they turned their attention to strategies: What actions will the Columbia Heights community take to reach this goal? In small groups, they reviewed sample strategies and brainstormed their own, considering the benefits and barriers to each strategy.

Figure 18: Team members review brainstorming activity



Workshop 4: What strategies will we include in the plan?

December 2024

With support from the Sustainability Commission, Team members reviewed and refined the actions they wanted to include in the Energy Action Plan. First, they voted on the strategies they had proposed in Workshop 3, identifying which they were most enthusiastic about, which they thought should be done immediately, and which they would consider removing from the plan. Then, they brainstormed communication channels, placing those channels with the appropriate strategies. Finally, in small groups, they looked at the strategies by focus area, finalizing which ones they wanted to prioritize.

Figure 19: Community Liaison Andrew Boucher adds a communication channel to a popular strategy

Workshop 5: How will we accomplish each strategy?
January 2025

Having decided on what actions to include in the plan, the team considered how to accomplish those actions by breaking into two groups. One group considered the impact and feasibility of each strategy as a way to decide which to do first. The other group gave elevator pitches on each strategy to share why it was important to them and how they could get it done. The groups swapped and built on one another's work. Afterward, the team reviewed the plan, looked ahead at the steps for approval, and celebrated their work.

Figure 20: Team members brainstorm how the plan strategies fit together

APPENDIX B: BASELINE ENERGY ANALYSIS

Data was provided by Xcel Energy for all Columbia Heights premises for 2021–2023. Xcel Energy provides electric service to the community and CenterPoint Energy provides natural gas service to the community. The data helped the Energy Action Team understand Columbia Heights' 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.

Electricity and Natural Gas Premises

Most Columbia Heights premises are residential. Of the 8,898 distinct premises in Columbia Heights in 2023, 87% (8,293) are residential, 12% (589) are commercial and industrial, and the remaining 1% (20) are municipal buildings. The number of natural gas premises is lower than electricity premises because multi-family buildings tend to be individually metered for electricity but metered at the building level for natural gas. In 2023, the total number of natural gas premises in Columbia Heights was 7,607.

Table 10: Electricity premise counts by sector, 2021–2023

Sector	2021	2022	2023	Average
Residential	8,235	8,216	8,293	8,248
Commercial & Industrial	592	589	585	589
Municipal	20	20	20	20
Total	**8,847**	**8,825**	**8,898**	**8,857**

Electricity and Natural Gas Consumption and Trends by Sector

On average, the Columbia Heights community consumes almost 98 million kWh of electricity and 9 million therms of natural gas across all sectors per year. Total energy consumption increased by 3.5% over the baseline period, which can be attributed to an increase of 5.2% in natural gas consumption while electricity consumption remained flat.

Table 11: Total energy consumption by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity (kWh)	Residential	56,291,837	53,898,484	54,585,207	54,925,176
	Commercial & Industrial	40,619,560	42,104,131	41,705,654	41,476,448
	Municipal	1,447,929	1,573,823	1,492,186	1,504,646
	Total	98,359,326	97,576,438	97,783,047	97,906,270
Natural Gas (therm)	Residential	5,538,552	6,439,395	5,761,988	5,913,312
	Commercial & Industrial	2,667,490	3,329,428	2,864,007	2,953,642
	Municipal	76,864	98,063	86,095	87,007
	Total	8,282,906	9,866,886	8,712,090	8,953,961
Total (MMBtu)	Residential	745,923	827,841	762,444	778,736
	Commercial & Industrial	405,343	476,602	428,700	436,882
	Municipal	12,627	15,176	13,701	13,835
	Total	1,163,893	1,319,619	1,204,845	1,229,452

Total energy consumption during the baseline period varied in each sector consistent 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, Columbia Heights' natural gas consumption was at its highest level in 2022, which was also the coldest year with the most heating degree days.

Table 12: Cooling degree and heating degree days, 2021–2023

	2021	2022	2023
Cooling Degree Days	1,184	1,049	1,232
Heating Degree Days	6,731	7,849	6,565

Greenhouse Gas Emissions and Trends

Columbia Heights' overall energy-related greenhouse gas emissions decreased by 2% from 2021–2023. However, a disaggregation by fuel type shows electricity emissions decreased by

12.9% while natural gas emission increased by 5.2% during this time. To calculate Columbia Heights' energy-related emissions, an emissions factor is used. This emissions factor describes the amount of CO2 emitted per unit of energy (Table 14). Specifically, the 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 may change slightly.

