

An Energy Action Plan for **Fridley**



Approved by City Council on November 26, 2018

Acknowledgements

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

Fridley's Energy Action Planning Team

The planning team was formed from a varied group of City staff and commissioners, local businesses, and committed community members.

City of Fridley

- **Scott Lund**, Mayor
- **Wally Wysopal**, City Manager
- **Rachel Workin**, Environmental Planner
- **Jeannie Benson**, Facilities Operations
- **Annie Leibel**, Intern, Housing and Redevelopment Authority

Environmental Quality and Energy Commission

- **Mark Hanson**, Chair
- **Nick Olberding**, Vice Chair

Fridley Residents

- **Amy Dritz**
- **Natividad Seefeld**, Manager, Park Plaza Cooperative

Business Representatives

- **Lance Voigt**, Owner, Voigt Bus Service
- **Mike Wardwell**, Associate, Hyde Development

Institution Representatives

- **Tim Pastoors**, Director of Facilities and Technology, Totino-Grace High School
- **Russ Couwenhoven**, Facilities Manager, Redeemer Lutheran

Energy Utility Representatives

- **Elena Foshay**, Partners in Energy Facilitator
- **Marisa Bayer**, Partners in Energy Facilitator
- **Brady Steigauf**, Partners in Energy Facilitator
- **Tami Gunderzik**, Partners in Energy Program Manager, Xcel Energy
- **Yvonne Pfeifer**, Community Energy Efficiency Manager, Xcel Energy
- **Colette Jurek**, Community Relations Manager, Xcel Energy
- **Jennifer Abbott**, Account Manager, Xcel Energy
- **Emma Schoppe**, CenterPoint Energy
- **Nick Mark**, CenterPoint Energy

Table of Contents

- Executive Summary i
 - Our Vision i
 - Our Energy Mission..... i
 - How Will We Get There?..... i
 - Focus Area Goalsii
- Introduction..... 1
- Fridley’s Commitment to Sustainability 1
 - The Case for a Community Energy Action Plan 4
 - Xcel Energy’s Partners in Energy..... 4
 - Plan Development Process 5
- Where Are We Now? – Baseline Energy Analysis..... 7
 - Energy Data Overview 7
 - Baseline Energy Analysis..... 7
 - Premises 7
 - Energy Consumption..... 8
 - Current Energy Conservation..... 9
 - Renewable Energy..... 12
- Where Do We Want To Go? – Community Energy Vision, Focus Areas, and Goals 13
 - Our Energy Vision & Mission 13
 - Focus Areas..... 13
 - Goals..... 15
- How Are We Going To Get There? – Actionable Strategies 16
 - Focus Area 1: Residential Energy..... 17
 - Focus Area 2: Businesses and Multifamily Buildings 25
 - Focus Area 3: Institutions..... 33
 - Focus Area 4: Transportation and Electric Vehicles..... 40
- Impact of Energy Action Plan 44
- Plan Implementation 46
 - Roles and Responsibilities 47
 - Implementation Launch..... 48
 - How We Will Stay On Course 48

Appendix 1: Implementation Memorandum of Understanding	50
Appendix 2: Who Are We? – Community Background	51
Appendix 3: Methodology for Measuring Success	54
Appendix 4: Glossary of Terms	56
Appendix 5: Work Plan and Timeline	57

Executive Summary

Fridley has set a goal to reduce community energy use 5 percent by the year 2020, and 20 percent by 2030. This goal will set Fridley on a path toward long-term resilience against the impacts of climate change, while generating immediate benefits such as energy cost savings; ensuring Fridley achieves its energy vision and mission.

The purpose of this plan is to identify specific goals and strategies for increasing energy efficiency and renewable energy use among residents, businesses, and institutions in the community. Community support will be critical to the success of this plan, and the strategies outlined emphasize broad engagement in energy action.

Our Vision

Fridley will continue leading by example and engaging residents, businesses, and institutions to save money and reduce greenhouse gas emissions for the benefit of everyone in the community.

Our Energy Mission

Fridley will continue improving upon its values of being a safe, vibrant, friendly, and stable home for families and businesses by:

1. Increasing sustainable, reliable energy in the grid;
2. Strengthening energy efficient practices and participation; and
3. Supporting innovative strategies and technologies to achieve Fridley's energy vision.

How Will We Get There?

To achieve our goal, Fridley will prioritize four short-term focus areas:

- **Focus Area 1: Residential Energy**, inclusive of homeowners, renters, and under-resourced residents.
- **Focus Area 2: Businesses and Multifamily Buildings**, inclusive of all businesses in the community, as well as multifamily buildings with more than five units.
- **Focus Area 3: Institutions**, including municipal premises, worship facilities, schools, and hospitals and medical facilities.
- **Focus Area 4: Transportation and Electric Vehicles**, noting that this area is important for long-term greenhouse gas emission reductions.

Renewable energy was also noted as an important component and will be included in all focus areas as a goal or strategy.

Focus Area Goals¹

Residential Energy

- By 2020, Fridley residents will take 1,200 additional actions toward energy conservation and renewable energy.
- By 2030, residents will reduce total energy use 10 percent, as compared to business as usual.

Businesses and Multifamily Buildings

- By 2020, business and multifamily buildings will achieve 5 percent energy savings.
- By 2030, business and multifamily buildings will reduce total energy use 20 percent, as compared to business as usual.

Institutions

- By 2020, institutions will achieve 5 percent energy savings.
- By 2030, institutions will reduce total energy use 15 percent, as compared to business as usual.

Transportation and Electric Vehicles

- By 2020, conduct an outreach campaign to raise awareness about electric vehicles, with the goal of reaching 500 residents and individuals who work in Fridley.
- By 2020, reach 10 businesses and multifamily buildings through a targeted outreach campaign to encourage installation of charging infrastructure.
- By 2020, install one electric vehicle charging station at a City-owned building or location.

¹ The business as usual scenario represents a presumed slight increase in energy demand based on residential and commercial energy demand of about 0.5 percent per year. It is assumed institutions demand will increase in 2019 when the new civic campus opens, but stay relatively flat in future years.



Photo Credit: City of Fridley

Introduction

Fridley prides itself on being a safe, vibrant, friendly, and stable home for families and businesses. Sustainability is a core value, as demonstrated by the history and variety of actions taken by the community. Through the guidance of the Environmental Quality and Energy Commission, the City of Fridley has a solid framework to position itself as a local leader. This plan represents an exciting first step in energy action planning, and will launch the community toward a more

sustainable and resilient future.

Fridley is a community in transition: its population is changing, growing more diverse and younger; and redevelopment of industrial and commercial areas will add new, denser multifamily housing and mixed-use buildings.² Redevelopment opportunities give Fridley the chance to ensure development is sustainable long term. Initial progress has been made through City policy and community initiatives that promote on-site solar generation, and in the 2040 Comprehensive Plan.

In the 2040 Comprehensive Plan, the City of Fridley identifies food security, native landscaping, and solar resources important to planning for the impacts of climate change and reducing the City's contribution to greenhouse gas emissions. The Energy Action Plan identifies strategies that will reduce Fridley's energy-related greenhouse gas emissions through energy efficiency, renewable energy subscriptions, and encouraging on-site renewable energy generation. These strategies will increase energy resiliency for residents, businesses, and institutions — ensuring everyone in the community benefits.

Fridley's Commitment to Energy Efficiency

Fridley has demonstrated a strong commitment to sustainability and energy efficiency over the past few years. To date, the City has achieved Step 2 in GreenStep Cities, a statewide voluntary challenge, assistance, and recognition program to help cities achieve their sustainability and quality-of-life goals. Fridley is on track to become a Step 3 city by 2020.

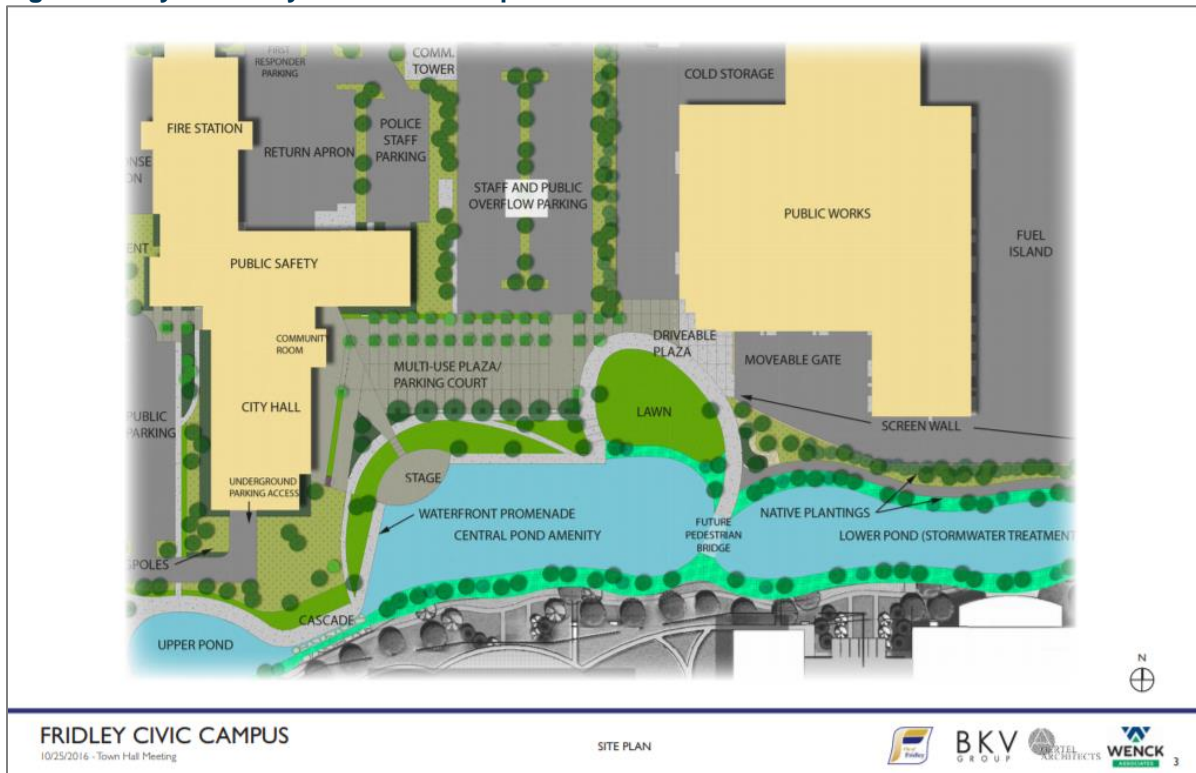
The City has invested in efficiency in many of its own facilities. Some of the upgrades completed include replacing old equipment with energy efficient units, upgrading to LED lighting in public buildings, installing variable frequency drives throughout the City's water treatment system, and replacing city street lights with LED bulbs. The City of

² See Appendix 2 for community demographic data.

Fridley updated their zoning ordinance to make it easier to permit photovoltaic solar installations. The City is also completing a fleet analysis with Xcel Energy and FleetCarma,³ and is participating in the Cities Charging Ahead!⁴ initiative to understand ways to integrate electric vehicles (EVs) into the City fleet and become EV ready at the new civic campus.

The most exciting effort to reduce energy use in City facilities is tied to construction of the new civic campus. This campus will consolidate City Hall, Public Safety, and Fire Station 1 into the same facility, and relocate Public Works and vehicle storage. The City participated in Xcel Energy’s Energy Design Assistance program to include energy savings in the planning and design phase of the new civic campus project. Fridley’s new Public Safety and City Hall building are anticipated to save 32 percent compared to baseline, and the new Public Works facility is anticipated to save 43 percent compared to baseline.⁵ The City is committed to exploring additional opportunities in these buildings and other City-owned facilities to increase efficiency and reduce costs.

Figure 1: City of Fridley New Civic Campus Site Plan⁶



³ Fleet analysis assesses electric vehicle suitability in City-owned fleet and charging infrastructure needed based on the deployment of electric vehicles.

⁴ Cities Charging Ahead! is sponsored by CERTs and Great Plains Institute. Participating cities receive technical assistance focused on actions and best practices local governments can implement to accelerate adoption of electric vehicles.

⁵ Energy Design Assistance CD Review Report, 2017.

⁶ City of Fridley, Town Hall Meeting, 2016.

The City of Fridley also prioritizes energy efficiency for its residents by offering discounted Home Energy Squad[®] Enhanced⁷ visits through the Housing and Redevelopment Authority. In 2014, the first year of the partnership, participation rates were the highest, but participation has decreased over the last two years. An important target of this plan is to increase participation in Home Energy Squad. Fridley also offers low-interest home improvement loans, administered by the Center for Energy and Environment. However, while energy efficiency upgrades are allowable in the loan scope, past applicants have not generally incorporated efficiency into their project. This plan will also address increasing the use of loans for efficiency projects.

The 2040 Comprehensive Plan update has been an important opportunity for the City to establish long-term energy and sustainability initiatives. In the 2040 Comprehensive Plan, the City's goals are to establish policies and implement programs that support Fridley's commitment to environmental sustainability in the community and region, and to increase resiliency. Specific components of the 2040 Comprehensive Plan include supporting the Next Generation Energy Act goal;⁸ encouraging the use of solar devices, especially in under-utilized spaces; and ensuring equitable access to alternative energy and energy efficiency programming. Action steps detailed in this plan, such as participating in programs to promote and incentivize energy efficiency and renewable energy, and integrating green building best practices into the permit process, will help the City of Fridley meet its Comprehensive Plan goals.

⁷ Home Energy Squad[®] is a joint program offered by Xcel Energy and CenterPoint Energy to help customers reduce energy use. Energy experts deliver customized energy solutions, including installation of energy-saving measures. Enhanced visits include blower door test, thermal image testing, combustion safety check, and carbon monoxide check.

⁸ Next Generation Energy Act passed in 2007 established statewide goals for reducing greenhouse gas (GHG) emissions 30 percent by 2025 and 80 percent by 2050 below 2005 levels.

Table 1: Fridley's Sustainability Initiatives

Fridley's Sustainability Initiatives	
Recognition Programs	<ul style="list-style-type: none"> • GreenStep Cities • Tree City USA Community through the Arbor Day Foundation • Pollinator-friendly city with Pollinate Minnesota
Policies & Plans	<ul style="list-style-type: none"> • Zoning districts allow roof-mount solar as permitted use and ground-mount solar installations as a special use • 2040 Comprehensive Plan • Solid Waste Management Plan • Active Transportation Plan
Community Initiatives	<ul style="list-style-type: none"> • Home Energy Squad buy-down through Housing & Redevelopment Authority • Curb-cut raingarden grants
City-owned Buildings & Fleet	<ul style="list-style-type: none"> • Completed Xcel Energy and CenterPoint Energy's Energy Design Assistance program to improve efficiency in new civic campus buildings in 2017 • Upgraded to LED fixtures in City-owned buildings, parking lots, and street lights • Replacing old equipment with energy efficient models • Updating building operations to include energy efficiency practices • Completing a fleet analysis through Xcel Energy and FleetCarma • Participating in Cities Charging Ahead!

The Case for a Community Energy Action Plan

The City of Fridley has successfully integrated energy efficient policies and practices into many of their own operations. Looking to approach energy efficiency more holistically, the City identified Partners in Energy as an opportunity to “involve and motivate different sectors of the community in [energy action planning]”, to ensure that Fridley “is developing sustainably and equitably.”⁹ This process allows inclusive engagement across all sectors and helps the community reduce energy use and greenhouse gas emissions. City staff saw Partners in Energy as a great opportunity to participate in a community-driven, data-led approach to energy action planning.

Xcel Energy's Partners in Energy

Xcel Energy is the main electric utility serving the City of Fridley. In the summer of 2014, Xcel Energy launched Partners in Energy to support communities like Fridley in developing and implementing energy action plans that supplement existing

⁹ Fridley's Partners in Energy Application.

sustainability plans, strategies, and tools. The content of this plan is derived from a series of planning workshops held in the community with a planning team committed to representing local energy priorities and implementing plan strategies.

The Partners in Energy planning process consisted of a series of five workshops where the Energy Action Team learned about community energy use to develop goals and strategies to achieve Fridley’s energy vision.

Partners in Energy will work with the City of Fridley to coordinate support for implementing the plan and will develop a Memorandum of Understanding that outlines specific support Xcel Energy will provide, including resources diagrammed in Figure 3, to help Fridley deploy its strategies and achieve its goals.

Figure 2: Partners in Energy Process for Success



Figure 3: Resources from Xcel Energy for Implementation



Plan Development Process

To develop Fridley’s Energy Action Plan, the City of Fridley recruited a diverse group of business and institution representatives, residents, City staff, Environmental Quality and Energy Commission members, and utility representatives serving Fridley. See the Acknowledgements section at the beginning of this document for a complete list of participants.

The Energy Action Team met over the course of five months to review community energy use data, set priorities and goals, and develop strategies to meet those goals. A summary of the workshops can be found in

Table 2.

Between workshops, Energy Action Team members completed surveys to provide additional input on goals and strategies; and a sub-group met outside of the regular

workshop schedule via conference call to establish goals and strategies for the Electric Vehicles Focus Area.



Photo: Fridley Energy Action Team at Workshop 5

Table 2: Planning Workshop Summary

Planning Workshop Summary	
Workshop 1 April 24, 2018	<ul style="list-style-type: none"> • Introduced team and Partners in Energy process. • Reviewed baseline energy data, including past City energy initiatives. • Discussed community energy vision and priorities.
Workshop 2 June 8, 2018	<ul style="list-style-type: none"> • Identified focus areas that emerged from workshop 1 and pre-workshop 2 survey. • Provided an overview of available utility programs and incentives. • Brainstormed initial strategies for achieving Fridley’s energy vision.
Workshop 3 July 9, 2018	<ul style="list-style-type: none"> • Introduced the group to the goal setting process and sample community goals. • Established community-wide goal language. • Broke into focus area groups to draft focus area goals and strategies to reach those goals.
Workshop 4 July 23, 2018	<ul style="list-style-type: none"> • Reviewed impact of focus area goals. • Gained an understanding of community-based social marketing. • Evaluated strategies identified at workshop 3 and pre-workshop 4 survey. • Identified implementation resources for each focus area.
Workshop 5 August 30, 2018	<ul style="list-style-type: none"> • Confirmed process and timeline for plan approval. • Finalized community-wide goal and focus area goals. • Completed a SWOT analysis of the Energy Action Plan. • Assessed necessary resources for implementation of plan

Where Are We Now? – Baseline Energy Analysis

Energy Data Overview

An integral part of the Partners in Energy planning process is reviewing historic energy data for Fridley. This included data on energy use and participation in utility energy conservation programs, as well as savings associated with participation in those programs. Data was provided by both Xcel Energy and CenterPoint Energy for all Fridley premises for 2015-2017. The data helped the Energy Action Team decide where to focus efforts and allowed the group to forecast the impact of Fridley's energy goals.

