

Inver Grove Heights Environmental Commission
Virtual Meeting via Zoom
Thursday, February 25, 2021 at 7:00 p.m.

Meeting Agenda

NOTICE TO RESIDENTS: The Environmental Commission is taking proactive steps to prevent the spread of COVID-19 by meeting remote. People wishing to speak at a public meeting should call into the meeting using the following information: Phone number: 651-450-2471. Individuals may submit written public comments in advance of the meeting by emailing comments to Ally Sutherland (asutherland@ighmn.gov). Comments received prior to 4:00 p.m. on Wednesday, February 24, 2021, will be provided to the Commission before the Thursday, February 25, 2021, meeting.

1. Call to Order

2. Roll Call

3. Presentations - Items that do not require action.

4. Announcements

A. Next Meeting - Thursday, March 25, 2021- Virtual Regular Meeting 7:00pm

5. Consent Agenda - All items on the consent agenda are considered routine and have been made available to the Environmental Commission at least two days prior to the meeting. The items will be enacted in one motion. There will be no separate discussion of these items unless a Commission member or citizen so requests, in which event the item will be removed from this agenda and considered in normal sequence.

A. Minutes of Thursday, January 28, 2021 Environmental Commission Meeting

6. Public Comment - Public comment provides an opportunity for the public to address the Commission on items that are not on the agenda. Comments will be limited to three (3) minutes per person.

7. Regular Agenda - Items Requiring an Action.

A. Consider recommending City Council Approval of the City of Inver Grove Heights' Energy Action Plan

8. Administrative Presentations - Items that need to be discussed without any actions.

9. Commission Comments - An opportunity for Commissions to raise additional questions or comments.

10. Adjourn

Inver Grove Heights Environmental Commission
Virtual Meeting via Zoom
Thursday, January 28, 2021 at 7:00 p.m.

Meeting Minutes

1. Call to Order

The Environmental Advisory Commission of Inver Grove Heights met virtually via Zoom on Thursday, January 28, 2021. Chair Trenzeluk called the meeting to order at 7:00 p.m.

2. Roll Call

Present: Chair Ted Trenzeluk, Commissioners; Sarah Brass, Katherine Teiken, Patricia Todd, Aditya Jayam, Larry Moehring, Matt Mills, Robert Heidenreich and Nichole Boehmke

Absent: None

3. Presentations

A. Metropolitan Airports Commission (MAC), Noise Oversight Committee (NOC) Update

Brad Juffer, Metropolitan Airports Commission (MAC), gave an informational presentation on 2020 MAC updates related to Inver Grove Heights. The roles and responsibilities of the agencies involved in airline transportation, including the MAC, Airlines and FAA were reviewed. Mr. Juffer also reviewed the Noise Oversight Committee's (NOC) role. NOC is a function of MAC and is made up of 6 community representatives and 6 aviation user representatives. NOC's goal is to identify, study and analyze airport noise issues for MAC owned airports within the Twin Cities. Heather Rand, Community Development Director, represents Inver Grove Heights on the NOC committee. NOC monitors compliance with established noise policy at MSP and provides policy recommendations for noise issues to other MAC commissions. NOC's 2021 Work Plan includes residential noise mitigation program, MSP airport community relations, and review of public input. In 2020, total number of airline flights were reduced drastically due to COVID-19 and related travel restrictions. The number of flights was reduced by 40% from 2019 to 2020 and the number of passengers per flight decreases significantly as well. Runway patterns were temporary varied in 2020 due to flight reductions. The number of airport noise complaints Inver Grove Heights residents increased from 2018 to 2019 but dropped 38% in 2020, likely correlated with the reduction in total flights. In 2020, all Inver Grove Heights noise complaints received by MAC were submitted by 20 addresses, and four of the addresses accounted for 98% of all complaints.

Chair Trenzeluk asked how a resident can submit a complaint and Mr. Juffer responded most complaints are submitted through their website, but a phone number is available as well.

Chair Trenzeluk asked if the city receives phone calls often or if people know to go to MAC's website. Mrs. Sutherland responded that the city receives phone calls but directs the caller to submit the complaint through the MAC's website so it is officially recorded.

Commissioner Moehring asked what the complaints are typically about and what proportion are usually able to be resolved. Mr. Juffer responded that the complaints vary by location. Residents in the North and Central areas of the city have noise complaints from 30L and 30R runway arrivals, where residents in the southwest area have noise complaints from 12R and 1-7 runway departures. Departures routes have more flexibility to be altered and therefore these concerns have a greater chance of being addressed.

Commissioner Teiken requested updates on the City of Eagan's FAA complaint. Mr. Juffer responded that residents of the City of Eagan researched airport traffic patterns that would potentially reduce aircraft noise in their city and proposed new patterns to their City Council. The proposal was later reviewed by NOC, MAC and FAA. FAA stated two of the proposals may be plausible but required additional NOC review. NOC found only one option would reduce noise in Eagan without significantly increasing the noise in other communities. This option would potentially reroute 9 daily departures to fly over commercial areas of Eagan and Mendota Heights instead of residential zones in Eagan. These 9 departures most likely fly over the southwest portion of Inver Grove Heights and may be moved to fly over the central portion. More testing is still needed before the proposal moves forward.

Commissioner Mills asked why the South St. Paul airport is not included in the MAC and Mr. Juffer responded that the City of South St. Paul has sufficient operations in place to manage it and there have been no discussions of MAC owning it that he is aware of.

4. Announcements

A. Next meeting - Thursday, February 25, 2021 - Virtual Regular Meeting 7:00pm

B. Xcel Energy Partners in Energy Status Update

Ms. Sutherland noted that the city was selected to the join Partners in Energy program in February 2020 and since has completed all 5 stakeholder engagement workshops. The Environmental Commission will be reviewing the Energy Action Plan developed by the stakeholder team to consider recommendation of approval at the February 2021 meeting.

5. Consent Agenda

A. Minutes of Thursday, August 27, 2020 Environmental Commission Meeting

Motion by Commissioner Heidenreich, seconded by Commissioner Moehring to approve the minutes from Thursday, August 27, 2020 as submitted.

Ayes: 7

Nays: 0 Motion carried.

6. Public Comment

7. Regular Agenda

A. Consider recommending City Council approval of the Wetland Replacement Plan submitted by Canvas of Inver Grove Heights.

Mrs. Sutherland stated the applicant has proposed to construct a residential development located on the northeast quadrant of Hwy 3 and 70th Street in IGH that includes 120 single family detached homes, a mix of single-family lots, and a multifamily apartment area. Due to significant discussion about stormwater at the last meeting, Mrs. Sutherland clarified how the Environmental Commission should review and recommend approval of wetland replacement applications. She noted stormwater is not reviewed during the TEP review of the Wetland Replacement Plans. The city consults the Soil and Water Conservation District (SWCD) to review wetland replacement applications against the Wetland Conservation Act (ACT) rules and guidelines. Stormwater water plans are reviewed through a different city review process. First the preliminary site plan,

stormwater management plan and grading plans are reviewed and approved by city staff, and then reviewed and approved by the Planning Commission and City Council during a public review process. The Wetland Replacement Plan and Environmental Commission's recommendation are brought to the City Council for review and approval along with the final development plans for the proposed project.

Ms. Sutherland noted the applicant proposed 0.1528 acres of impacts and mitigation at 2:1 ratio by a purchase of 0.3056 acres of wetland bank credits from Wetland Bank Service Area #8 in Dodge County. Ms. Sutherland stated TEP determined the applicant meets all WCA rules and guidelines and recommends approval of the Wetland Replacement Plan as submitted by the applicant.

Chair Trenzeluk asked if the applicant could describe the green stormwater features proposed on the site. Ian Peterson, the applicant, stated they have exceeded total and contiguous open space requirements. He noted the site is challenging with the amount of grade changes, and that the road system location and need for turn lanes is the driver of the wetland impacts. They hope to develop a trail system along Allen Way, have exceeded stormwater requirements, and are developing narrow streets to reduce the amount of stormwater runoff.

Commissioner Moehring asked how stormwater runoff is being handle on the site. Mark Rausch, the project engineer, answered that stormwater is being treated by infiltration. They are retaining the water onsite and then filtering it into the ground onsite.

Environmental Commission Recommendation

Motion by Commissioner Trenzeluk, seconded by Commissioner Teiken to recommend City Council approval of the Wetland Replacement Plan submitted by Canvas of Inver Grove Heights

Ayes: 7

Nays: 0 Motion carried.

B. Consider recommending City Council approval of the Wetland Replacement Plan submitted by Dakota County for CSAH 26

Mrs. Sutherland stated Dakota County and the Cities of Inver Grove Heights and Eagan are proposing to expand roughly 2 miles of County Road 26 from Trunk Highway 55 to Trunk Highway 3 from an existing two-lane roadway rural section to a four-lane divided urban highway. CR 63/Argenta Trail will also be reconstructed. The project purpose is to improve vehicle mobility, vehicle safety, and enhance walkability/bikeability along County Roads 26 and 63. The preliminary site plan, stormwater management plan and grading plan have been reviewed and approved by City staff, and by the Planning Commission and City Council during the public review process. The Wetland Replacement Plan and Environmental Commission's recommendation will be brought to the City Council for review and approval along with the final development plans for the proposed project.

Ms. Sutherland noted the applicant proposed 1.54 acres of impacts and is proposing to mitigate at a slightly higher than average ratio of 2.5:1 because they are purchasing wetland bank credits in a different service bank area than the impacted wetlands. Ms. Sutherland stated that Dakota County is unique in that it has several bank service areas, which is unlike other counties. Even though these are being mitigated in Band Service Area 8, it is still located in nearby in Dakota County. Mrs. Sutherland stated TEP determined the applicant meets all WCA rules and

guidelines and recommends approval of the Wetland Replacement Plan as submitted by the applicant.

Tom Kaldunski, the city engineer, reviewed ariel images of impacted wetlands included in the meeting packet and shared additional details of the impacts and location context. Mr. Kaldunski noted he supports TEP panel's recommendation.

Luke Moren, the project engineer, added that the largest wetland impact is due to the alignment of Highway 63/Argenta Trail. He stated the County and City went through an extensive alternative alignment study in 2016 that reviewed alignment options with varying degrees of wetland impacts. The alignment selected and ultimately approved by City Council is included in the proposed application. Funding and growth determined when final approvals were brought forward. Mr. Moren also noted there is a DNR pond along the Eagan and Inver Grove Heights boarder. The County is proposing trails on both side of County Road 26, and for that reason they are reducing the boulevard width and installing a retaining wall to reduce impacts to the water body as much as possible.

Environmental Commission Recommendation

Motion by Commissioner Teiken, seconded by Commissioner Mills to recommend City Council approval of the Wetland Replacement Plan submitted by Canvas of Inver Grove Heights.

Ayes: 7

Nays: 0 Motion carried.

8. Administrative Presentations

9. Commission Comments

10. Adjourn

Motion by Commissioner Heidenreich, seconded by Commissioner Brass to adjourn at 8:17 pm.

Ayes: 7

Nays: 0 Motion carried.

**Environmental Commission Staff Report**

TITLE: Consider recommending City Council approval of the City of Inver Grove Heights' Energy Action Plan

		Fiscal/FTE Impact	Mark all that apply
Meeting Date:	February 25, 2021	None	
Item Type:	Regular Agenda	Amount included in current budget	
Contact:	Ally Sutherland, 651-604-8511	Budget amendment requested	
Prepared by:	Ally Sutherland	FTE included in current complement	
Reviewed by:	Partners in Energy Facilitators	New FTE requested - N/A	
		Other	

PURPOSE/ACTION REQUESTED:

Review the City of Inver Grove Heights' Energy Action Plan, provide feedback, and consider recommending City Council approval.

PROJECT BACKGROUND:

In February 2020, the City of Inver Grove Heights applied and was selected to participate in Xcel Energy's Partners in Energy, a two-year collaboration to develop and implement a community's energy goals. Through Partners in Energy, our community will create a strategic energy plan built upon existing sustainability goals and a stakeholder engagement process. The City has joined more than 30 Minnesota and Wisconsin communities to provide residents and businesses targeted education to help save energy, lower their energy bills, and support renewable energy.

To form an Energy Action Team ("Team"), the City convened 22 community members, including representatives from various City commissions and committees, City Council, local educational institutions, businesses, service organizations, utility representatives, and many residents. Over a seven-month process, the Team completed five workshops and published a community survey to assist with the development of an Energy Action Plan for the Inver Grove Heights community. Over 200 survey responses were received.

The attached draft Energy Action Plan ("Plan") is the result of the stakeholder team's planning workshops. This Plan will be the guiding document that will assist our community in making energy choices that conserve both natural and financial resources. It builds off and supports existing related City programming, including Minnesota's GreenStep Cities programming and the municipal facilities

sustainable maintenance and operations plans. Through implementing this Plan, the City will have the new resources available to educate community members on how to practice energy conservation, use renewable energy, and align with the City's environmental commitments. Additionally, the City is committed to implementing the municipal operations actions identified in this Plan to increase energy and cost savings in our buildings, resulting in responsible management of taxpayer dollars and demonstrating leadership in sustainability in our community and region.

City staff are requesting the Environmental Commission provide feedback and consider a recommendation for City Council approval. City staff will bring the Plan document to the City Council for review at the March 1, 2021 Work Session and March 8, 2021 Regular Meeting.

ATTACHMENTS: Draft Executive Summary, Energy Action Plan
 Draft Energy Action Plan



INVER GROVE HEIGHTS ENERGY ACTION PLAN

Our Energy Action Plan, approved by the City Council in March 2021, seeks to address and engage our diverse community on energy issues. We will improve economic vitality and sustainability for all who call Inver Grove Heights home.

Our Vision

Inver Grove Heights will be an innovative and engaged community where energy choices conserve both our natural and financial resources.

Our Goals and Impacts

Between 2021 and 2022, we will...



Engage **2,500** residents and **250** businesses, schools, nonprofits, and places of worship.

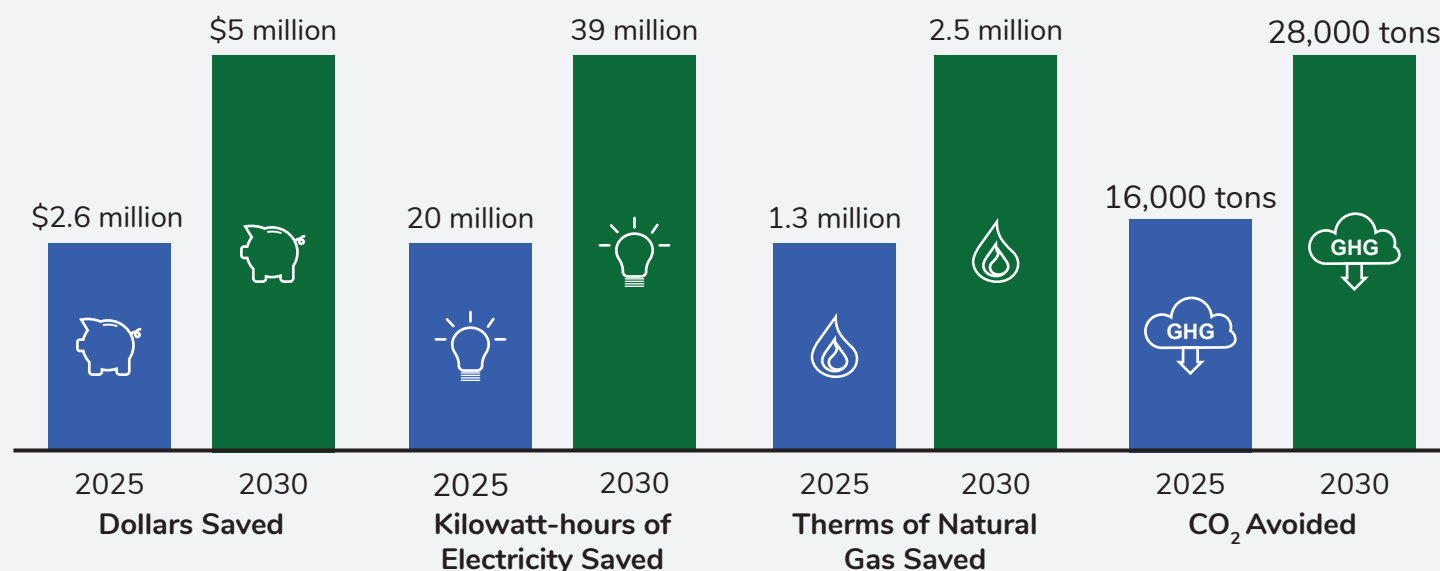


Support **80** under-resourced households with energy costs.



Increase renewable energy support by **250** residents and **12** businesses. Add **10** residential on-site solar installations.

Estimated Savings and Changes in the Inver Grove Heights Community



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





How We Are Going to Get There

We've identified three focus areas and 14 strategies to focus our resources and targets to achieve our goals:

Residential Community Engagement

- Education & outreach to increase energy efficiency among resident.
- Decrease energy burden for underserved households
- Saving energy for multi-family properties
- Education & outreach to increase renewable energy support and adoption among residents
- Longer term: Support efficient transportation options for residents

Businesses, Schools, Nonprofits, and Places of Worship

- Education & outreach to increase energy efficiency among:
 - Small businesses
 - Industry and large businesses
 - Local schools, nonprofits, and places of worship
- Education & outreach to increase renewable energy support and adoption among businesses
- Longer term: Support efficient transportation options for businesses, schools, nonprofits, and places of worship

Municipal Leadership

- Demonstrate leadership in sustainability
- Increase energy efficiency in municipal operations
- Explore renewable energy for municipal operations and buildings
- Examine & implement efficient transportation and fleet electrification options

Get Involved

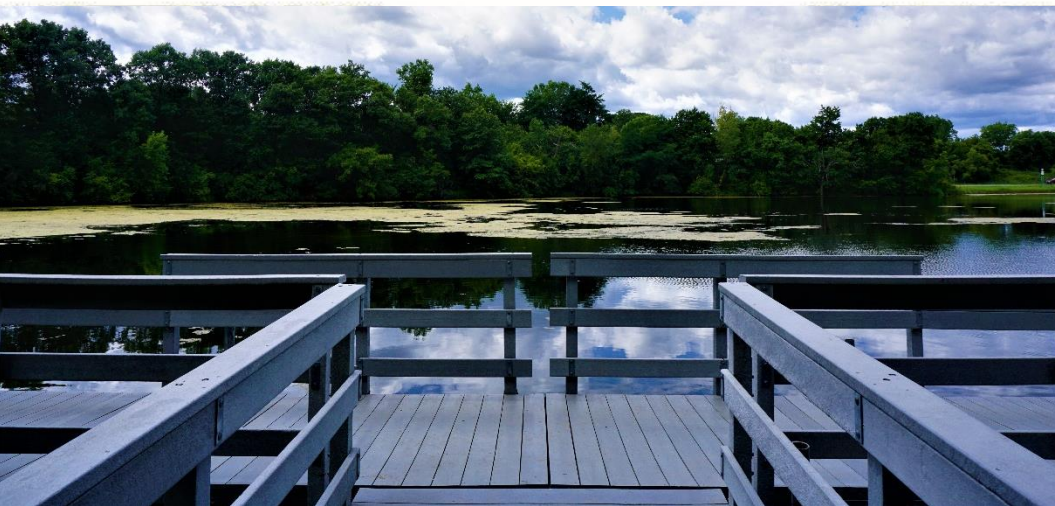
Visit ighmn.gov/Energy to read more about our Energy Action Plan and find ways you can support our work.

