NORTHFIELD CLIMATE ACTION PLAN

City Council: CAP Presentation and Discussion

October 15, 2019

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GREAT PLAINS INSTITUTE

Presentation Overview

- Plan Timeline and Process
- Engagement
  - Survey
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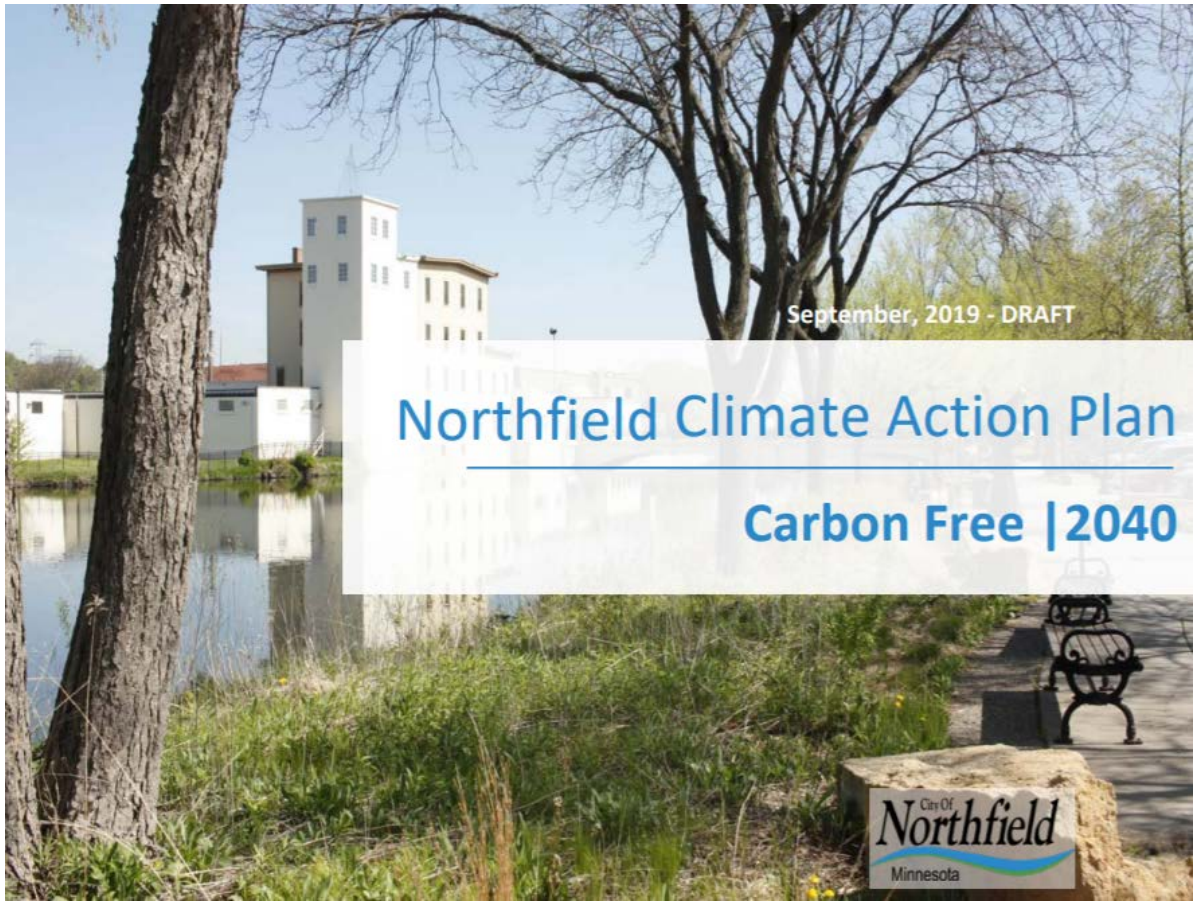
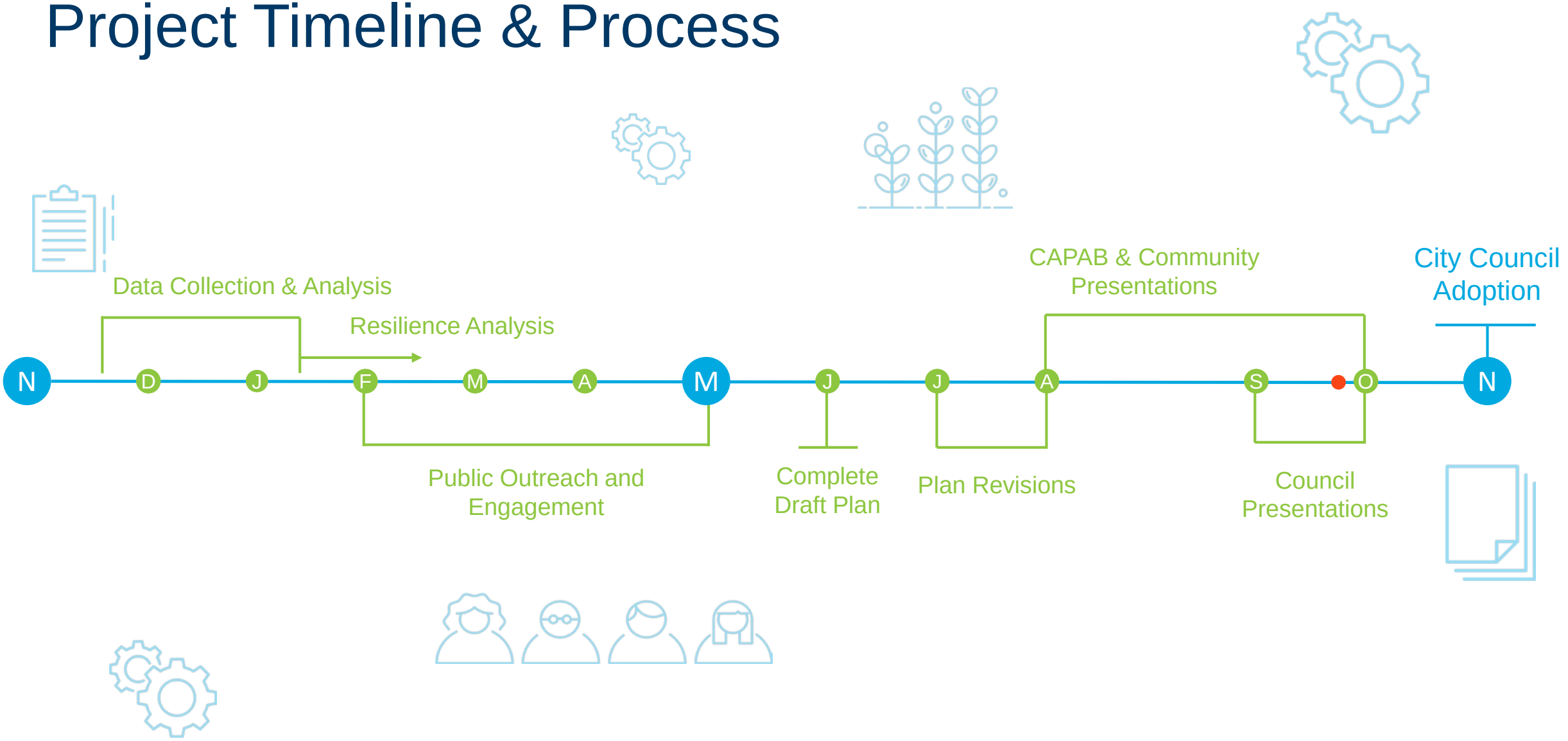
  - Focus Groups
- Plan Structure and Content
  - GHG Inventory
  - Goals
  - Strategies, Priorities, and Actions
  - Resilience
  - 3-Year Targets
  - Implementation