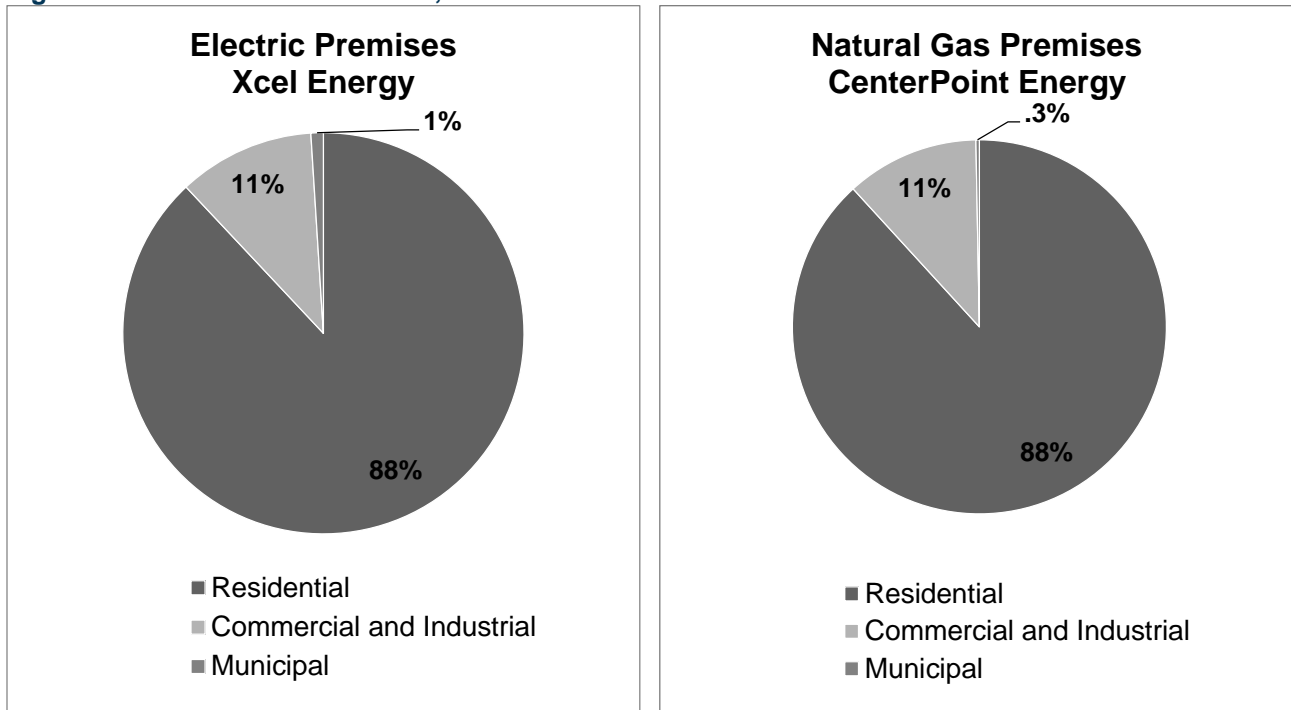
Baseline Energy Analysis

This section summarizes community-wide energy use, conservation program participation, and historic energy savings.¹⁰ Data included in this section establish a baseline against which progress toward goals will be compared to in the future.

Premises

A premise is a unique identifier for the location of electricity or natural gas service. In most cases, it is a facility or building location. In Fridley, there are 13,433 electricity premises served by Xcel Energy and 9,768 natural gas premises served by CenterPoint Energy. The distribution of electric and natural gas premises among residential, commercial and industrial, and municipal premises is shown in Figure 4.

¹⁰ The electricity and natural gas data in this plan complies with Xcel Energy's 15 x15 privacy rules, which require all data summary statistics to contain at least 15 entities, with no single entity responsible for more than 15 percent of the total. Following these rules, if an entity is responsible for more than 15 percent of the total for that data set, they are removed from the summary. No premises were removed from the summary.

Figure 4: Distribution of Premises, 2017

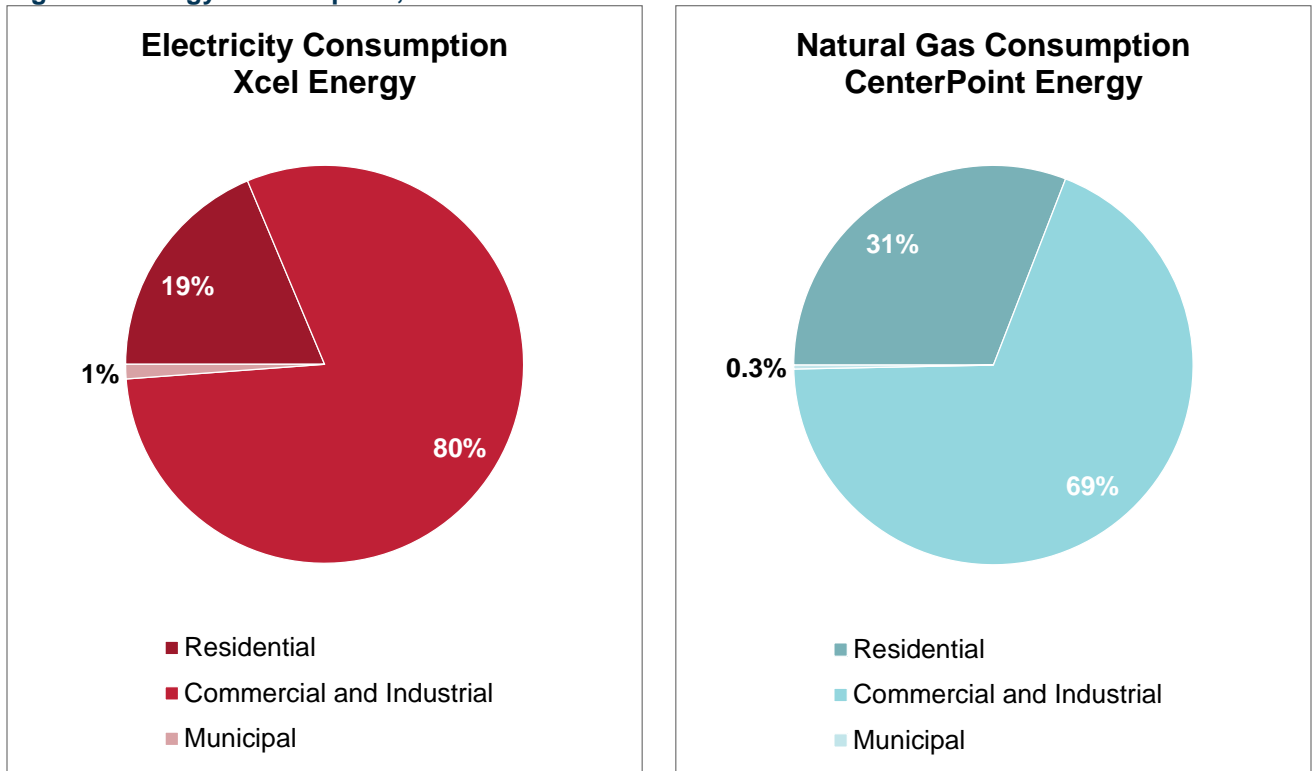
Energy Consumption

Fridley consumed a total of 397,416,249 kilowatt-hours (kWh) of electricity and 23,280,262 therms of natural gas in 2017. Combined, all sectors spent an estimated \$52.8 million on energy in 2017.¹¹ Although the majority of premises are residential, most electricity and natural gas are consumed by commercial and industrial premises (Figure 5). Commercial and industrial premises consumed 80 percent of electricity and 69 percent of natural gas in 2017, spending an average of \$20,583 on electricity and \$6,583 on natural gas per premise per year.¹² Residential premises consumed 19 percent of electricity and 31 percent of natural gas, spending an average of \$776 on electricity and \$677 on natural gas per premise in 2017. Fridley homes spent an average of \$120 per month on energy. The remaining energy was consumed by municipal premises, representing 1 percent of electricity and less than 1 percent of natural gas.

¹¹ This excludes any taxes and fees.

¹² The commercial and industrial customer usage and spend can be highly variable, which can have an impact on customer averages.

Figure 5: Energy Consumption, 2017



Current Energy Conservation

Both Xcel Energy and CenterPoint Energy offer programs and rebates to help residents and businesses save energy. Over the past three years, Fridley residents and businesses have taken important steps toward reducing energy use, saving an average of 1.6 percent of electricity consumed, and 1.4 percent of natural gas consumed per year through participation in conservation improvement programs.¹³

¹³ Conservation improvement programs include the portfolio of approved utility energy efficiency and demand management programs. Minnesota electric utilities have a goal of saving 1.5 percent of their total energy sales each year via customer conservation efforts. Minnesota natural gas utilities have a goal of saving .5 percent of their total energy sales each year via customer conservation efforts.

Figure 6: Electricity Savings from Xcel Energy Conservation Improvement Program Participation

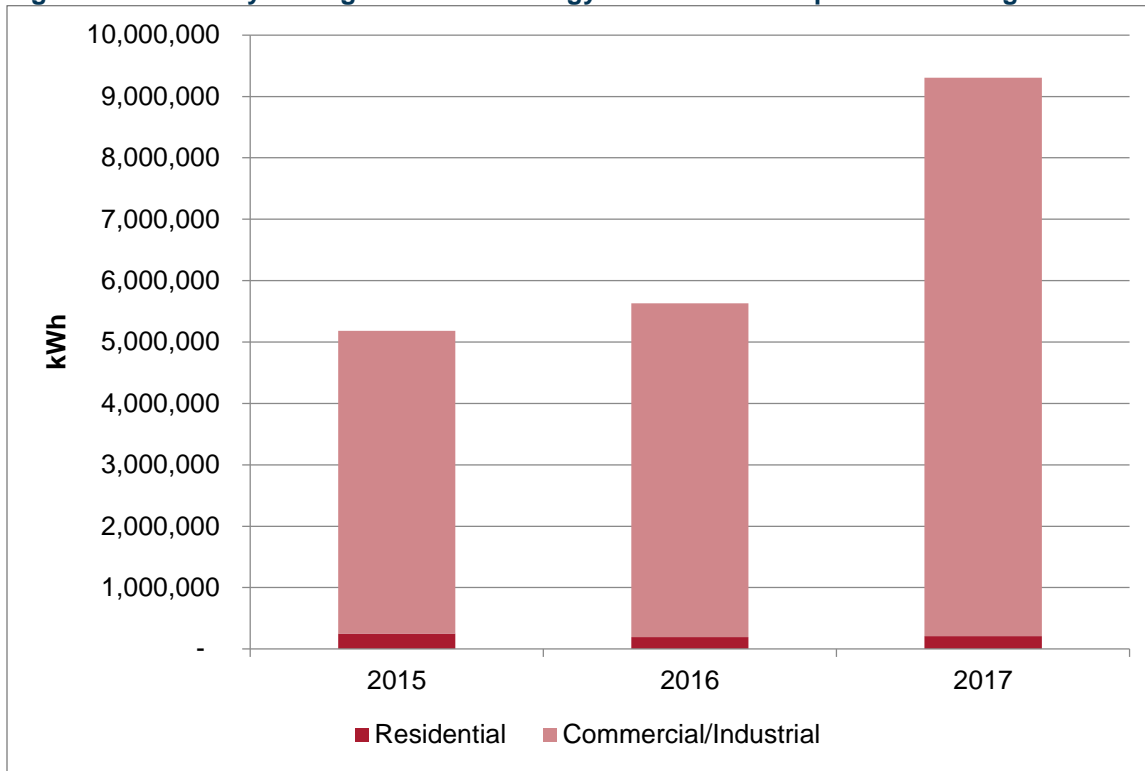


Figure 7: Therm Savings from CenterPoint Energy Conservation Improvement Program Participation

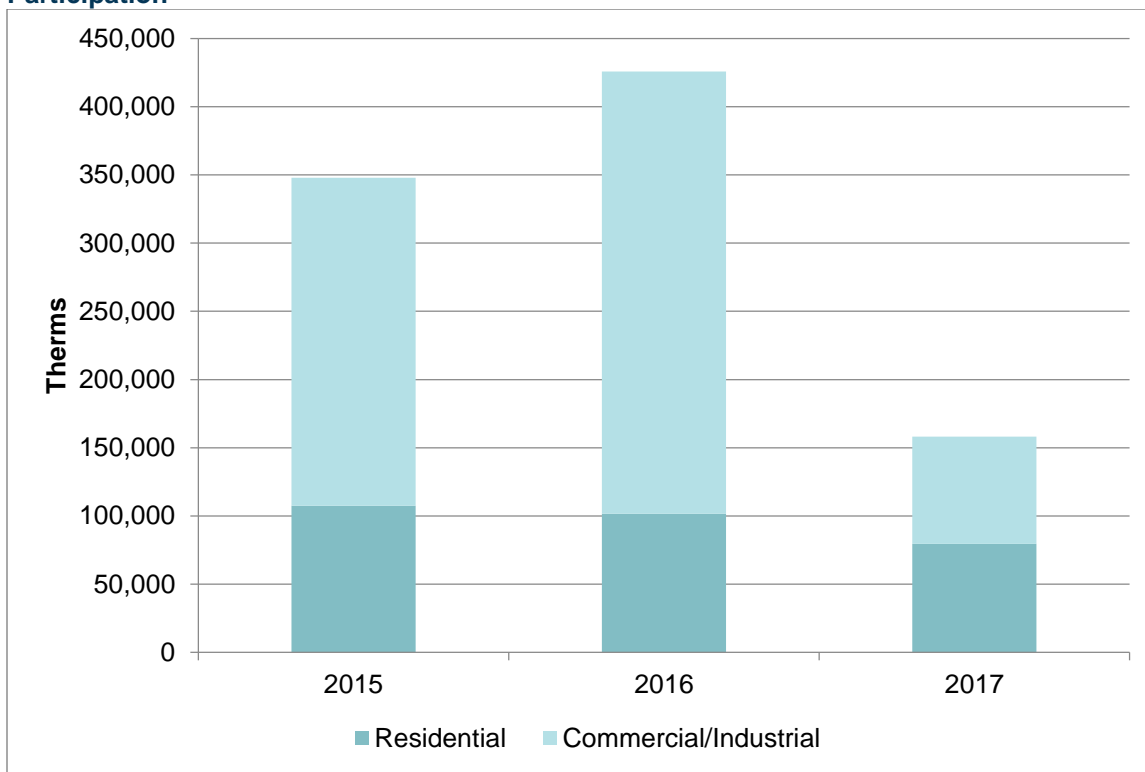


Figure 8 summarizes residential conservation program participation for the past three years. Total participation in residential conservation programs has declined slightly since 2015, with 9 in 100 premises participating in an Xcel Energy conservation program in 2017. In 2017, Fridley residents saved 209,351 kWh and 79,647 therms, representing 0.9 percent of total residential energy use. Residential program participation has been highest in home efficiency rebates, primarily tied to replacement of heating and cooling equipment.