Please contact Environmental Specialist Ally Sutherland to learn how you can help Inver Grove Heights achieve our energy vision at asutherland@ighmn.gov.



AN ENERGY ACTION PLAN FOR INVER GROVE HEIGHTS

DRAFT February 2021



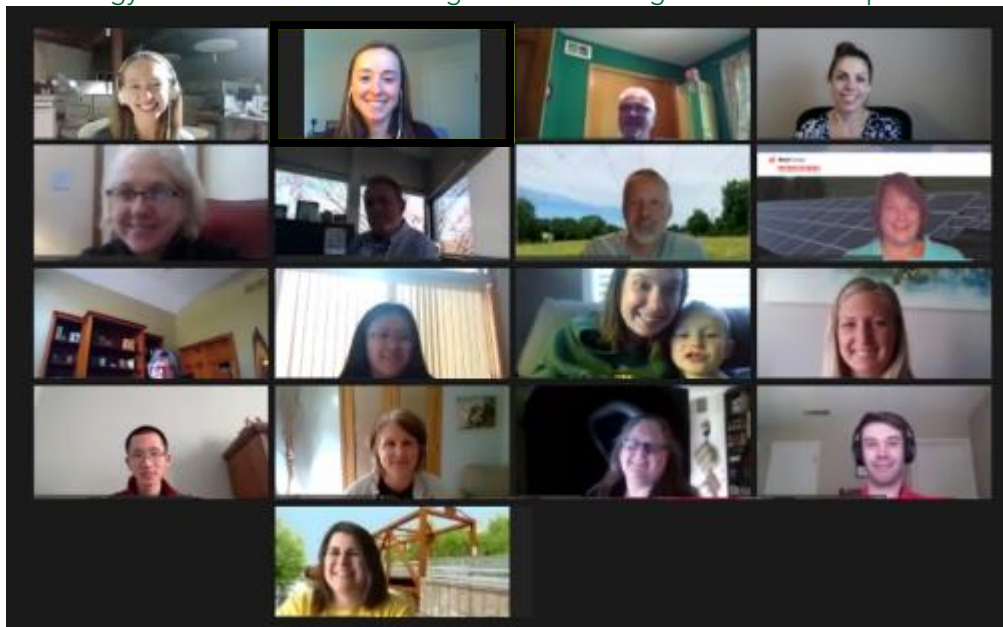
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ACKNOWLEDGEMENTS

The content of this plan was derived from a series of planning workshops hosted the City of Inver Grove Heights and facilitated by Xcel Energy's Partners in Energy. Partners in Energy is a two-year collaboration to develop and implement a community's energy goals. For more information about the planning workshops, see *Appendix 3*.

Figure 1: The Energy Action Team met over digital conferencing for five workshops to create our plan.



The Energy Action Team

Thank you to the following community members who contributed many hours of service to developing our Energy Action Plan.

Team Members and Affiliations	
<i>Municipal Staff, City of Inver Grove Heights</i>	
Heather Rand	Director of Community Development and Director of the Economic Development Authority
Ally Sutherland	Environmental Specialist
<i>Elected and Appointed City Officials, City of Inver Grove Heights</i>	
Sue Gliva	City Council Member
Annette Maggi	Planning Commission Chair
Kara Perry	Former City Council Member
Katherine Teiken	Environmental Commission Member
Mary T'Kach	Housing Committee Member
Ted Trenzeluk	Environmental Commission Chair
<i>Business and Nonprofit Community Representatives</i>	
Charlie Thompson	Neighbors Inc. CEO and President and Resident
Ben Van Straten	CHS Inc.
<i>School Representatives</i>	
Heather Aune	ISD 199 Director of Business Services
Quennel Cooper	ISD 199 Pine Bend Elementary Principal
Randi Goettl	Inver Hills Community College
Shannon Williams	Inver Hills Community College
<i>Resident Representatives</i>	
Jake Berg	Resident
Tenzin Dolkar	Resident
Dawn Gaetke	Resident
<i>Utility Representatives</i>	
Tami Gunderzik	Program Manager, Xcel Energy's Partners in Energy
Ashley Haung	Marketing Assistant, Xcel Energy's Partners in Energy
Patrick Mathwig	Energy Services Representative, Dakota Electric
Yvonne Pfeifer	Community Energy Efficiency Manager, Xcel Energy
Jake Sedlacek	Community Relations Manager, Xcel Energy and Resident
<i>Partners in Energy Facilitators</i>	
Marisa Bayer	Partners in Energy Community Facilitator
Jamie Johnson	Partners in Energy Community Facilitator



This Energy Action Plan was funded by and developed in collaboration with Xcel Energy's Partners in Energy.

Table of Contents

Acknowledgements	iii
Executive Summary	1
Introduction	3
Why the City is Bringing an Energy Action Plan to Our Community	3
Our Engagement Process.....	5
Energy Utilities in Our Community	5
Baseline Energy Data, 2017-2019.....	6
Our Energy Future, 2021 and beyond.....	15
Energy Vision Statement.....	15
Goals.....	15
Implementation Work Plan.....	19
Our Focus Areas	20
Focus Area: Residential Community Engagement.....	21
Focus Area: Businesses, Schools, Nonprofits, and Places of Worship	30
Focus Area: Municipal Leadership	39
Measuring Success	44
Energy Action Plan Impacts – Near Term.....	44
Long-Term Impacts.....	47
Support and Commitments.....	48
Data and Reporting	48
Project Management and Tracking	49
Other Commitment and Engagements	49
Appendix 1: Baseline Energy Data Analysis, 2017-2019	50
Appendix 2: Methodology for Measuring Success.....	59
Appendix 3: Xcel Energy’s Partners in Energy Planning Process.....	67
Appendix 4: Glossary of Terms.....	71
Appendix 5: Implementation Memorandum of Understanding	74

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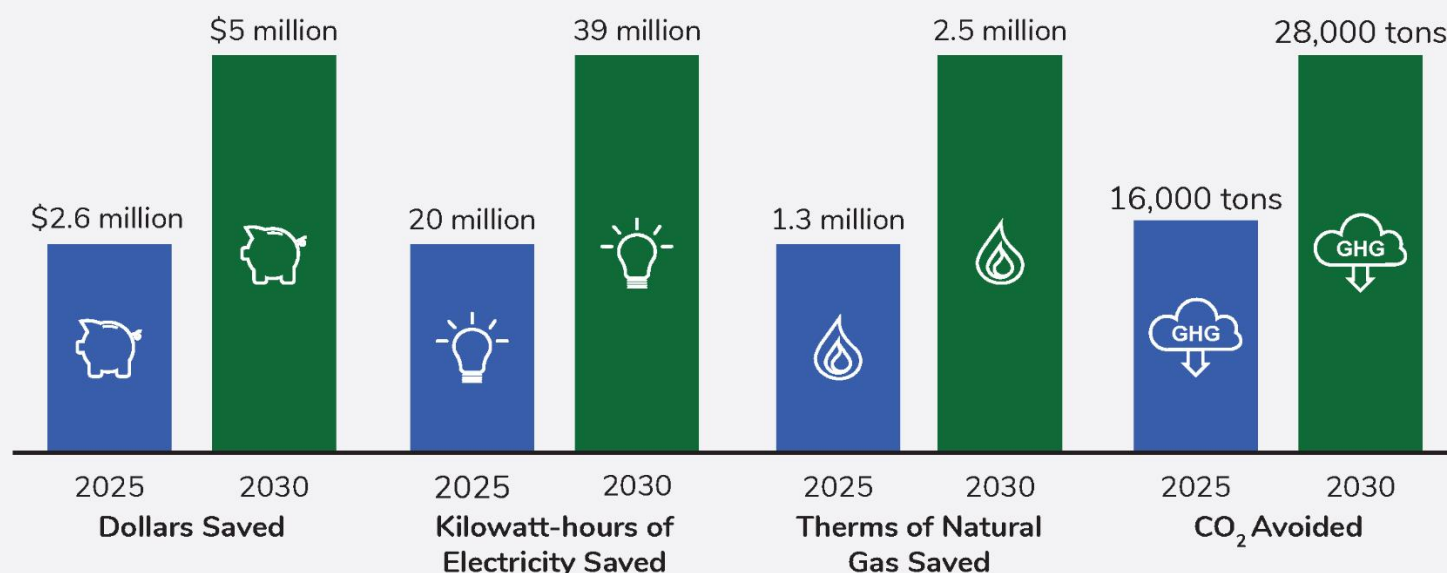


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INTRODUCTION

Inver Grove Heights is a second-ring suburban community, nestled along the banks of the Mississippi River, mixed with developing suburban and rural land. The community is known for its quiet, small-town feel, while being seated only 10 short minutes from downtown Saint Paul and closely connected to neighboring suburban communities. The city is home to residents, commercial and industrial businesses, nonprofits, and K-12 and higher education institutions.

Who are we talking about?

We, Our, and the City refer to the City of Inver Grove Heights.

Community refers to the broader Inver Grove Heights community.

Energy Action Team is the group of individuals whose input created our energy action plan.

Energy Action Plan refers to this document for the City of Inver Grove Heights.

Our energy action plan seeks to address and engage this diverse community on energy issues with the mission to enhance economic vitality and conservation of natural resources in Inver Grove Heights.

Why the City is Bringing an Energy Action Plan to Our Community

The City of Inver Grove Heights applied to Xcel Energy's Partners in Energy to further the work we have been doing on environmental and sustainability programming, and to connect everyone in the community with the same environmental and financial benefits. The City entered this planning process to develop a community-driven Energy Action Plan that we and our partners may fully embrace.

As the city continues to grow, ensuring development meets the needs of the present and future is a top priority. This includes ensuring access to resources, such as energy, that are reliable and affordable for all community members. Through

developing and implementing this plan, the City will have the resources available to educate community members on how to reduce their energy costs through practicing energy conservation, use renewable energy, and align with the City's environmental commitments.

The work of this Energy Action Plan builds off past work by the City, including its work in Minnesota's GreenStep Cities program and the energy efficiency work the City is pursuing in its own facilities.

Figure 2: Volunteers help beautify one of Inver Grove Heights' many parks and green spaces.



Our plan is primarily concerned with grid energy use, including electricity and natural gas. It also begins to address the growing area of electric vehicles and works to support related initiatives, including transportation initiatives, in our 2040 Comprehensive Plan.¹

Economic Benefits to Our Community

The economic benefits of energy efficiency are well-documented and wide-ranging. Perhaps the most direct economic benefit is lowered energy costs from reduced energy use. Typically, when a home or business reduces energy it lowers monthly energy bills, enabling more funds to put back into the local economy. Energy efficiency also stimulates the local economy by supporting local jobs, like construction workers and heating, cooling, and ventilation technicians.² In implementing our plan, we will be bringing these economic benefits to our community.

Health Benefits to Our Community

Energy efficiency, renewable energy, and sustainable transportation each drive local health benefits for those who live, work, and visit Inver Grove Heights. Using less energy means burning fewer fossil fuels and reducing air pollution that can be damaging to human health.³

¹ For more information about Inver Grove Heights' 2040 Comprehensive Plan, visit the City's [website](#).

² Environmental Protection Agency, Quantifying the Multiple Benefits of Energy Efficiency and Renewable Energy: A Guide for State and Local Governments, 2018 Edition, https://www.epa.gov/sites/production/files/2018-07/documents/epa_slb_multiple_benefits_508.pdf.

³ *Ibid.*

Our plan will also seek to improve our community's residential and commercial building stock by supporting energy efficiency. In addition to making a building more comfortable and durable, efficiency can also contribute to health and safety benefits in several ways. Increased ventilation can improve indoor air quality by reducing problems with moisture, pollutants, or pathogens. Improving water and space heating systems can reduce the risk of interior hazardous gas leaks. Air sealing and insulation can reduce drafts and ice dams – helping to keep buildings cool in the summer and warm in the winter.

By pursuing efficiency alongside clean and sustainable energy, the actions of this plan will contribute to the physical health and well-being of all who call Inver Grove Heights home.

Our Engagement Process

This Energy Action Plan was created over a seven-month process that helped our community characterize its energy use, identify energy-related goals, and develop engagement strategies to guide us toward our energy future. The following content was created through a series of planning workshops that started in June 2020 and were held digitally over video conferencing with a planning team committed to representing local priorities in collaboration with City of Inver Grove Heights and Xcel Energy's Partners in Energy.

Over five workshops, we engaged 22 community members, including representatives from various City commissions and committees, City Council, local educational institutions, businesses, service organizations, utility representatives, and many residents. See the *Acknowledgements* section for a list of participating Energy Action Team members. See *Appendix 3* for more information about the planning process and Xcel Energy's Partners in Energy.

Energy Utilities in Our Community

Our Energy Action Plan seeks to address how the community uses energy. The City of Inver Grove Heights is served by two utility energy providers: Xcel Energy and Dakota Electric Association (Dakota Electric).⁴ This plan includes baseline data for each utility. The action and work of this plan seeks to engage residents served by each of these utilities by connecting community members with their service providers, primarily through outreach and education.

⁴ See [xcelenergy.com](https://www.xcelenergy.com) for more information about Xcel Energy and its programs and services, many of which are addressed in this plan. See [dakotaelectric.com](https://www.dakotaelectric.com) for more information about Dakota Electric Association and its programs and services.



BASELINE ENERGY DATA, 2017-2019

An integral part of the Partners in Energy planning process is reviewing historic energy data that informs our community's energy baseline. Xcel Energy and Dakota Electric provided data on energy use, participation counts, utility energy conservation program savings, and renewable energy support for Inver Grove Heights from 2017-2019, as detailed in the following section. In addition, we analyzed the American Community Survey and other community data to better understand residents' transportation choices, income, and housing stock. See *Appendix 1* for a more in-depth picture of Inver Grove Heights' energy baseline data.

Some common energy units & terms

Kilowatt-hour (kWh) is a unit of electricity consumption.

Therm is a unit of natural gas consumption.

Premise is a unique combination of utility service address and meter.

MTCO_{2e}, or metric tons of carbon dioxide equivalent, is unit of measure for greenhouse gas emissions.

See *Appendix 4: Glossary of Terms* for a glossary of common energy terms used in this plan.

The data we examined for this baseline was broken down into three main sectors:

- **Residential** includes the residents of the Inver Grove Heights community.
- **Commercial and industrial** includes businesses, schools, nonprofits, places of worship, and some multi-family properties.⁵
- **Municipal** refers to buildings and premises owned or operated by the City of Inver Grove Heights.

⁵ Due to 15 x 15 data privacy concerns, one commercial and industrial premise was removed from the data included in the baseline analysis of our plan. See *Appendix 4: Glossary of Terms* for further explanation of 15 x 15.

Energy Utilities Serving Our Community

Xcel Energy provides electricity and natural gas to most of Inver Grove Heights. Dakota Electric provides electric service to the remaining 10%, serving southwest areas of the community. The data below includes electric data for both Xcel Energy and Dakota Electric unless otherwise noted. See Figure 3 for a breakdown of premises by utility. *Figure* shows a map of electric utility service area. Xcel Energy is the sole utility provider for natural gas in Inver Grove Heights.

Figure 3: Inver Grove Heights Premises by Utility and by Sector, 2019

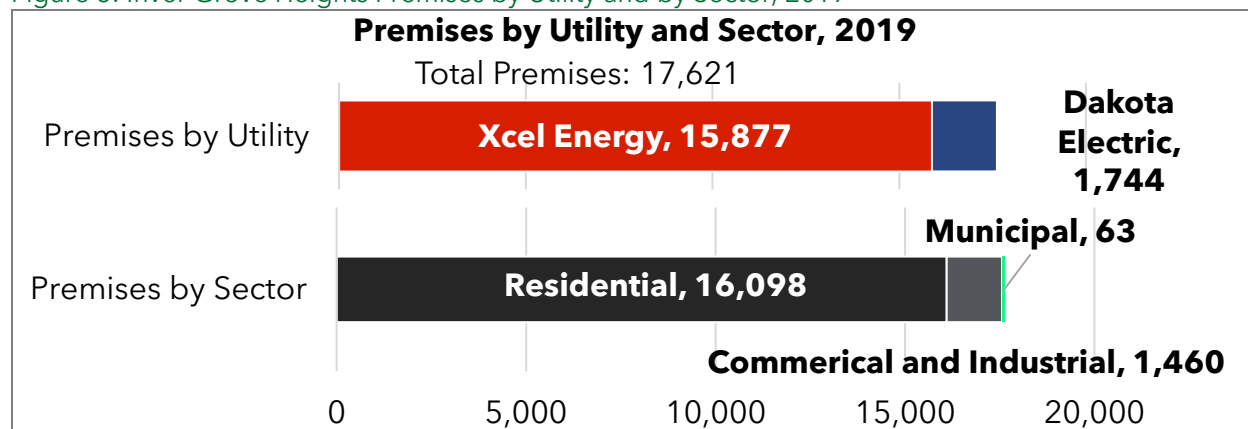
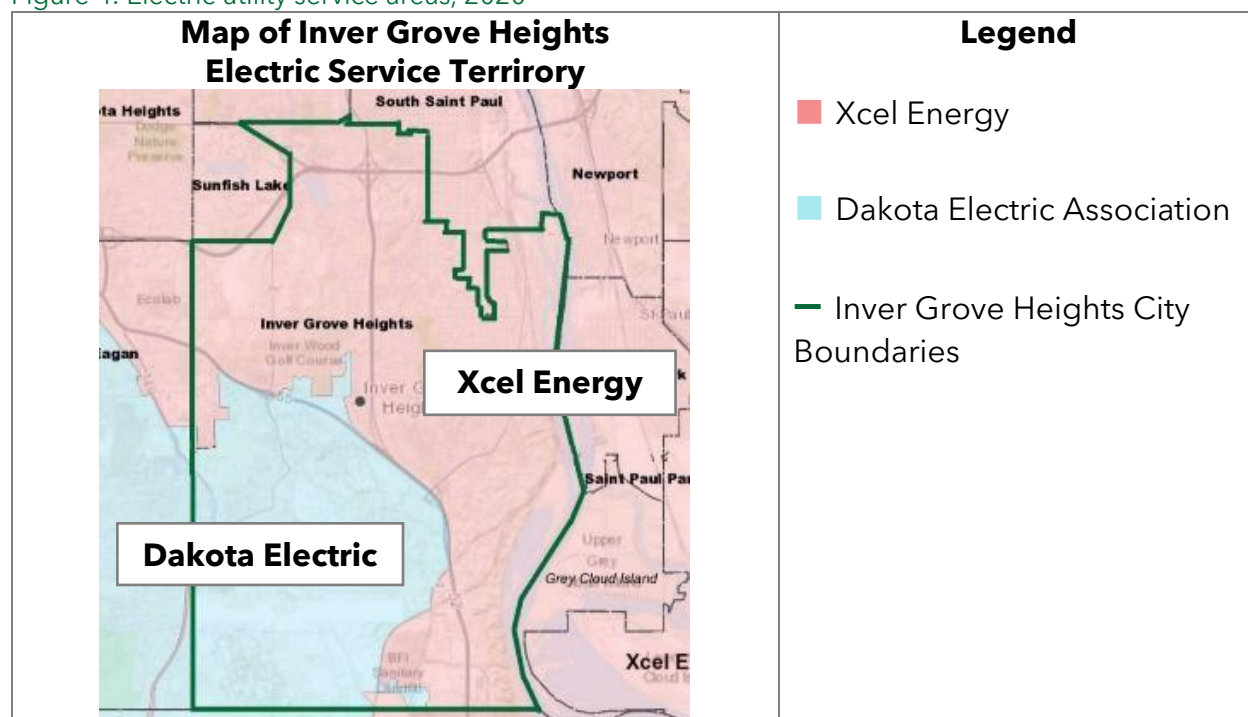