Table 13: Energy-related greenhouse gas emissions in MTCO2e, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average
Electricity	Residential	16,112	14,351	13,692	14,718
	Commercial & Industrial	11,626	11,211	10,461	11,099
	Municipal	414	419	374	403
	Total	28,152	25,981	24,528	26,220
Natural Gas	Residential	29,394	34,175	30,579	31,383
	Commercial & Industrial	14,157	17,670	15,200	15,675
	Municipal	408	520	457	462
	Total	43,958	52,365	46,236	47,520
Total	Residential	45,506	48,526	44,272	46,101
	Commercial & Industrial	25,783	28,880	25,661	26,775
	Municipal	822	939	831	864
Total		**72,111**	**78,345**	**70,764**	**73,740**

Table 14: Emissions factors used to calculate energy-related greenhouse gas emissions, 2021–2023[9]

Fuel Type	2021	2022	2023
Electricity Emissions Factor (lbs./MWh)	631	587	553
Natural Gas Emissions Factor (MTCO2e/Dth)	0.05307	0.05307	0.05307

Energy Costs

In total, Columbia Heights premises spent an annual average of $21.7 million on energy during the baseline period. Columbia Heights residential premises made up almost two-thirds of that spending ($14.2 million or 65%), while commercial and industrial premises made up most of the

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

other third. A small fraction of the spending was from municipal premises. Residential premises spent an annual average of $1,722 per premise on fuel costs. Commercial premises spent much more per premise on energy, with an annual average of $12,284 per premise.

Table 15: Annual energy costs by sector and fuel type, 2021–2023

Fuel Type	Sector	2021	2022	2023	Average	Average Annual Cost Per Premise
Electricity	Residential	$7,305,057	$7,782,924	$8,313,794	$7,800,592	$946
	Commercial & Industrial	$4,180,422	$4,902,140	$4,947,213	$4,676,592	$7,944
	Municipal	$162,362	$204,290	$195,185	$187,279	$9,364
	Total	$11,647,841	$12,889,354	$13,456,192	$12,664,462	
Natural Gas	Residential	$5,043,092	$7,352,805	$6,806,236	$6,400,711	$776
	Commercial & Industrial	$1,851,104	$2,990,886	$2,821,129	$2,554,373	$4,339
	Municipal	$60,179	$95,083	$92,532	$82,598	$4,130
	Total	$6,954,375	$10,438,774	$9,719,897	$9,037,682	
Total	Residential	$12,348,149	$15,135,729	$15,120,030	$14,201,303	$1,722
	Commercial & Industrial	$6,031,526	$7,893,026	$7,768,342	$7,230,965	$12,284
	Municipal	$222,541	$299,373	$287,717	$269,877	$13,494
Total		**$18,602,216**	**$23,328,128**	**$23,176,089**	**$21,702,145**	

Energy Burden

Energy burden is the percentage of income that residents spend on energy. Columbia Heights residents who own their homes and make 30% or less of the median area income spend up to 12% of their income on energy costs. This group comprises 592 households, 7% of the total households in the city. Notably, the overall energy burden for Columbia Heights is 4.1%, which is higher than the state average of 2%.

Table 16: Energy burden by unit occupancy and median income[10]

	Energy Burden		Household Count	
Percent of Area Median Income	**Own**	**Rent**	**Own**	**Rent**

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

0–30%	12%	8%	592	1193
30–60%	6%	3%	1001	854
60–80%	3%	2%	666	317
80–100%	2%	2%	852	297
100–150%	2%	2%	1648	343
150%+	2%	2%	1035	74
Total	**3.8%**	**4.6%**	**5794**	**3078**

Program Participation and Savings

Columbia Heights already has a considerable number of participants in energy efficiency programs from Xcel Energy and CenterPoint 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 savings per premise. In total, participation in these commercial programs saved an annual average of 904,510 kWh and 32,147 therms, while participation in residential programs saved an annual average of 92,040 kWh and 25,099 therms. The annual savings shown below represent the aggregated first-year energy savings for each program during the baseline period. However, energy savings of completed energy efficiency projects will persist beyond the first year of installation. For example, if an energy efficient furnace that results in energy savings is installed, we would expect there to be energy savings in future years as well. While we quantify the annual participation and first-year energy savings for the baseline period in the tables below, the modeled impact of Columbia Heights' implementation of their Energy Action Plan accounts for persistent savings. This is shown in more detail in Appendix C.

