



MEMORANDUM

DATE: July 15, 2019
 To: Honorable Mayor & City Council
 CC: Dave Bennett, Director of Public Works/City Engineer; Monte Nelson, Police Chief; Mitzi Baker, Community Development Director; Deb Little, City Clerk; Michelle Mahowald, Communications & Human Resources Director; Teresa Jensen, Director of Library and Information Technology Resources; Chris Hood, City Attorney
 From: Ben Martig, City Administrator
 RE: "Supplemental Agenda Background Memo" for July 16, 2019 No.1.

Summary Report:

The following is an update on agenda items as supplemental background agenda information made available for Tuesday, July 16, 2019.

Item 1. Review of Energy Subcommittee report and the Memorandum of Understanding for Phase 2 Implementation (18-month Energy Action Jump Start) with Partners in Energy Program.

Please see attached Powerpoint presentation.

Item 2. Jefferson Parkway TH 246 Roundabout Discussion

The following is the additional information that we indicated under "Financial Impacts" section of the memo related to cost impacts of the options.

Options	Cost Estimate	State Funding	Bonded Amount	Bond Amount	Annual Pymt/\$100K	% Levy Increase
					\$ 12,495	\$ 9,357,257
Option 1	\$ 2,970,000.00	\$ 1,883,480.00	\$ 1,086,520.00	\$ 1,100,000	\$ 137,445	1.47%
Option 2	\$ 3,325,000.00	\$ 1,883,480.00	\$ 1,441,520.00	\$ 1,400,000	\$ 174,930	1.87%
Option 3	\$ 3,368,000.00	\$ 1,883,480.00	\$ 1,484,520.00	\$ 1,500,000	\$ 187,425	2.00%



Energy Subcommittee Report 18-month Energy Action Jump Start

City Council Work Session
July 16, 2019

Process to date

- City approved MOU to participate in Phase 1 of the Partners in Energy (PiE) program (Oct 2018)
- 6 Months of Planning and creating the report
- Routing through Boards & Commissions
 - Climate Action Plan Advisory Board (June 5)
 - Environmental Quality Commission (June 13)
 - Planning Commission (June 20)
 - Economic Development Authority (June 27)
- Council presentation and request for MOU approval

CAPAB Energy Subcommittee

- **INSTITUTIONAL:** Carleton, St. Olaf, Northfield Hospital, Northfield Public Schools
- **RESIDENTIAL:** Various community members
- **NON-PROFIT:** Healthy Communities Initiative, Growing Up Healthy
- **LARGE BUSINESS:** Post, Sheldahl
- **SMALL BUSINESS:** Just Food Coop, Hot Spot Music
- **SERVICE ORGS:** Rotary Club, Greater Northfield Sustainability Collaborative

RAISING
AWARENESS



BUILDING
SUPPORT

Why a detailed energy report?

1. Energy is the largest piece of Northfield's carbon footprint
2. Energy - unlike many other carbon sources - can be clearly defined, quantified and tracked
3. Northfield has the opportunity to build upon past efforts, specifically the 2008 Northfield Energy Task Force Report
4. Northfield had the opportunity to utilize the Xcel Energy Partners in Energy offering to assist with energy program planning and implementation

Why Xcel Partners in Energy?

1. Direct engagement with our utility provider regarding future energy plans
2. Experienced, robust facilitation and support at no cost
3. Direct access to data needed for energy planning and carbon accounting
4. Lessons learned and proven strategies from other similar cities (Winona, Faribault, Red Wing, etc.)
5. Customizable process, tailored specifically for Northfield
6. Alignment with CAPAB timeline and process

Building on Past



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An Xcel Energy Community Collaboration