Figure 8: Residential Conservation Improvement Program Participation¹⁴

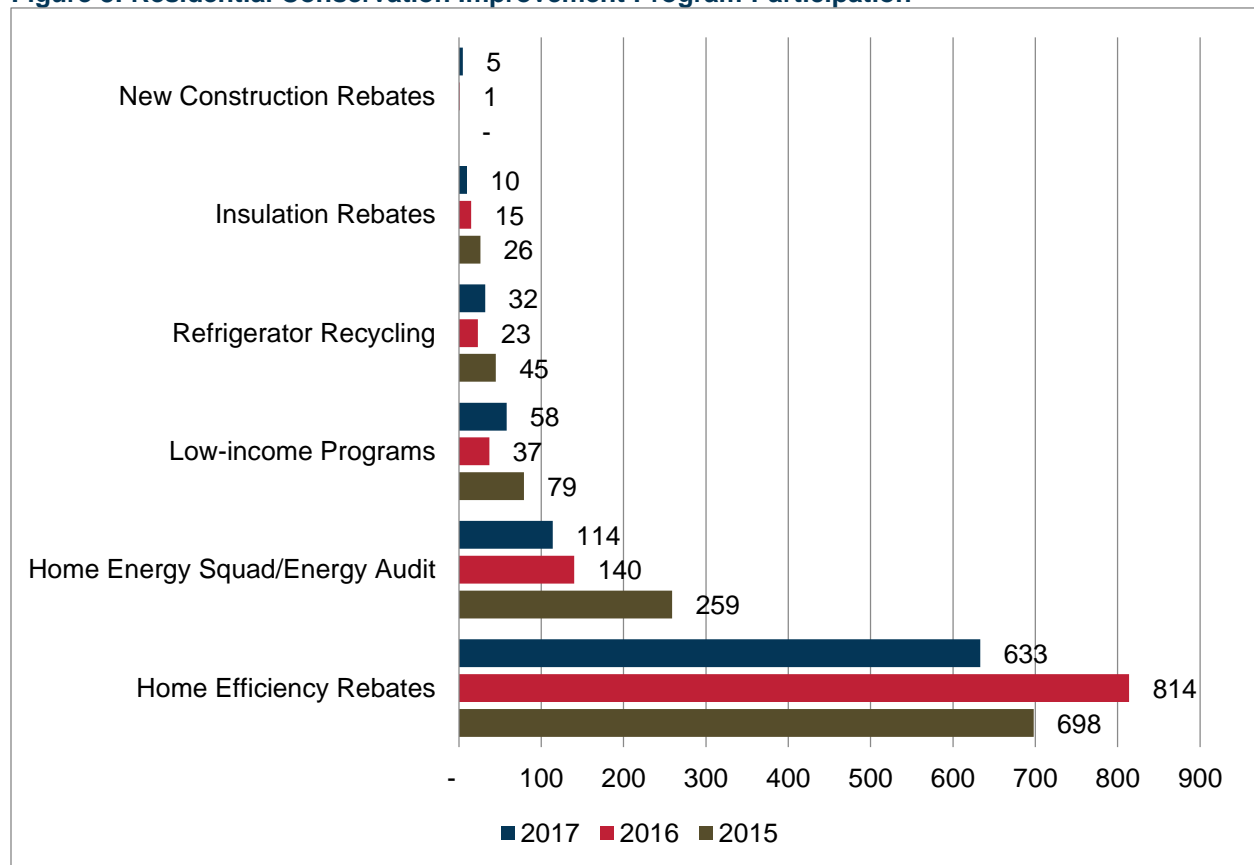
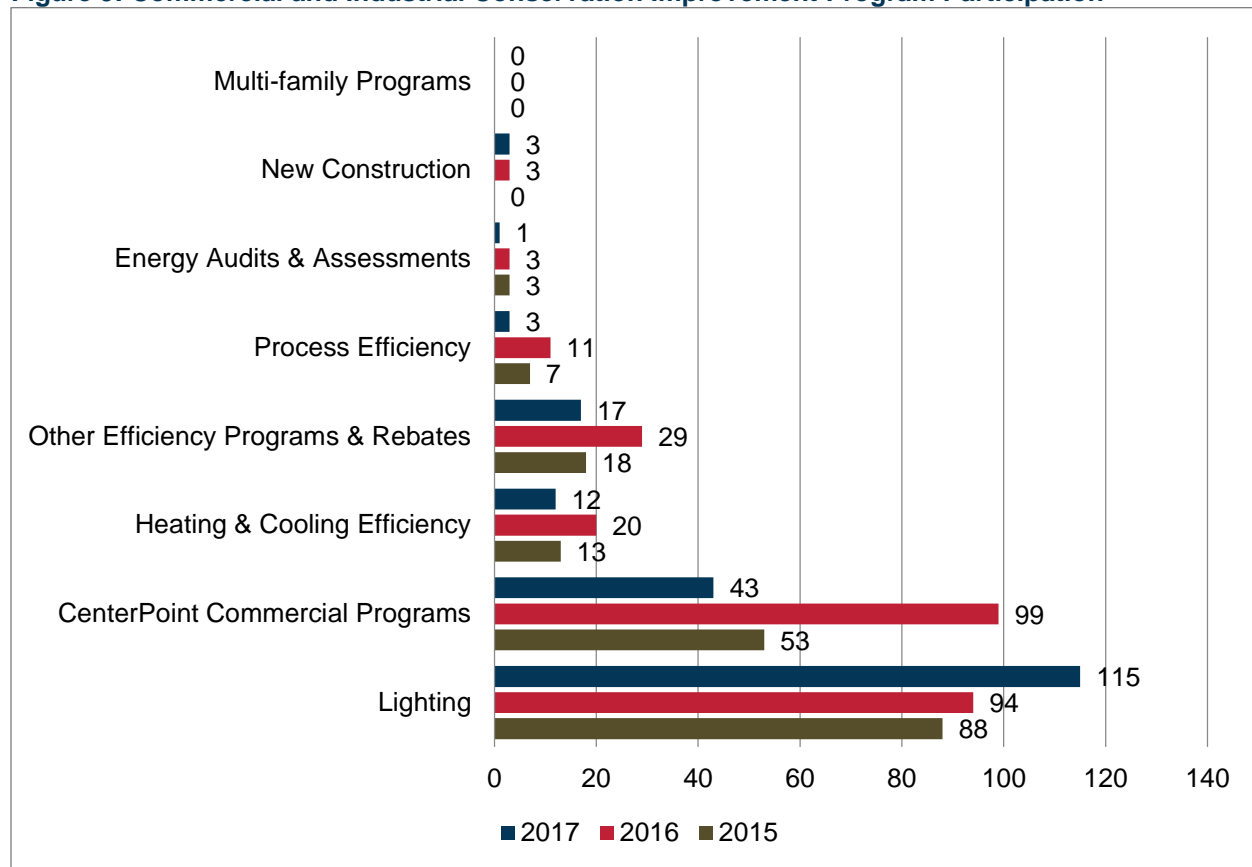


Figure 9 shows that commercial and industrial program participation rates have been slightly higher than residential sector participation over the past three years – 7 in 50 commercial premises participated in an Xcel Energy conservation improvement program in 2017. Lighting and natural gas equipment rebates have been most popular among commercial and industrial customers. In 2017, commercial and industrial premises saved 9,094,217 kWh and 78,420 therms, representing 1.4 percent of total sector energy use.

¹⁴ Xcel Energy and CenterPoint Energy Conservation Program Participation Counts, 2015-2017. Programs grouped based on common themes defined by Partners in Energy.

Figure 9: Commercial and Industrial Conservation Improvement Program Participation¹⁵

Renewable Energy

Fridley has taken initial strides to support on-site renewable energy installations and renewable energy subscription programs. The City of Fridley removed a barrier to ground-mount solar by updating their zoning ordinance to allow ground-mount installations with a special use permit. Five residential and eight commercial and industrial premises have installed on-site solar installations in Fridley between 2014 and 2018, according to City permit records. Renewable energy subscriptions have also been popular among Fridley residents. In 2017, 490 households subscribed to Windsource[®], a voluntary subscription program that allows customers to source some or all of their electricity from wind energy. Of these, 68 households elected to cover 100 percent of their annual electricity use with wind energy, representing 0.6 percent of total residential electricity use in 2017. There are two commercial Windsource subscribers; both subscribe 100 percent of their annual electricity use. Fridley residents and businesses also subscribe to Renewable*Connect[®], a voluntary subscription program from Xcel Energy that allows customers to subscribe up to a 100 percent of their annual electricity

¹⁵ Xcel Energy and CenterPoint Energy Conservation Program Participation Counts, 2015-2017. Programs grouped based on common themes defined by Partners in Energy.

use from a blend of wind and solar energy. In 2018, 17 residents, and 4 commercial and industrial customers subscribed to Renewable*Connect.¹⁶

Where Do We Want To Go? – Community Energy Vision, Focus Areas, and Goals

Our Energy Vision & Mission

During the first and second planning workshops, the Energy Action Team worked together to develop a shared vision and mission for Fridley’s energy future. The vision and mission represent the priorities of the team and the community throughout the energy planning process.

Vision

Fridley will continue leading by example and engaging residents, businesses, and institutions to save money and reduce greenhouse gas emissions for the benefit of everyone in the community.

Mission

Ensure Fridley will continue improving upon its values of being a safe, vibrant, friendly, and stable home for families and businesses by:

- 1. Increasing sustainable, reliable energy in the grid;*
- 2. Strengthening energy efficient practices and participation; and*
- 3. Supporting innovative strategies and technologies to achieve Fridley's energy vision.*

Focus Areas

After analyzing baseline energy use and historical program participation, four priority focus areas were chosen:

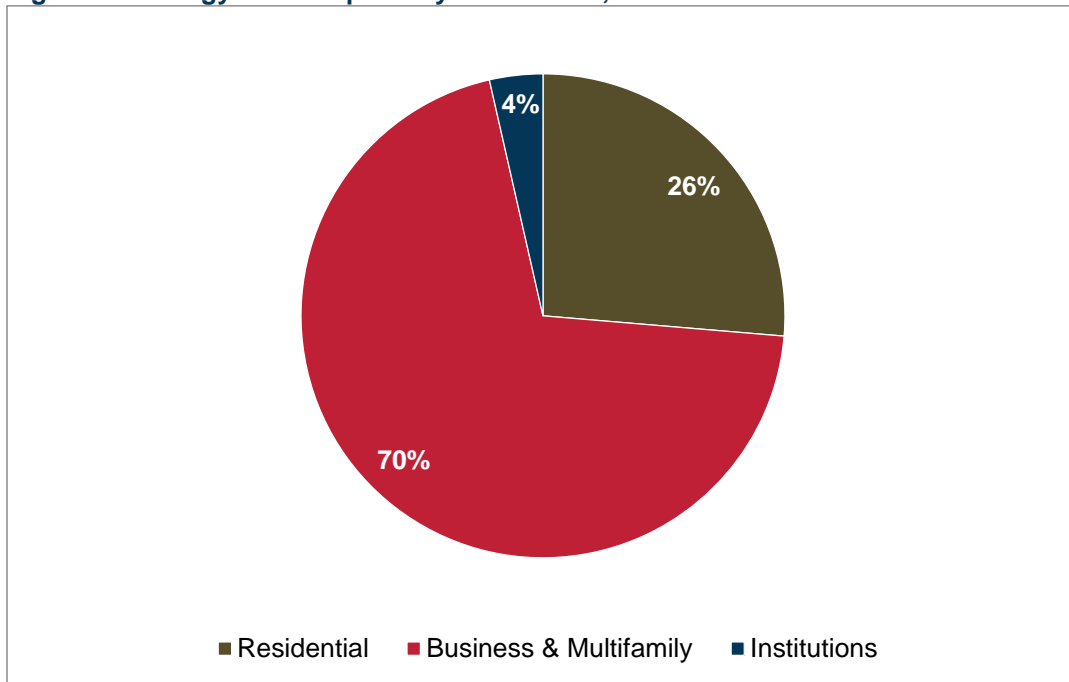
- **Focus Area 1: Residential Energy**, inclusive of homeowners, renters, and under-resourced residents.
- **Focus Area 2: Businesses and Multifamily Buildings**, inclusive of all businesses in the community, as well as multifamily buildings with more than five units.
- **Focus Area 3: Institutions**, including municipal premises, worship facilities, schools, and hospitals and medical facilities.
- **Focus Area 4: Transportation and Electric Vehicles**, noting that this area is important for long-term greenhouse gas emission reductions.

¹⁶ Renewable*Connect was fully subscribed at time of plan adoption and was not accepting new subscriptions.

Focus areas 1-3 are sectors in the community that the Energy Action Team believes can realize short-term measurable results through the strategies outlined in this plan. Focus area 4 is a long-term priority – the Energy Action Team acknowledged transportation and electric vehicles are important for long-term greenhouse gas emission reductions, public health, and cost-savings for electric vehicle owners over the lifetime of the vehicle. A small sub-group met outside of the regular workshop schedule to identify strategies for this focus area.

Through the planning process, renewable energy was also noted as an important component for reducing greenhouse gas emissions and improving energy resilience. Rather than defining renewable energy as a separate focus area, the group determined that renewable energy was an important component of all focus areas and should be integrated throughout the plan for a more comprehensive approach.

Figure 10: Energy Consumption by Focus Area, 2017¹⁷



¹⁷ Xcel Energy and CenterPoint Energy, estimates based on modeling and projections by Partners in Energy. Total energy consumption based on actual 2017 electricity consumption for classified premises and a natural gas consumption estimate. The natural gas consumption estimate was completed using actual 2017 therm consumption for all commercial and industrial premises and applying a ratio to institution consumption based on actual kWh consumption for classified premises.

Goals¹⁸

During workshops 3-5, the Energy Action Team worked together to develop a community-wide goal, and in small groups to develop goals and strategies for each focus area. The group wanted to make sure that goals were data-driven and would include both short-term and long-term time horizons. The Energy Action Team believes shorter time frames will provide immediate, tangible results that can garner support for the Energy Action Plan, while also building toward more ambitious outcomes in the future. Appendix 3 explains methodology of how goals will be measured and success reported.

¹⁸ Goals measured against the business as usual scenario, where noted. The business as usual scenario represents a presumed slight increase in energy demand based on residential and commercial energy demand of about 0.5 percent per year. It is assumed institutions demand will increase in 2019 when the new civic campus opens, but stay relatively flat in future years.

Community-wide Goal

- Reduce energy use 5 percent by 2020, and 20 percent by 2030, as compared to business as usual.

Residential Energy

- By 2020, Fridley residents will take 1,200 additional actions toward energy conservation and renewable energy.
- By 2030, residents will reduce total energy use 10 percent, as compared to business as usual.

Businesses and Multifamily Buildings

- By 2020, business and multifamily buildings will achieve 5 percent energy savings.
- By 2030, business and multifamily buildings will reduce total energy use 20 percent, as compared to business as usual.

Institutions

- By 2020, institutions will achieve 5 percent energy savings.
- By 2030, institutions will reduce total energy use 15 percent, as compared to business as usual.

Transportation and Electric Vehicles

- By 2020, conduct an outreach campaign to raise awareness about electric vehicles, with the goal of reaching 500 residents and individuals who work in Fridley.
- By 2020, reach 10 businesses and multifamily buildings through a targeted outreach campaign to encourage installation of charging infrastructure.
- By 2020, install one electric vehicle charging station at a City-owned building or location.

How Are We Going To Get There? – Actionable Strategies

The following sections detail actionable strategies to achieve the goals outlined in this plan. The Energy Action Team worked in teams to create strategies they believed would have high impact and measurable results.

In addition to strategies listed within each focus area, there are general strategies that fall within the scope of all four focus areas to broadly address energy efficiency and renewable energy throughout the community. These include:

- Providing general informational materials through City communication channels, including website, newsletter, social media, and events;
- Leveraging existing City relationships and programs to promote targeted energy-saving and renewable energy opportunities; and

- Coordinating with the City’s building department and Development Review Committee to integrate information about energy efficiency and renewable energy into the development process.

Specific actions to support these strategies are further detailed in each focus area section.

Focus Area 1: Residential Energy

Residents are an important component for the success of the Energy Action Plan. The residential sector represents 23 percent of total community energy use. In addition to conserving energy, this sector creates an opportunity for broad community engagement and support for energy goals.



Source: City of Fridley

Homeowners are the primary target for this focus area. A majority of Fridley residents own their home (62.5 percent¹⁹) and most owner-occupied homes are single-family units (65 percent²⁰). The housing stock in Fridley is aging – 89 percent of housing units are more than 30 years old.²¹ These homes likely have many opportunities to improve efficiency, particularly as part of planned kitchen, bath, and other remodeling projects.

Under-resourced Households

The residential sector also includes under-resourced households. Data show that under-resourced residents are energy burdened – meaning the household spends a high percentage of their income on home energy bills (see Figure 11). Fridley has a high rate of people living in poverty (12.3 percent²²), as compared to Anoka County (7.4 percent). The number of Fridley households earning less than 50 percent of state median income (SMI), the threshold for utility low-income program eligibility, is estimated to be 2,750.²³ This represents 24.9 percent of all households in Fridley. The highest concentration of households below the 50 percent SMI threshold is in the census tract located north of Interstate 694, west of University Avenue, and south of Mississippi Street (see Figure 12). Understanding the geographic distribution of under-resourced households will help the Energy Action Team target their efforts. There are a

¹⁹ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

²⁰ City of Fridley, 2018.

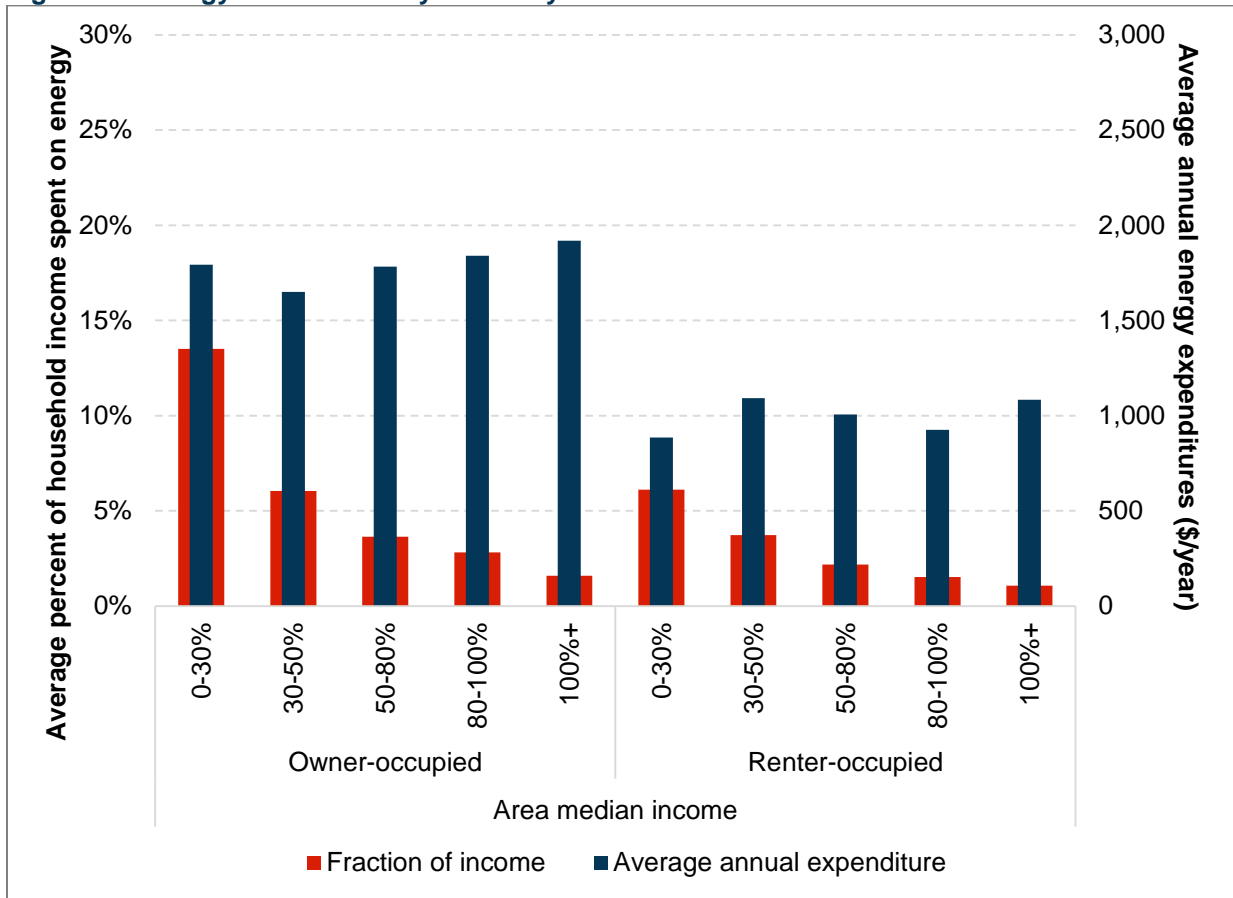
²¹ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

²² U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

²³ Estimate based on American Community Survey 2016 Household Income in the Past 12 Months (2016 Inflation-Adjusted Dollars).