Home Energy Squad is a residential program jointly offered by Xcel Energy and CenterPoint Energy, and Xcel Energy also maintains a separate program designation for income-qualified residents. Table 17, Table 18, and Table 20 show the Home Energy Squad participation and energy savings for Xcel Energy and CenterPoint Energy separately. The Home Energy Squad participation counts for Xcel Energy and CenterPoint Energy are not unique residents, and in many cases overlap; however, the electricity savings are exclusive to Xcel Energy, and the gas savings to CenterPoint Energy.

Table 17: Annual Xcel Energy residential energy efficiency program participation and savings, 2021–2023

Residential Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Efficient New Home Construction	2	3,622	0	0	0	0
Home Energy Audit	10	0	20	0	49	0

Home Energy Squad	17	10,964	20	16,968	35	18,804
HomeSmart	6	0	9	0	12	0
Insulation Rebate	3	425	3	183	3	484
Refrigerator Recycling	32	22,306	37	35,239	16	11,707
Residential HVAC	218	68,864	144	31,595	109	31,668
Residential Saver's Switch	308	316	6	7	583	585
Smart Thermostat	76	2,731	117	1,386	216	3,618
Total	**672**	**109,228**	**356**	**85,378**	**1,023**	**66,866**

Table 18: Annual Xcel Energy income-qualified energy efficiency program participation and savings, 2021–2023

Income-Qualified Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Low-Income Home Energy Squad	4	4,062	5	2,025	10	3,824
Home Energy Savings Program	0	0	0	0	8	4,737
Total	**4**	**4,062**	**5**	**2,025**	**18**	**8,561**

Table 19: Annual Xcel Energy business energy efficiency program participation and savings, 2021–2023

Business Program	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Efficiency Controls	0	0	0	0	1	185,289
Electric Rate Savings	0	0	0	0	4	31
Energy Design Assistance	0	0	1	1,232,201	1	150,415
Fluid System Optimization	0	0	1	10,372	0	0
Foodservice Equipment	1	2,089	0	0	0	0
HVAC+R Efficiency	9	14,840	4	5,354	3	391
Lighting Efficiency	10	125,264	6	18,818	11	353,028
Multi-Family Building Efficiency	0	0	2	4,737	0	0

Saver's Switch for Business	5	13	1	2	3	7
Small Business Lighting	20	447,451	6	69,993	9	86,657
Smart Thermostat for Businesses	14	6,479	4	98	0	0
Total	**59**	**596,136**	**25**	**1,341,575**	**32**	**775,818**

Table 20: Annual CenterPoint Energy residential energy efficiency program participation and savings, 2021–2023[11]

Residential Program	**2021**		**2022**		**2023**	
	Count	Savings (therms)	Count	Savings (therms)	Count	Savings (therms)
High-Efficiency Home	2	770	0	0	0	0
Home Efficiency Rebates	155	18,250	157	19,490	191	21,833
Home Energy Squad	41	1,611	0	0	47	2,166
Home Insulation Rebates	15	1,472	8	2,050	28	2,625
New Home Construction Rebates	1	40	0	0	0	0
Total	**214**	**22,143**	**165**	**21,540**	**266**	**26,624**

[11] The CenterPoint Energy programs of DIY Efficiency, Home Energy Reports and School Kits are excluded from this table.

Table 21: Annual CenterPoint Energy income-qualified energy efficiency program participation and savings, 2021–2023

Income-Qualified Program	2021		2022		2023	
	Count	Savings (therms)	Count	Savings (therms)	Count	Savings (therms)
Low-Income Free Heating System Tune-Up	27	570	10	211	8	169
Low-Income Multi-Family Housing Rebates	1	183	0	0	0	0
Low-Income Rental Efficiency	6	766	0	0	0	0
Low-Income Weatherization	5	1,218	0	384	7	399
Non-Profit Affordable Housing Rebates	7	1,089	0	0	0	0
Total	46	3,825	10	595	15	568

Table 22: Annual CenterPoint Energy business energy efficiency program participation and savings, 2021–2023[12]

Commercial Sector Programs	2021		2022		2023	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
C&I Heating and Water Heating Rebates	14	6,317	43	15,089	5	2,603
Commercial Foodservice Equipment Rebates	2	5,124	4	8,689	1	4,027
Energy Design Assistance	0	0	1	52,440	0	0
Industrial Process and Commercial Efficiency	0	0	2	1,080	0	0
Multi-Family Building Efficiency	0	0	4	247	2	826
Total	**16**	**11,441**	**54**	**77,546**	**8**	**7,456**

[12] The CenterPoint Energy programs of Code Compliance, Training and Education, and Benchmarking are excluded from this table.