Figure 4: Electric utility service areas, 2020⁶

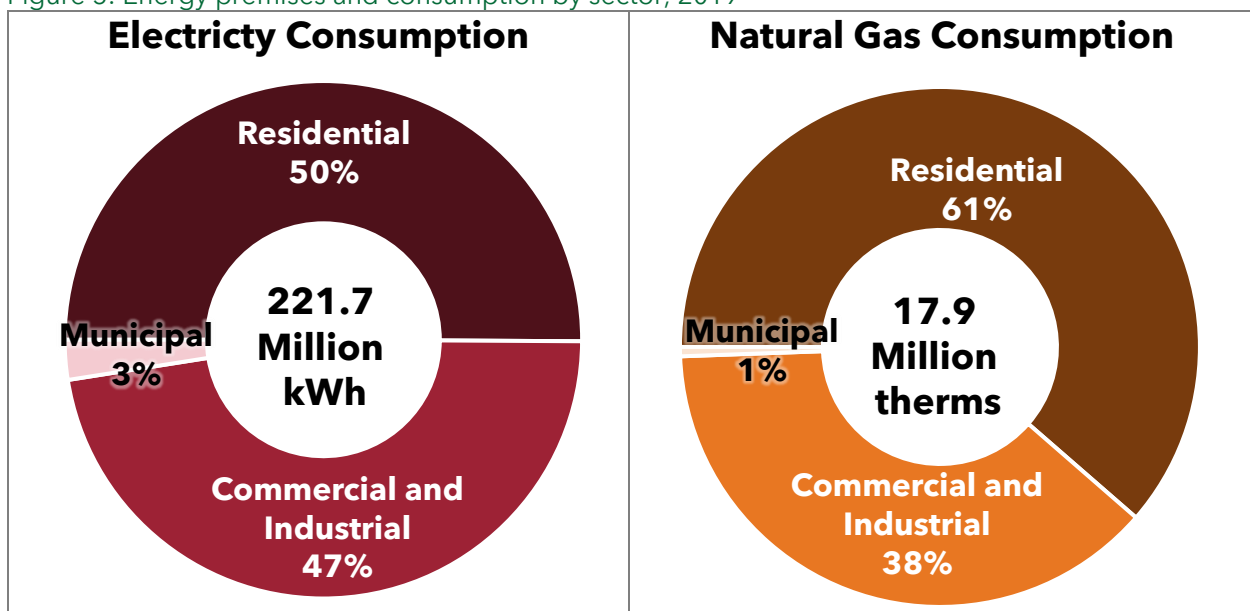


⁶ Source: Minnesota Public Utilities Commission, Electric Service Area Maps. Accessed December 30, 2020. <https://mn.gov/puc/utilities/maps/>.

Grid Energy Use

Overall, residents use slightly more energy than the commercial and industrial sector in the community. Residents consumed 50% of electricity and 61% of natural gas over the baseline period. While electricity has a variety of end uses, in Minnesota, natural gas is primarily used for space heating. Municipal facilities consumed about 2% of energy in the community, and the commercial and industrial sector consumed 48% of electricity and 39% of natural gas over the baseline period. While the commercial and industrial sector consumed less energy in the community than residents, on average, each commercial and industrial property consumed a far greater portion of energy. The commercial and industrial sector makes up about 8% of premises in the community but is responsible for nearly half of all energy consumed.

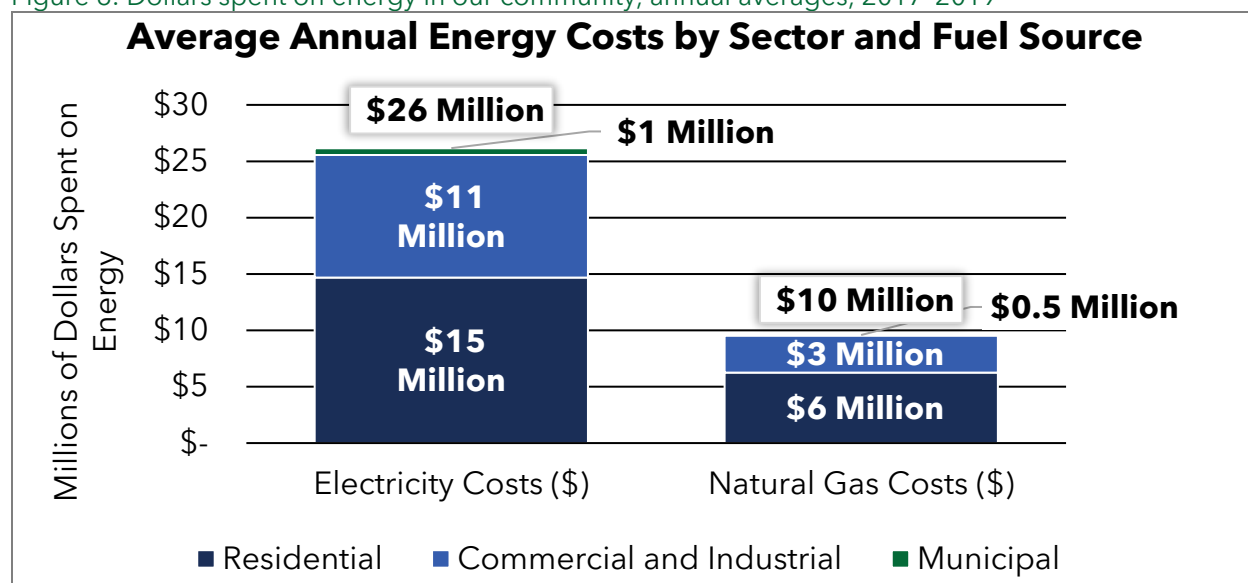
Figure 5: Energy premises and consumption by sector, 2019



Energy Costs

Across the baseline period, the Inver Grove Heights community spent an estimated \$35.5 million dollars annually on energy costs across both electricity and natural gas. About 75% of all energy costs are for electricity, with the residential sector spending an average of \$15 million a year on electric costs.

Figure 6: Dollars spent on energy in our community, annual averages, 2017-2019



The average residential premise spends about \$1,300 on energy each year – or a little over \$100 per month. While costs fluctuate greatly for commercial and industrial premises based on size and industry, these premises on average spent nearly eight times what residents did on energy, just under \$10,000 each year over the baseline period.

Table 1: Average annual energy costs per premise by sector, 2017-2019

Customer Type	Electricity Costs	Natural Gas Costs	Total Costs	Average Monthly Costs
Residential	\$ 917	\$ 391	\$ 1,308	\$ 109
Commercial and Industrial	\$ 7,523	\$ 2,264	\$ 9,787	\$ 816
Municipal	\$ 9,746	\$ 806	\$ 10,551	\$ 879

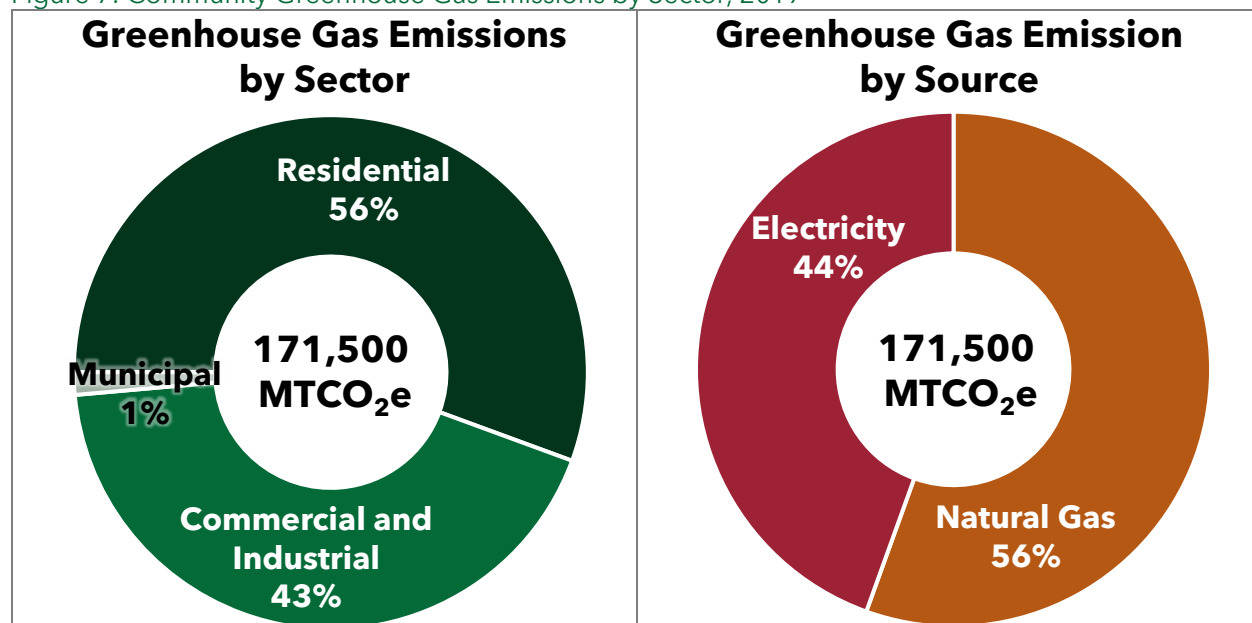
While the average municipal building spends more on energy than the average commercial and industrial building, as a whole, the City is responsible for less than 5% of overall energy costs within the community.

Greenhouse Gas Emissions

Over the three-year baseline period, the community was responsible for an average of 171,000 MTCO_{2e} of emissions annually, which is equivalent to 19.2 million gallons of gasoline consumed.⁷ Residents were responsible for a little more than half – about 56% – of community emissions. Breaking down those emissions by source, just over half were from natural gas.

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

Figure 7: Community Greenhouse Gas Emissions by Sector, 2019



Renewable Energy

There are many ways that the Inver Grove Heights community supports renewable energy. This includes renewable energy subscriptions, community solar gardens, and on-site solar.

Renewable energy subscriptions: The most popular renewable energy programs in Inver Grove Heights are subscriptions. Renewable energy subscriptions are structured so that a customer can subscribe part or all their home's electricity to renewable energy produced by their utility provider.

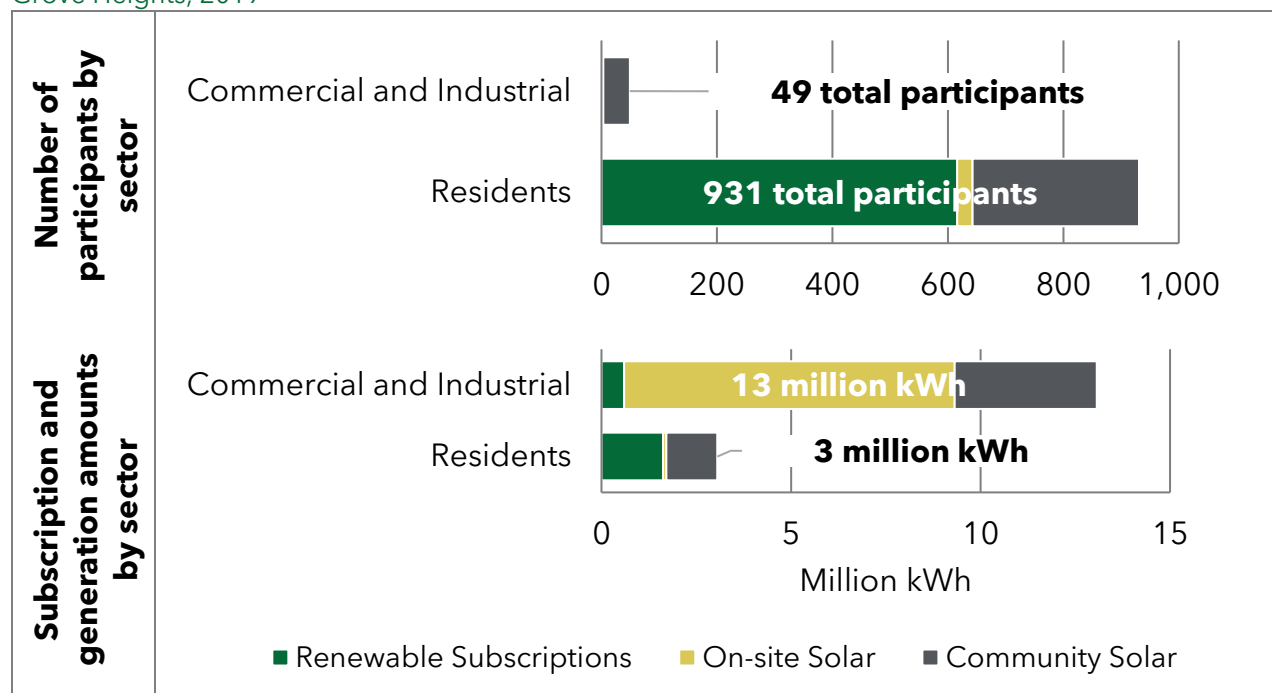
Community solar: Community solar allows for community members to support the development of solar energy produced and sold off-site by an independent developer.

On-site solar: Homeowners or business owners may install solar panels on their houses or facilities to power their building.

Both Xcel Energy and Dakota Electric Association offer programs to support resident and businesses to subscribe to, host, or otherwise support renewable energy. Overall, far more residents than businesses and nonprofits support renewable energy in some way – almost 1,000 residents compared to just under 50 businesses. However, businesses and nonprofits are responsible for supporting more renewable energy development and production – about 13 million kWh in 2019 compared to just 3 million kWh for residents. For businesses, most of this production was from on-site solar installations and tracked through participation in Xcel Energy's Solar*Rewards®. On the residential side, renewable energy subscription programs

were the most popular. See *Figure 8* below for a breakdown of renewable energy and solar development support in the community.

Figure 8: Participation in and electricity generation for renewable energy and solar programs in Inver Grove Heights, 2019⁸



Energy Conservation Program Participation and Savings

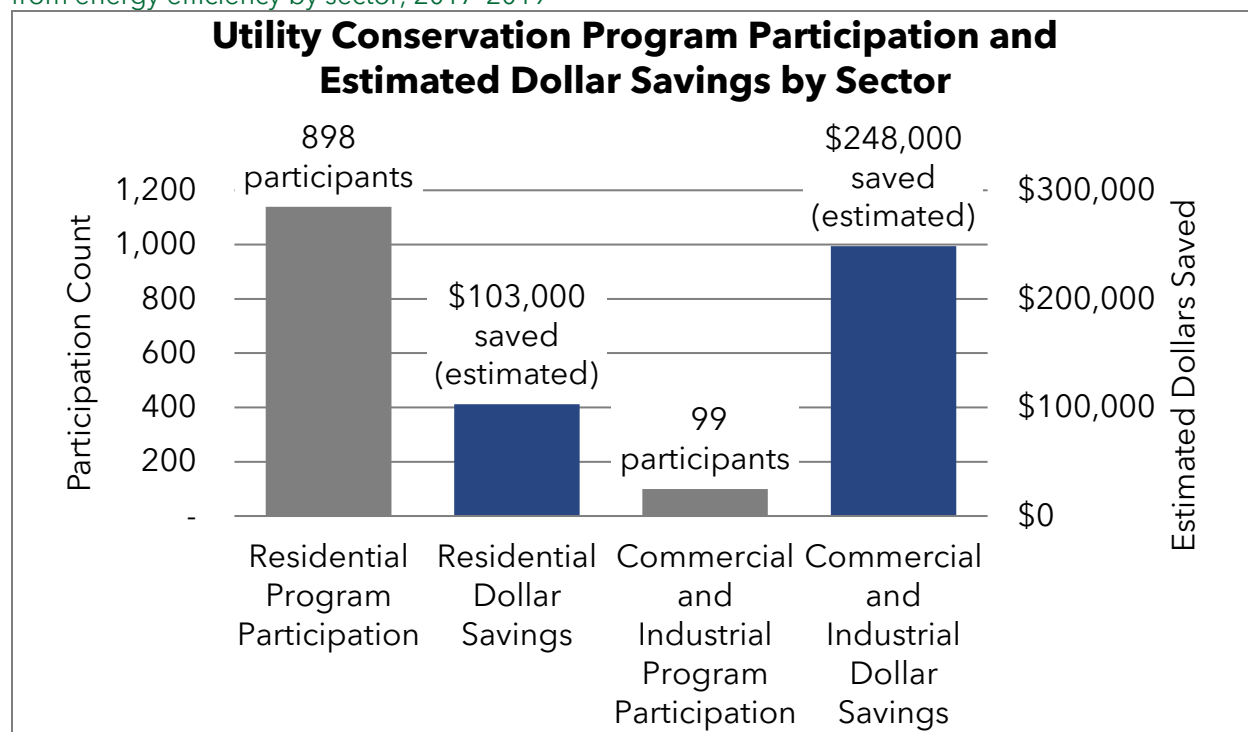
In Minnesota, utilities offer a variety of Conservation Improvement Programs designed to help customers reduce energy use and expenditures. Over the three-year baseline, more than 3,400 residents and 300 businesses participated in these programs from Xcel Energy and Dakota Electric – about 1,100 residents and 100 businesses participated each year. In an average year over the baseline period, the community saved 2.8 million kWh of electricity and 141,000 therms of natural gas. This equates to around \$422,000 in avoided energy costs annually. Through energy conservation, the community also avoided more than 5,300 MTCO₂e, the equivalent of carbon sequestered by 6,900 acres of forest in one year.⁹

For a breakdown of specific programs and savings for the community, see *Appendix 1*.