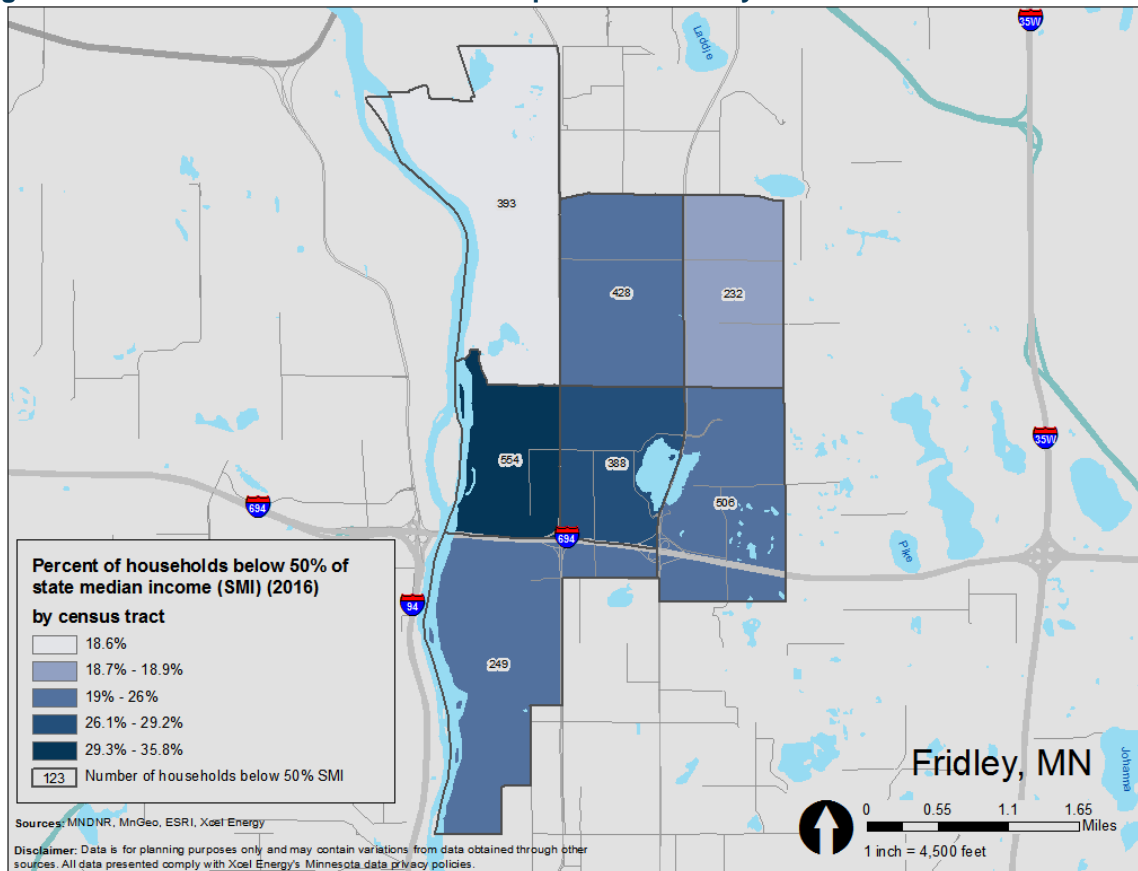
variety of programs and strategies for these households that help reduce energy bills and offer grants and low-interest financing to make repairs.

Figure 11: Energy Burden for City of Fridley²⁴



²⁴ U.S. Department of Energy, Better Buildings Initiative, Clean Energy for Low Income Communities Accelerator. Average annual expenditure based on U.S. Energy Information Administration reported electric utility revenue per residential customer, and statewide natural gas expenditures per residential customer.

Figure 12: Percent of Households Below 50 percent of SMI by Census Tract²⁵



Renters

There is also large percentage of renters in the community – 37.5 percent of households are renters.²⁶ Ensuring cost of living remains affordable for renters was important to the Energy Action Team, so strategies include those that target renters in single family, multifamily, and other housing types.

Table 3: Household Tenure by Housing Type²⁷

	Owner-Occupied	Renter-Occupied
Single family	6,293	1,046
Multifamily, 2-4 units	103	278
Multifamily, 5+ units	128	2,759
Other	363	55
Total	6,887	4,138

²⁵ Estimate based on American Community Survey 2016 Household Income in the Past 12 Months (2016 Inflation-Adjusted Dollars).

²⁶ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

²⁷ Ibid.

Since renters do not own their housing unit, most are limited in the types of energy improvements they can make. Some ways that renters likely can save energy include managing indoor temperature using thermostats, replacing lightbulbs with LEDs, unplugging electronics when not in use, and using ENERGY STAR-rated products. Strategies identified to target renters include energy conservation and energy efficiency to ensure renters are able to achieve energy savings. In addition, income-qualified renters can utilize a free energy efficiency program that also replaces appliances.

Residential Energy Goal and Strategies

Fridley's goals in the residential sector are to increase program participation in conservation programs and renewable energy subscriptions:

- By 2020, Fridley residents will take 1,200 additional actions toward energy conservation and renewable energy.
- By 2030, residents will reduce total energy use 10 percent, as compared to business as usual.

To achieve this goal, the Energy Action Team identified specific programs to promote during outreach – see Table 4. In addition to increasing participation in utility conservation programs, behavior changes inspired through education and awareness are a critical component to successfully reducing residential energy use.

Table 4: Residential Program Participation Targets

Program	Baseline (2017)	Participation Target by 2020
Home Energy Squad	55	340
Refrigerator Recycling	32	150
Income Qualified Programs	58	190
Windsorce®	490	200 additional

These programs were chosen because of the opportunity to have a big impact on residential energy savings. The City of Fridley Housing and Redevelopment Authority (HRA) offers discounted Home Energy Squad visits to all Fridley residents. Home Energy Squad is a key first step to identifying cost-effective opportunities to reduce energy use. However, participation has been decreasing since 2014, when the discount program launched.

During planning, Energy Action Team members spent time considering perceived benefits among residents of taking energy action, and barriers that might get in the way (Table 5). Energy Action Team members noted that lack of awareness and distrust in the message and/or messenger were barriers to taking action; so strategies were crafted to overcome those barriers.

Table 5: Residential Energy Barriers and Benefits

Barriers	Benefits
Cost to take action	Cost savings
Language barrier	Sense of community & pride in Fridley
Lack of trust in the message and/or messenger	Helping the environment
Lack of knowledge	Comfort and safety in the home
Effort needed to take action	Awareness of impact

Cost to take action was also identified as a barrier to taking an energy efficiency or renewable energy action. Refrigerator recycling was targeted because there is no cost to participate and a rebate is given to the customer after pick up. Xcel Energy’s Windsource[®] was chosen as an easy, low cost way for residents to access renewable energy. The planning team also prioritized income-based programs from both Xcel Energy and CenterPoint Energy since they are available at no cost for income-eligible households. These programs include low-income Home Energy Squad, Home Energy Savings Program, Stay Safe Stay Warm, and weatherization services.

Table 6: Residential Energy Strategies

Focus Area: Residential Energy
Strategy 1: Engage residents in taking action through a community-wide marketing campaign.
<p>Actions:</p> <ul style="list-style-type: none"> • Analyze resident survey to understand what messaging resonates with residents and who the trusted messengers are. • Create “first-step actions” checklist to guide residents on easy actions to take at home. • Create a checklist for installing solar panels on residential structures. • Create informational materials focusing on program participation and rebates as a way to conserve energy and use renewable energy. <ul style="list-style-type: none"> ○ Include behavior change information as part of campaign materials. ○ Use testimonials, success stories, and case studies to encourage participation. ○ Target programs: Enhanced Home Energy Squad, Refrigerator Recycling, renewable energy programs (e.g. Windsource[®], community solar garden subscriptions), and the Fridley Home Loan Program. • Create and distribute informational materials with targeted messaging for key populations. <ul style="list-style-type: none"> ○ Target neighborhoods with older homes with home rehabilitation information. ○ Target new residents using new resident packet with energy audit and rehab information. ○ Door-knock at manufactured home parks with program and rebates information.

Focus Area: Residential Energy

- Translate materials into other languages, such as Somali and Spanish.
 - Identify nonprofit and service organizations to share and support translated materials and program offerings.
 - Partner with leaders in language communities to help ensure messaging will resonate with community.
- Partner with local businesses where home improvement or construction materials are purchased to display informational materials.
- Use existing communication channels and community events to share materials and information.

Strategy 2: Integrate energy efficiency language into existing points of City communications; and train staff to share message with residents.

Actions:

- Update Home Loan Program application, website, and program marketing to emphasize energy efficient improvements.
- Include energy efficient information in Building Permit display and application materials.
- Create energy efficiency inserts for water utility bills.

Strategy 3: Partner with schools and community groups to reduce energy use by promoting behavior change.

Actions:

- Partner with school district to reach senior citizens and senior center on actions they can take at home.
- Partner with local Boy Scout and Girl Scout troops to do energy badge activity.
 - Create materials and messaging scouts can share with their family.
- Design energy efficiency course with Community Education and offer course during one session.

Strategy 4: Conduct marketing and outreach specifically targeting under-resourced households.

Actions:

- Create materials summarizing income-qualified program options from all utilities and local service providers.
- Collaborate with local food shelves and other service providers to reach under-resourced populations.
 - Distribute marketing campaign materials at their locations and events.
 - Co-brand materials with service providers.
- Establish partnerships with property managers at income-eligible multifamily buildings to share informational materials.
- Leverage existing contacts, networks, and events to reach under-resourced residents.

Implementation Partners

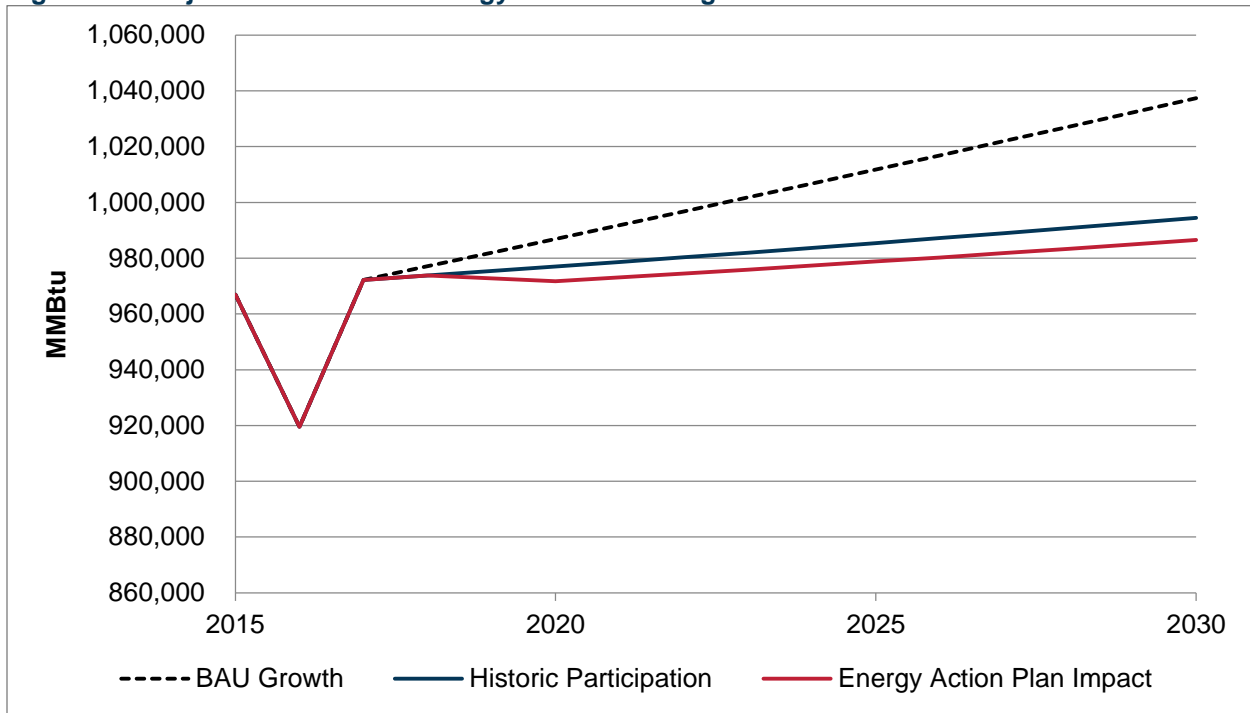
The following partners were identified as needed to help with implementation of residential energy strategies:

- City of Fridley staff, including City Lead, Communications Division, and Building Inspections
- Fridley Housing and Redevelopment Authority and Business Retention and Expansion Team
- Environmental Quality and Energy Commission
- Home Energy Squad implementers
- Xcel Energy's Partners in Energy

Impact

Achieving goals outlined here will generate important impacts on both community engagement and energy use. Increasing energy conservation and renewable energy program participation by 1,200 additional actions will result in almost 3,000 homes taking action by 2020, representing 25 percent of all households in Fridley. If the goals of this focus area are achieved, residential energy use will decrease by 1.5 percent by 2020, saving an estimated 700,922 kWh and 94,694 therms between 2019 and 2020. Residential energy-related greenhouse gas emissions will be reduced 955 MTCO₂e by 2020, which is approximately equivalent to the carbon emitted from 204 passenger vehicles in one year.²⁸ These actions will also improve the quality of life for Fridley residents by improving the health and comfort of their homes, and lowering their energy bills. On average, Fridley residents who participate in an energy conservation program are expected to save \$52 per year.

²⁸ U.S. Environmental Protection Agency (March 13, 2018). Greenhouse gas equivalencies calculator. Retrieved from <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>.

Figure 13: Projected Residential Energy Use and Savings

Long-term Residential Energy Strategies

Strategies outlined in this plan will help Fridley achieve its goal of residents taking 1,200 additional actions toward energy conservation and renewable energy. To achieve Fridley's goal of reducing total energy use 10 percent by 2030, additional strategies and resources will need to be identified. Initial ideas from the Energy Action Team include continuing promotion of rebates and programs using City communication channels and trusted messengers, and identifying additional funding sources or incentives to help residents make energy-related improvements or install on-site renewable energy. The Energy Action Team also noted that evolving technology and new utility programs and rebates will have an impact and should be utilized as they become available.

Focus Area 2: Businesses and Multifamily Buildings



Source: City of Fridley

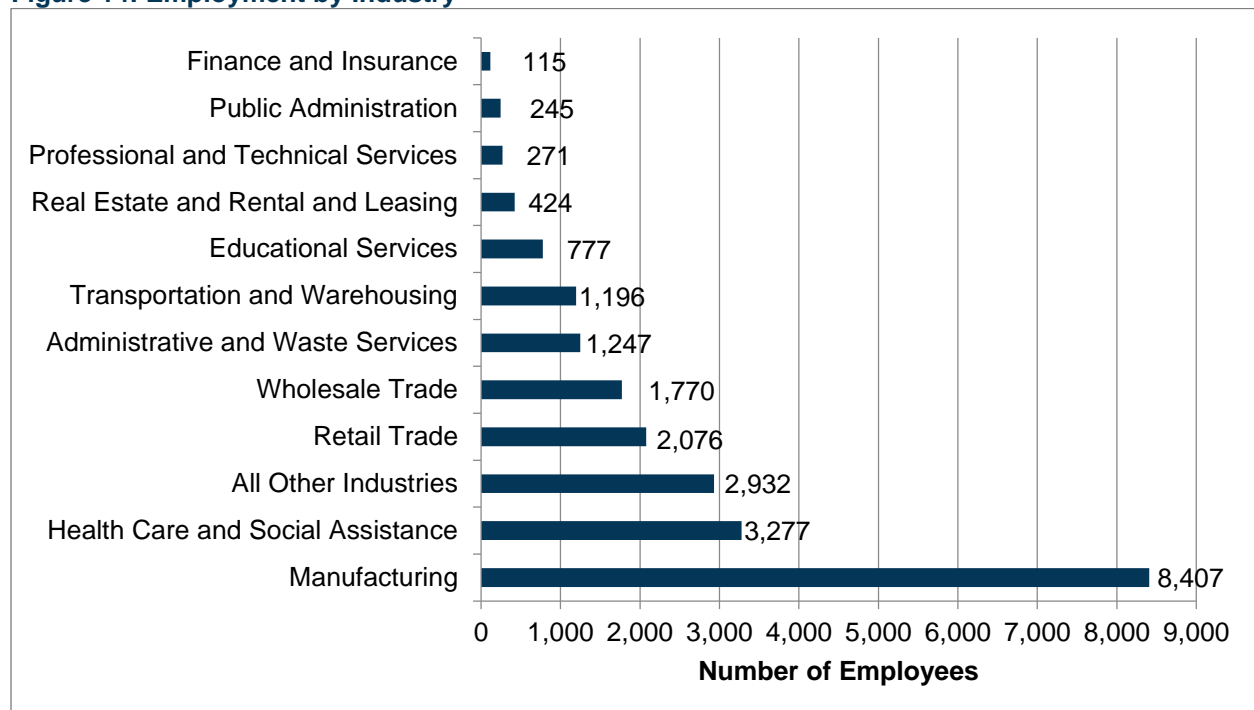
Businesses are typically among the largest energy users in a community and can therefore make a significant impact on reducing overall energy use.