Project Timeline & Process



Community Engagement

- Survey: > 1,000 responses
- 3 public engagement events
- Riverwalk tabling
- 5 Focus group discussions
  - High school students
  - St. Olaf & Carleton students
  - Latinx community
  - Business representatives
  - City staff

- **Strong support for a plan & action**
- **Willingness to participate**
- **Opportunity for equity:**
  - Better housing
  - Access to capital
  - More transportation options
- **Collaboration**
  - Institutions: transportation, tree planting
  - Business: cooperative purchasing, sharing

Plan Structure & Content

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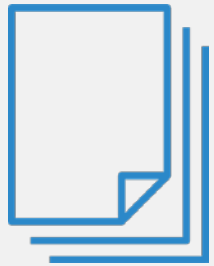


GHG Inventory – Community-wide

- Buildings: 85.31% of total emissions
- Travel: 12.17% of total emissions
- Waste (downstream only): 1.65%
- Wastewater treatment: 0.87%

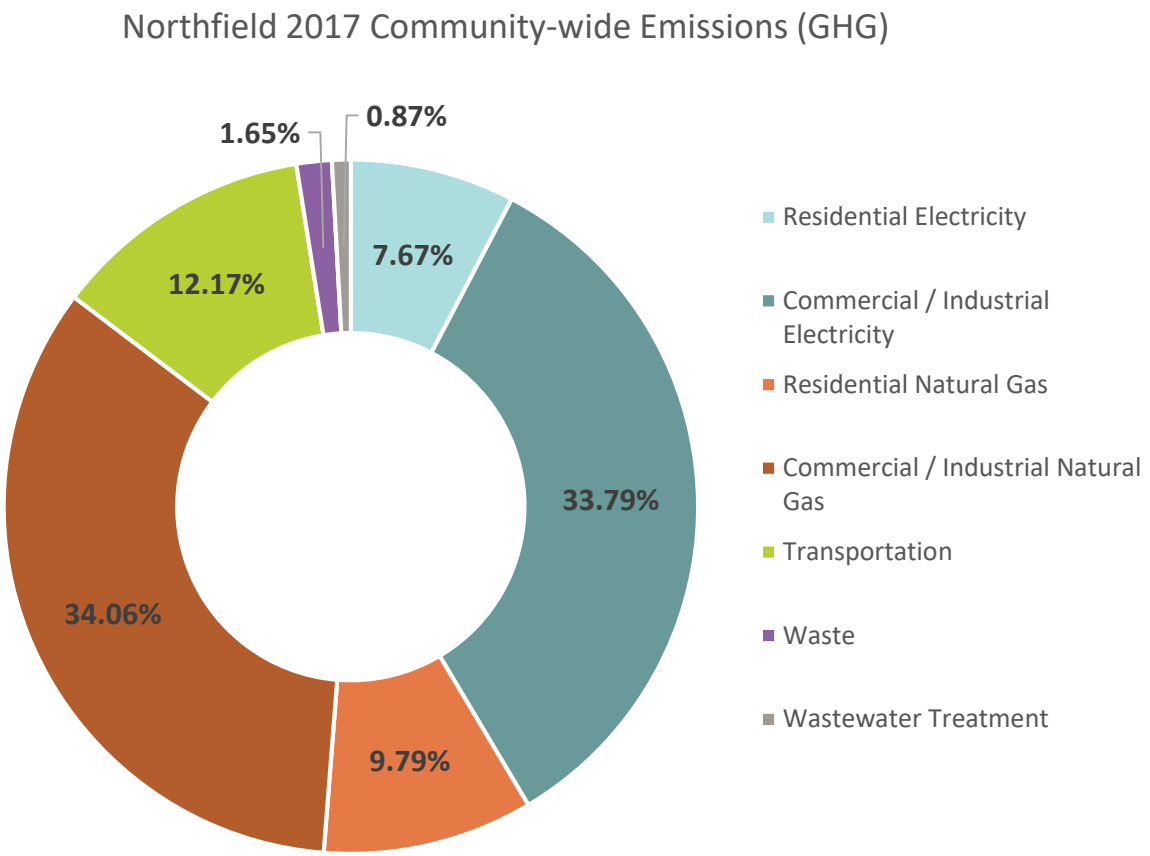
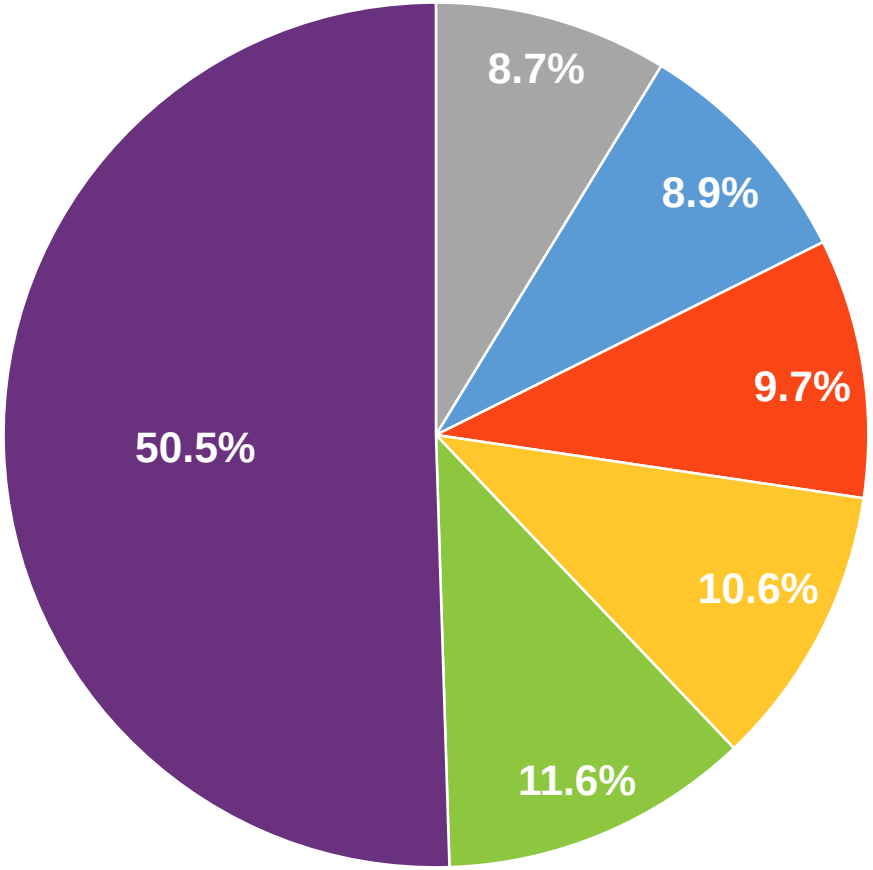