Renewable Energy Support

There is support for renewable energy in Columbia Heights with 575 residential premises and 25 commercial and industrial premises subscribing to Xcel Energy renewable programs in 2023. These premises respectively receive a total of 1.95 million kWh and 11.3 million kWh of their electricity from renewable sources. Furthermore, 42 residential premises and 17 commercial premises have on-site solar generation.

Table 23: Xcel Energy subscription renewable energy program support, 2023

Renewable*Connect® & Renewable*Connect Flex®[13]	Residential	Commercial & Industrial	Total
Subscriber Count	500	9	509
Total Annual Electricity Subscribed (kWh)	1,477,703	8,041,540	9,519,243
Community Solar Gardens – Solar*Rewards® Community			
Subscriber Count	75	16	91
Total Annual Electricity Subscribed (kWh)	473,345	3,222,730	3,696,074
Total Xcel Energy Subscription Renewable Energy Support			
Subscriber Count	575	25	600
Total Annual Electricity Subscribed (kWh)	1,951,048	11,264,270	13,215,317
Percent of Sector Xcel Energy Electricity Use	3.6%	26.1%	13.5%

Table 24: Xcel Energy on-site solar program support, 2023[14]

On-site Solar – Solar*Rewards® and Net-Metering	Residential	Commercial & Industrial	Total
Participant Count	42	17	59
Total Electricity Capacity (kW)	327	951	1,278

[13] The Windsource® program is now called Renewable*Connect Flex®

[14] Source: Xcel Energy Community Energy Report for Columbia Heights, 2023

APPENDIX C: 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 **Columbia Heights**. All goals will be measured against **Columbia Heights**' three-year baseline of 2021–2023 data unless otherwise noted.

The following section defines the three-year baseline against which progress is measured, including Xcel Energy and CenterPoint Energy program(s) included in the baseline.

To quantify the impact of the Columbia Heights Energy Action Plan from 2025–2030, the savings for residential and commercial energy efficiency are modeled to persist beyond the year of installation. For example, if an energy efficient furnace that results in energy savings is installed in one year, we count the savings for the installation year as well as for succeeding years. For the purposes of this Energy Action Plan, the first year of implementation is equivalent to year one for energy efficiency, and savings accumulate from that point forward.

Focus Areas

Residential Energy Efficiency

- Engage 1,108 residents annually (6,648 residents by 2030) in energy efficiency programs
- Save 2,490,418 kwh and 738,222 therms by 2030
- Save $850,649 in residential energy costs by 2030

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from June 1, 2025, through December 2030. Table 25

identifies annual program participation targets for select programs to meet this goal.[15] These targets are based on current Xcel Energy programs. If Xcel Energy offers new residential efficiency rebate programs, they will be included in this calculation at the discretion of the Columbia Heights team and Partners in Energy.

Table 25: Residential energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2025–2030
Xcel Energy Residential Programs Total	**675**	**830**	**4,977**
Home Energy Audit	26	40	237
Home Energy Squad	24	36	216
Insulation Rebate	3	5	27
Residential Heating & Cooling	157	207	1,242
Refrigerator Recycling	28	38	230
Smart Thermostat	136	205	1,227
Other programs	300	300	1,798
CenterPoint Residential Energy Program Totals	**186**	**279**	**1,671**
Grand Total	**861**	**1,109**	**6,648**

Business Energy Efficiency

- Engage 88 businesses annually (530 by 2030) in energy efficiency programs
- Save 36,247,322 kWh and 1,012,645 therms by 2030 through energy efficiency programs
- Save $3,749,965 in commercial energy costs by 2030

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from June 1, 2025, through December 2030. Table 26 identifies annual program participation targets for select programs to meet this goal. These targets are based on current Xcel Energy programs. All business programs are aggregated for CenterPoint Energy. If Xcel Energy offers new commercial and industrial efficiency rebate programs, they will be included in this calculation at the discretion of the Columbia Heights team and Partners in Energy.

[15] Programs that focus on income-qualified residents are not included in this table but are found in a following focus area designed to reduce energy burden.