Manufacturing is the primary employment sector in the community; representing 37 percent of all jobs in Fridley (see Figure 14).

Manufacturing businesses are primarily concentrated along the railroad corridor on the western side of the City, and near the intersection of University Avenue and 73rd Avenue.

Health care, retail, and wholesale trade also employ a large number of people. Job growth is steady – Fridley is home to several large industrial and manufacturing companies, and its proximity to Minneapolis will help the community continue to attract and sustain business growth. Fridley businesses source most of their employees from outside of Fridley (see Table 7).

Figure 14: Employment by Industry²⁹



²⁹ Minnesota Department of Employment and Economic Development, Quarterly Census of Employment and Wages, 2nd quarter data, 2017.

Table 7: Top 10 Cities of Residence for People Who Work in Fridley³⁰

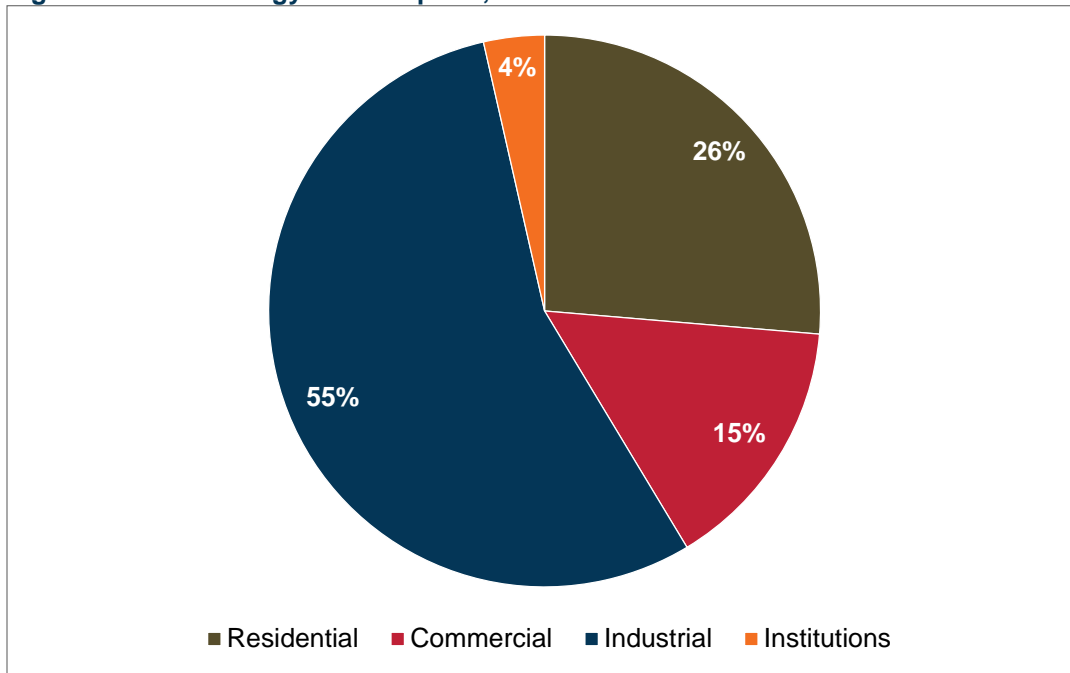
Residences	Workers
Minneapolis	1,661
Blaine	1,535
Coon Rapids	1,442
Fridley	1,286
St. Paul	924
Brooklyn Park	776
Andover	687
Maple Grove	575
Plymouth	449
Ramsey	425
Other	8,952

Industrial Premises

For the purposes of this plan, industrial premises are businesses that are heavy manufacturers and industrial processors. Industrial premises account for approximately 55 percent of total energy consumption (see Figure 15). Industrial premises typically include larger energy users, such as manufacturing, machining, and metal and coating facilities.

³⁰ Census Bureau Local Employment-Household Dynamics.

Figure 15: Total Energy Consumption, 2017³¹



Historically, industrial customers have been the most active energy efficiency participants among commercial energy users, with particular emphasis on four areas: lighting, fluid system optimization, process efficiency, and motors efficiency. Opportunity exists for additional energy efficiency services, in particular walk-through energy audits³² and recommissioning,³³ which historically have had low participation.

Multifamily Buildings

Multifamily buildings with more than five units were grouped into this focus area because they are typically operated like a business and it is up to building owners to make energy efficient improvements, not tenants. Additionally, utility conservation programs that serve buildings with more than five units are typically part of the commercial program portfolio.

There are 149 multifamily buildings with more than five units in Fridley³⁴. Nine buildings are classified as low-income by Minnesota Housing's Low-Income Rental Classification

³¹ Xcel Energy and CenterPoint Energy, Estimates based on modeling and projections by Partners in Energy. Partners in Energy classified electrical commercial and industrial premises based on Xcel Energy's rate classification and NAICS code.

³² Turn Key Services is a full-service program designed to provide our customers with on-site energy efficiency assessments and/or free implementation services they need to make energy-saving improvements.

³³ Recommissioning is a study that looks to improve the efficiency of existing building operations by identifying and tuning up less-than-optimal equipment within the facility.

³⁴ City of Fridley, 2017.

(LIRC) certification. According to the American Community Survey, of the households living in multifamily properties, 65 percent live in multifamily buildings built before 1980.³⁵ These older buildings are likely in need of energy efficiency improvements, which can benefit residents through increased comfort, and building owners through cost savings.

Multifamily building energy use may show up as part of the residential or commercial sector, or both, depending on how they are metered. Most commonly, individual units pay electricity bills but there is a single natural gas account for the whole building. As a result, multifamily engagement strategies must reach both building owners and tenants, to ensure benefits are shared among all. Historically, there has been no participation in conservation programs aimed at multifamily buildings with more than five units, presenting an important program opportunity. Two barriers to engaging this sector are identifying the owners and operators of these multifamily buildings and identifying the message that resonates with them. Strategies were crafted to engage trusted messengers to help reach the multifamily sector.

Table 8: Multifamily Buildings by Unit Count³⁶

Housing Unit Type	Unit Count	Building Count
Multifamily Building, 2-4 units	244	64
Multifamily Building, 5+ units	3,263	149
Total	3,507	213

Table 9: Age of Multifamily Structure by Units in Structure³⁷

	Multifamily Building, 2-4 units	Multifamily Building, 5+ units
Built 1939 or earlier:	-	13
Built 1940 to 1959:	51	286
Built 1960 to 1979:	189	1,469
Built 1980 to 1999:	38	894
Built 2000 to 2009:	-	68
Built 2010 or later:	-	29
Total	278	2,759

Business and Multifamily Buildings Energy Goals and Strategies

Below are Fridley's goals for businesses and multifamily buildings:

- By 2020, Business and Multifamily Buildings will achieve 5 percent energy savings;

³⁵ Multifamily buildings defined as buildings with five or more units.

³⁶ City of Fridley, 2017.

³⁷ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

- By 2030, Business and Multifamily Buildings will reduce total energy use 20 percent, as compared to business as usual.

A short-term goal was chosen to motivate immediate action toward Fridley’s community-wide goal. To achieve this goal, the Energy Action Team identified specific actions to promote during outreach, including lighting upgrades, motor efficiency, and heating and cooling efficiency. Energy assessments and audits are also a focus, since these are often recommended as the first step toward energy efficiency. Fridley’s Energy Action Team chose to target all businesses to have the most impact, noting there should be specific strategies for manufacturing businesses and multifamily buildings.

During planning workshops, Energy Action Team members spent time considering perceived benefits among businesses and multifamily buildings for taking energy action, and barriers that might get in the way. Similar to the residential sector, cost and lack of knowledge about programs were identified as key barriers. To overcome these barriers, financing resources and information materials will be shared with both businesses and multifamily buildings. Businesses who rent commercial or office spaces have additional barriers for taking action, since tenants are not always responsible for improvements and utility bills. The Energy Action Team noted that it may be easier to motivate businesses in tenant occupied spaces with one property manager.

Table 10: Business and Multifamily Buildings Barriers and Benefits

Barriers	Benefits
Cost	Energy-savings opportunities
Time (no dedicated staff)	More money for other projects
Lack of knowledge about available programs and financing options	Increased property value and public image
Multiple decision makers	More comfortable space
No incentive as tenant	Happier tenants/better occupancy retention
Property owner uninterested in taking action	One point of contact for energy action in multi-tenant buildings
Lack of trust in the message and/or messenger	City is trusted messenger
Identifying the decision maker	Increased safety through improved lighting
	Better tenant retention and more competitive space
	More production/higher profit margin

Table 11: Business and Multifamily Buildings Strategies**Focus Area: Business and Multifamily Buildings****Strategy 1: Create and distribute informational and marketing materials educating businesses and multifamily building owners about actions and programs.**

Actions:

- Distribute informational materials at building permit counter and City communication channels, with a particular focus on utility programs and renewable energy opportunities that are free and/or provide follow-up support.
- Create checklist for on-site solar installation and include on City website.
- Distribute informational materials at City business retention and expansion program visits.
- Publish case studies of local businesses who have taken action on City communication channels.
- Include energy efficiency messaging in the City business e-newsletter with concrete, simple ways to save energy; highlight case studies.
- Promote Property Assessed Clean Energy (PACE), Trillion BTU, and other financing opportunities to inspire businesses to take action.
- Develop informational materials for the Minnesota Technical Assistance Project (MNTAP) engineering intern program and conduct outreach to businesses that would be likely candidates.
- Establish partnerships with business green teams to share informational materials.

Strategy 2: Leverage existing events and trusted communication channels to educate and raise awareness.

Actions:

- Recognize businesses who have taken action.
 - Promote businesses that have taken energy efficiency action on Small Business Saturday (November).
 - Ask an independent retailer who has shown interest in making energy saving advancements to accept the Proclamation for Independent Retailer Month (July).
 - Leverage City communication channels to recognize businesses who take action.
- Encourage manufacturers who have made advancements in energy savings to host a community tour of their business highlighting those projects for Manufacturing Week. (October).
- Utilize the City's ongoing relationships and communication channels to inform businesses about energy-saving opportunities.

Focus Area: Business and Multifamily Buildings

Strategy 3: Conduct door-to-door outreach to businesses to encourage energy action.

Actions:

- Target outreach to high energy users with efficiency programs and energy audits.
- Enlist partners to assist with door-to-door outreach, such as CERTs.
- Sign up businesses on the spot for energy audits or free assessments/walk-throughs.
- Include Windsource[®] and other renewable energy options as part of informational materials.

Strategy 4: Host a lunch and learn event for businesses about energy actions the City has taken to share experience and encourage best practices.

Actions:

- Partner with both local Chambers of Commerce and local business green teams to co-host and promote event.

Strategy 5: Conduct outreach specifically targeting multifamily buildings to engage them in energy action.

Actions:

- Create information materials targeting for multifamily building owners and operators.
- Identify and prioritize engagement to under-resourced areas and multifamily buildings in the City that are eligible to participate in income-qualified programs.
- Utilize trusted communication channels and networks of building owners to share energy-saving actions.
 - Multifamily housing associations.
 - “Crime Free Housing” meetings hosted by Fridley’s Police Department.
- Collaborate with rental inspectors on multifamily energy efficiency information.
 - Add a question on the rental license application that asks whether the property owner or manager is interested in learning more about energy efficiency.

Implementation Partners

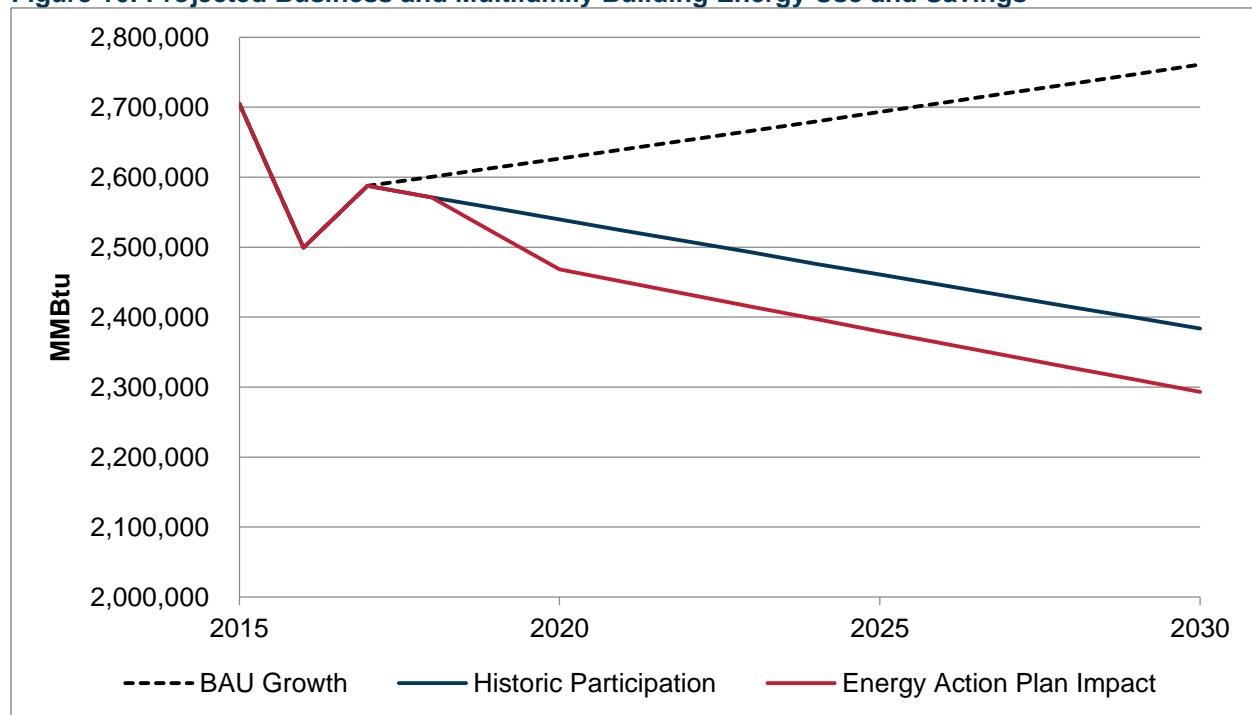
Partners identified to help during implementation include:

- City of Fridley staff, including City Lead, Communications Division, Building Inspections, Rental Inspection, and Police Department
- Fridley Housing and Redevelopment Authority and Business Retention and Expansion Team
- Environmental Quality and Energy Commission
- Minnesota Technical Assistance Program (MnTAP)
- Multifamily housing associations and property managers
- Clean Energy Resource Teams (CERTs)
- Xcel Energy’s Partners in Energy

Impact

Achieving the goals outlined here will generate important benefits for business engagement and retention, as well as lower energy use. Achieving 5 percent energy savings by 2020 will result in an estimated 16,836,281 kWh and 717,088 therms saved, which would be equivalent to 12,010 MTCO₂e in avoided emissions. Through increased efficiencies, businesses are anticipated to save an estimated \$1.8 million between 2019 and 2020.

Figure 16: Projected Business and Multifamily Building Energy Use and Savings



Long-term Business and Multifamily Energy Strategies

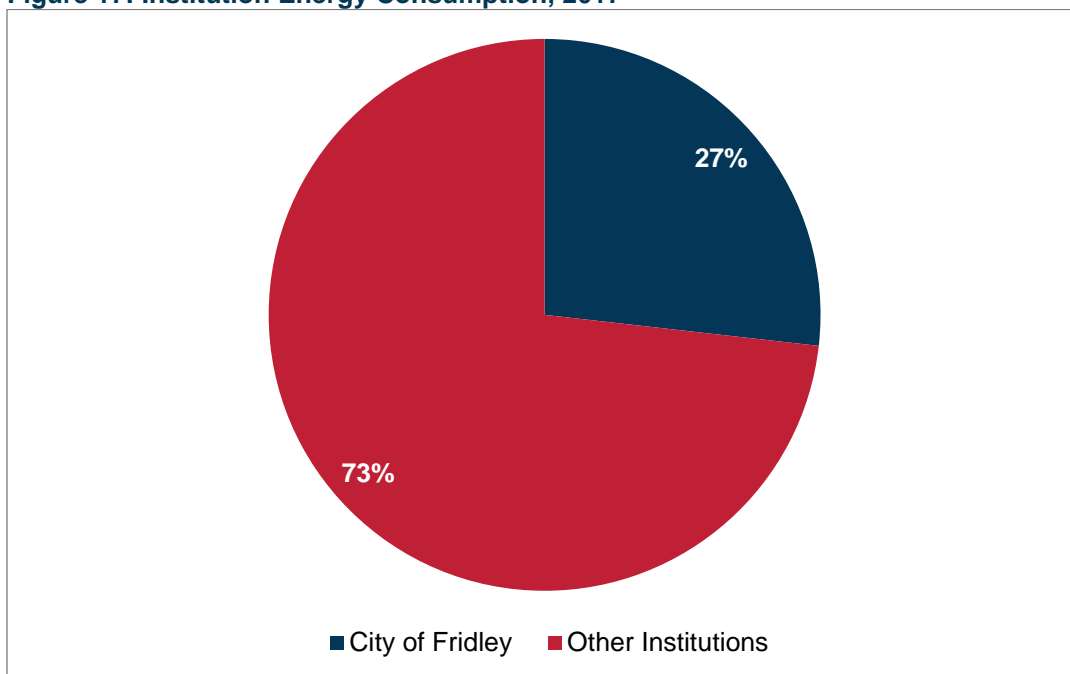
Achieving the goals outlined in this section and continued engagement of businesses and multifamily buildings will result in businesses and multifamily buildings reducing their energy use an estimated 17 percent by 2030, as compared to business as usual; which is 3 percent below their goal of a 20 percent reduction in energy use by 2030. The Energy Action Team identified opportunities to achieve their goal of a 20 percent reduction in energy use – capitalizing on advancing technology and processes for increased efficiency in manufacturing; expanded funding resources and incentives to inspire businesses and multifamily buildings to take action; and new multifamily and mixed-use redevelopment being more efficient than the older industrial or commercial properties they replaced. Resources, partners, and specific actionable strategies will need to be identified by the Energy Action Team, the City of Fridley, and the Environmental Quality and Energy Commission to address these opportunities.