With Hope: A Resilient Community

An Action Plan for Northfield Area Energy
Sustainability



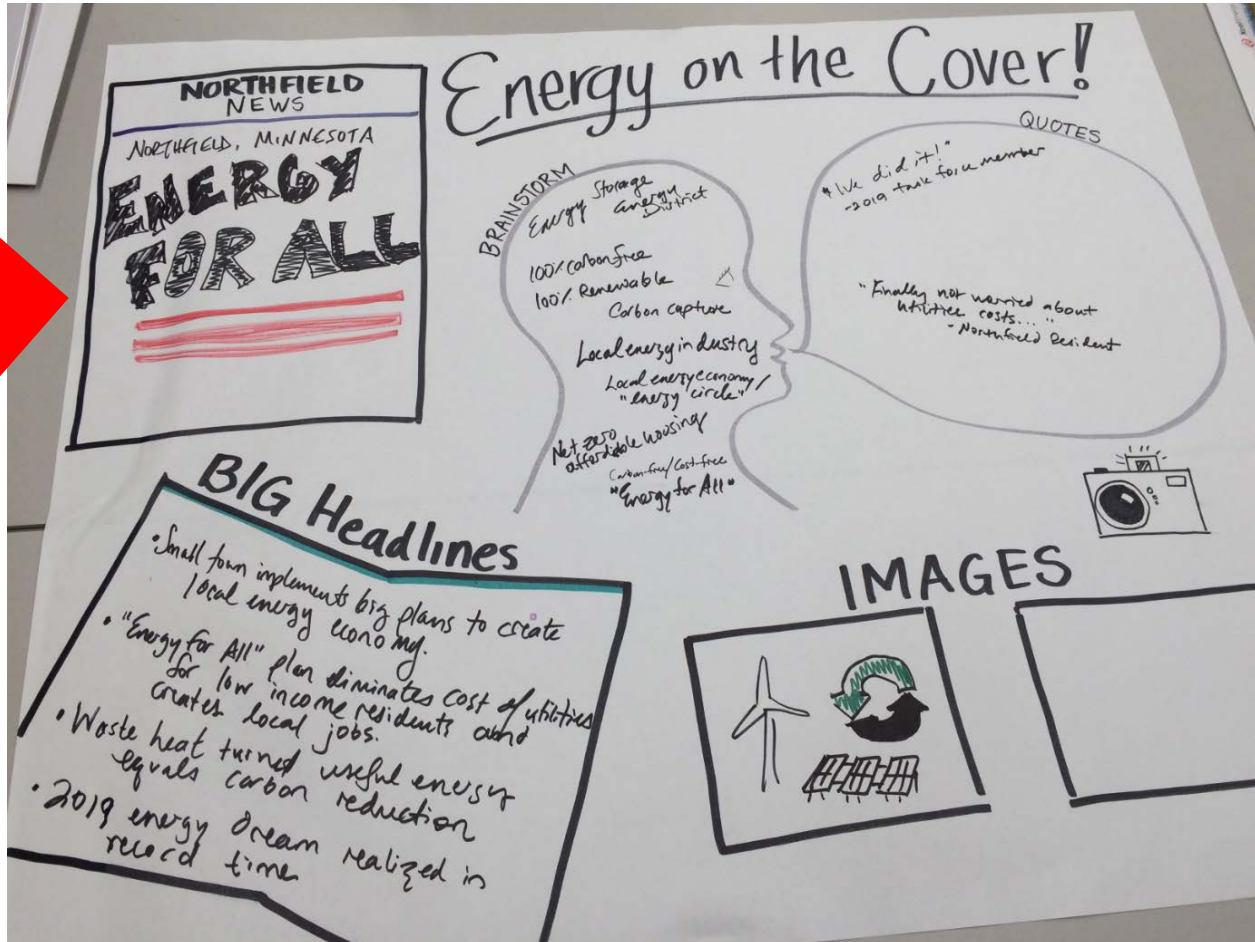
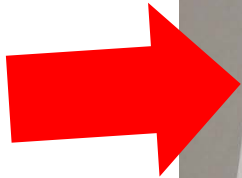
Northfield MN Energy Task Force
Report

June 2008

2008 Mayor's Energy Task Force Report



Envisioning Northfield's Energy Future

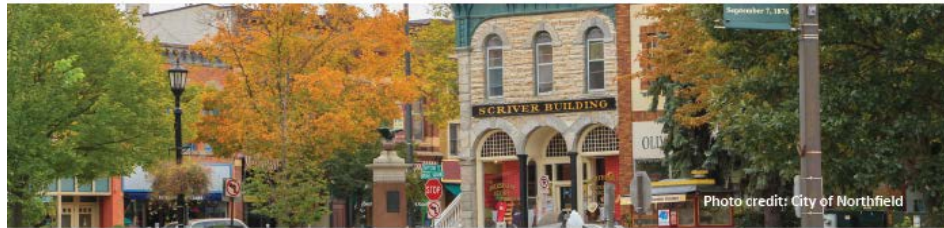


Energy Subcommittee Report



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Northfield Energy Subcommittee Report



Vision

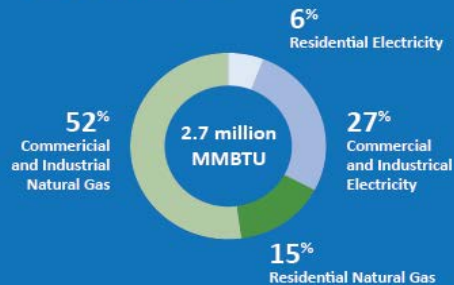
Northfield strives to ensure all citizens have access to clean, renewable, reliable, and affordable energy systems that will adapt to a changing climate by conserving energy, reducing our community-wide carbon footprint, and supporting sustainable energy solutions.