Table 26: Business energy efficiency focus area annual and cumulative participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2025–2030
Xcel Energy Business Programs Total	**39**	**48**	**290**
Business Energy Assessments	0	1	6
Energy Design Assistance	1	2	10
HVAC +R Efficiency Rollup	5	8	48
Lighting Efficiency	9	11	66
Multi-Family Building Efficiency	1	2	10
Small Business Lighting	12	14	82
Other programs	11	11	68
CenterPoint Business Energy Programs Total	**26**	**39**	**234**
Grand Total	**65**	**87**	**524**

Renewable Energy

- Add 19 new residential participants annually to selected renewable energy programs
- Add 2 new business participants annually to selected renewable energy programs
- Save 8,649 $MTCO_2e$ through renewable energy programs by 2030

This goal will measure program participation by residents in Xcel Energy's renewable energy 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 27. By 2030, the cumulative renewable energy participation target is an additional 216 residents and businesses over the 2023 baseline.

Table 27: Annual participation increases in Xcel Energy Renewable Energy Programs

Sector	Renewable Energy Program	Baseline Participation	Annual Participation Increase	2030 Goal
Residential	Renewable*Connect Flex	479	10	539
	Solar*Rewards (on-site solar)	28	5	46
	Net Metering (on-site solar)	14	3	32
	Solar*Rewards Community	75	2	12
Commercial	Renewable*Connect Flex	8	2	20
	Solar*Rewards (on-site solar)	13	1	19

Beneficial Electrification

- 10 residential participants annually in Xcel Energy electrification programs

Because the electrification programs from Xcel Energy were new in 2024, there is no historical participation data to base annual targets on. Instead, the Energy Action Team set an initial annual target of 10 residential participants. The electrification programs from Xcel Energy include rebates that replace home heating equipment that only comes from natural gas with an electric alternative, such as an air or ground source heat pump and rebates that replace natural gas water heaters with a heat pump water heater. The secondary fuel source for air source heat pumps can be either natural gas or electricity, which is triggered when temperatures drop below a certain setpoint.

Reducing Energy Burden for Low-Income Residents

- Engage 50 income-qualified residents annually (298 by 2030) in energy efficiency programs
- Save 160,705 kWh and 52,378 therms by 2030 through income-qualified energy efficiency programs
- Save $55,872 in energy costs by 2030

This goal will be measured by comparing actual program participation against the BAU scenario. Progress will be measured from June 1, 2025, through December 2030. Table 28 identifies annual program participation targets for select programs to meet this goal. These targets are based on current Xcel Energy programs. All business programs are aggregated for CenterPoint Energy. If Xcel Energy offers new commercial and industrial efficiency rebate programs, they will be included in this calculation at the discretion of the Columbia Heights team and Partners in Energy.

Table 28: Energy burden focus area annual participation targets by program

	BAU Annual Participation	Annual Target	Cumulative Target, 2025–2030
Xcel Energy Income Qualified Programs Total	**9**	**14**	**85**
Home Energy Savings Program	3	4	22
Low-Income Home Energy Squad	6	10	57
Low-Income Multi-Family Building Efficiency	0	1	6
CenterPoint Energy Income Qualified Programs Total	**24**	**36**	**213**
Grand Total	**33**	**50**	**298**

APPENDIX D: ENERGY ACTION WORK PLAN

This appendix serves as a work plan for the implementation of the Energy Action Plan. It provides additional details for each strategy: who will be primary implementer, who will support, and the specific tactics and timelines. All communications will be reviewed and approved by Xcel Energy before being circulated.

Abbreviations used in this plan:

City: City of Columbia Heights

PiE: Partners in Energy

Focus Area: Reducing Energy Burden for Low Income Residents									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 '25**	**Q4 '25**	**Q1 '26**	**Q2 '26**	**Q3 '26**	**Q4 '26**
Strategy 1: Create a multilingual outreach campaign to educate residents and promote residential energy efficiency programs, home energy audits, rebate information and low-income energy assistance.	1A: Table at community and school events.	City	PiE						
	1B: Highlight programs that are free to participate in, like the Refrigerator Recycling program and income-qualified Home Energy Squad visits.	PiE	City						