⁸ Note: “commercial and industrial” in this figure also includes any City of Inver Grove Heights (“municipal”) renewable energy or solar. A more detailed breakdown of customer support and production by program and sector can be found in *Appendix 1*.

⁹ Source: U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

Figure 9: Average annual energy conservation program participation and estimated dollar savings from energy efficiency by sector, 2017-2019¹⁰



Transportation and Electric Vehicles

As of 2019, there were an estimated 70 electric vehicles registered to residents of Inver Grove Heights.¹¹ As of our plan's creation, Inver Grove Heights has two public electric vehicle charging stations, located at car dealerships.¹² For public transportation, our community is primarily served by Metro Transit lines 68, 71, and 75.¹³ Inver Grove Heights is also served by 79 combined miles of trails and sidewalks that provide recreation and transportation options to the area.¹⁴

Figure 10: Community members enjoy the many bike trails spread across Inver Grove Heights.



¹⁰ Note: "commercial and industrial" in this figure also includes any City of Inver Grove Heights ("municipal") program participation and savings.

¹¹ EV Registrations in MN, Drive Electric Minnesota, Accessed December 2020, <https://www.driveelectricmn.org/vehiclesinmn/>.

¹² Source: PlugShare, accessed December 28, 2020. <https://www.plugshare.com/location/192795>

¹³ Metro Transit maintains online updates to route maps and schedules. See <https://www.metrotransit.org/> for more information.

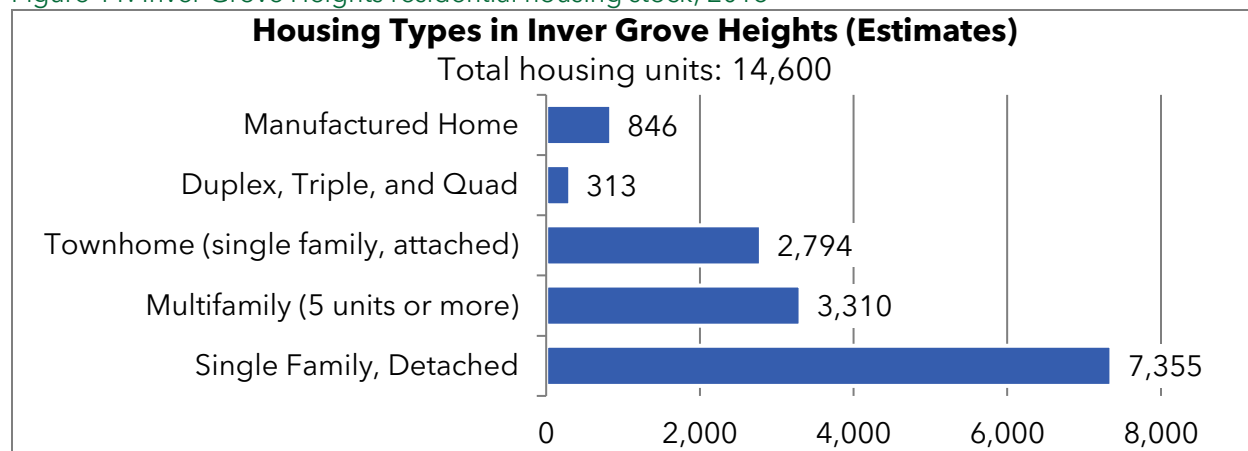
¹⁴ City of Inver Grove Heights 2040 Comprehensive Plan, page 6-146. <https://www.ighmn.gov/DocumentCenter/View/8284/IGH-2040-Comp-Plan>.

Diverse Housing Stock

Inver Grove Heights' housing stock is overall quite diverse, consisting of a wide range and number of housing types. While about half of homes are single-family detached homes, multi-family homes – including both large multi-family buildings and two-to-four-unit homes – make up another quarter of the housing stock. Townhomes make up 20% of the community's housing stock. An estimated 6% of homes are manufactured homes. Understanding our housing stock is important, since our utilities have programs available that target certain home types.

About 35% of housing units in Inver Grove Heights are renter-occupied.¹⁵

Figure 11: Inver Grove Heights residential housing stock, 2018¹⁶



Energy Burden

Energy burden is the percentage of gross household income spent on energy costs.¹⁷ While high energy burden can occur across most incomes, it is the most prevalent among low-income households. Average energy burden in Inver Grove Heights is estimated to be quite low – only about 2%, however, it may be much greater for lower-income households.¹⁸ Figure 12 shows geographic concentration of these households in Inver Grove Heights who may be experiencing greater energy burden. The map shows the percentage of households living below 50% of the state median income. For Inver Grove Heights, most of these households are concentrated in the north and east portions of the community.

¹⁵ Source: Metropolitan Council Community Profile Data, City of Inver Grove Heights 2018.
<https://stats.metc.state.mn.us/profile/>

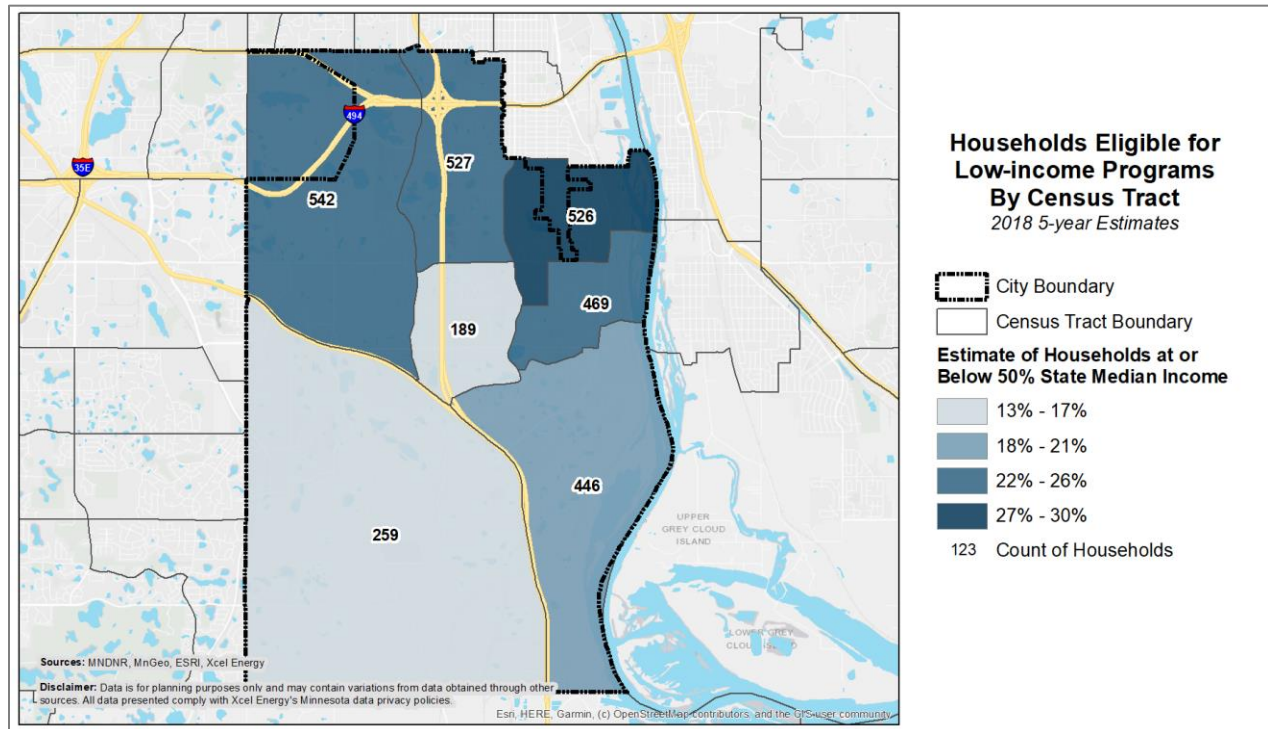
¹⁶ *Ibid.*

¹⁷ Source: <https://www.energy.gov/eere/slsc/low-income-community-energy-solutions>

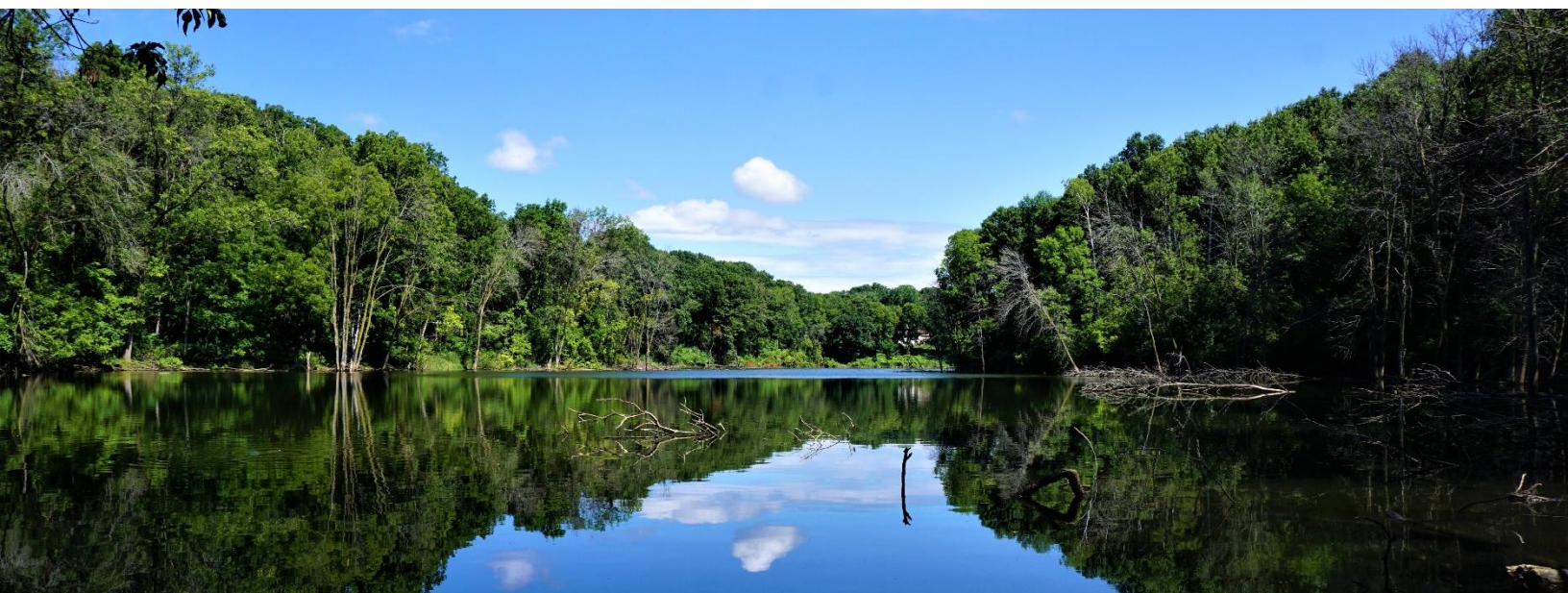
¹⁸ Source: U.S. Department of Energy, Low-Income Energy Affordability Data (LEAD Tool).
<https://www.energy.gov/eere/slsc/maps/lead-tool>.

Our plan seeks to support these residents with resources, especially resources that are free for income-qualifying households. Households with incomes below 50% of the state median income qualify for resources to help lower energy use and bills.

Figure 12: Percentage of households estimated to be eligible from income-qualifying programs, 2018¹⁹



¹⁹ Darker tracts contain a higher percentage of households eligible for free programs. Households with incomes below 50% of the state median income area eligible for free energy programs and utility support. This figure maps out the estimate percent and number of households eligible for such programs by census tract. Source: American Community Survey, 2018, City of Inver Grove Heights.



OUR ENERGY FUTURE, 2021 AND BEYOND

Energy Vision Statement

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

This statement helped guide the planning process and reflects our intention for the community's future:

Inver Grove Heights will be an innovative and engaged community where energy choices conserve both our natural and financial resources.

Goals

The Energy Action Team set goals during the planning process by reviewing the community's energy baseline data and discussing priorities and feasibility of potential goals. Based on group discussions, the team selected goal values above and beyond what was accomplished in the baseline period. We will measure our success against the following goals, which will guide the actions of this plan.

Our Goals

Between 2021 & 2022, we will...



Engage an estimated 2,000 residents and 250 businesses, schools, nonprofits, and places of worship across our community through utility programs



Support 80 under-resourced households with energy costs



Add 250 new residential and 12 new commercial renewable energy subscribers or community solar garden supporters



Support 10 residential on-site solar installations

By 2025, we will cumulatively...



Save an estimated \$2.6 million



Save 20 million kWh of electricity & 1.3 million therms of natural gas



Avoid an estimated 16,000 MTCO₂e*

** Equivalent to the carbon sequestered by 21,000 acres of U.S. forests in one year.²⁰*

By 2030, we will cumulatively...



Save an estimated \$5 million



Save 39 million kWh of electricity & 2.5 million therms of natural gas



Avoid an estimated 28,000 MTCO₂e*

**Equivalent to the carbon sequestered by 37,000 acres of U.S. forests in one year.²¹*

²⁰ Source: U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

²¹ *Ibid.*

Visualizing our Success

The following visuals demonstrate the estimated impacts included over the 10-year course of these goals. These include estimated cost savings from energy conservation efforts for both natural gas and electricity, as well as greenhouse gas savings from energy conservation and renewable energy.

Figure 13: Estimated cumulative dollars of avoided costs over the goal period, 2021-2030

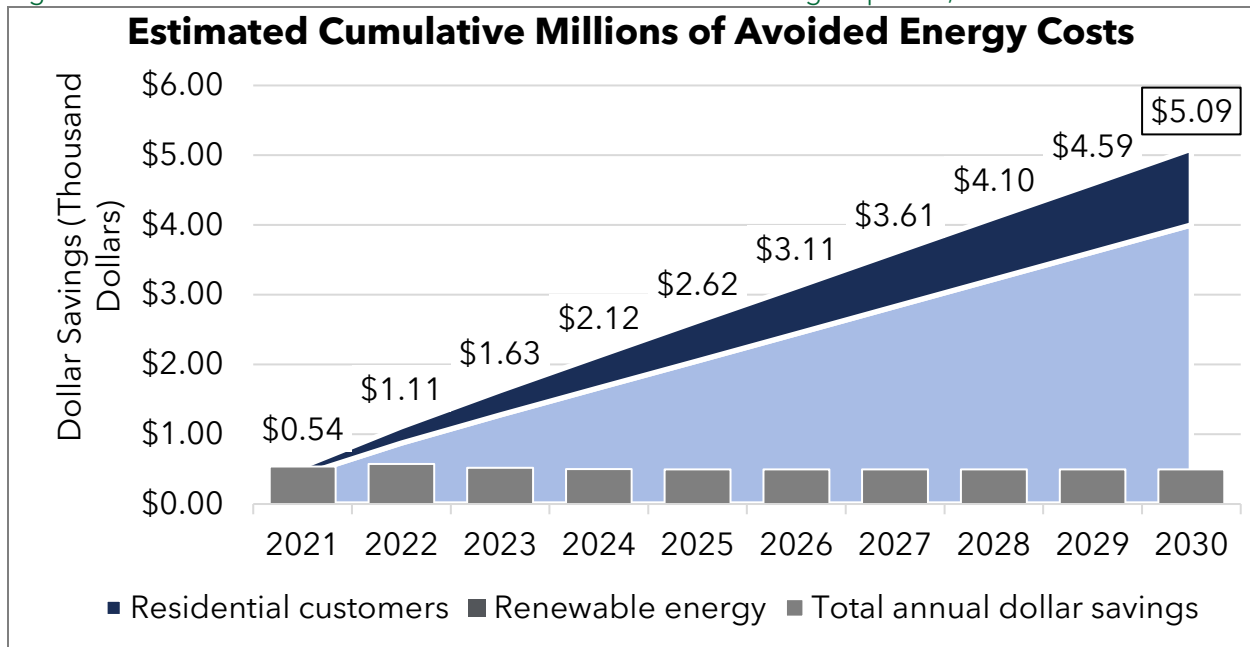
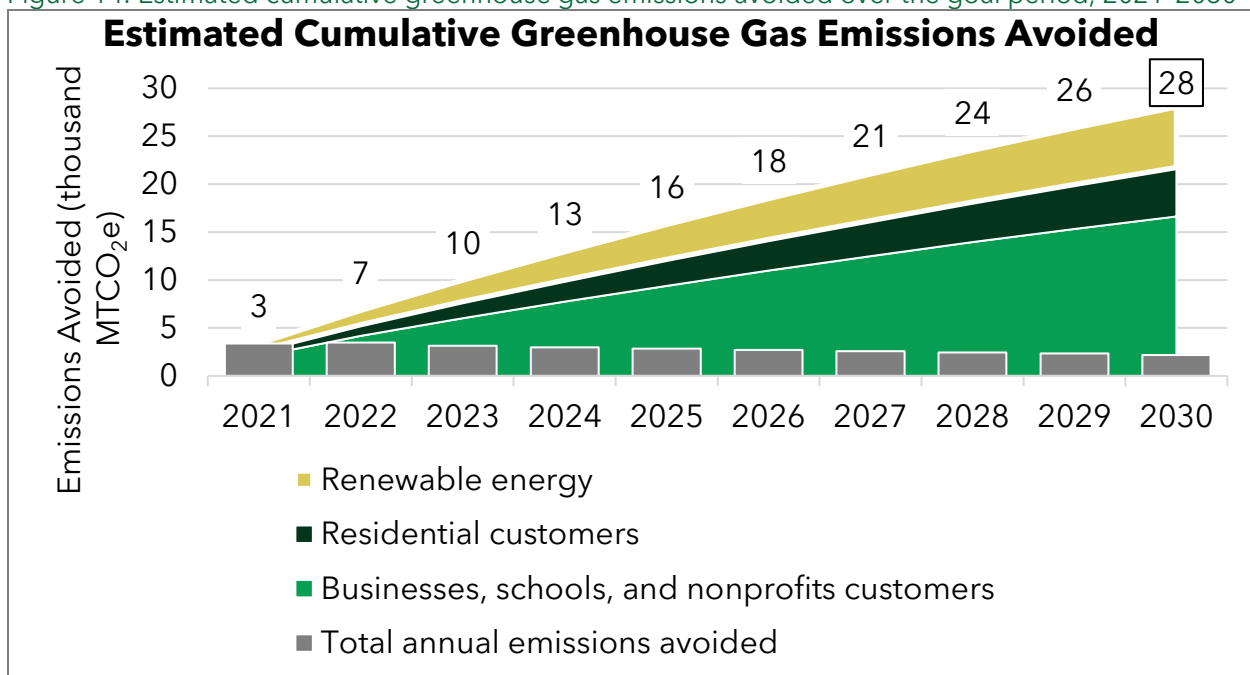


Figure 14: Estimated cumulative greenhouse gas emissions avoided over the goal period, 2021-2030



Our Stretch Goals

In addition to our main goals, the energy action team decided to establish a set of stretch goals that will guide our efforts if we are on track to *meet or exceed our main goals* listed on the previous pages.