Figure 8. Community-wide greenhouse gas emissions for Northfield, Minnesota by sector. Each wedge represents a different sector and energy use category. Source: Xcel Energy, Minnesota Department of Transportation. Generated by Regional Indicators Initiative.

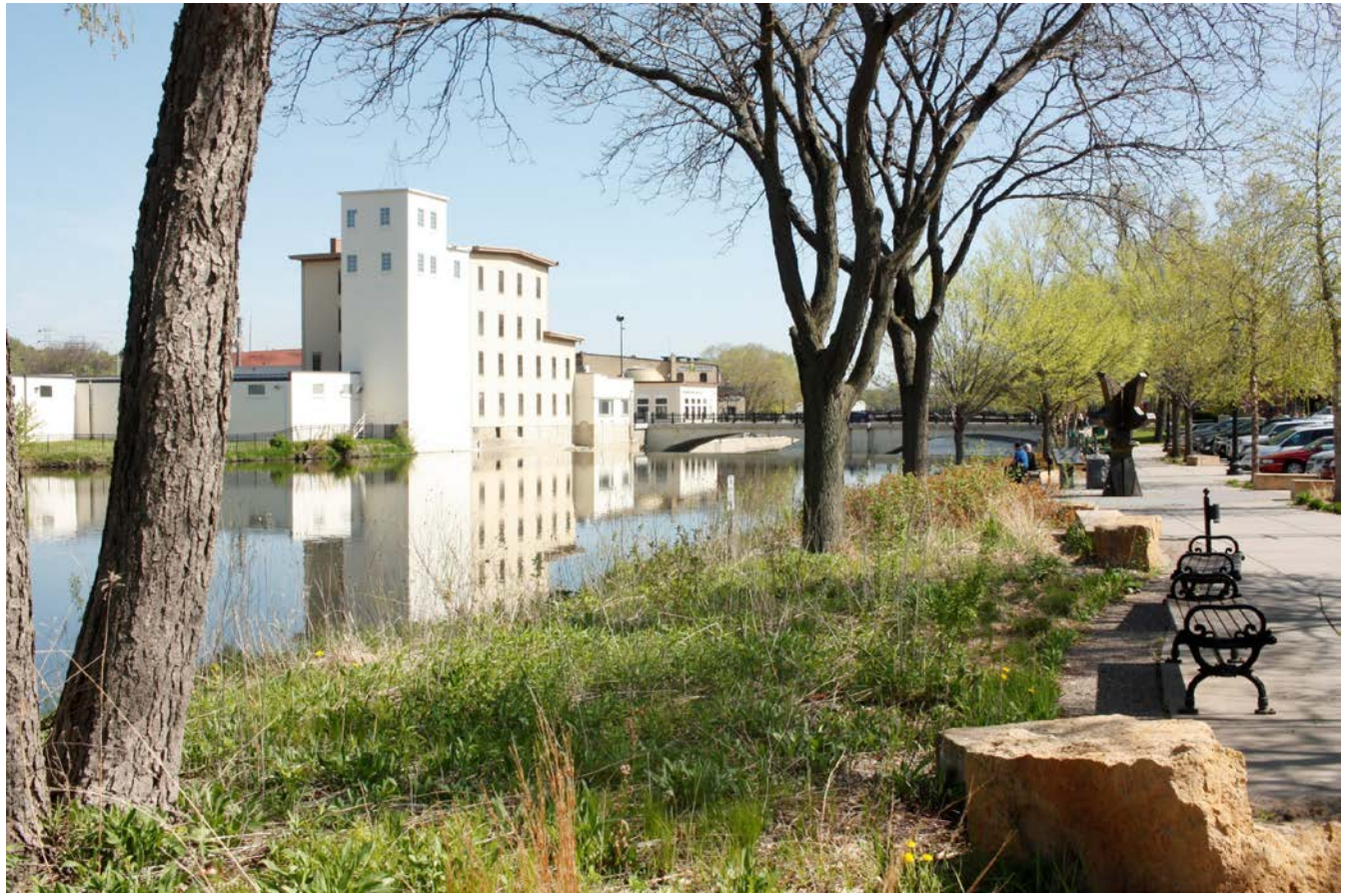
City Operations



Greenhouse Gas Emissions, 2017

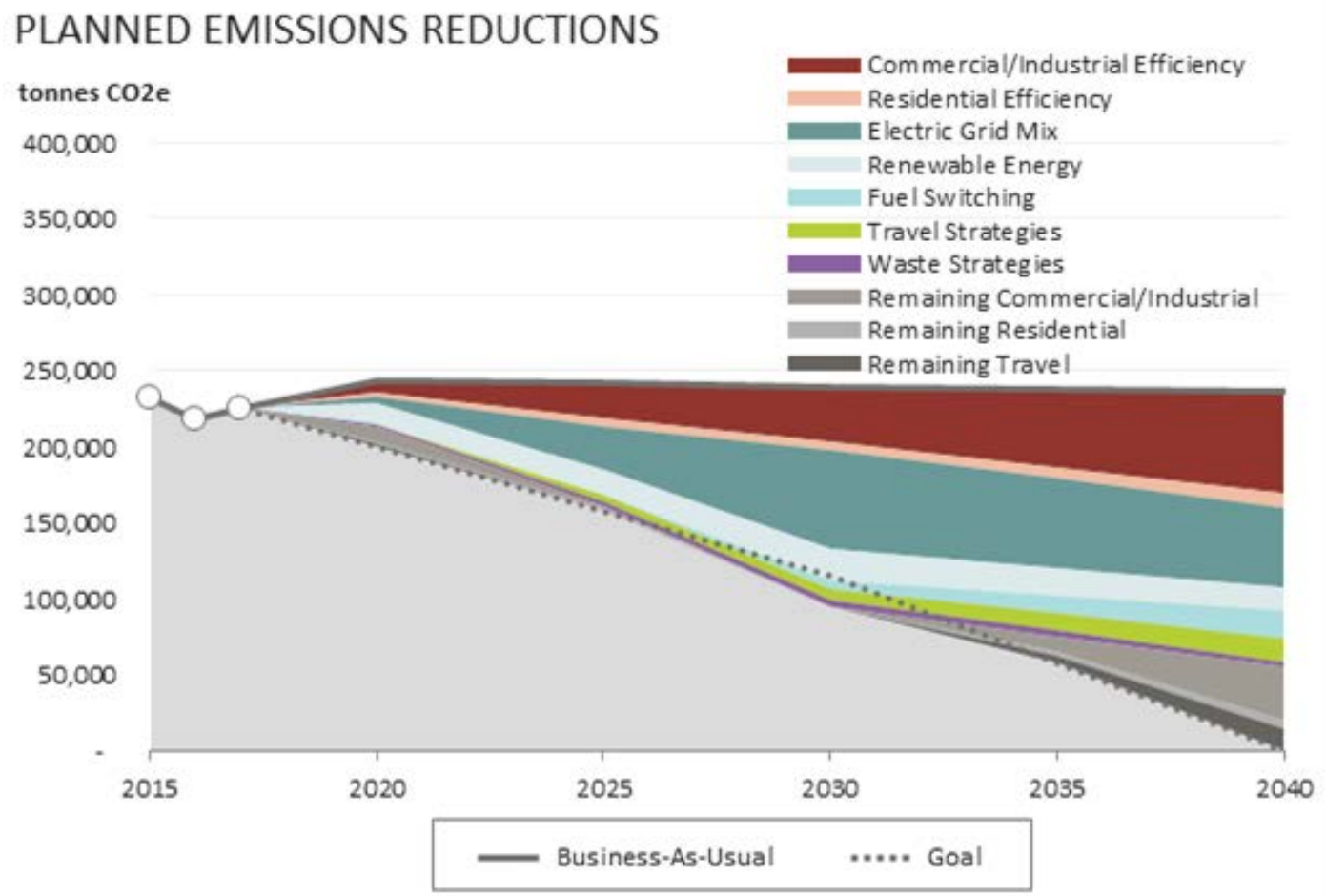
Our Goals

The City of Northfield is committed to **100% carbon-free electricity** by 2030 and being a **100% carbon-free community by 2040**. This plan also includes strategies to enhance the resilience of the community through cultivating and supporting a resilient population, forward-looking stormwater management and infrastructure planning, 21st century electric grid updates, and supporting local food efforts.



Emissions Reduction Targets and Plan Impact

NORTHFIELD GREENHOUSE GAS EMISSIONS



OVERALL

Reduction from 2015 baseline:

	2030	2040
Goal	**50%**	**100%**
Plan	**59%**	**77%**
Energy	63%	78%
Vehicle Travel	24%	52%
Waste	100%	100%

Advanced strategies and/or offsets required for remaining natural gas and vehicle travel

Strategies, Priorities, and Actions for Climate Mitigation

Strategies: Umbrella

1. Education and Engagement
2. Policy and Planning
3. Innovation and Demonstration
4. Supporting the Plan

Priority Examples:

- Renewable Energy
- Transportation and Land Use

Action Example:

Encourage rooftop solar on commercial buildings where the is an economically viable solar resource (i.e. available space with adequate sunlight, and a structurally sound roof)

Priorities, Strategies, and Action for Climate Mitigation

Policy and Planning

Policy and Planning strategies include actions that are supported by City rules and procedures. Many policies and programs that are already in place can be built upon to implement climate-specific actions insofar as they align with the goals of this plan. Relevant policies and planning functions include but are not limited to: Complete Streets, Safe Routes to Schools, Land Development Code, and the Comprehensive Plan. In some instances, it will be necessary to create new policies to address some of the challenges where existing policies are insufficient to meet climate targets.

Policies and planning have the potential to have the greatest impact on emissions. Those that are targeted toward large energy users will have the most impact.

To create predictability and transparency around climate policies in the community. By enacting these polices the City will send clear signals to community members about expectations regarding reduction of GHG emissions.

PP – 1 Large Energy Users		
Description: Commercial and Industrial energy users represent the greatest share of emissions and therefore the greatest opportunity for reductions. Actions are aimed at addressing both buildings that already exist to maximize their efficiency and at buildings yet to be constructed as they have the potential to meet higher building energy standards.		
Recommended Actions		
	General	GHG Impact
PP 1.1	For existing buildings, adopt a commercial building benchmarking ordinance for buildings larger than 15,000 square feet. There are 100 buildings at this size threshold, which is 2% of all buildings, but more than half of all building energy consumption *GSC best practice 2* • Encourage ENERGY STAR certification for eligible facilities; require energy audit for low performing buildings	CO_2 CO_2 CO_2 CO_2 CO_2
PP 1.2	Currently, cities are not allowed to require stricter buildings standards than the state building code. However, the goals of this plan cannot be achieved if new buildings are not constructed to be net zero carbon by 2030. There have been efforts to allow cities to adopt a stretch code that would enable them to enforce higher energy standards. • Collaborate with other Minnesota cities to support legislation or state policy that would enable local jurisdictions to enforce stricter energy standards • Evaluate, plan, and prepare to adopt a stretch code if it becomes available *GSC best practice 1,2*	CO_2 CO_2 CO_2 CO_2 CO_2
PP 1.3	Implement a voluntary green building code for new or substantially reconstructed buildings • Consider incentives to encourage local builders and contractors to attend green building workshops available in Minnesota • Require any new building that receives public fuding or incentives to be constructed to green building standards *GSC best practice 3*	CO_2 CO_2 CO_2 CO_2 CO_2