Focus Area: Reducing Energy Burden for Low Income Residents									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 '25**	**Q4 '25**	**Q1 '26**	**Q2 '26**	**Q3 '26**	**Q4 '26**
	1C: Partner with schools to educate students and parents about reducing energy burden and improving energy efficiency.	City	PiE						
	1D: Provide energy kits for students and parents to take home. Partner with SACA to distribute energy resources to income-qualified residents.	PiE	City						
	1E: Partner with nonprofits serving income-qualified residents to understand needs.	City	PiE						
	1F: Translate materials into Spanish, Somali and Arabic.	PiE	City						
	1G: Promote information using mediums like videos and infographics.	City	PiE						
Strategy 2: Work with multicultural connectors and trusted messengers to conduct outreach to residents on energy efficiency and cost-saving programs and opportunities.	2A: Work with trusted community champions to share information with or host workshops for specific communities.	City	PiE						
	2B: Train community volunteers connected with specific communities.	City	PiE						

Focus Area: Reducing Energy Burden for Low Income Residents									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
Strategy 3: Conduct outreach to rental property owners with resources to help improve their properties’ energy efficiency and lower tenants’ energy bills.	3A: Include landlord resources in the City’s rental permitting process.	City	PiE						
	3B: Mail resources to the billing address of multi-family buildings to reach owners directly.	PiE	City						
	3C: Promote the Xcel Energy Multi-family Building Efficiency Program.	City	PiE						
Strategy 4: Create a targeted outreach campaign to income-qualified households identified using available data from the census and other sources.	4A: Promote Energy Assistance and encourage residents to self-qualify for the Xcel Energy income-qualified automatic bill credit.								

Focus Area: Energy Efficiency									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
Strategy 5: Create a broad outreach campaign to educate and encourage residents, HOAs and landlords to become more energy efficient and learn about programs, rebates and approved contractors.	5A: Set up quarterly meetings with landlords to educate and promote available programs.	Comms	PiE						
	5B: Research and learn about where residents get their information from to communicate more effectively. For example, newsletters, social media campaigns, or community events.	City	PiE						
	5C: Promote the City’s façade program for window upgrades.	City	PiE						
Strategy 6: Create a City program to recognize and showcase success stories from residents, landlords and businesses that have made energy upgrades	6A: Identify residents and businesses that have implemented energy efficiency projects.	City	PiE						
	6B: Call for citizen-submitted content on energy wins from residents, landlords and businesses to create case studies.	City	PiE						

Focus Area: Energy Efficiency									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
	6C: Showcase the success stories in the newsletter.	City	PiE						
	6D: Create yard signs or displays that recognize that person as an “Energy Champion.”	PiE	City						
Strategy 7: Support local businesses in completing energy efficiency improvements.	7A: Connect businesses with energy assessment programs that provide support from start to finish of a project.	City	PiE						
	7B: Prioritize BIPOC- and women-owned businesses in City-supported energy projects.	City	PiE						
	7C: Promote existing lists of reliable vendors for energy efficiency upgrades.	City	PiE						
	7D: Share utility programs that offer energy assessments for faith communities.	PiE	City						
Strategy 8: Change City ordinance to require adding energy efficiency information to the city property sales inspections.	8A: Create welcome packets for new homeowners, renters and business tenants/owners.	City	PiE						
	8B: Examine existing TISH Energy Disclosure programs in Minneapolis and other cities for guidance.	City	PiE						

Focus Area: Energy Efficiency									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
	8C: Create a welcome packet for new residents that includes incentives and other energy resources.	PiE	City						
Strategy 9: Create a City program to aid in financing upfront costs of energy efficiency improvements for residents and businesses.	9A: Apply for state and national funding to support Naturally Occurring Affordable Housing (NOAH) with grants for energy efficiency updates.	City	PiE						
	9B: Establish programs where the City and landlords collaborate to share costs of upgrades like insulation, efficient lighting, appliances and energy audits.	City	PiE						
	9C: Share rebate scenarios to show potentials savings.	PiE	City						
	9D: Continue City buy-downs of Home Energy Squad visit costs for residents.	City	Council & PiE						
	9E: Explore suppliers/ providers who could lower the cost of appliances by creating a mass order for the community.	City	PiE						