Focus Area 3: Institutions

While Institutions³⁸ represent approximately 4 percent of total energy use, they constitute the Energy Action Plan’s important “leadership wedge.” These organizations demonstrate leadership through action. Institutions are viewed as responsible public stewards and are often in a position to influence others to take action. The City in particular is an important leader in reducing energy use and achieving the Energy Action Plan’s mission

The institutions focus area includes schools, worship facilities, hospitals and medical service centers, government buildings, day care centers, and nonprofit organizations. There are a total of 211 electric premises³⁹ in this category, including 104 that belong to the City of Fridley.

Figure 17: Institution Energy Consumption, 2017⁴⁰



Municipal Energy

The City of Fridley consumed 4,674,909 kWh of electricity and 73,357 therms of natural gas in 2017. The water treatment plants consume the most energy among municipal facilities – three treatment plants represented 45 percent of total municipal energy consumption in 2017 (see Figure 18). In the past, the City of Fridley received treated

³⁸ To classify institutions, Partners in Energy reviewed NAICS codes and premise names on the commercial and industrial electric premise list.

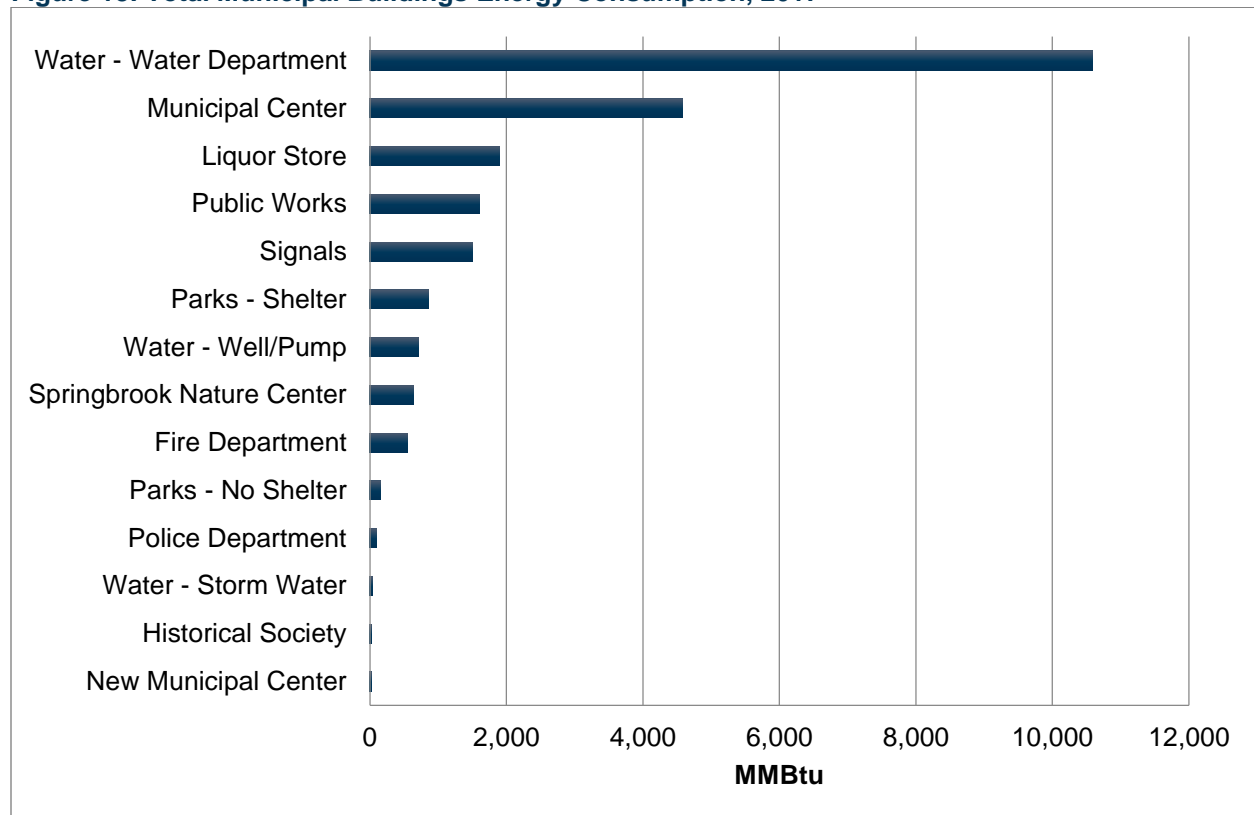
³⁹ Four premises were removed for 15x15 violations and their energy use is included in the Business and Multifamily focus area.

⁴⁰ Xcel Energy and CenterPoint Energy, Estimates based on modeling and projections by Partners in Energy.

water from the City of New Brighton at virtually no cost. In the last three years, the City of Fridley no longer receives the treated water from New Brighton, resulting in the City needing to increase capacity at their wells and pumps about 27 percent. To reduce energy use of its water infrastructure, the City installed more efficient variable frequency drives in the last five years. The City's water treatment plants also made some operational changes to help offset increased energy use.

The City of Fridley is currently constructing a new civic campus to consolidate four departments: City Hall, Public Safety, Public Works, and Fire Station 1. The new civic campus, which will open in the fall of 2018, is estimated to increase municipal electricity consumption by 350,000 kWh and 20,000 therms. As part of the design process, the City participated in Xcel Energy's Energy Design Assistance program to learn how to increase energy efficiency and identify cost-savings opportunities. Additional opportunities may exist at these buildings, but municipal strategies in this sector will be primarily focused at other City-owned buildings and properties.

Figure 18: Total Municipal Buildings Energy Consumption, 2017⁴¹



Other efficiency opportunities include upgrading to energy efficient lighting at parks, including field lighting, tennis court lighting, park shelters, and parking lots; upgrading

⁴¹ Xcel Energy, CenterPoint Energy.

lighting at water treatment plants and facilities; and completing a commercial refrigeration efficiency assessment at a municipal-owned liquor store.

Worship Facilities

Worship facilities can be important energy leaders and trusted resources that value responsible environmental stewardship. In addition to addressing efficiency in their own buildings, congregations can play an important role in engaging members in energy action at home.

Worship facilities are unique because there are variable times of heavy use, which can change depending on the day of the week or season. Opportunities for energy efficiency include upgrading lighting to LEDs, installing occupancy sensors to control lighting in rooms when they are not in use, and using programmable thermostats to control room temperatures. Strategies to engage worship facilities include one-on-one outreach with information about actions the facility can take related to energy efficiency and renewable energy. Strategies also include engaging congregants to take action at their home, which can contribute toward the greater good and benefit the worship facility.

Schools

There are six public schools and five private schools in Fridley. The public schools are spread between three different school districts – Fridley ISD 14 has five elementary, middle, and high schools in the community, plus two elementary schools from Spring Lake Park ISD 16 and Columbia Heights ISD 13. The private schools include Totino-Grace, a large high school with some on-site residents, as well as three charter and religious schools.

Schools tend to be high-energy users, and are often housed in older buildings. Similar to worship facilities, schools can demonstrate leadership through energy action at their buildings. Schools can also integrate learning into efficiency projects, building in engagement with students. Through increased energy efficiency, cost savings can be used toward other student programming.

Since Fridley ISD 14 and other schools in Fridley have their own facility managers and capital improvement plans, strategies in this plan focus on technical assistance to help schools develop energy plans and sharing information about resources. As schools develop energy plans, there is an opportunity for the City of Fridley to further engage schools in taking additional energy action.

Institution Energy Goals and Strategies

Fridley's goals for institutions are to increase energy savings and reduce total energy use:

- By 2020, institutions will achieve 5 percent energy savings;
- By 2030, institutions will reduce total energy use 15 percent, as compared to business as usual.

To achieve these goals, the Energy Action Team placed emphasis on increased participation in lighting efficiency programs, and free energy audits and assessments.

The Energy Action Team identified a wide range of barriers to engaging institutions because of the different building and organization types included in this focus area. Strategies were developed to overcome barriers, and the team agreed that focusing on communicating the benefits to taking action will help inspire action among the “leadership wedge.”

Table 12: Institution Barriers and Benefits

Barriers	Benefits
Often rent building	Cost savings
Long budget cycle	Responsible public steward
Not in line with primary mission	Align with organization goals and values
Management and decision making structure	Influencing others; be in a position to influence
Not aware of energy costs	Available budget can be spent elsewhere
Older building	Sense of responsibility
Hard to understand cost-benefit	Contributing to the public good
Limited resources	
Lack of staff	
No up-front cash	
Lack of interest	

Table 13: Institutions Strategies

Focus Area: Institutions
Strategy 1: Engage worship facilities in energy action.
<p>Actions:</p> <ul style="list-style-type: none"> • Make a contact list and complete phone surveys to identify decision makers and management structures within worship facilities. • Conduct one-on-one outreach and follow-up to engage interest in building energy audits and assessments. • Assess interest in renewable energy and on-site community solar gardens as part of outreach, with the potential for connecting interested congregations to renewable opportunities. <ul style="list-style-type: none"> ○ Share case studies of worship facility action. • Establish partnerships with church creation care committees/green teams to: <ul style="list-style-type: none"> ○ Develop small scale energy plans with specific actions to implement. ○ Promote residential energy efficiency through energy challenge, linking energy savings with donations to help the facility make energy upgrades. ○ Use Congregation Toolkit to inspire action.

Focus Area: Institutions

Strategy 2: Demonstrate City leadership in reducing energy use in City facilities.

Actions:

- Educate City staff on municipal efforts to reduce energy use and efficient building operations, and share information on office behavior changes.
- Evaluate and pursue opportunities to reduce energy use, including:
 - Liquor store participation in refrigeration efficiency program;
 - Variable Frequency Drives (VFDs) for irrigation and fountains;
 - Updating outdoor and parks lighting with LEDs.
- Highlight efficient features at new Civic Center and other city facilities using City communication channels.
- Publish case studies about efficient and renewable features at new Civic Center, Springbrook Nature Center, and municipal-owned liquor stores.
- Track City facility energy use in benchmarking software.

Strategy 3: Identify ways to reduce energy use in water treatment plants located in Fridley.

Actions:

- Identify actions already taken by water treatment facilities located in Fridley to reduce energy use.
- Partner with Xcel Energy to reach out to representatives from water utilities with plants located in Fridley to discuss additional opportunities to reduce energy use.
- Partner with MnTAP to support Fridley's water utility in implementing energy management best practices.

Strategy 4: Partner with schools, hospitals, and other medical or education centers located in Fridley to reduce energy use in their facilities.

Actions:

- Provide technical assistance to school and hospital facility managers interested in benchmarking or developing energy-savings plans, and share financing opportunities.
 - Work with utility account managers to support implementing efficiency projects and accessing rebates.
- Identify schools or medical facilities that have taken action toward energy conservation or renewable energy to feature in case studies.
- Work with students to create a video about energy efficient behavior changes that can help save on energy costs.

Focus Area: Institutions

Strategy 5: Integrate energy efficiency and renewable energy into City development review process.

Actions:

- Collaborate with Development Review Committee to identify areas of opportunity to encourage energy efficiency or renewable energy use during review process.
- Create packet to provide developers at Development Review Committee with information on how to integrate efficiency and renewable energy into new construction and building rehabilitation/additions.
- Research available policy and program options for sustainable building policy, with examples of similar initiatives in other cities.
- Develop policy proposals with assistance of the Environmental Quality and Energy Commission and present to the Planning Commission and City Council for consideration.

Implementation Partners

Partners identified to help during implementation include:

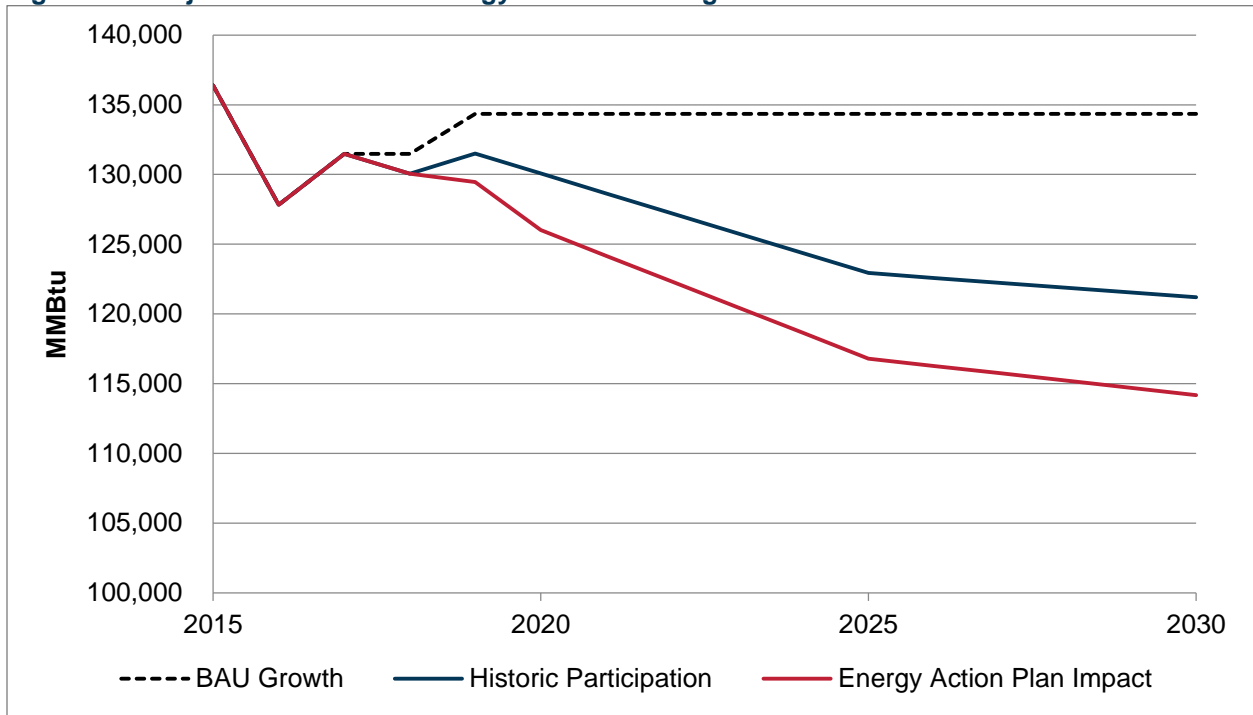
- City of Fridley staff, including City Lead, City Facilities Manager, Communications Division, Development Review Committee, and Police Department
- Environmental Quality and Energy Commission
- Nonprofit organizations, including Interfaith Power and Light, Alliance for Sustainability, and EnerChange
- Congregation and faith leaders
- Creation Care teams at congregations
- Student-led green teams at schools
- MnTAP
- Xcel Energy's Partners in Energy
- Utility Account Managers

Relationships have not been established with all partners identified. City Lead and EQEC will be responsible for establishing initial partnerships.

Impact

Institutions are projected to achieve their goals of 5 percent energy savings by 2020 and 15 percent reduction in energy use by 2030 (Figure 19). By 2020, Institutions are estimated to save 1,963,473 kWh and 2,104 therms, which would be equivalent to 854 MTCO_{2e} in avoided emissions. Impact will also be seen through increased engagement in the “leadership wedge” – where institutions acting as public energy stewards will inspire action among others. These actions will likely be seen in the residential sector through inspiration from worship facilities; and in businesses through leadership from the City of Fridley, medical facilities, and other government buildings.

Figure 19: Projected Institutions Energy Use and Savings



Focus Area 4: Transportation and Electric Vehicles

Transportation and electric vehicles were identified as important focus areas with short-term actions that will generate long-term benefit. Electric vehicles help reduce greenhouse gas emissions, benefit public health by improving air quality, and increase cost-savings for owners over the lifetime of the vehicle. A small working group met outside the five planning workshops to identify strategies that will help push Fridley forward in adoption of electric vehicles. The group noted that it is important to help raise awareness and provide education about alternative transportation opportunities and electric vehicles. Lack of knowledge, negative perception, and upfront costs to owning an electric vehicle were identified as barriers to taking action; strategies focus on educating and increasing awareness for Fridley residents, workers, and businesses.

Existing Policy and Practice

The City of Fridley is participating in Cities Charging Ahead!, a municipal cohort organized by Great Plains Institute and Clean Energy Resource Teams. The cohort receives technical assistance on actions and best practices that local governments can implement to accelerate the adoption of electric vehicles. Cities Charging Ahead! participants identify a GreenSteps Cities best practice they will work toward. The City of Fridley chose best practice action 6.5 – *Adopt climate mitigation and/or energy independence goals and objectives in the comprehensive plan or in a separate policy document.*

City of Fridley is also completing a fleet analysis with FleetCarma through an Xcel Energy pilot. This analysis looks at the City's existing fleet operations in all departments and identifies where opportunities may exist to electrify fleet vehicles.

Existing Infrastructure

There is limited public charging infrastructure in the City of Fridley. There is one public charging station located near two major thoroughfares, University Avenue and Interstate 694. To increase access to public charging stations, strategies in this plan include educating businesses about the different options available for adding on-site charging stations and installing at least one station at a City-owned building or property. The City is also installing electric vehicle charging infrastructure at their new civic campus, so that it is electric vehicle ready.

Transportation and Electric Vehicles Goals and Strategies

Success in this focus area is measured through participation counts and points of contact; and is dependent on establishing partnerships with electric vehicle organizations and advocates.

- By 2020, conduct an outreach campaign to raise awareness about electric vehicles, with the goal of reaching 500 residents and individuals who work in Fridley;
- By 2020, reach 10 businesses and multifamily buildings through a targeted outreach campaign to encourage installation of charging infrastructure;

- By 2020, install one electric vehicle charging station at a City-owned building or location.