Our stretch goals are as follows:

Between 2021 & 2022, we will...

- Engage an estimated 2,150 residents and 300 businesses, schools, nonprofits, and places of worship across our community
- Support 100 under-resourced households with energy costs
- Add 300 new residential and 15 new commercial renewable energy subscribers or community solar garden supporters
- Support 12 residential on-site solar installations

By 2030, we will cumulatively...

- Save an estimated \$5.5 million
- Save 41 million kWh of electricity & 2.7 million therms of natural gas
- Avoid an estimated 30,000 MTCO₂e*

**Equivalent to the carbon sequestered by 39,000 acres of U.S. forests in one year.²²*

²² Source: U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.



IMPLEMENTATION WORK PLAN

The following section outlines the work plan for Inver Grove Heights Energy Action Plan efforts, including focus areas, strategies, tactics, and targets.

These initiatives will be led by the City of Inver Grove Heights Community Development Department and will be supported in partnership with other municipal divisions, including Communications, Public Works, Operations and Maintenance, and Finance.

Xcel Energy's Partners in Energy and Inver Grove Heights Energy Action Team will also be important

contributors to the implementation of our Energy Action Plan. Partners in Energy facilitators will provide project management, data reporting, and marketing support. The Energy Action Team will be involved by serving as our community champions—serving as connectors to their network to champion our energy vision and goals. Additional detail on how Partners in Energy and the Energy Action Team will be involved can be found in the section *Support and Commitments*.

Defining terms we use in the work plan:

Focus area refers to the broad areas that this plan is choosing to focus on.

Target audiences are the more specific groups or individuals that may be prioritized in a strategy.

Strategies are broad plans meant to guide action.

Tactics are more specific actions carefully planned to achieve the strategies.

Targets are benchmarks that are meant to guide work and demonstrate progress toward goals.

Our Focus Areas

To achieve a community-wide commitment to energy stewardship, the Energy Action Team identified the following focus areas to prioritize strategies and resources.

These focus areas were chosen to approach energy stewardship holistically, covering a broad swath of the community. More specific target audiences are also outlined within each strategy.



Residential Community Engagement



Businesses, Schools, Nonprofits,
and Places of Worship



Municipal Leadership

Focus Area: Residential Community Engagement

Why is this a priority?

More than 35,000 people call Inver Grove Heights home. According to the American Community Survey, approximately 76% of residents are white, 12% are Hispanic or Latinx, 4% are Black or African American, and 5% are Asian; and approximately 15% of residents speak a language other than English at home.



Energy burden, which measures the amount of monthly income that goes toward energy bills, is relatively low – with an average burden of 2% – but the American Community Survey reports that 28% of Inver Grove Heights households experience housing cost burden, meaning more than 30% of their income is being spent on mortgage or rent.

This plan aims to work with residents across the community to help them to save energy and money using a broad outreach campaign with a clear call to action and messaging that will resonate with them.

Strategies

The following strategies are aimed at engaging Inver Grove Heights residential community on energy issues. Actions, details and partners for each of these are included below.

- A. Education & outreach to increase energy efficiency among residents
- B. Decrease energy burden for under-resourced households
- C. Provide targeted education & outreach to multi-family properties and senior living facilities to increase energy efficiency
- D. Education & outreach to increase renewable energy support and adoption among residents
- E. Support efficient transportation options

Figure 15: Our plan seeks to engage all those who call Inver Grove Heights home.



Near-term strategies

A: Education & outreach to increase energy efficiency among residents

Target Audience: All Inver Grove Heights residents								
Tactic 1: Education and outreach campaign around the benefits and how-tos of energy efficiency for homes								
Lead Implementer: City of Inver Grove Heights Support: Partners in Energy								
Actions, Details, and Partners								
• Use messaging that works for Inver Grove Heights residents, such as “cost savings” • Promote available online tools to monitor household energy use, including My Energy and Dakota Electric’s smart meters • Work with City communications department to create an “Energy Savings Corner” of the City’s quarterly newsletter • Create and share videos highlighting energy efficiency opportunities and how-tos • Communicate return on investment for energy efficiency for homes and how rebates offset costs • Consider strategies to target the largest energy users in the community (e.g., targeted mail to census tracts with highest per-premise residential energy use) • Establish outreach channels to residents on rebates and opportunities beyond contractors								
Suggested Timeline								
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Tactic 2: Create a step-by-step guide to walk residents through home energy efficiency								
Lead Implementer: Partners in Energy Support: City of Inver Grove Heights								
Actions, Details, and Partners								
• Provide educational materials about energy efficiency to new residents using a variety of communication channels including social media, City website, and City newsletters • Gather and share testimonials from families that have taken action to encourage other families to do the same								
Suggested Timeline								
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +

Tactic 3: Consider City-sponsored financial incentives for energy efficiency

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy; energy efficiency program implementers

Actions, Details, and Partners

- Consider and evaluate the following options to support reducing barriers to energy efficiency among residents:
 - Buying down up to 100 Home Energy Squad visits annually to \$50 for all residents
 - Buying down the cost of Home Energy Squad visits for those between 50% and 100% of state median income to reach households that don't qualify for the free visits but for whom the \$70-\$100 is cost prohibitive
 - Offering bonus rebates for those who follow through on recommendations from Home Energy Squad visits

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 4: Design competitive ways to generate excitement amongst neighbors about saving energy

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Examine effective ways to generate competition among residents in the community
- Develop recognition strategies such as Green Awards for residents

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 5: Host and publish annual community engagement opportunities to collect community feedback on energy related needs

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Create and promote additional energy surveys, considering promoting in languages other than English, based on community composition
- Work with local community partners & service organizations to survey or gather information about how to continue engaging the community
- Run community workshops to gather input, especially in locations easily accessible for those who may be under-resourced. Consider if translation is needed at these.

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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B: Decrease energy burden for under-resourced households

Target Audience: Households who spend the greatest portion of income on energy costs

Tactic 1: Identify community partners to assist in outreach to under-resourced populations in Inver Grove Heights

Lead Implementer: City of Inver Grove Heights

Support: Energy Action Team; Partners in Energy

Actions, Details, and Partners

- Find and communicate with service and community-based organizations that could act as trusted messengers to under-resourced communities in Inver Grove Heights
- Possible Partners:
 - Neighbors Inc. connection (leverage team member connection)
 - Dakota County resources
 - Three Rivers Community Action Partnership
 - Dakota County CDA
 - Public libraries
 - Scott Carver Dakota County Community Action
 - Manufactured home park managers
 - Existing City relationships

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 2: Work with community partners to sign up eligible under-resourced households for free Home Energy Squad visits

Lead Implementer: Partners in Energy

Support: City of Inver Grove Heights; energy efficiency program implementers

Actions, Details, and Partners

- Develop outreach materials
- Identify if outreach should be done in languages other than English & create materials if needed, with Partners in Energy support for material translation

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 3: Target Inver Grove Heights community members with higher energy burden, such as manufactured home communities, to help residents save money on energy bills

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy; community partners

Actions, Details, and Partners

- Work with community partners including manufactured home park members and managers to conduct outreach to these residents
- Engage owners of older homes to help reduce their energy bills and upkeep housing stock
- Consider ways to compensate partners for support

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 4: Distribute information about energy savings to organizations that serve under-resourced populations, such as at local food shelves

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy; community partners

Actions, Details, and Partners

- Identify local organizations that support under-resourced populations
- Coordinate with partners to design effective outreach materials and methods, considering translation as needed
- Distribute information through existing communication channels

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 5: Consider partnering with home finance providers in the area and region who offer financing for under-resourced households

Lead Implementer: City of Inver Grove Heights

Support: Local financing providers; Partners in Energy

Actions, Details, and Partners

- Identify and coordinate with home finance providers to determine the best methods for providing low-interest financing opportunities and support for under-resourced households

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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C. Save energy in multi-family properties

Target Audience: Multi-family property landlords, property owners, and tenants

Tactic 1: Conduct one-on-one outreach to multi-family properties in Inver Grove Heights to encourage them to sign up for an energy program

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy; Energy Action Team; energy efficiency program implementers

Actions, Details, and Partners

- Continue developing a multi-family inventory for the City to communicate with property manager and owners using the Low Income Rental Classification list as a starting point
- Work with existing contacts from multi-family recycling outreach to target property owners
- Encourage energy efficiency for new multi-family properties, including efficiency in design and electric vehicle-ready development
- Ensure that senior living and congregate care are included, with materials and outreach targeted toward these buildings

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 2: Educate renters about energy and cost saving opportunities unique to being a property renter

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy; local landlords, property owners, and property managers

Actions, Details, and Partners

- Identify unique savings opportunities for property renters, including behavior change
- Customize materials created for residential outreach to fit the needs of renters and multi-family residents
- Work with existing communication channels, including landlords and property managers to distribute information

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 3: Recognition for efficient multi-family buildings in Inver Grove Heights

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Consider the most effective ways to recognize efficient multi-family properties
- Engage the River Heights Chamber of Commerce

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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D: Education & outreach to increase renewable energy support and adoption among residents

Target Audience: All Inver Grove Heights residents																	
Tactic 1: Outreach campaign to increase participation in renewable energy subscription programs Lead Implementer: City of Inver Grove Heights Support: Partners in Energy; Energy Action Team Actions, Details, and Partners - Create messaging highlighting the benefits - Gather and share testimonials from families that have taken action, encouraging others to join in Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 2: Create a checklist of the on-site solar process for residents Lead Implementer: Partners in Energy Support: City of Inver Grove Heights Actions, Details, and Partners - Explore messaging that works for Inver Grove heights residents, like dollar savings - Use existing resources and share along existing networks Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 3: Consider feasibility and opportunities to support or initiate solar garden development and on-side solar group buys for residents as a cost-saving opportunity Lead Implementer: City of Inver Grove Heights Support: Partners in Energy Actions, Details, and Partners - Follow examples of peer communities that have implemented this tactic in their communities - Explore ways to support lower-income families with renewable energy access as an energy cost-saving measure Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									

Longer-term strategy

E: Support efficient transportation options for residents

Target Audience: All Inver Grove Heights residents
Tactic 1: Education & outreach to inform residents about the benefits of electric vehicles
Tactic 2: Encourage electric vehicle-ready development through the City's development review process, especially for multi-family housing
Tactic 3: Continue to follow through on the transit recommendations of Inver Grove Heights' 2040 Comprehensive Plan, supporting initiatives with outreach as needed
Tactic 4: Partner with Xcel Energy's dealership contact to encourage local dealerships to stock electric vehicles
Suggested Timeline
Most work on this strategy will occur in 2023 and beyond.

Targets

Through the strategies listed above, this plan hopes to meet the following targets. These targets will contribute to the vision and overall residential goals.

Across 2021 and 2022 combined, we hope to engage our residential community to achieve the following goals:

- ✓ 200 homes receive a home energy assessment or direct-install visit to jump-start energy savings
- ✓ 90 homes are served by programs specifically targeted toward income-qualifying households
- ✓ 180 new home construction or renovation projects complete a utility new home efficiency program
- ✓ 6 multi-family buildings complete an energy assessment
- ✓ 260 new residents supporting renewable energy

Focus Area: Businesses, Schools, Nonprofits, and Places of Worship

Why is this a priority?

Inver Grove Heights is home to a mix of small and large commercial and industrial businesses, nonprofits, places of worship, K-12 and higher-education institutions.



More than 10,000 people are employed in the city, with the top industries in 2019 including retail trade, healthcare and social assistance, education services, manufacturing, and food services. There are also a variety of faith-based organizations and service providers in our community, with 16 places of worship identified during the baseline analysis.

This focus area includes all these buildings, plus their occupants and users, to help them save money on energy bills, identify the best return on investment projects, and make their buildings more comfortable for occupants and users.

Strategies

The following strategies aim to engage Inver Grove Heights businesses, schools, nonprofits, and places of worship on energy issues. Actions, details and partners for each of these are included below.

- A. Education & outreach to increase energy efficiency among industry and large businesses
- B. Education & outreach to increase energy efficiency among small businesses
- C. Education & outreach to increase energy efficiency among local schools, nonprofits, and places of worship
- D. Education & outreach to increase renewable energy adoption and support among businesses and institutions
- E. Support efficient transportation options for businesses, schools, nonprofits, and places of worship

Figure 16: Our community is home to many businesses, schools, nonprofits, and places of worship.



Near-term strategies

A: Education & outreach to increase energy efficiency among industry and large businesses

Target Audience: Inver Grove Heights largest businesses and industries																	
Tactic 1: Create peer-sharing opportunities Lead Implementer: City of Inver Grove Heights Support: local industrial and business leaders Actions, Details, and Partners • Work with communications staff to create an energy opportunities and information page on our website that links to grant opportunities and things of that nature. Business can sign up for email list serve updates • Gather and share testimonials from large businesses that have done energy efficiency work • Engage local business leaders like CHS to share their energy efficiency journeys Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 2: Develop a recognition program to reward those who have taken action Lead Implementer: Inver Grove Heights Support: Partners in Energy Actions, Details, and Partners • Research best practices for creating a recognition programs • Establish a recognition category for large businesses and industry • Promote success stories and testimonials of completed energy efficiency projects Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 3: Create and share a guide for forming Green Teams at businesses Lead Implementer: Partners in Energy Support: City of Inver Grove Heights, local businesses Actions, Details, and Partners • Work with local businesses to distribute a guide for forming Green Teams Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									

Tactic 4: Host and publish annual community engagement opportunities to collect community feedback on energy related needs.

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Create and promote additional energy surveys, considering promoting in languages other than English, based on community composition
- Work with local community partners & service organizations to survey or gather information about how to continue engaging the community
- Run community workshops to gather input.

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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B: Education & outreach to increase energy efficiency among small businesses

Target Audience: Inver Grove Heights small businesses

Tactic 1: Educate small business on the benefits and how-tos of energy efficiency, such as through an educational campaign

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Share information about energy efficiency using communication channels identified, including the River Heights Chamber of Commerce
- Use messaging that works for Inver Grove Heights businesses, like dollar savings and ROI
- Share testimonials and case studies highlighting businesses that have taken action
- Partner with local nonprofits and community partners to support these efforts
- Use concise and consistent communication

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 2: Create peer-sharing opportunities for small businesses

Lead Implementer: Inver Grove Heights

Support: Partners in Energy; River Heights Chamber of Commerce

Actions, Details, and Partners

- Work with River Heights Chamber to host events highlighting businesses that have implemented energy efficiency actions and technologies
- Present on energy-related topics at monthly River Heights Chamber member meetings

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 3: Conduct outreach through the local Chamber of Commerce & door-to-door outreach in Inver Grove Heights commercial areas to encourage businesses to complete an energy efficiency action

Lead Implementer: Partners in Energy, City of Inver Grove Heights

Support: Energy efficiency organizations and program implementers, volunteers

Actions, Details, and Partners

- Determine most effective geographical areas to target based on business makeup
- Identify local partners and volunteers to support outreach
- Collect testimonials from businesses to encourage others to take action

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 4: Develop a recognition program to reward those who have taken action

Lead Implementer: Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Research best practices for creating a recognition program
- Establish a recognition category for small businesses
- Promote success stories and testimonials of completed energy efficiency projects

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 5: Conduct targeted outreach to landlords that rent commercial property to small businesses in the Inver Grove Heights community

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Determine effective messaging and design outreach materials
- Identify communication channels to commercial property landlords

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 6: Host and publish annual community engagement opportunities to collect community feedback on energy related needs.

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Create and promote additional energy surveys, considering promoting in languages other than English, based on community composition
- Work with local community partners & service organizations to survey or gather information about how to continue engaging the community
- Run community workshops to gather input, especially encouraging input from small businesses owned by under-resourced groups. Consider if translation is needed at these.

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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C: Education & outreach to increase energy efficiency among local schools, nonprofits, and places of worship

Target Audience: local schools, nonprofits, and places of worship																	
Tactic 1: Create peer-sharing opportunities Lead Implementer: City of Inver Grove Heights Support: Partners in Energy Actions, Details, and Partners Work with River Heights Chamber to host coffee events highlighting those that have implemented energy efficiency actions and technologies Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 2: Educate local schools, nonprofits, and places of worship on the benefits and how-tos of energy efficiency, such as through an educational campaign Lead Implementer: Partners in Energy Support: City of Inver Grove Heights Actions, Details, and Partners - Develop materials specific to communicating with organizational boards - Use messaging that works to communicate benefits to Inver Grove Heights schools, nonprofits, and places of worship, like dollar savings, return on investment, and triple bottom line (people, planet, profit) - Emphasize the equity and community components of taking action on energy (i.e., reducing greenhouse gas emissions) Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									
Tactic 3: Develop a recognition program to reward those who have taken action Lead Implementer: City of Inver Grove Heights Support: Partners in Energy Actions, Details, and Partners - Research best practices for creating a recognition program - Establish a recognition category for local schools, nonprofits, and places of worship - Promote success stories and testimonials of completed energy efficiency projects Suggested Timeline <table> <tr> <td>Q1 2021</td><td>Q2 2021</td><td>Q3 2021</td><td>Q4 2021</td><td>Q1 2022</td><td>Q2 2022</td><td>Q3 2022</td><td>Q4 2022</td><td>2023 +</td></tr> </table>									Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +									

Tactic 4: Host and publish annual community engagement opportunities to collect community feedback on energy related needs.

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Create and promote additional energy surveys, considering promoting in languages other than English, based on community composition
- Work with local community partners & service organizations to survey or gather information about how to continue engaging the community
- Run community workshops to gather input. Consider if translation is needed at these

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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D: Education & outreach to increase renewable energy adoption and community solar garden support among businesses and institutions

Target Audience: All businesses and institutions

Tactic 1: Use communication channels like the Chamber of Commerce newsletter to share the benefits of renewable energy and community solar gardens

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Include messaging around cost savings and the environmental benefits

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 2: Create and share a checklist of the on-site solar process for businesses

Lead Implementer: Partners in Energy

Support: City of Inver Grove Heights

Actions, Details, and Partners

- Communicate potential economic and environmental benefits

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 3: Share information about hosting community solar gardens with businesses with viable rooftop space or sites

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Determine which sites may prove viable from a solar potential and grid capacity standpoint using available tools
- Conduct outreach through existing communication channels

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Tactic 4: Host and publish annual community engagement opportunities to collect community feedback on energy related needs.