Focus Area: Renewable Energy									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
Strategy 10: Create a multilingual page on the City website that is a centralized hub for renewable energy resources.	10A: Link to programs and resources to empower residents and businesses to participate in renewable energy offerings.	PiE	City						
	10B: Identify third-party lists for residents to find reputable solar installers or renewable energy subscription providers.	PiE	City						
	10C: Educate about different types of renewable energy available, including onsite solar, subscription programs and options for battery storage.	PiE	City						
Strategy 11: Create a multilingual outreach campaign to educate residents and businesses about renewable energy programs, with an emphasis on renewable energy subscriptions and community solar gardens as a way to access renewable energy without rooftop solar.	11A: Create simple written and video materials and translate them into multiple languages to reach all community members.	City	PiE						
	11B: Connect residents with ambassadors who have already implemented solar at their home or business.	City	PiE						

Focus Area: Renewable Energy									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
	11C: Table at community events and bring in installers to help answer questions and interpreters translate.	City	PiE						
	11D: Add renewable energy resources to City processes such as permitting process or the resident welcome packet.	City	PiE						
	11E: Work with community connectors such as places of worship to disseminate information on renewable energy opportunities.	City	PiE						
Strategy 12: Educate City officials on larger-scale renewable energy projects, such as microgrids.	12A: Gather data and find potential locations for a microgrid.	City	PiE						
Strategy 13: Create a City program to recognize and showcase success stories from residents, landlords and businesses that have made renewable energy upgrades.	13A: Identify residents and businesses that have implemented renewable energy projects.	City	PiE						
	13B: Call for citizen-submitted content on renewable energy wins from residents, landlords and businesses to create case studies.	City	PiE						

Focus Area: Renewable Energy									
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**
	13C: Showcase the stories in the city newsletter.	City	PiE						
	13D: Share GIS maps showing which census block groups have rooftop solar to encourage uptake.	PiE	City						

Focus Area: Beneficial Electrification										
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**	
Strategy 14: Design and execute an education and outreach campaign promoting the benefits of home electrification and the technologies, programs and incentives available.	14A: Share information about beneficial electrification in videos, infographics, social media campaigns, newsletters and mail inserts.	City	PiE							
	14B: Connect with neighborhood groups and HOAs to educate and share resources about electrification.	City	PiE							
	14C: Meet residents and businesses where they are on their electrification journey.	City	PiE							
	14D: Create handouts with different scenarios for electrification upgrades.	PiE	City							

Focus Area: Beneficial Electrification										
Strategy	**Tactic**	**Primary**	**Support**	**Q3 '25**	**Q4 '25**	**Q1 '26**	**Q2 '26**	**Q3 '26**	**Q4 '26**	
	14E: Organize a heat pump open house where owners can show their heat pumps in their homes.	City	PiE							
	14F: Create a video with the mayor in a home with a heat pump talking about how heat pumps work and their benefits.	City	PiE							
	14G: Conduct data analysis to identify areas with a high number of homes heated with inefficient electric resistance heat to target with heat pump resources.	PiE	City							
Strategy 15: Explore creating a City program that provides rebate matches or other incentives for residential and business electrification projects.	15A: Ensure program resources are available to all residents including income-qualified families and seniors.	City	PiE							
	15B: Explore options such as partnering with the Economic Development Authority or adding electrification measures to home rehab loans.	City	PiE							
	15C: Share information on how to stack different funding sources for electrification projects.	PiE	City							

Focus Area: Beneficial Electrification										
Strategy	**Tactic**	**Primary**	**Support**	**Q3 ’25**	**Q4 ’25**	**Q1 ’26**	**Q2 ’26**	**Q3 ’26**	**Q4 ’26**	
Strategy 16: Evaluate opportunities to incentivize or require building electrification and electric vehicle (EV) charging infrastructure in City zoning and policies.	16A: Collaborate with organizations to expand EV carshare programs into Columbia Heights.	City	PiE							
	16B: Explore incorporating electrification standards into capital improvement plans for City buildings.	City	PiE							
Strategy 17: Design and execute a business outreach campaign to encourage businesses to make beneficial electrification improvements.	17A: Explore opportunities to work and partner with businesses and business councils.	City	PiE							
	17B: Create targeted communication channels to landlords and businesses and highlight the different opportunities for each sector.	PiE	Comms							
	17C: Compile existing lists of vendors, contractors or suppliers who can do this type of work.	City	PiE							

APPENDIX E: 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.

Beneficial electrification (BE): the replacement of direct fossil fuel use that results in either lower costs, reduced emissions, or more effective use of the power grid.

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 consumed. For example, setting the thermostat to a lower temperature *reduces* the energy used in your home during the winter. Since energy reductions fluctuate, 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 of 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.