Since this focus area’s goals are centered on education and awareness, the Energy Action Team identified messaging that overcomes barriers such as lack of knowledge, mindset/perception, and lack of awareness as important components of all strategies in this focus area.

Table 14: Electric Vehicles Barriers and Benefits

Barriers	Benefits
Variety of vehicles available	Emissions reduction/environmental impact
Lack of knowledge or expertise at dealerships	Lower maintenance costs over lifetime of vehicle
Lack of charging infrastructure	Tax credits/rebates
Mindset/perception	Growing public infrastructure (free charging)
Lack of awareness	Better mileage
Upfront cost to purchase	Health
Upfront cost to install charging station at home	Ability to charge at home
Driving range (miles per charge)	Ability to source fuel renewably

Table 15: Transportation and Electric Vehicles Strategies

Focus Area: Transportation and Electric Vehicles
Strategy 1: Raise awareness about electric vehicle ownership to residents and individuals who work in Fridley.
<p>Actions:</p> <ul style="list-style-type: none"> • Table at five events to educate attendees about electric vehicle ownership. <ul style="list-style-type: none"> ○ Leverage existing community events for tabling: 49er Days, Springbrook Environmental Fair, Farmers Market. ○ Identify channels to bring electric vehicles to tabling events (e.g. existing owners, car dealerships, electric vehicle organizations). • Design informational materials to help educate and normalize electric vehicle ownership. <ul style="list-style-type: none"> ○ Craft message using barriers and benefits list, focusing on benefits most don’t know about (e.g. no oil changes, less maintenance, etc.). ○ Use City social media to distribute materials and promote tabling events. ○ Work with City videographer to create short PSA about ownership. • Establish partnerships with electric vehicle organizations to co-host tables • Write articles for City newsletters (Community Connection and Business e-Newsletter). <ul style="list-style-type: none"> ○ Interview electric vehicle owners for testimonials to include in newsletter articles. ○ Interview Fridley business with electric vehicle charging stations. ○ Feature new civic center’s charging stations.

Focus Area: Transportation and Electric Vehicles

- Include industry updates (“did you know”) about electric vehicles and charging infrastructure.
- Partner with Fridley Community Education to have a class on electric vehicles and plug-in hybrids.

Strategy 2: Conduct one-on-one outreach to business and multifamily buildings to encourage installation of charging infrastructure.**Actions:**

- Create information materials to distribute during outreach.
 - Materials should focus on types of charging infrastructure and benefits to customers.
- Partner with electric vehicle organizations to assist with outreach.
- Identify destinations, large employers, hotels, and major attractions where charging infrastructure makes sense.
- Partner with businesses applying to MPCA Volkswagen settlement grant to spread awareness and get testimonials.
- Partner with Xcel Energy to deliver presentations about electric vehicle charging stations and special rate programs.

Strategy 3: Integrate electric vehicle charging infrastructure into development review process to encourage action.**Actions:**

- Work with City planning staff to add language to development review process encouraging charging infrastructure.

Strategy 4: Educate City staff about electrifying fleet vehicles and installing charging stations.**Actions:**

- Partner with local auto dealerships and other electric vehicle organizations to host one ride and drive event for City staff.
 - Coordinate event near Earth Day or other “green” event date.
- Partner with Xcel Energy to present to City staff about electrifying fleet vehicles.
 - Coordinate presentation to align with 2020 budget cycle kick-off.
- Use findings from FleetCarma study and Cities Charging Ahead! to craft message.
- Identify City-owned opportunity sites for a charging station.

Implementation Partners

Partnerships with electric vehicle organizations and volunteers are important to realizing success in this focus area. During the planning process, the Energy Action Team identified the following organizations as potential partners for implementation of this focus area’s strategies:

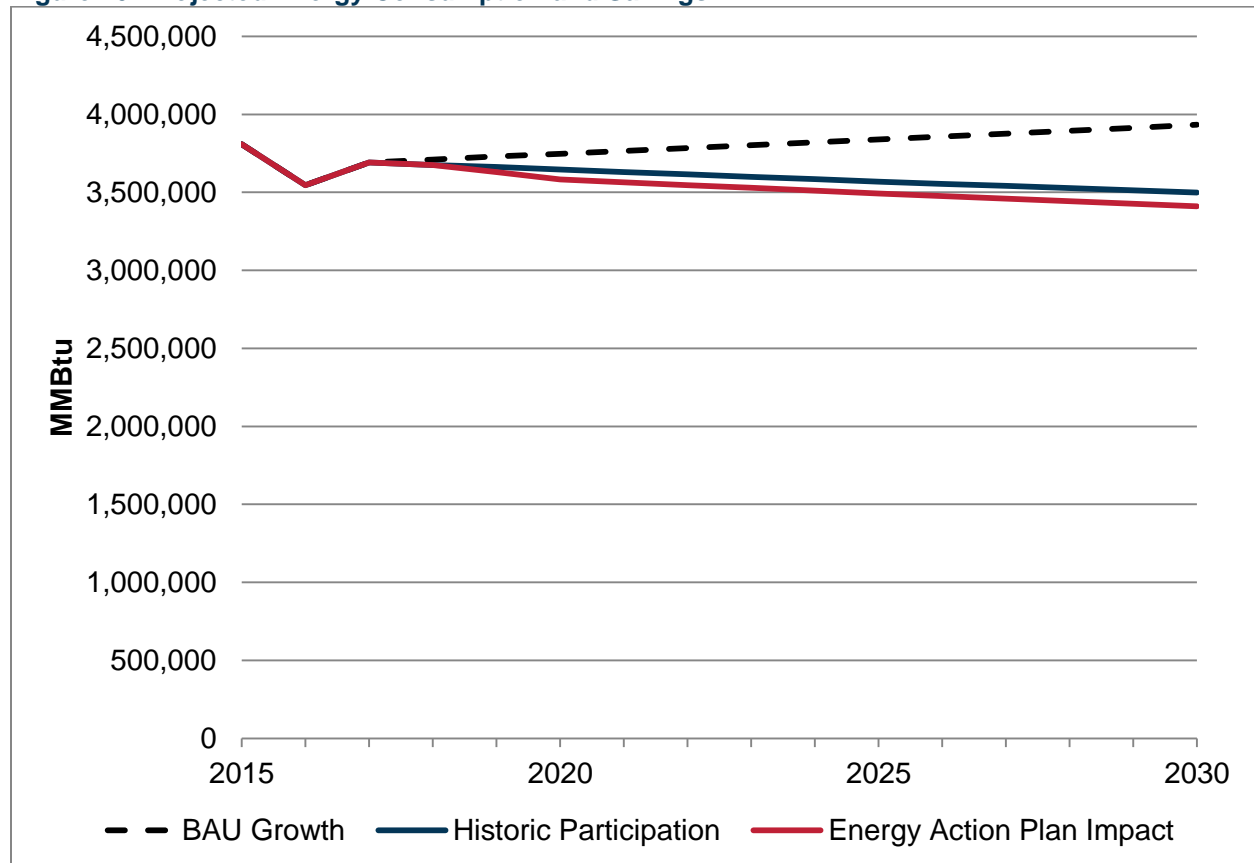
- PlugInConnect
- Minnesota Electric Vehicles Owners group
- Cities Charging Ahead!

- American Lung Association
- Drive Electric Minnesota
- Midwest EVOLVE
- Xcel Energy's Partners in Energy

Impact of Energy Action Plan

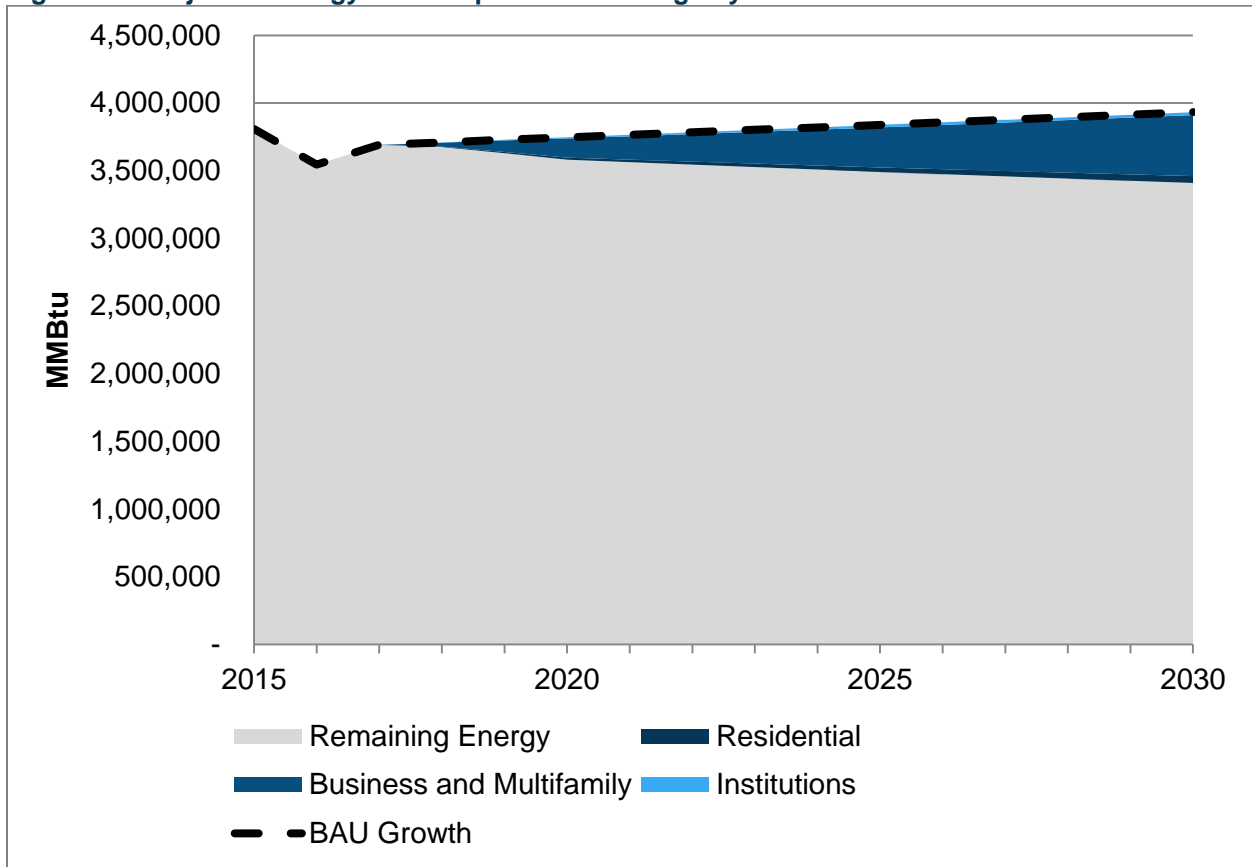
The combined goals and strategies outlined in this plan will have a significant impact on decreasing energy use and reducing Fridley's carbon footprint. Overall, achieving the short-term goals laid out in this plan will result in an estimated 5 percent reduction in energy use below business as usual by 2020, and 14 percent by 2030 (Figure 20). This represents an incremental increase in kWh savings of 4.6 percent and therm savings of 2.1 percent over projected historic participation savings by 2030.

Figure 20: Projected Energy Consumption and Savings⁴²



⁴² Projected energy consumption and savings includes both electricity and natural gas. BAU Growth scenario represents a presumed slight increase in energy demand based on residential and commercial energy demand of about 0.5 percent per year. It is assumed institutions demand will increase in 2019 when the new civic campus opens, but stay relatively flat in future years.

Figure 21: Projected Energy Consumption and Savings by Focus Area⁴³



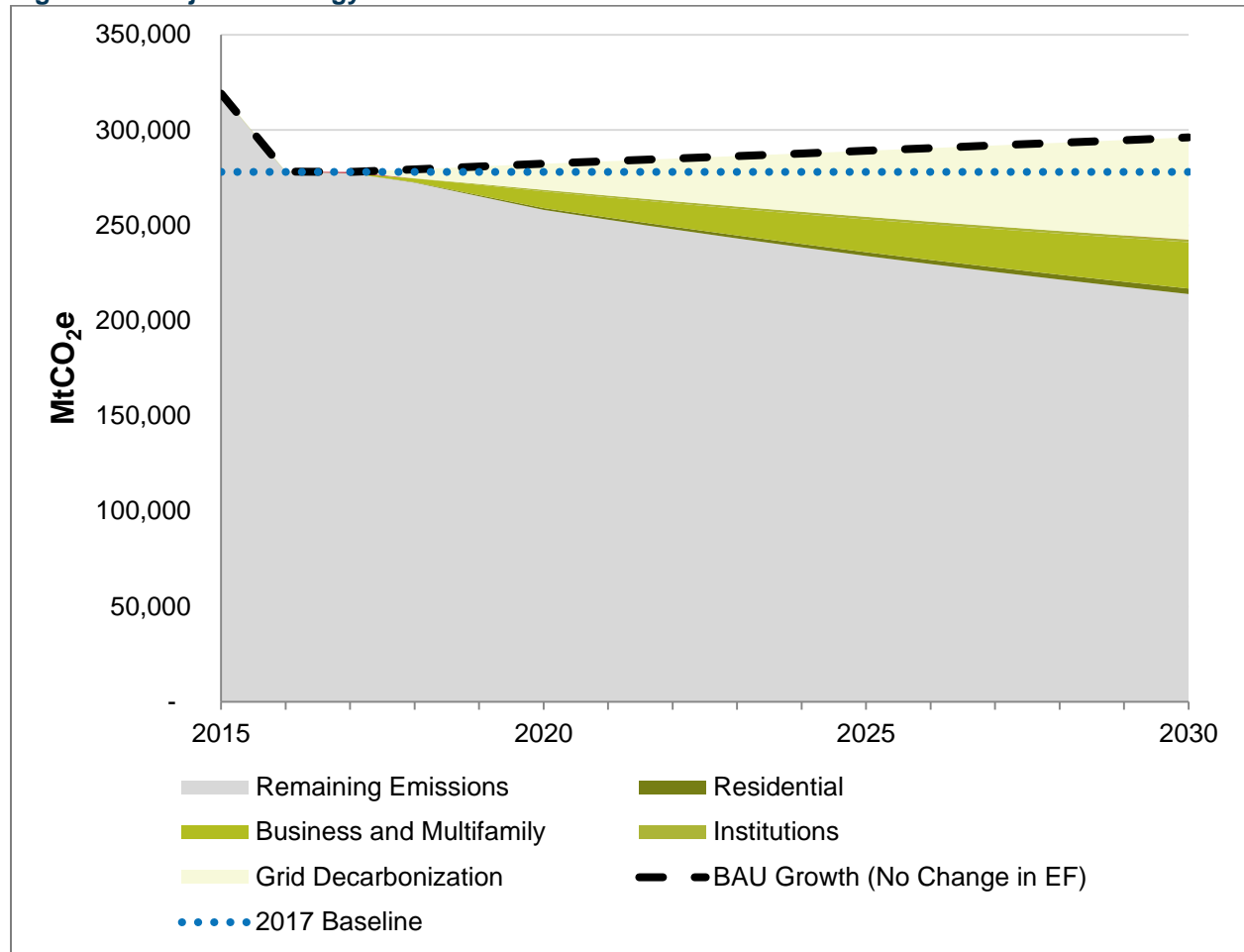
Fridley is expected to make strides toward reducing its energy-related greenhouse gas emissions, which will reduce Fridley’s contribution toward climate change. The combined impact of the focus area goals beyond anticipated grid decarbonization⁴⁴ is projected to result in a 30 percent reduction in energy-related greenhouse gas emissions (Figure 22)⁴⁵. This reduction is important to Fridley increasing resiliency in the community. Further reductions are possible through increased renewable energy subscriptions, renewable energy generation, and energy efficiency.

⁴³ Projected energy consumption and savings includes both electricity and natural gas. BAU Growth scenario represents a presumed slight increase in energy demand based on residential and commercial energy demand of about 0.5 percent per year. It is assumed institutions demand will increase in 2019 when the new civic campus opens, but stay relatively flat in future years.

⁴⁴ Grid decarbonization is the current planned reduction in the carbon intensity of electricity provided by Xcel Energy through the addition of low or no carbon energy sources to the electricity grid.

⁴⁵ Reduction based on 2017 baseline.

Figure 22: Projected Energy-related Greenhouse Gas Emission Reductions



Long-term Strategies

The Energy Action Team will need to identify additional strategies, resources, and partners in all focus areas to achieve its community-wide goal of 20 percent reduction in energy use by 2030 – current strategies result in a 14 percent reduction in energy use. The Energy Action Team identified businesses and multifamily buildings, which includes large energy users, as an opportunity to achieve additional energy savings. Continued engagement in this focus area will be important to ensuring energy action and increased efficiency. With the help of grid decarbonization, achieving a 20 percent reduction in energy use by 2030 will result in a 37 percent reduction in energy-related greenhouse gas emissions.

Plan Implementation

The goals and strategies outlined in this plan represent priorities for action over the next two years, with the intention that the momentum generated will continue into the future. A detailed work plan that outlines tasks, roles, and timeline is included in Appendix 4.

City staff, and the Environmental Planner in particular, will serve as project lead on plan implementation, and the Environmental Quality and Energy Commission will provide boots-on-the-ground support. However, engagement of additional community volunteers and business representatives will be critical in successfully achieving plan goals. A core team will be designated by the Energy Action Team to work closely with Partners in Energy on strategy implementation during the first 18 months. Partners in Energy will provide support in four main areas: project management, technical expertise, data tracking to measure progress toward goals, and marketing and communications. An implementation Memorandum of Understanding will be signed as a first step, outlining specific actions and energy conservation goals to be achieved during this time period.

Roles and Responsibilities

Implementing the strategies laid out in this plan will require leadership and collaboration from a team of partners, including City staff, Environmental Quality and Energy Commission members, and the Energy Action Team. To ensure plan success, this section outlines the following roles and responsibilities for the first 18 months of implementation. Specific responsibilities are further detailed in Appendix 5.