Lead Implementer: City of Inver Grove Heights

Support: Partners in Energy

Actions, Details, and Partners

- Create and promote additional energy surveys, considering promoting in languages other than English, based on community composition
- Work with local community partners & service organizations to survey or gather information about how to continue engaging the community
- Run community workshops to gather input. Consider if translation is needed at these.

Suggested Timeline

Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	2023 +
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Longer-term strategy

E. Support efficient transportation options for businesses, schools, nonprofits, and places of worship

<i>Target Audience: All Inver Grove Heights businesses, schools, nonprofits, and places of worship</i>
Tactic 1: Work with large employers in the community to host ride-and-drive or electric vehicle showcase events
Tactic 2: Encourage electric vehicle-ready development through the City's development review process, especially for multi-family housing or new large business development
Tactic 3: Share information about fleet study opportunities for local businesses and institutions with vehicle fleets
Tactic 4: Continue to follow through on the transit recommendations of Inver Grove Heights' 2040 Comprehensive Plan, supporting initiatives with outreach as needed
Suggested Timeline
Most work on this strategy will occur in 2023 and beyond.

Targets

Through the strategies listed above, this plan hopes to meet the following targets. These targets will contribute to the vision and overall goals related to businesses and other organizations.

Across 2021 and 2022 combined, we hope to engage our businesses, schools, nonprofits, and places of worship to achieve the following goals:

- ✓ 95 small business energy assessments for lighting, HVAC, or commercial refrigeration equipment
- ✓ 7 new construction projects that use a program to increase efficiency
- ✓ 5 larger businesses complete a Commercial Streamlined Assessment or recommissioning
- ✓ 12 new businesses, schools, nonprofits, and places of worship supporting renewable energy

Focus Area: Municipal Leadership

Why is this a priority?

Our plan will position Inver Grove Heights as a leader in energy and sustainability. The City of Inver Grove Heights will seek to complement that leadership by building on existing activities and demonstrating a commitment to energy stewardship and taking action in municipal operations.

In 2016, the City of Inver Grove Heights joined the Minnesota GreenStep Cities program, by resolution, to make a formal commitment to pursuing environmental and sustainability initiatives. This free and voluntary program provides technical assistance for over 175 Best Practices actions to help cities achieve their sustainability and quality-of-life goals. The city has been committed to participating in this program and related program's such as Dakota County's Community Waste Abatement grant program, which demonstrates to residents, businesses and city employees that the City of Inver Grove Heights is committed to the environmental, economic and social stewardship of our community.



What is the City already doing?

The City is building off years of work on sustainability initiatives. Here's a highlight of some of our accomplishments:

Achieved Step 4 in the Minnesota GreenStep Cities program in 2020.

Participated in Cities Charging Ahead in 2019 to focus on electric vehicle readiness.

Installed a geothermal energy system in City Hall in 2012.

Supported the development of renewable energy with a rooftop solar array on City Hall and the Veteran's Memorial Community Center in 2017.

Subscribed a portion of the City's electricity to community solar in 2016.

Environmental programs supported by partner agencies provide the city resources to improve city operations that would otherwise be unavailable to staff or require an excessive amount of staff resources. Through partnership, the city can easily access research and information on best practices, technical assistance implementing best practices, free electronic and printed resources for community members, grant resources, a large and well-connected network of peers or assistance organizations, and more.

The City is committed to implementing the actions identified in this plan to increase energy and costs savings in our buildings, resulting in responsible management of taxpayer dollars and demonstrating leadership in sustainability in our community and region. Strategies in this focus area include all city-owned buildings and fleet, and internal city policies and initiatives.

Strategies

The following strategies aim to position the City of Inver Grove Heights as a community and regional leader in sustainability and energy efficiency. We will be building off the work the City has already undertaken in sustainability and energy. Details for each of these are included below.

- A. Demonstrate leadership in sustainability
- B. Increase energy efficiency in municipal operations and buildings
- C. Explore renewable energy for municipal operations and buildings
- D. Examine and implement efficient transportation and fleet electrification

Because the City has already been working on energy and sustainability initiatives, the tactics in this section are broken out into two categories:

Ongoing City initiatives that already exist: Actions that have already begun but will continue to be supported by this plan

New Initiatives for this plan: Ideas generated through this plan that will be supported by the City and partners

Figure 17: Inver Grove Heights' City Hall. This building uses a ground-source heat pump (geothermal) to meet energy needs.



Near-term strategies

A. Demonstrate leadership in sustainability

Ongoing City initiatives that already exist
Demonstrate sustainable leadership by promoting prior and current sustainability actions on City website, newsletter
Continue reporting metrics for GreenStep Cities
Promote low-impact development and water conservation practices

New initiatives for this plan
• Tactic 1: Showcase the city's journey related to energy efficiency, renewable energy and sustainability through demonstrating past progress as well as greenhouse gas and cost impacts • Tactic 2: Highlight clean energy projects completed by the city, residents and businesses through written case studies, social media posts, tours, etc. • Tactic 3: Provide education to developers on grants available for clean energy projects, energy efficiency projects, water conservation projects, etc. • Tactic 4: Educate City Council, leadership, and commissions about Energy Action Plan goals and strategies and initiate call to action for support • Tactic 5: Update City code as needed to make develop standards friendly for renewable energy use and development • Tactic 6: Establish an internal Green Team including representatives of City divisions such as community development, finance, fleet management, parks and operations and maintenance to guide municipal sustainability efforts • Tactic 7: Create an environmental purchasing policy • Tactic 8: Continue to make progress towards GreenStep City goals related to energy conservation, renewable energy and collection of baseline and annual reporting metrics.
Suggested Timeline
Work on these initiatives will begin in 2021

B. Increase energy efficiency in municipal operations and buildings

Ongoing City initiatives that already exist
Prioritizing energy efficiency opportunities in municipal facilities (McKinstry study, recommissioning)
Continue engaging operations and maintenance supervisor on prioritizing energy efficiency in City facilities
Using B3 Benchmarking data (entered data and review in future)
Partnering with City facilities and operations staff to integrate utility programs and rebates into purchasing process
Embarking on a three-year sustainable operations study for municipal buildings
Hiring and training an operations and maintenance supervisor

New initiatives for this plan
• Tactic 1: Educate employees and other building occupants about recommended sustainable behaviors at municipal facilities • Tactic 2: Explore cost-effective options to maximize efficiency and sustainability in major municipal development and construction projects
Suggested Timeline
Work on these initiatives will begin in late 2021

C. Explore renewable energy on solar opportunities for municipal operations and buildings

Ongoing City initiatives that already exist
Continuing to support existing renewable energy and solar contracts and systems covering municipal operations, including a geothermal system, a rooftop solar installation, and a community solar garden.

New initiatives for this plan
• Tactic 1: Explore renewable energy options, including on-site and subscription programs, to cover municipal operations • Tactic 2: Examine municipal properties for opportunities to host solar gardens, including community solar gardens, following the best practices of peer communities
Suggested Timeline
Work on these initiatives will begin in 2021

D. Explore efficient transportation and fleet electrification options for the municipal vehicle fleet

Ongoing City initiatives that already exist

Prioritize fleet electrification for City-owned vehicles based on FleetCarma study completed in 2019

Promote City walkability and public transportation – wayfinding map; new website maps, trails, and sidewalks; park master plan 2021/trail gap study

New initiatives for this plan

- **Tactic 1:** Consider right-sizing or down-sizing the city fleet with vehicles that are more fuel efficient and an optimal size for their intended functions (GreenStep Cities Best Practice #13.2)
- **Tactic 2:** Consider purchasing alternative fuel vehicles, such as electric vehicles, during fleet vehicle replacement process (GreenStep Cities Best Practice #13.2)
 - Review FleetCarma analysis for vehicle replacement recommendations
 - Replace high-use light-duty vehicles with electric vehicles
- **Tactic 3:** Seek and apply for grant funding opportunities for electric vehicle charging infrastructure for public or fleet use
- **Tactic 4:** Host ride-and-drive education events for staff, residents, and businesses
- **Tactic 5:** Educate staff on efficient use of city fleet vehicles, such as carpooling, video conferencing, and no idling when feasible (GreenStep Cities Best Practice #13.3)

Suggested Timeline

Work on these initiatives will begin in 2021

Targets

Through the strategies listed above, this plan hopes to meet the following targets. These targets will contribute to the vision and overall municipal goals.

To measure progress towards these targets, one of the first actions the City of Inver Grove Heights will take will be to establish baselines from which to assess progress. Meeting the targets will mean demonstrating annual increases in the specific areas beyond the baselines.

- ✓ Increase energy efficient at City facilities
- ✓ Increase the number of municipal community solar garden subscriptions
- ✓ Increase the amount of renewable energy used by City facilities
- ✓ Increase fuel efficiency of vehicle fleet
- ✓ Increase the amount of alternative fuel vehicles in the fleet



MEASURING SUCCESS

Energy Action Plan Impacts – Near Term

The combined targets and strategies outlined in this plan will save our community an estimated over \$1.3 million dollars in the near term.

Table 2: Estimated near-term impact of implementation of this plan, 2021 and 2022 combined.

<i>Cumulative Savings</i>	<i>Business as Usual</i>	<i>Our Impacts</i>
Electricity Savings	7 million kWh	8.5 million kWh
Natural Gas Savings	490,000 therms	536,000 therms
Estimated Dollar Savings	\$0.95 million	\$1.35 million
Greenhouse Gas Emissions Avoided	5,800 MTCO ₂ e	6,800 MTCO₂e
Community Members Engaged ²³	1,800 community members	3,500 community members
Renewable Energy Support ²⁴	980 community members	1,252 community members

²³ Includes residents engaged through Xcel Energy conservation programs, renewable energy programs, and other outreach by the City. For further details, see *Appendix 2: Methodology for Measuring Success*. Saver's Switch is not included in business as usual projections.

²⁴ Includes Xcel Energy's Windsource® and Renewable*Connect® Solar*Rewards® (on-site solar); Solar*Rewards Community (community solar gardens); and Dakota Electric's Wellspring.

HOW WILL OUR ACTIONS IMPACT THE COMMUNITY?

Achieving our financial goals, we can save up to **\$1.3 million** dollars, which is equivalent to...



The **energy bills** of **over 1,000 homes** for a year

The **City's energy costs** for two years



Achieving our climate & air quality goals, we can avoid **6,800 MTCO₂**, which is like...



1.5 wind turbines producing electricity for a year

Taking **1,500 vehicles** off the road for a year



Planting **112,000 trees**

Impacts for 2021 & 2022, combined.

Near-term Impacts for Residents

Successful implementation of the near-term strategies of our plan will engage more than 2,200 residents in energy efficiency and almost 1,200 in renewable energy. Residents will save an estimated \$230,000 and help our community avoid the equivalent of 2,800 metric tons of carbon dioxide over this two-year period.

Table 3: Estimated near-term impacts for residents, 2021 and 2022 combined.

<i>Cumulative Savings</i>	<i>Our Impacts</i>
Electricity Savings	1 million kWh
Natural Gas Savings	163,000 therms
Estimated Dollar Savings ²⁵	\$230,000
Greenhouse Gas Emissions Avoided	2,580 MTCO₂e
Community Members Engaged ²⁶	2,280 community members
Renewable Energy Support ²⁷	1,188 community members

Near-term Impacts for Businesses, Schools, Nonprofits, and Places of Worship

Successful implementation of the near-term strategies of our plan will engage more than 250 businesses, schools, nonprofits, and places of workshop in energy efficiency and 60 in renewable energy. These groups will cumulatively save an estimated \$874,000 and help our community avoid the equivalent of 4,600 metric tons of carbon dioxide over this two-year period.

Table 4: Estimated near-term impacts for businesses, schools, nonprofits, and places of worship, 2021 and 2022 combined.

<i>Cumulative Savings</i>	<i>Our Impacts</i>
Electricity Savings	3.9 million kWh
Natural Gas Savings	373,000 therms
Estimated Dollar Savings ²⁸	\$874,000
Greenhouse Gas Emissions Avoided	4,600 MTCO₂e
Community Members Engaged ²⁹	250 community members
Renewable Energy Support ³⁰	60 community members

²⁵ Includes avoided costs through Xcel Energy conservation program participation. For further details on how we measure costs savings, see *Appendix 2*.

²⁶ Includes residents engaged through Xcel Energy conservation programs, renewable energy programs, and other outreach by the City. For further details, see *Appendix 2*.

²⁷ Includes Xcel Energy's Windsource® and Renewable*Connect® Solar*Rewards® (on-site solar); Solar*Rewards Community (community solar gardens); and Dakota Electric's Wellspring.

²⁸ Includes avoided costs through Xcel Energy conservation program participation. For further details on how we measure costs savings, see *Appendix 2*.

²⁹ Includes residents engaged through Xcel Energy conservation programs, renewable energy programs, and other outreach by the City. For further details, see *Appendix 2*.

³⁰ Includes Xcel Energy's Windsource® and Renewable*Connect® Solar*Rewards® (on-site solar); Solar*Rewards Community (community solar gardens); and Dakota Electric's Wellspring.

Long-Term Impacts

Energy and energy efficiency will remain important for our community into the future, beyond the initial implementation of the near-term objectives of our plan. Below are estimates what these long-term impacts will look like, based on the goals of our plan. Major changes to the energy landscape or to the long-term strategies of this plan may affect these impacts.

Our long-term impacts are articulated in our community goals:

By 2025, we will cumulatively...



Save \$2.6 million



Save 20 million kWh of electricity & 1.3 million therms of natural gas



Avoid an estimated 16,000 MTCO₂e*

** Equivalent to the carbon sequestered by 21,000 acres of U.S. forests in one year.³¹*

By 2030, we will cumulatively...



Save \$5 million



Save 39 million kWh of electricity & 2.5 million therms of natural gas



Avoid an estimated 28,000 MTCO₂e*

**Equivalent to the carbon sequestered by 37,000 acres of U.S. forests in one year.³²*

³¹ Source: U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

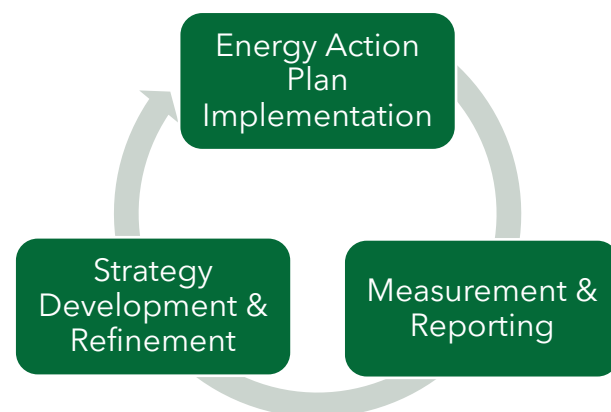
³² Source: U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.



SUPPORT AND COMMITMENTS

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

Figure 18: Actions and Tracking



Data and Reporting

Data from 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 (e.g., Home Energy Squad) can be provided to measure success of campaigns and to determine whether we need to change course.

Data from Dakota Electric Association

Dakota Electric was involved in the planning process and has agreed to provide electricity consumption and program participation data directly to the City of Inver Grove Heights when requested to help the City measure progress toward goals.

Regular Reporting

Regular reporting on the success of implementation will be important to generate enthusiasm about our Energy Action Plan, and to keep the City and Energy Action

Team accountable. Progress reports will include data from Xcel Energy and Dakota Electric Association, plus implementation highlights. Reports will be given to the Environmental Commission and City Council with the support of Community Development staff.

Project Management and Tracking

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

If necessary, an implementation check-in meeting with the Energy Action Team can be convened to assess progress toward goals and discuss strategy refinement at the midpoint of implementation.

Other Commitment and Engagements

Energy Action Team Commitment

The Energy Action Team formed to create this plan will support implementation by serving as community connectors to their networks, promoting our energy vision, encouraging participation in programs and outreach campaigns, and sharing success stories. When available, Energy Action Team members will serve as partners, experts, and leaders in strategies targeting residents, businesses, schools, nonprofits, and places of worship. Partners in Energy facilitators and the City of Inver Grove Heights may invite Energy Action Team leaders to project management calls or other check-in meetings to ensure strategies are implemented successfully.

Xcel Energy's Commitment

In addition to data reporting, project management, and implementation tracking, Xcel Energy commits to 18 months of implementation support, including marketing and communications support and program expertise. They will also provide a dedicated community facilitator to serve as a primary point of contact. Partners in Energy digital resources, including office hours, community portal, and community events will also be available to the Inver Grove Heights team.

Continuing Engagement

The City of Inver Grove Heights will continue to engage its community members on these topics after this plan is adopted by City Council. Ideas for community engagement are outlined in the Implementation Work Plan.

Long-Term Strategies

Strategies identified as long-term will need additional review, including identifying resources and implementation leads. The City of Inver Grove Heights and the Energy Action Team will reconvene at a later date to further specify these long-term strategies as new funding and technology innovations become available.



APPENDIX 1: BASELINE ENERGY DATA ANALYSIS, 2017-2019

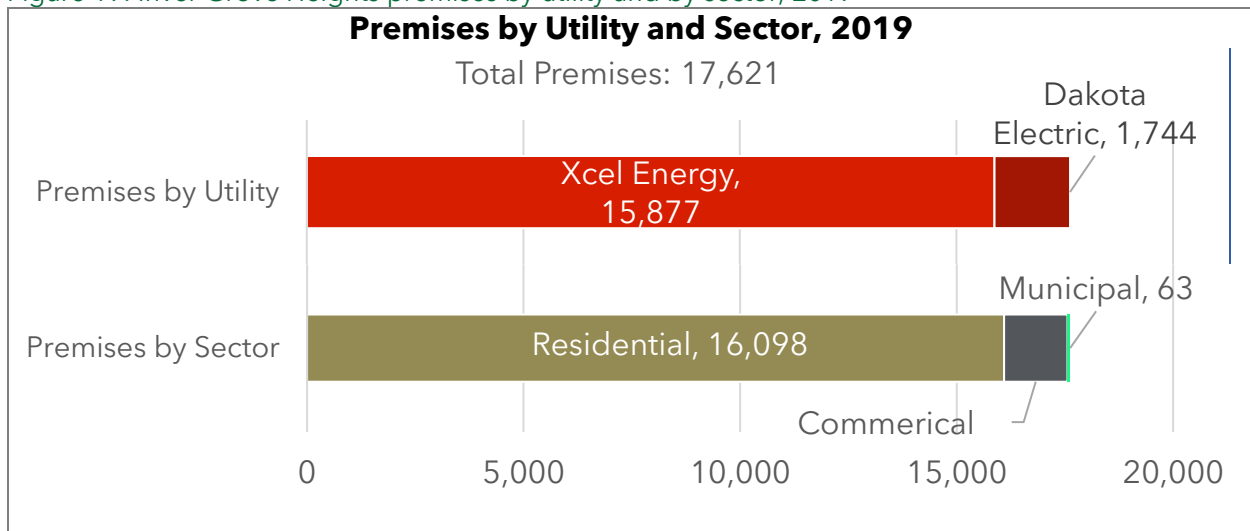
Data was provided by Xcel Energy and Dakota Electric for all Inver Grove Heights premises for 2017-2019. Xcel Energy provides electric and natural gas service to the community, and Dakota Electric provides electric service to the Inver Grove Heights community. The data helped the Energy Action Team understand Inver Grove 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 in the future.