Carbon Reduction Goal

Achieve a **50%** reduction in energy-related carbon emissions from 2017 levels by **2030**, and consume **100%** carbon-neutral energy no later than **2050**.

Our Energy Snapshot*

Energy Consumption



\$31 million spent across all sectors

*2017 data

Renewable Energy Support



Three college-owned wind turbines



81 solar panel installations



145 community solar garden subscribers



Almost 26 million kilowatt-hours (kWh) of purchased green energy



Energy Subcommittee Report

Guiding principles

- Pursue a sustainable energy future with clean energy available to **all businesses and residents**, with particular support for **under-resourced households**.
- Increase overall **energy literacy** among residents and business owners and operators, including knowledge of where energy comes from, the environmental impacts of different types of energy generation, and what can be done to reduce energy use.
- Expand **renewable energy generation**.
- **Lead by example** and offer recognition for successful energy efforts
- Make energy efficiency **feasible, affordable, and achievable** for both residents and businesses.
- Promote **economic growth** while increasing energy conservation and renewable energy generation.
- Empower **future generations** to be self-motivated in working toward a sustainable energy future.
- Inspire and support a **high quality of life** for future generations.
- Includes households on a fixed-income, experiencing energy burden, or are eligible for **income qualified programs**.

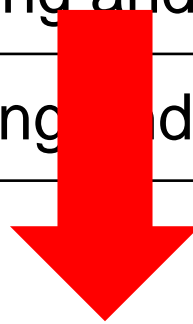
Energy Subcommittee Report

Strategic Priority Summary Matrix

Area A: Education and Engagement (EE)	
EE-1	Small Consumer Energy Engagement
EE-2	Large Consumer Energy Engagement
EE-3	Energy Marketing and Tourism
EE-4	Energy Reporting and Transparency
Area B: Policy and Planning (PP)	
PP-1	Building Energy Use Benchmarking and Disclosure
PP-2	Building Energy Efficiency Standards
PP-3	Energy Conscious Strategic Growth
PP-4	Forward-Thinking Utility System Expansion
PP-5	Renewable Energy Development Plan
PP-6	Community Energy Resilience Plan
Area C: Innovation and Demonstration (ID)	
ID-1	Deep Energy Efficiency Retrofits
ID-2	Net-Zero Energy Buildings
ID-3	Strategic Electrification
Area D: Supporting and Continuing the Plan (SC)	
SC-1	City Energy Coordinator Position
SC-2	Advancing and Updating the Plan

Area A: Education and Engagement (EE)

EE-1	Small Consumer Energy Engagement
EE-2	Large Consumer Energy Engagement
EE-3	Energy Marketing and Tourism
EE-4	Energy Reporting and Transparency



18-Month Energy Action Jump-Start
(Appendix 3)

Area B: Policy and Planning (PP)

PP-1	Building Energy Use Benchmarking and Disclosure
PP-2	Building Energy Efficiency Standards
PP-3	Energy Conscious Strategic Growth
PP-4	Forward-Thinking Utility System Expansion
PP-5	Renewable Energy Development Plan
PP-6	Community Energy Resilience Plan

“...join other leading communities and reinforce consistency with [our] own Comprehensive Plan by incorporating more specific energy and carbon reduction language in existing policies and planning documents.”

“...to evolve Northfield’s built environment into one that is more affordable, equitable, and resilient, and to institutionalize a low-carbon approach...”

Area C: Innovation and Demonstration (ID)

ID-1	Deep Energy Efficiency Retrofits
ID-2	Net Zero Energy Buildings
ID-3	Strategic Electrification

“...test unfamiliar concepts as we prepare to scale up those that prove to be both feasible and effective. “

“Demonstration projects could be fully implemented by the City of Northfield, Northfield residents, businesses, and institutions, or implemented through public–private partnerships. “

“City buildings, public school buildings, and affordable housing are called out as priorities given their potential to maximize the outreach and educational opportunities associated with innovative demonstration projects. “

Area D: Supporting and Continuing the Plan (SC)