City of Fridley

- Invest staff resources in supporting plan implementation.
- Dedicate one or more pages on the City website for providing information and resources to help residents and businesses access utility programs and rebates, and support renewable energy.
- Leverage existing City events and communication channels to promote energy efficiency and renewable energy.
- Integrate energy efficiency into Home Loan Program application, Development Review Committee, and City permitting process.
- Establish partnerships with local service providers, institutions, and creation care teams.
- Assist with door-knocking efforts in multifamily buildings, manufactured home parks, and business blitz.
- Lead by example through investments in energy efficiency and renewable energy in City facilities.
- Benchmark City energy use.
- Engage City staff from all departments in supporting energy conservation and energy efficient operations.
- Provide information about residential and commercial energy efficiency programs and rebates at the City permit desk and Development Review Committee.
- Recognize businesses using existing events and website.
- Encourage manufacturers to host energy tours.

Environmental Quality and Energy Commission

- Assist with door-knocking efforts in manufactured home parks and business blitz.

- Table at existing events and leverage existing communication channels to promote energy efficiency and renewable energy.
- Establish partnerships with local service providers, property owners, institutions, creation care teams, and electric vehicle organizations.
- Research policy and program options for sustainable development, and present to City Council.

Energy Action Team

- Become advocates for achieving Energy Action Plan goals.
- Promote engagement of residents in energy action.
- Identify strategies and resources to support energy use reductions to achieve long-term goals.

Partners in Energy

- Assist with designing informational materials for residents, businesses, multifamily buildings, and institutions.
- Write and publish case studies, newsletter articles, and press releases.
- Identify ways to reduce energy use in water treatment plants located in Fridley.
- Provide technical assistance in energy benchmarking or development energy saving plans.
- Leverage existing relationships to connect the City of Fridley and EQEC with local service providers.
- Support door-knocking and tabling efforts with marketing materials, talking points, and tabling kits.
- Provide biannual reports for tracking progress toward goals.
- Provide overall project management support and coordination during the first 18 months of plan implementation.

Implementation Launch

The Energy Action Team and City staff will work together to promote the Energy Action Plan with press and social media coverage announcing the adoption of the plan, and an engagement page will be added to the City website with additional information for residents, businesses, multifamily buildings, and institutions.

How We Will Stay On Course

As part of implementation support, Partners in Energy will provide biannual progress reports that include metrics of success and overall progress toward goals. These reports will be made available to the public through the City of Fridley website. Results of these reports will be analyzed to assess whether a change in course is needed. An in-person meeting will take place at the mid-point of implementation to evaluate overall progress in each of the focus areas and set priorities for the remaining time period. The Energy Action Team and Environmental Quality and Energy Commission will be invited to reconvene at the halfway point of implementation to evaluate whether Fridley is on

track to meet its goals, and whether goals should be revised to be more ambitious or expanded to include additional priorities.

Appendix 1: Implementation Memorandum of Understanding

To be added.

Appendix 2: Who Are We? – Community Background

The City of Fridley is a fully developed community just north of the City of Minneapolis. Its area is approximately 10 square miles, and it is located in Anoka County.

Geography, Population, and Demographics

Fridley is a first-ring suburb located just 15 minutes north of downtown Minneapolis with major transit corridors, including Interstate 694, Central Avenue (TH-65) and University Avenue (TH-47), and access to the Mississippi River along its western border.

Although population has remained steady, with 27,447 residents in 2016, Fridley has become increasingly diverse and younger:

- Median age has decreased 2.5 years from 38.3 in 2010 to 35.8 in 2016;
- 18.2 percent of families speak a language other than English at home; and
- 14 percent of the population is foreign-born.⁴⁶

Fridley is home to six public schools in three school districts and five private schools, totaling over 3,500 students⁴⁷. Ninety percent of the population has graduated from high school and 27.2 percent have a bachelor's degree or higher.

Median household income in Fridley is \$55,006 and 12.3 percent of residents live in poverty (compared to 11.3 percent statewide). An estimated 2,750 households earn less than 50 percent of state median income (SMI), the eligibility threshold for utility low-income programs. The highest concentration of households below 50 percent SMI is in the census tract located north of Interstate 694, west of University Avenue, and south of Mississippi Street.

Housing

Fridley's housing stock contains a mix of owner-occupied and renter-occupied units, and most of Fridley's housing stock is aging. Eighty-nine percent of units are more than 30 years old.

Tenure breakdown is 62.5 percent owner-occupied and 37.5 percent renter-occupied units. One third of housing units are in multifamily buildings, creating a unique opportunity for multifamily and renter engagement.

Business and Economy

Fridley has a strong economic base – the City is home to the largest number of employees in Anoka County with 22,737 jobs. Fridley employment is forecasted to grow to 26,100 jobs by 2040⁴⁸. Manufacturing is the largest industry, representing 37 percent

⁴⁶ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates.

⁴⁷ U.S. Census Bureau, American Community Survey 2012-2016 5-year Estimates, Fridley Public Schools, and Totino-Grace High School enrollment.

⁴⁸ Minnesota Department of Employment and Economic Development, Quarterly Census of Employment and Wages, 2nd quarter data, 2017.

of all jobs in the City.⁴⁹ The City's unemployment rate is slightly above state average at 3.8 percent in 2017 but is below the national unemployment rate.⁵⁰

Major employers include Medtronic, Cummins Power Generation, and Unity Medical Center.

Table 16: Major Employers in Fridley⁵¹

Major Employer	Sector	Number of Employees
Medtronic, Inc.	Medical/Technology	3,464
Cummins Power Generation	Energy Generators	1,210
Unity Medical Center	Medical	1,138
Target	Retail	696
BAE Systems	Security	600
ISD 14 (Fridley Schools)	Education	580
Minco Products, Inc.	Manufacturing	515
Walmart	Retail	312
Kurt Manufacturing	Manufacturing	295
Treehouse Foods	Food Manufacturing	206

Local Outreach and Communication Channels

Engaging the community is critical to reaching Fridley's Energy Action Plan goals. Table 17 lists some of the ways that residents and businesses currently receive information. These communication channels will be helpful during implementation efforts.

⁴⁹ Minnesota Department of Employment and Economic Development, Quarterly Census of Employment and Wages, 2nd quarter data, 2017.

⁵⁰ Minnesota Department of Employment and Economic Development, Local Area Unemployment Statistics, 2017.

⁵¹ City of Fridley, 2016.

Table 17: Local Outreach Channels

Local Outreach Channels

City Communications

- Website
- Social media (Facebook, Twitter, NextDoor)
- CityTV
- Email updates (Fridley4U)
- Community Connection, bi-monthly newsletter
- Quarterly business newsletter
- Business retention visits
- Cops & Clergy group
- Electronic billboard on University Ave.
- New Resident Packet

Other Communication Channels

- Local newspapers
 - Sun Focus
 - Northeaster
- Fridley Patch
- Civic Organizations
- Homeowners Associations
- Neighborhood Associations
- Mississippi Library bulletin board

Events

- Farmers Market
- 49er Days
- Springbrook Environmental Fun Fair
- Night to Unite
- Municipal Open House
- Manufacturing Week
- Small Business Saturday
- Independent Retailer Month
- Summer Concert Series
- Springbrook Nature Center Camps



Source: City of Fridley, Community Connection, May/June 2018 Issue

Appendix 3: Methodology for Measuring Success

As part of implementation support, Partners in Energy will provide biannual progress reports that include metrics of success and overall progress toward goals. The following section defines how progress toward goals will be measured. All 2020 goals will be measured through the implementation closeout date, as agreed to in the Implementation Memorandum of Understanding. All 2030 goals will be measured through the end of the year 2030.

For purposes of this plan, the business as usual scenario represents a presumed slight increase in energy demand based on residential and commercial energy demand of about 0.5 percent per year. It is assumed institutions demand will increase in 2019 when the new civic campus opens, but stay relatively flat in future years.

Community-wide Goal:

1. Reduce energy use 5 percent by 2020, and 20 percent by 2030, as compared to business as usual.

The community-wide goal will be measured by comparing actual kWh and therm consumption, measured in MMBtu, against projected community-wide MMBtu consumption based on the business as usual scenario. Projected community-wide MMBtu consumption in 2020 is 3,747,985 MMBtu, and in 2030 is 3,932,786 MMBtu.

Residential Energy Goals:

1. By 2020, Fridley residents will take 1,200 additional actions toward energy conservation and renewable energy.
2. By 2030, residents will reduce total energy use 10 percent, as compared to business as usual.

Goal one assumes the three-year participation average of 964 actions will continue in 2018, 2019, and 2020. The baseline that goal one will be measured against is the three-year participation average of 964 actions. Goal one will be measured by counting all actions taken in 2019 and 2020 above the 964 actions baseline.

Goal two will be measured by comparing actual kWh and therm consumption, measured in MMBtu, against projected residential MMBtu consumption based on the business as usual scenario. Projected residential business as usual MMBtu consumption for 2030 is 1,037,362 MMBtu.

Businesses and Multifamily Buildings Goals:

1. By 2020, business and multifamily buildings will achieve 5 percent energy savings.
2. By 2030, business and multifamily buildings will reduce total energy use 20 percent, as compared to business as usual.

Goal one will be measured by combining actual kWh and therm savings, measured in MMBtu, in 2019 and 2020 (MMBtu_{saved}). MMBtu_{saved} will be measured against 2017 MMBtu consumption.

Goal two will be measured by comparing actual kWh and therm consumption, measured in MMBtu, against projected business and multifamily buildings MMBtu consumption based on the business as usual scenario. Projected business and multifamily buildings business as usual MMBtu consumption for 2030 is 2,761,076 MMBtu.

Institutions Goals:

1. By 2020, institutions will achieve 5 percent energy savings.
2. By 2030, institutions will reduce total energy use 15 percent, as compared to business as usual.

Goal one will be measured by combining actual kWh and therm savings, measured in MMBtu, in 2019 and 2020 (MMBtu_{saved}). MMBtu_{saved} will be measured against 2017 MMBtu consumption.

Goal two will be measured by comparing actual kWh and therm consumption, measured in MMBtu, against projected institutions MMBtu consumption based on the business as usual scenario. Projected institutions business as usual MMBtu consumption for 2030 is 134,349 MMBtu.

Transportation and Electric Vehicles Goals:

1. By 2020, conduct an outreach campaign to raise awareness about electric vehicles, with the goal of reaching 500 residents and individuals who work in Fridley.
2. By 2020, reach 10 businesses and multifamily buildings through a targeted outreach campaign to encourage installation of charging infrastructure.
3. By 2020, install one electric vehicle charging station at a City-owned building or location.

Goals one and two will be measured through points of contact. Points of contact will be quantified by sign-in sheets at presentations and lunch and learns, count of collateral pieces distributed at tabling events, count of individuals spoken to at tabling events, count of businesses and multifamily buildings contacted through door-knocking, and count of one-on-one outreach calls completed.

Goal three will be measured by the count of charging stations installed at City-owned buildings and properties. The baseline is zero.

Appendix 4: Glossary of Terms

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

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

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

GreenStep Cities: Minnesota GreenStep Cities is a voluntary challenge, assistance and recognition program managed by a public-private partnership to help cities achieve their sustainability and quality-of-life goals. More information is available at: greenstep.pca.state.mn.us/.

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

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

MTCO₂e (metric tons of carbon dioxide equivalent): A unit of measure for greenhouse gas emissions. The unit "CO₂e" represents an amount of a GHG 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.

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.

Therm: A unit of natural gas consumption.

Trade Ally: 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, assisting with rebate paperwork, to receiving rebates for equipment sold.

Appendix 5: Work Plan and Timeline

Residential Energy									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Analyze resident survey to inform marketing campaign							City Lead	Partners in Energy, City Communications	Polco results
Create materials to promote energy efficiency at home, including materials in other languages and materials targeted at under-resourced households							Partners in Energy	City Lead, City Communications	Money for printing materials, Translation services
Create solar panel installation checklist and include on City website							City Lead, Partners in Energy	City Communications	Website page
Target neighborhoods with older homes with informational mailer							Partners in Energy	City	Assessing data, Postage for mailing
Target new residents using new resident packet							Partners in Energy	City	Informational materials
Door-knock at manufactured home parks							City Lead, EQEC	Partners in Energy	Informational materials, Talking points
Use existing events and communication channels to promote energy efficiency and residential campaign materials							City Lead, EQEC	Partners in Energy	Tabling kits, Informational materials, Volunteers, Social media content and press releases
Update Home Loan Program application, website, and marketing materials to emphasize energy efficiency							City Lead, HRA	City Communications, Partners in Energy	Content, Talking points
Include energy efficiency at City's building permit desk and on website							City Lead	City Communications, Building Department, Partners in Energy	Informational materials
Create energy efficiency insert for City's water utility bills							Partners in Energy	City Communications	Insert
Partner with senior center on actions senior citizens can take home							City Lead	Partners in Energy	Behavior change information

Residential Energy									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Collaborate with local food shelves and service providers to reach under-resourced populations							City Lead	EQEC	Informational materials
Leverage existing partnerships with property managers at multifamily buildings to share information							City Lead, City Rental Department, EQEC	Property managers, Home Energy Squad, Local service organizations	Informational materials, Talking points
Leverage existing contacts, networks, events to reach under-resourced residents							City	EQEC	Informational materials

Businesses and Multifamily Buildings									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Create informational materials about actions and programs for business and multifamily, including case studies and funding information							Partners in Energy	City Communications, Business Retention and Expansion Team	Case study examples, Information on ROI
Distribute informational materials at building permit counter and city communication channels							City Lead	Building Department, City Communications	Money for printing materials, Talking points, Website
Include energy efficiency messaging in City business e-newsletter and business retention visits							City Lead	City Communications, Business Retention and Expansion Team	Newsletter content, Informational materials
Conduct outreach on MNTAP intern program							City Lead	City Communications, Business Retention and Expansion Team, MNTAP	Informational materials
Launch door-knocking campaign(s) to promote energy audits, energy efficiency, and							City Lead, EQEC	Business Retention and Expansion Team, CERTs	Informational materials, Talking points, Volunteer training

Businesses and Multifamily Buildings									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
renewable energy to local businesses									
Host lunch and learn for businesses about City actions/experiences							City Lead, Business Retention and Expansion Team	Partners in Energy, Utility Program Reps, EQEC	Meeting location, Meeting refreshments and lunch Presentation content
Identify and target engagement in under-resourced areas and buildings							City Lead, HRA	EQEC	List of under-resourced areas and buildings Targeted informational materials
Use existing communication channels and relationships to share information with multifamily buildings							City Communications	Multifamily housing associations, Police Department, City HRA, Buildings Department	Information materials for different platforms
Collaborate with rental inspections to promote energy efficiency in multifamily buildings							City Lead	Partners in Energy, Rental Inspectors	Information materials, Talking points

Institutions									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Engage worship facilities in energy action and renewable energy							City Lead	EQEC, Interfaith Power and Light, Alliance for Sustainability, Cops and Clergy, EnerChange	List of worship facilities, Mailing funds, Scripts and talking points, Informational materials, Case studies
Establish partnerships with creation care teams to promote residential energy efficiency and create small scale energy plans							City Lead	EQEC, Partners in Energy	Congregation toolkit, Scripts and talking points, Informational materials
Educate city staff about efficient building operations, utility rebates and programs, and behavior changes							City Lead	Partners in Energy, Xcel Energy Account Manager	Presentation materials, Behavior change materials

Institutions									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Pursue opportunities to reduce energy use in city buildings and properties							City Facilities Manager	City Lead, Xcel Energy Account Manager	List of future projects/improvements, Rebate information, ROI information
Publish case studies for new civic campus and Springbrook Nature Center							Partners in Energy	City Lead, Facilities Manager	Information on improvements, Photos of improvements, ROI and rebate information, Communication channels to share highlights
Highlight efficient features at Civic Center open house using City communication channels and informational materials							City Lead	Partners in Energy	Informational materials and posters, Social media content and press releases
Complete energy benchmarking for City Facilities							City Lead	Xcel Energy Benchmarking tool	B3 support
Identify ways to reduce energy use in water treatment plants located in Fridley in partnership with Xcel Energy and MnTAP							Partners in Energy	Xcel Energy Account Managers, MnTAP, City Lead	Talking points
Provide technical assistance to school and hospital facility managers interested in benchmarking or developing energy saving plans							City Lead, Partners in Energy	Xcel Energy and CenterPoint Energy Account Managers	Informational materials, ROI information, Communication channels to share information
One-on-one outreach to school and hospitals to identify existing actions and potential resources							City Lead	Xcel Energy and CenterPoint Energy Account Managers	
Work with students to create behavior change video							Identify school partner to take lead	City Communications, Partners in Energy, School green teams/students	Funding to film and edit video, Content for video, Volunteers to participate
Collaborate with DRC to identify areas of opportunity for energy efficiency in review process							City Lead	Development Review Committee	

Institutions									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Create energy efficiency and renewable energy packet for developers at DRC							Partners in Energy	City Lead Development Review Committee	Informational materials

Transportation and Electric Vehicles									
Actions	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Responsible	Support	Other Resources Required
Table 5 events to educate attendees about electric vehicle ownership							EQEC	City Lead, Partners in Energy	Tabling kits, Informational materials, Volunteers, Social media content and press releases
Design electric vehicle information materials for residential, business, and multifamily building outreach	x						Partners in Energy	City Lead	Case study examples, Printing funds, EV-oriented information
Establish partnerships with electric vehicle organizations and dealerships to co-host tabling events and ride & drive, and assist with door knocking							EQEC	City Lead, Partners in Energy	Informational materials, Talking points, Contact information
Write newsletter articles							Partners in Energy	City Lead, City Communications	Newsletter topics
Identify community destinations and large businesses to help target outreach							EQEC		
Add language to DRC process encouraging charging infrastructure							City Lead	Development Review Committee	Draft language
Present to city staff about electrifying fleet vehicles and FleetCarma study							City Lead	Partners in Energy, Xcel Energy, FleetCarma	FleetCarma study results, Space for presentations, Presentation materials
Identify city-owned opportunity sites for charging station							City Lead		List of city-owned property, Criteria for charging station