Climate Resilience and Adaptation

Climate Hazards

Resilience Assessment

- Population
- Built Infrastructure
- Natural Infrastructure

Resilience Strategies

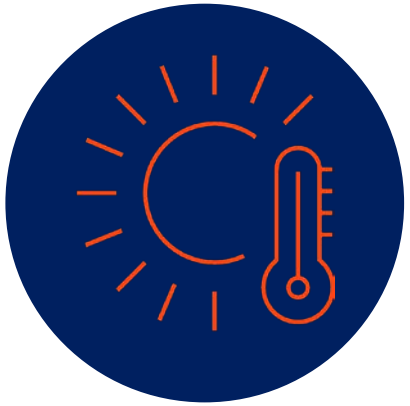
Local Climate Hazards

Air

Pollution, Pollen

- Respiratory illness
- Cardiovascular disease
- Allergies

Weather



Extreme weather, heat

- Heat stress, illness
- Infrastructure stress
- Power outages

Water

Flooding, drought, availability

- Waterborne disease
- Water quality
- Scarcity
- Infrastructure damage
- Drowning, injury

Ecosystem

Ecological changes

- Vector-borne disease
- Tree canopy impact
- Food scarcity

Resilience Assessment

Resilience Assessment

Population

Built Infrastructure

Natural Infrastructure

People are impacted differently by climate hazards. The ability to recover from an event may depend on a variety of factors, including demographic characteristics (age, income, race, language, health conditions) and situational factors (mobility, housing, transportation access).

Built infrastructure includes elements related to transportation infrastructure (roads and bridges, public transportation, and active mobility), water infrastructure (stormwater, drinking water, and wastewater), and critical infrastructure (back-up generation facilities and energy infrastructure).

Natural infrastructure like trees, native plants, water, and ecosystems are simultaneously susceptible to climate hazards and help improve the resiliency of the city.

Climate Resilience Strategies

RS – 3 Natural Infrastructure

Description: Protect and enhance natural infrastructure to ensure resilience to climate hazards and ability to mitigate impacts from climate hazards

Recommended Actions

Education

- Host workshops to provide opportunities for interested parties to learn about actions they can take to improve resilience including: *GSC best practice 24*
  - Soil remediation best practices
  - Increasing tree canopy and caring for existing trees on private property
  - Changing landscaping practices to consider beneficial plantings and practices that provide stormwater benefits, improve soil health, and increase pollinator habitat
  - Water conservation measures to reduce consumption of potable water and treatment of wastewater
- Incorporate food education and farming programs into Northfield school districts *GSC best practice 27*

Urban Forest and Vegetation

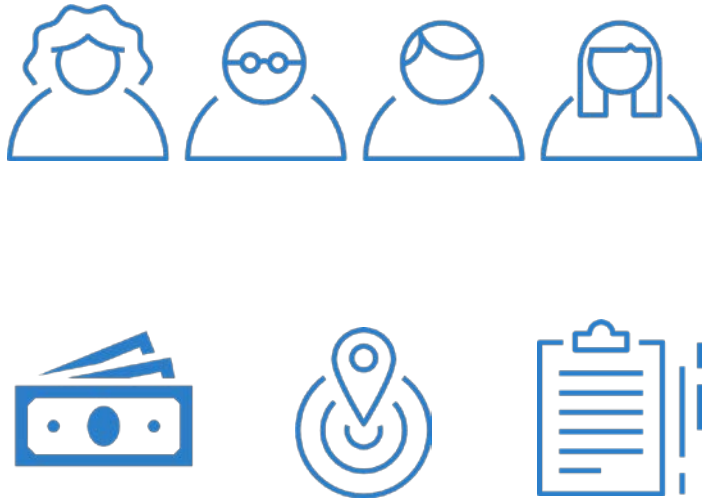
- Update and adopt Urban Forestry Asset Management Plan *GSC best practice 16*
- Incentivize expansion of boulevard gardens on private property; expand boulevard gardens and rain gardens on city-owned lands, and incorporate pollinator gardens in all parks and encourage / incentivize them on private property *GSC best practice 11*
- Increase tree canopy through city-sponsored program to plant trees *GSC best practice 16*
  - Prioritize tree replacement and plantings in areas of low canopy coverage to reduce the impact of Emerald Ash Borer damage
  - Proactively pursue increased canopy coverage to improve long-term resilience
- Pursue pervious pavement alternatives
- With the development of City parks and green spaces, ensure accessibility for all residents through connected trails, proximity to low-income neighborhoods, and signage in English and Spanish