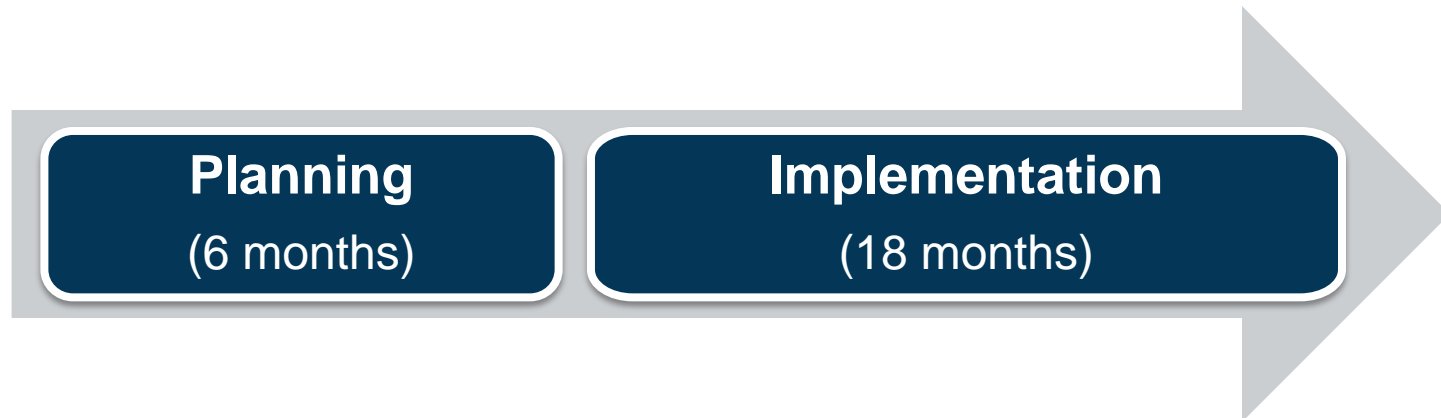
SC-1	City Energy Coordinator Position
SC-2	Advancing and Updating the Plan

“...establish a reliable, multi-level approach to implementing and sustaining this plan into the future.”

“...establish processes that allow the recommendations and resources listed in this plan to be regularly updated in alignment with technological, financial, and policy advancements at the local, state, and federal level. “

What is Partners in Energy?

- A *two-year* collaboration with Xcel Energy to develop and implement your energy plan goals
- Xcel Energy provides tools and resources to enable community-driven and data-driven energy planning with support for implementation
- Helps develop a better understanding of the energy needs of communities; better align services and programs with customer needs; and strengthen relationships with the community and support the Xcel Energy philosophy of community engagement



Partners in Energy Impact



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21
Communities
Served Total



Average DSM Savings per Community in 2018



8 Million
kWh



118,000
Therms

Total Participants in DSM & Renewable Programs in 2018



40,454
Residential



4,532
Commercial

Total Renewables Consumption 2018



91 Million
kWh



766,000
Dollars



18-Month Energy Action Jump Start

Target Audience

- **Small Consumers:** inclusive of all residents, including homeowners and renters, small businesses, and nonprofit organizations.
- **Large Consumers:** inclusive of local institutions, such as the colleges and hospital, large businesses, and industrial businesses.

Small Consumer Strategies

- A. Create centralized, **quick-reference guide** on energy efficiency and renewable energy options for residents
- B. Promote **home energy audits** through city-wide marketing campaign
- C. Design **city-wide challenge** for residents to subscribe 100% to renewable energy
- D. **Targeted outreach to under-resourced** residents at manufactured home parks to promote energy efficiency upgrades



Photo Credit: City of Northfield

Small Consumer Strategies (cont.)



Photo Credit: Partners in Energy

- E.** Co-host **free electric vehicle ride and drive events** at existing community events, places of employment, and/or destinations
- F.** **Survey small businesses and nonprofits** about how they use and think about energy to develop a targeted outreach campaign
- G.** Engage small businesses and nonprofit organizations in energy efficiency action through **door-to-door outreach with energy coaches**
- H.** **Host an “energy” booth** for the 2020 Northfield Home & Garden Show, Earth Day Celebration, River Walk Market Fair and other city-wide events

Large Consumer Strategies

- A. Host **best practice energy workshops and tours** with case studies
- B. Facilitate a **large consumer energy coalition** to share best practices on action plans and carbon reduction goals
- C. **Recognize** large consumers' renewable energy investments and energy efficiency upgrades through different communication channels



Photo Credit: Daniel Edwins | CC BY-SA [2.5](#)

Large Consumer Strategies (cont.)