Electricity and Natural Gas Premises

Both Xcel Energy and Dakota Electric provide electric service to Inver Grove Heights. Xcel Energy is the community's only utility natural gas provider. The chart below demonstrates a breakdown of utility premises by utility and by customer type.³³ As shown in the chart, most premises in Inver Grove Heights are residential, and the majority are served by Xcel Energy for electricity.

³³ See *Appendix 4: Glossary of Terms* for more information on what each customer type entails.

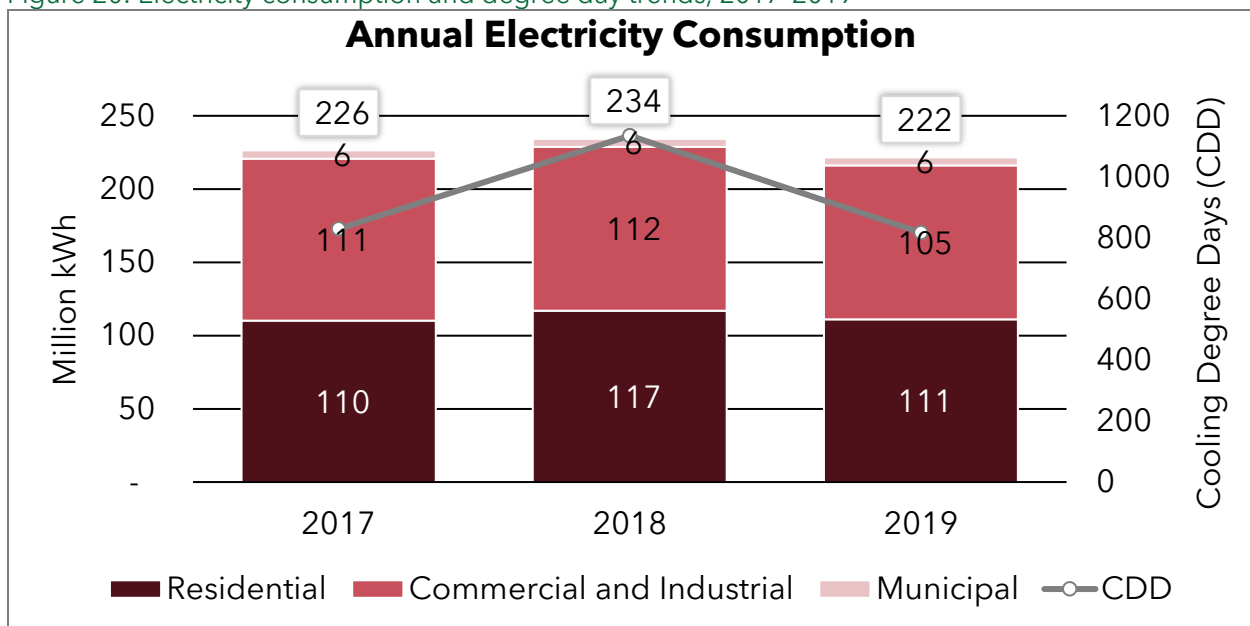
Figure 19: Inver Grove Heights premises by utility and by sector, 2019



Electricity Consumption Trends

On average, Inver Grove Heights consumes 227.4 million kWh and spends \$26.2 million on electricity across all sectors each year. Electricity consumption over the three-year baseline has remained relatively consistent, with a slight increase 2017 to 2018, which aligns with an increase in cooling degree days and the need to air condition homes and businesses.

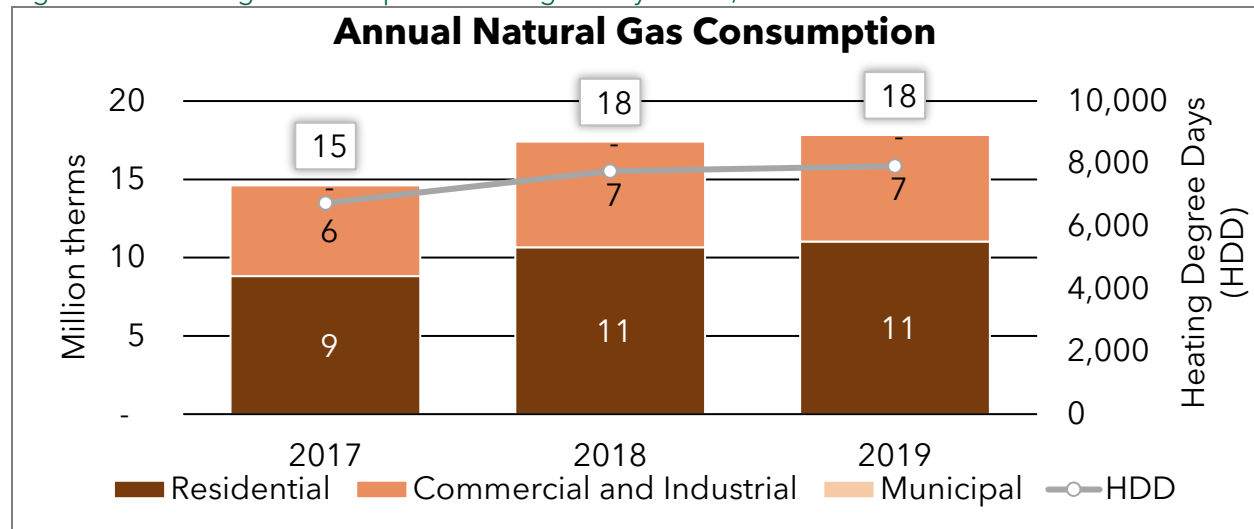
Figure 20: Electricity consumption and degree day trends, 2017-2019



Natural Gas Consumption Trends

On average, Inver Grove Heights consumes 16.7 million therms and spends \$9.6 million on natural gas across all sectors per year. Natural gas consumption over the three-year baseline has increased, which aligns with an increase in heating degree days and the need to heat homes and businesses.

Figure 21: Natural gas consumption and degree day trends, 2017-2019

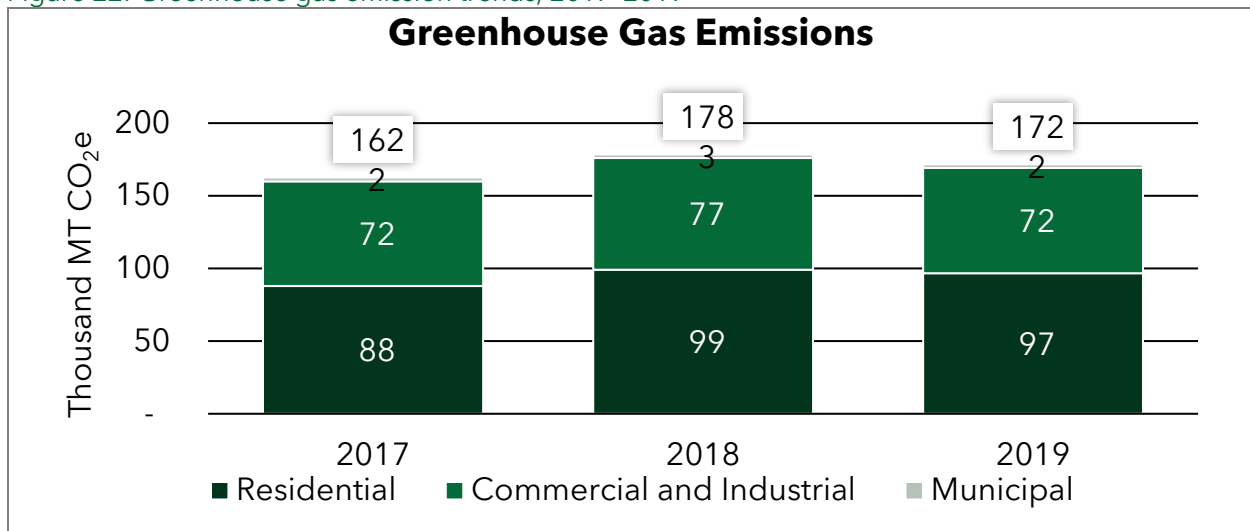


Greenhouse Gas Emissions and Trends

From 2017 through 2019, greenhouse gas emissions averaged 50,300 MTCO₂e. To put that into perspective, that is the equivalent the emissions from 10,867 passenger vehicles driven for one year, or about 55.4 million pounds of coal burned.³⁴

³⁴ U.S. Environmental Protection Agency Greenhouse Gas Equivalencies Calculator. <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

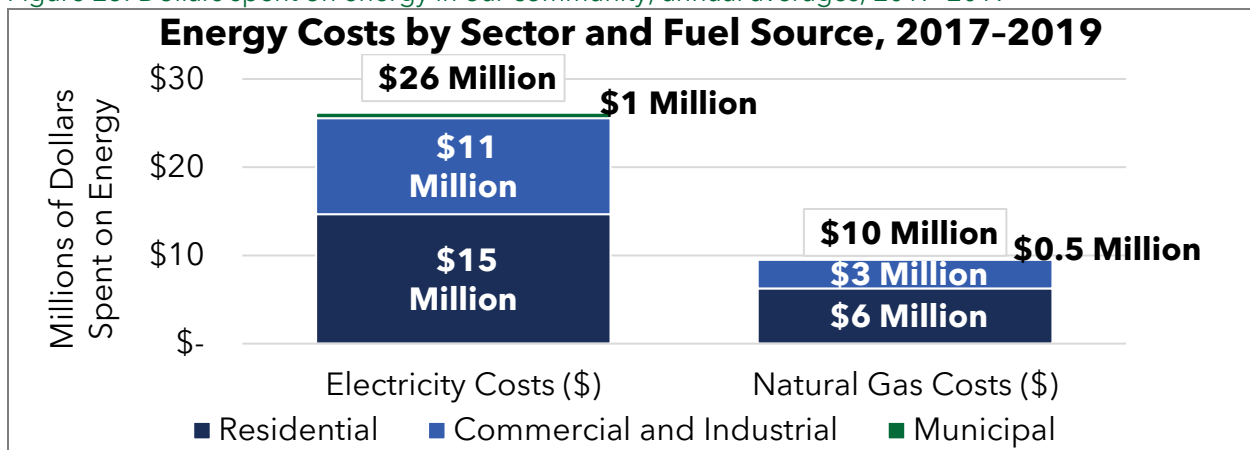
Figure 22: Greenhouse gas emission trends, 2017-2019



Energy Costs

Across the baseline period, the Inver Grove Heights community spent an estimated \$35.5 million dollars annually on energy costs across both electricity and natural gas. Most of that spending was on electricity – about three-quarters.

Figure 23: Dollars spent on energy in our community, annual averages, 2017-2019



The average residential premises spend about \$1,300 on energy each year – or a little over \$100 per month. While costs fluctuate greatly for commercial and industrial premises based on size and industry, these premises on average spent nearly eight times what residents did on energy, just under \$10,000 each year over the baseline period.

Table 5: Average annual energy costs per premise by sector, 2017-2019

Customer Type	Electricity Costs	Natural Gas Costs	Total Costs	Average Monthly Costs
Residential	\$ 917	\$ 391	\$ 1,308	\$ 109
Commercial and Industrial	\$ 7,523	\$ 2,264	\$ 9,787	\$ 816
Municipal	\$ 9,746	\$ 806	\$ 10,551	\$ 879

Program Participation and Savings

In Minnesota, utilities offer an array of Conservation Improvement Programs designed to help customers reduce energy use and expenditures. Below, the historic savings for these programs are shown for each of the utilities serving Inver Grove Heights.

Residential Program Participation and Savings

Over the three-year baseline period, energy savings for residents in Inver Grove Heights averaged around 0.6% of energy use – or about 0.4% of electricity use in the community and 0.7% of natural gas use. Almost 90% of these savings were from Xcel Energy customers. The most popular programs were rebates for heating and cooling equipment – see *Table 6*.

Table 6: Xcel Energy residential conservation program participation counts and savings, 2017-2019

Xcel Energy Program	2017			2018			2019		
	Count	Savings (kWh)	Savings (therm)	Count	Savings (kWh)	Savings (therm)	Count	Savings (kWh)	Savings (therm)
Efficient New Home Construction	65	40,941	12,682	114	109,837	27,238	79	130,732	28,296
Home Energy Audit	40	–	–	46	–	–	58	–	–
Home Energy Savings Program	7	1,212	562	17	5,313	–	26	9,960	750
Home Energy Squad	23	32,812	1,574	26	29,373	1,614	37	38,588	1,786
Insulation Rebate	14	4,973	2,710	17	2,420	4,993	15	2,268	4,332
Low-Income Home Energy Squad	3	1,333	151	13	12,915	802	9	6,383	338
Residential Cooling	201	63,056	–	282	79,460	–	228	59,182	–
Residential Heating	228	110,134	32,533	293	139,891	40,380	242	114,916	35,992
Refrigerator Recycling	60	48,126	–	73	55,230	–	65	51,448	–
Residential Saver's Switch	192	392	–	309	623	–	222	446	–
Smart Thermostat	43	105	56	52	1,322	1,316	31	2,289	1,190
Water Heater Rebate	35	–	1,159	35	–	1,180	29	–	1,262
Whole Home Efficiency	1	–	154	–	–	–	1	792	185
Total	912	303,084	51,581	1,277	436,384	77,523	1,042	417,004	74,131

Table 7: Dakota Electric residential conservation program participation counts and savings, 2017-2019

Dakota Electric Program	2017		2018		2019	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Recycled Fridge/Freezer	15	15,219	17	16,996	13	13,336
Residential Air Conditioning Programs	33	14,936	31	14,523	40	19,160
Residential Heat Pumps	1	3,555	1	11,742	1	3,555
Energy Star Dehumidifier	5	2,175	7	3,480	7	3,045
Residential Equipment – Other	–	–	4	8,400	–	–
Income-Qualified Programs	–	–	–	–	8	5,919
LED Lights and Holiday Lights	1,769	78,100	1,177	52,671	334	15,030
EV Charger Install	1	–	1	–	5	–
Total	1,824	113,985	1,239	107,812	408	60,045

Commercial & Industrial Program Participation and Savings

Commercial and Industrial premises in Inver Grove Heights saved far more energy over the baseline period than residents saved. In total, they saved an average of 2.4

million kWh and 74,000 therms over the baseline period – or about 2% of total sector use for each of the respective fuel sources. The most popular programs were lighting efficiency programs, followed by heating equipment rebates. Over 97% of savings were from customers served by Xcel Energy.

Table 8: Xcel Energy commercial and industrial conservation program participation counts and savings, 2017-2019³⁵

Xcel Energy Program	2017			2018			2019		
	Count	Savings (kWh)	Savings (therm)	Count	Savings (kWh)	Savings (therm)	Count	Savings (kWh)	Savings (therm)
Cooling	2	394	–	6	2,256	–	6	11,105	–
Custom Efficiency	2	318,831	673	1	–	47,697	2	84,065	5,003
Efficiency Controls	–	–	–	2	67,318	2,447	–	–	–
Electric Rate Savings	3	-21,683	–	1	-212	–	–	–	–
Energy Design Assistance	–	–	–	–	–	–	2	21,028	126,660
Energy Efficient Buildings	–	–	–	–	–	–	2	92,599	-8
Fluid System Optimization	–	–	–	2	36,170	–	4	226,703	–
Foodservice Equipment	–	–	–	–	–	–	1	–	5,319
Heating Efficiency	36	1,261	14,144	9	1,687	9,698	13	2,522	9,048
Lighting Efficiency	25	1,166,788	–	32	1,407,091	–	38	815,286	–
Motor Efficiency	2	83,763	–	4	320,687	–	1	10,466	–
Saver's Switch for Business	–	–	–	3	30	–	1	2	–
Small Business Lighting	39	939,400	–	27	657,049	–	22	657,827	–
Turn Key Services	2	–	–	–	–	–	2	–	–
Total	70	1,549,354	14,817	57	1,834,997	59,842	69	1,263,774	146,022

³⁵ Note: “commercial and industrial” in this table also includes any City of Inver Grove Heights (“municipal”) participation and savings

Table 9: Dakota Electric commercial and industrial conservation program participation counts and savings, 2017-2019

Dakota Electric Program	2017		2018		2019	
	Count	Savings (kWh)	Count	Savings (kWh)	Count	Savings (kWh)
Commercial Lighting	–	–	–	–	6	162,231
Commercial HVAC	–	–	–	–	1	1,458
Commercial Motors and Drives	–	–	–	–	1	10,879
Total	0	0	0	0	8	174,568

Renewable Energy Support

Far more residents than commercial and industrial premises support renewable energy in Inver Grove Heights – nearly 20 times as many, or just under 1,000 premises. Xcel Energy’s Windsource was the most popular program, followed by community solar. Commercial and industrial customers were responsible for supporting the most renewable energy generation through on-site solar rewards or off-site community solar gardens, supporting 13 million kWh of renewable electricity generation in 2019 overall.

Table 10: Total support for renewable energy in Inver Grove Heights, 2019

Total Renewable Energy Support ³⁶	Residential ³⁷	Commercial & Industrial ³⁸
Subscriber Count	931	49
Total Annual Electricity Subscribed (kWh)	3,054,133	13,066,858

³⁶ Includes both programs where the customer can and cannot claim the Renewable Energy Credits for the energy. See Table 11 for program-specific details.

³⁷ Includes all Dakota Electric programs for which sector is unknown. Over 92% of Dakota Electric’s premises in Inver Grove Heights are residential, so this assumes that the renewable energy subscribers are primarily residential.

³⁸ Note: “commercial and industrial” in this figure also includes any City of Inver Grove Heights (“municipal”) renewable energy support.

Table 11: Support for renewable energy in Inver Grove Heights by program, 2019

Renewable Energy or Solar Program		Residential	Commercial & Industrial ³⁹
Off-site / Subscription	Xcel Energy Windsource®		
	Subscriber Count	577	1
	Total Annual Electricity Subscribed (kWh)	1,377,254	600,000
	Percentage of Sector Electricity Use	1.5%	0.6%
	Xcel Energy Renewable*Connect®		
	Subscriber Count	12	–
	Total Annual Electricity Subscribed (kWh)	78,986	–
	Percentage of Sector Electricity Use	0.1%	–
	Dakota Electric Wellspring®⁴⁰		
	Subscriber Count		27
	Total Annual Electricity Produced (kWh)		173,000
	Percentage of Sector Electricity Use		0.2%
	Xcel Energy Solar*Rewards Community® (Community Solar)**		
	Subscriber Count	288	46
On-site	Total Annual Electricity Produced (kWh)	1,339,332	3,749,879
	Percentage of Sector Electricity Use	1%	4%
	Xcel Energy Solar*Rewards®**		
	Installation Count	24	2
	Total Annual Electricity Produced (kWh)	85,561	8,716,979
	Percentage of Sector Electricity Use	0.1%	8.2%
	Dakota Solar Rebate**		
	Installation Count		3

**Indicates a program where the customer does not retain the renewable energy credits. Energy produced or credited through these programs cannot be classified as renewable electricity.