Soil and Agriculture

- Create Advisory Board that represents agricultural sector in Northfield, supporting best practice models for carbon reduction farming and equal access and affordability of sustainable food *GSC best practice 16*
- Enable and encourage more community gardens throughout the city *GSC best practice 16*
- Incentivize and reward soil best management practice for urban lawns, gardens, landscaping, parks, open spaces, prairies, environmentally sensitive areas, and agricultural land uses *GSC best practice 16*
- Support creation of local compost process facilities and system to deliver organic material *GSC best practice 22*
- Increase conversation with agricultural producers to support local food systems and ensure sustainable agricultural land use practices, learn with and from community to better improve and achieve community resilience *GSC best practice 27*

Plan Implementation

1. **Build internal capacity (staffing)**
2. **External support (commission, volunteers)**
3. **Funding (financing, public, private)**
4. 1-3-year priority projects
5. Three-year targets



Plan Implementation

Internal Projects	Leaders	Cost Estimate
1. **Build the One-Stop-Shop webpage** on the City's website. This will be a site dedicated to the CAP, providing resources for residents and business leaders to take action, sign-up opportunities for volunteer, event registration, as well as CAP progress and success updates	City staff	$
2. **Complete an assessment of city assets** for carbon reducing opportunities, including: a. Fleet assessment of all city-owned vehicles b. Building benchmarking and asset management study c. Solar site analysis for rooftop and ground-mount opportunities	City staff	$$$
3. A carbon-free city will need to plan for the elimination of fossil fuels in the community, including how to work with community members on fuel switching strategies and to how think **strategically about future infrastructure changes for natural gas and transportation fuels** (e.g., gasoline). The City's internal climate team should begin think about long-term strategies to transition to clean energy with minimal disruption.	City staff	$$

Plan Implementation

Community-wide Projects	Leaders	Cost Estimate
1. Identifying opportunities for on-site renewables to the achieve the 10% in-boundary generation goal • Complete a solar and wind analysis to determine how much renewable energy could be generated locally • Determine the amount of community solar garden subscriptions and green power purchases (Renewable*Connect) needed to support the goal • Add at least 1 MW of renewable energy by 2021	City staff	$$$$$
2. There is enormous potential to store carbon in trees, plants, and soils. This plan identified tree planting as a priority for the community to not only store carbon, but to provide additional co-benefits that come with increased canopy coverage. • Establish annual tree planting goals and identify priority areas in the community for accelerated tree planting and replacement • Create a community-wide tree planting event • Work with volunteers to enhance the existing volunteer tree planting program • Dedicate at least $2/per resident to the city's annual forestry program	City staff	$$$
3. Collaborate with PiE staff, the Energy Task Force, and EQC to execute shared building energy action items, particularly those that address large energy consumers and low-income households.	City staff	$$

3-year Targets

- Assessment of City assets completed and a plan in place to reduce emissions from city operations
- Commitment from large energy users to meet city climate goals
- Building benchmarking program established

- City fleet assessment completed and purchasing policy updated
- Additional public EV infrastructure available in the community

- 1 MW of additional renewable energy
- 8% of businesses and 19% of residences have made deep energy efficiency improvements
- PIE Jump Start goals have been achieved

- 10 miles of additional bike and pedstrian infrastructure (trails, paths, sidewalks)
- Community-wide mobility-sharing program in place

- Urban forestry program established that includes robust tree planting, soil restoration, and other sustainable practices
- Resilience is incorporated into city planning and budget processes

- Zero-waste plan developed and adopted; including a plan for a waste processing facility
- Zero-waste packaging ordinance adopted
- Farm to school program in place


QUESTIONS
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