Photo Credit: City of Northfield

- D.** Targeted outreach to large consumers to complete energy **assessments and audits**
- E.** **Promote fleet electrification** by sharing information with large consumers and organizations with fleet vehicles to encourage electrification
- F.** **Encourage transparency** in annual energy and carbon footprint reporting to help track progress by Northfield's large consumers

Implementation Planning

Implementation: Partners in Energy Toolbox

Achieving Northfield's energy vision and goals is a group effort. Partners in Energy will provide...



Energize Your Home

Energize Maplewood! Residential Case

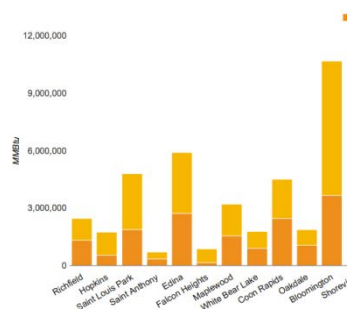
Challenge beginning this FALL, form or join team NOW

Things to know:
 - 6 month challenge sponsored by Maplewood and Xcel
 - You can form a team or join an existing team
 - Through energy actions, tracking, and friendly competition participants will work to be the "biggest loser" and reduce their energy footprint - and get prizes for winning!
 - All Xcel Energy customers are eligible to participate

For More Information:
www.ci.maplewood.mn.us/energychallenge

XCEL ENERGY IS PLEASED TO PARTNER WITH YOUR COMMUNITY TO HELP YOU

Marketing and Communications



Data Tracking/ Measurement

Add "Saving Money" to Your Winterizing Checklist

This winter, why not join other businesses saving an average of 7% to 10% per year from better energy management? With heating accounts by month, half your energy bill during winter months, making energy saving improvements—matched by these money-saving rebates—will pay off in no time at all.

- Replace your boiler.** Upgrade to a high efficiency boiler and reduce fuel consumption, raise gas temperatures and emissions—offer up to just energy savings. We have two rebate opportunities including a rebate average of **\$2,000** per boiler (EPA rebate up to \$2,500 in efficiency rebate).
- Seal up your boiler.** Boilers lose up to one energy, reduce the life of your heating system, and reduce emissions. Receive a rebate of 20% of the cost of each boiler tune up every year—averaging up to **\$200** per boiler.
- Wrap your pipes.** Insulating pipes can reduce energy losses by between 0.7% and 0.5%. We have three levels of rebate, depending on pipe diameter. By wrapping a four inch pipe with an R-value of 6.5 you can save **\$200** in energy 100 years.
- Install VFDs.** Providing load demand energy building loads in the forcing energy use the machine. Reduce additional electrical energy by installing variable frequency drives (VFDs) on all heating units and fan motors. Rebates vary, offering savings between **\$400** and **\$8,000** per VFD, from 1 to 200 HP.
- Add controls.** Managing energy use with a control system adds more savings by eliminating energy waste, increasing comfort and protecting the life of your equipment. We have control systems available, to save dollars for a month (rebate) based on the energy savings potential of your specific control system. These systems can save rebates up to **\$400** per kW saved (EPA) and **\$5** per DataPoint (EPA) saved.

Rebate Snapshot	Rebate
Boiler Tune-Up	\$200/boiler (EPA)
Boiler Seal	\$200/boiler (EPA)
4" to 6" Pipe	\$1,000/pipe (EPA)
6" to 8" Pipe	\$2,000/pipe (EPA)
8" to 12" Pipe	\$4,000/pipe (EPA)
12" to 24" Pipe	\$8,000/pipe (EPA)
VFD (1-100 HP)	\$400 (EPA)
VFD (100-200 HP)	\$800 (EPA)
VFD (200-500 HP)	\$1,600 (EPA)
VFD (500-1000 HP)	\$3,200 (EPA)
VFD (1000-2000 HP)	\$6,400 (EPA)
VFD (2000-5000 HP)	\$12,800 (EPA)
VFD (5000-10000 HP)	\$25,600 (EPA)
VFD (10000+ HP)	\$51,200 (EPA)

Program Expertise



Project Management

Implementation: Roles and Responsibilities

- **City of Northfield**

- Act as main point of contact during implementation
- Engage City staff from all departments in supporting energy efficiency and renewable energy in operations
- Leverage existing City events and communication channels
- Lead by example through investments in City facilities and benchmarking City energy use

- **Northfield Energy Task Force**

- Assist with door-knocking efforts
- Table at City events and leverage existing communication channels
- Establish partnerships with local service providers, institutions, creation care teams, and electric vehicle organizations
- Research policy and program options for sustainable development, and present to City Council

Questions?



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