³⁹ Note: “commercial and industrial” in this figure also includes any City of Inver Grove Heights (“municipal”) renewable energy support.

⁴⁰ Numbers for Wellspring are for all customers, including residents and nonresidents.



APPENDIX 2: METHODOLOGY FOR MEASURING SUCCESS

The following section defines the ways that we will be measuring progress towards our goals and targets, including the Xcel Energy and Dakota Electric program(s) that were part of the baseline.

As part of implementation support, Partners in Energy will provide biannual progress reports for Xcel Energy participation and savings data. Goals are measured using projected savings impacts from achieving the targets of this plan. The assumptions that were used in modeling these goals are outlined below.

Community Goals

The goals of this plan are nonbinding and are designed to guide our implementation efforts and help measure our success.

The City established the following goals:

Between 2021 & 2022, we will...

- Engage an estimated 2,000 residents and 250 businesses, schools, nonprofits, and places of worship across our community
- Support 80 under-resourced households with energy costs
- Add 250 new residential and 12 new commercial renewable energy subscribers or community solar garden supporters
- Support 10 residential on-site solar installations

By 2025, we will cumulatively...

- Save an estimated \$2.6 million
- Save 20 million kWh of electricity & 1.3 million therms of natural gas
- Avoid an estimated 16,000 MTCO₂e

By 2030, we will cumulatively...

- Save an estimated \$5 million
- Save 39 million kWh of electricity & 2.5 million therms of natural gas
- Avoid an estimated 28,000 MTCO_{2e}

How to Measure

The following table outlines how to measure various aspects of the goals outlined above and articulated elsewhere in this plan. This includes details of what programs and activities may be included and any assumptions used to measure the goals.

Xcel Energy data will be provided through Partners in Energy. Dakota Electric data will be provided directly to the community by the utility.

<i>Timeline</i>	<i>How to measure</i>
Between 2021 & 2022	January 2021 to December 2022
Goal	How to Measure
Engage an estimated 2,000 residents and 250 businesses, schools, nonprofits, and places of worship across our community	Participation in all utility energy Conservation Improvement Programs from Xcel Energy and Dakota Electric
Support 80 under-resourced households with energy costs	Participation in utility programs targeted toward income-qualifying households, including: • Low Income Home Energy Squad • Home Energy Savings Program
Add 250 new residential and 12 new commercial renewable energy subscribers or community solar garden supporters	Participation in renewable energy subscription programs, including: • Xcel Energy's Windsource • Xcel Energy's, Renewable*Connect • Dakota Electric's Wellspring As well as participation in Xcel Energy's community solar program, Solar*Rewards Community
Support 10 residential on-site solar installations.	Participation in on-site renewable energy programs, including: • Xcel Energy's Solar*Rewards. • Dakota Electric's Solar Rebates Other on-site solar as documented by the City

Timeline	How to measure
By 2025	January 2021 to December 2025
By 2035	January 2021 to December 2030
Goal	How to Measure
• Save an estimated \$2.6 million (2025) • Save an estimated \$5 million (2030)	Dollar savings are estimated based on the energy savings listed below and an estimated average cost of energy by source and sector. See "Metric: Costs" below for more details.
• Save 20 million kWh of electricity & 1.3 million therms of natural gas (2025) • Save 39 million kWh of electricity & 2.5 million therms of natural gas (2030)	Energy savings are based on savings from participation in utility programs as reported by the utilities. See "Metric: Energy Savings" below for more details.
• Avoid an estimated 16,000 MTCO₂e (2025) • Avoid an estimated 28,000 MTCO₂e (2030)	Greenhouse gas emissions avoided are estimated based on future projected emissions for energy from the electricity grid and from natural gas. Xcel Energy's emission factors were used for all energy. See "Metric: Greenhouse Gas Emissions Avoided" below for more details.

Metric: Costs

All costs and dollar savings estimates are based on Xcel Energy averages for the baseline period. Changes in the costs of electricity and natural gas may impact the dollars saved, and therefore also this plan's impact. Costs in this goal do not account for delivered fuels, costs or savings from renewable energy, or demand charges for commercial customers.

Table 12: Cost assumptions for the goals, by customer and fuel type

Customer	Residential	Commercial & Industrial
Electricity, Dollars per kWh	\$0.113	\$0.087
Natural Gas, Dollars per kWh	\$0.09	\$0.5

Table 13 outlines which sectors we assumed savings would be sourced from.

Table 13: Cumulative estimated dollars saved (\$) by sector by goal years 2025 and 2030

Estimated Dollars Saved by Sector	By 2025	By 2030
Residential Energy Efficiency	\$564,942	\$1,088,947
Business Energy Efficiency	\$2,053,183	\$3,998,908
Total Estimated Dollars Saved	\$2,618,125	\$5,087,855

Metric: Energy Savings

Energy savings are provided by utilities based on participation in programs. Our goals hope to achieve the following savings by sector and utility.

Table 14: Cumulative estimated energy savings by sector by goal years 2025 and 2030

Estimated Dollars Saved by Sector	By 2025	By 2030
Xcel Energy Program Savings		
Electric (kWh)		
Residential Energy Efficiency	2,266,238	4,331,803
Business Energy Efficiency	17,388,365	33,719,516
Total Estimated Electricity Saved	19,654,603	38,051,319
Natural Gas (therms)		
Residential Energy Efficiency	395,772	766,180
Business Energy Efficiency	904,166	1,782,051
Total Estimated Natural Gas Saved	1,299,938	2,548,231
Dakota Electric Program Savings		
Residential Energy Efficiency	211,522	423,043
Business Energy Efficiency	90,128	180,257
Total Estimated Electricity Saved	301,650	603,300
Total Goal Electricity Saved, All Utilities (kWh)	20 million	39 million
Total Goal Natural Gas Saved, All Utilities (therms)	1.3 million	2.5 million

Metric: Greenhouse Gas Emissions Avoided

To estimate avoided emissions, projections of emissions factors were applied to the electricity savings. Avoided emissions for these goal years are based off Xcel Energy's 2019 Carbon Emissions Reporting,⁴¹ as well as Xcel Energy's electricity carbon goals of an 80% reduction in emissions by 2030 and a 100% reduction in emissions by

⁴¹ Energy and Carbon Emissions Reporting 2019 Summary by Xcel Energy.
<https://www.xcelenergy.com/staticfiles/xcel-responsive/Environment/Carbon/Xcel-Energy-Carbon-Dioxide-Emission-Intensities.pdf>.

2050.⁴² Differences between projections based on these goals and the actual emissions will impact progress toward the specific carbon estimates articulated for this plan.

The goal for greenhouse gas emissions avoided also included emissions avoided with renewable energy. Carbon impacts for renewable energy are only counted for renewable energy programs where the customer retains the Renewable Energy Credits (RECs). This includes Xcel Energy's Windsource and Renewable*Connect. The following table outlines the assumptions for renewable energy.

Table 15: Cumulative estimated greenhouse gas emissions avoided (MTCO₂e) by sector by goal years 2022 and 2030

Estimated Emissions Avoided by Sector	By 2025	By 2030
Residential Energy Efficiency	2,752	5,077
Business Energy Efficiency	9,396	16,648
Renewable Energy ⁴³	3,640	6,339
Total Greenhouse Gas Emissions Avoided	15,787	28,064

Greenhouse gas emissions avoided from other energy and non-energy sources, including transportation, are not measured in our plan.

Focus Area Targets

In addition to the overarching goals, this plan established targets in each focus area. Targets outline a framework and direction of how the community can contribute toward the bigger goals.

Focus Area: Residential Community Engagement

Targets: Across 2021 and 2022 combined, we hope to engage our residential community to achieve the following:

- ✓ 200 homes receive a home energy assessment or direct-install visit to jump-start energy savings
- ✓ 90 homes are served by programs specifically targeted toward income-qualifying households
- ✓ 180 new home construction or renovation projects complete a utility new home efficiency program
- ✓ 6 multi-family buildings complete an energy assessment
- ✓ 260 new residents supporting renewable energy

⁴² Xcel Energy's Clean Energy Goals. https://www.xcelenergy.com/carbon_free_2050.

⁴³ Includes only energy efficiency from renewable energy from Xcel Energy's Windsource and Renewable*Connect. This only includes residential participation because commercial participation is targeted to only include programs where the customer does not retain the RECs.

The following table outlines the targets that the community hopes to achieve for energy efficiency programs.

<i>Target Identified (Total, 2021-2022)</i>	<i>What's Included</i>	<i>How It's Measured</i>
200 homes receive a home energy assessment or direct-install visit to jump-start energy savings	Xcel Energy's Home Energy Squad, home energy audits, including those from Dakota Electric	Counts of program participation
90 homes are served by programs specifically targeted toward income-qualifying households	Xcel Energy's Low-Income Home Energy Squad, Home Energy Savings Program, Dakota Electric's low-income programs, others as requested	
180 new home construction or renovation projects complete a utility new home efficiency program	Xcel Energy's Efficient New Home Construction	
6 multi-family buildings complete an energy assessment	Xcel Energy's Multi-Family Building Efficiency Program, others targeted toward multi-family buildings as requested	
260 new residents supporting renewable energy	Participation in any renewable energy or community solar program. Other renewable energy as documented by the City. Measured from the 2019 baseline.	Counts of program participation or City permitting records.

Partners in Energy will be responsible for tracking and reporting participation from Xcel Energy. The City of Inver Grove Heights will be responsible for tracking programs from other utilities or providers.

Focus Area: Businesses, Schools, Nonprofits, and Places of Worship

Targets: By 2022, we will strive to engage the following numbers of businesses, schools, nonprofits, and places of worship:⁴⁴

⁴⁴ Business engagement will be measured by number of engagements and program participation, rather than by unique businesses or buildings reached.

- ✓ 95 small business energy assessments for lighting, HVAC, or commercial refrigeration equipment
- ✓ 7 new construction projects that use a program to increase efficiency
- ✓ 5 larger businesses completing a Commercial Streamlined Assessment or recommissioning
- ✓ 12 new businesses, schools, nonprofits, and places of worship supporting renewable energy

<i>Target Identified (Total, 2021-2022)</i>	<i>What's Included</i>	<i>How It's Measured</i>
95 small business energy assessments for lighting, HVAC, or commercial refrigeration equipment	Xcel Energy's Commercial Refrigeration Efficiency program, One-Stop Efficiency Shop, and other small-business-focused programs, including Energy Smart ⁴⁵	Counts of program participation
7 new construction projects that use a program to increase efficiency	Xcel Energy's Energy Efficiency Buildings and Energy Design Assistance Programs, other programs from Dakota Electric as requested	
5 larger businesses completing a Commercial Streamlined Assessment or recommissioning	Xcel Energy's Commercial Streamlined Assessment and Recommissioning, other programs as requested	
12 new businesses, schools, nonprofits, and places of worship supporting renewable energy	Participation in any renewable energy or community solar program. Other renewable energy as documented by the City. Measured from the 2019 baseline	Counts of program participation or City permitting records.

Focus Area: Municipal Leadership

The City established the following targets. As part of this plan's implementation, the City will work to establish baselines against which to measure progress.

- ✓ Increase energy efficient at City facilities

⁴⁵ Energy Smart is a program through the Minnesota Chamber of Commerce available to all utility customers. <https://www.mnchamber.com/your-opportunity/energy-smart>.

- ✓ Increase the number of municipal community solar garden subscriptions
- ✓ Increase the amount of renewable energy used by City facilities
- ✓ Increase fuel efficiency of vehicle fleet
- ✓ Increase the amount of alternative fuel vehicles in the fleet

Measuring our Stretch Goals

Our plan established stretch goals to work towards if we are on track to meet or exceed our main goals listed above. The metrics of these goals are the same as those listed above, only with higher values. Our stretch goals can be found on *page 18*.



APPENDIX 3: XCEL ENERGY'S PARTNERS IN ENERGY PLANNING PROCESS

About Xcel Energy's Partners in Energy

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

Plan Development Process

The content of this plan is derived from a series of workshops with a planning team committed to representing local priorities and implementing plan strategies.



Partners in Energy Process for Success

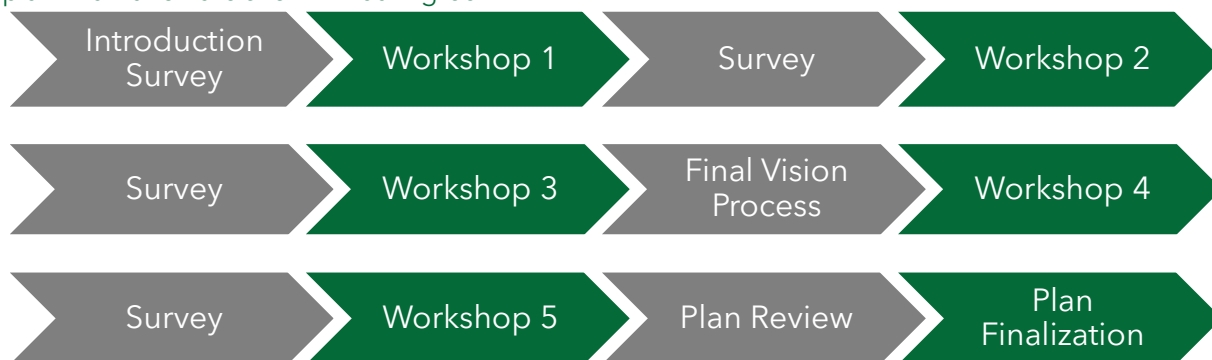


Resources from Xcel Energy for Implementation

Partners in Energy Engagement Process

The engagement process included both a series of five workshops, all hosted online through video conferencing, as well as multiple surveys and assignments between workshops.

Figure 24: A visualization of the engagement steps throughout the planning process. Workshops and plan finalization are shown in dark green.



Introduction Survey

July 2020

Before kicking off the planning process, the Energy Action Team completed an introduction survey, which both provided background on the Partners in Energy process and gathered input from the team.

In the survey, Energy Action Team members were asked to share a little bit about themselves, prioritize energy issues for the community, and react to a draft energy vision statement.

Workshop 1

July 22, 2020

Inver Grove Heights first planning workshop was centered around establishing a groundwork for the plan through data and a shared energy vision. The team received an introduction to the Partners in Energy planning process, gained an understanding of Inver Grove Heights through data, learned about how their community uses and saves energy, and discussed a shared energy vision for this process.

Survey and preparation for Workshop 2

August 2020

In preparation for the second workshop, the energy action team reviewed a revised version of the vision statement and provided input on a selection of draft focus areas.

Workshop 2

September 1, 2020

Inver Grove Heights' second planning workshop resulted in the team prioritizing near-term and long-term focus areas. After learning about energy opportunities for different focus areas, the team brainstormed community assets and voted on near-term focus areas for the plan.

Survey and preparation for Workshop 3

October 2020

Before Workshop 3, the team completed a survey to provide feedback on a draft vision statement, identify goal metrics that would resonate with the community, share their preferred time horizon and ambition level, and finalize focus areas.

Workshop 3

October 6, 2020

At Workshop 3, the Energy Action Team finalized their focus areas and vision statement. They also brainstormed communication channels to support implementation, worked in small groups to identify barriers and benefits to taking action for each focus area group, and discussed preferred goal metrics.

Final vision process

October–November 2020

A small group of Energy Action Team members volunteered to workshop the vision statement to create a short, concise statement. This small group worked separately from the workshop process to create Inver Grove Heights vision statement.

Workshop 4

November 17, 2020

The Energy Action Team spent the majority of the fourth workshop in small groups, refining strategies and tactics for each focus area. In addition, the group reacted to different goal scenarios, including an achievable and an ambitious scenario, to help refine their community-wide goal.

Survey and preparation for final workshop

December 2020

In preparation for the final workshop, the Energy Action Team completed an online survey to provide feedback on strategies, tactics, and targets discussed at Workshop 4. This was an opportunity for team members to give feedback on strategies not discussed in their small group and an opportunity to contribute more to the strategies and tactics they had already discussed.

Workshop 5

January 6, 2021

At the final workshop, the Energy Action Team reviewed the status of the Energy Action Plan and their role during the review process. The Energy Action Team prioritized strategies for implementation to help identify what strategies should be tackled first. The team also discussed implementation support opportunities, defining what success would look for them. Finally, the workshop wrapped up by generating excitement for the plan and the transition to implementation in 2021.

Plan Review

February 2021

Before the plan was finalized, the Energy Action Team had a chance to review the plan and provide input.

Plan Finalization

February-March 2021

The final plan was presented to Inver Grove Heights' Environment Commission and to City Council prior to approval. City staff and the Xcel Energy Partners in Energy team presented to Environment Commission on February 25, 2021, and to the City Council on March 1, 2021.



APPENDIX 4: GLOSSARY OF TERMS

15 x 15: Xcel Energy's privacy rule, which require all data summary statistics to contain at least 15 premises, with no single premise responsible for more than 15% of the total. Following these rules, if a premise is responsible for more than 15% of the total for that data set, it is are removed from the summary.

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

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

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

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

Conservation Improvement Programs (CIP): Portfolio of approved utility energy efficiency and demand management programs. Minnesota electric utilities have a

goal of saving 1.5% of their total energy sales each year via customer conservation efforts. Minnesota natural gas utilities have a goal of saving 0.5% of their total energy sales each year via customer conservation efforts.

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

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

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

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

Energy Savings: Comes from a permanent change that results in using less energy to achieve the same results. A new furnace uses X% less 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 both electricity and natural gas consumption to be combined.

Metric Tons of Carbon Dioxide Equivalent (MTCO_{2e}): A unit of measure for greenhouse gas emissions. The unit "CO_{2e}" 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 identifier for the location of electricity or natural gas service. In most cases it is a facility location. There can be multiple premises per building, and multiple premises per individual debtor.

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): 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.

APPENDIX 5: IMPLEMENTATION MEMORANDUM OF UNDERSTANDING

A Memorandum of Understanding (MOU) between the City of Inver Grove Heights and Xcel Energy will be included as an appendix of this plan. This MOU will outline support and commitments from both the City and Xcel Energy to support the implementation of this plan for the 18 months following passage of this plan.

The signed MOU will be included when approved and available.