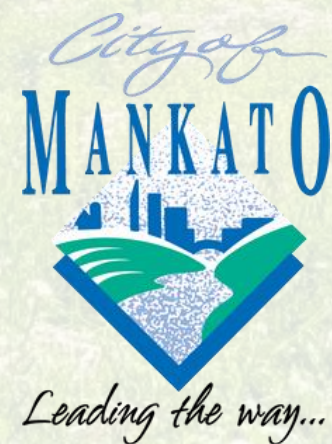


CITY OF MANKATO

CLIMATE ACTION PLAN



www.mankatomn.gov



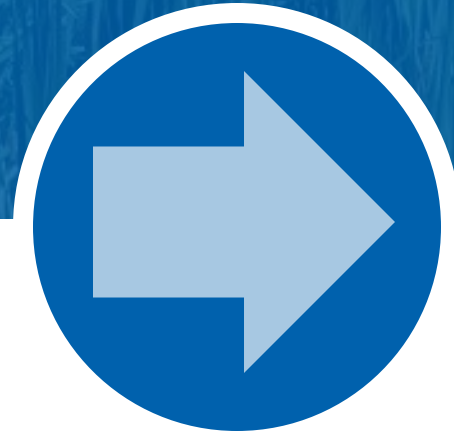
Climate Action Plan Stages



Awareness

Community Engagements:

- March 18
- April 21
- May 19



Consideration

- Community-proposed actions represent ideas based on perceived issues
- Further research required
- Evaluate to determine if aligned with Strategic Plan
- Clear priorities will be identified



Pilot

- Actions have potential viability
- Assess feasibility of implementing actions
- Actions warrant pilot phase



Program

- Actions expected to meet Climate Action Plan, Strategic Plan, Community Needs
- Reviewed for applicability and readiness to be implemented

Essential Services

25 essential services every city needs to function and thrive, especially in the face of climate change and growing inequality according to the United Nations Human Settlements Programme.

**Physical
Infrastructure**

**Cross-cutting
Services**

**Governance &
Planning**

**Environmental
Infrastructure**

**Social
Infrastructure**

UN-Habitat was developed by the UN General Assembly to promote socially and environmentally sustainable towns and cities.

PERIODIC TABLE OF BASIC URBAN SERVICES



Ws Water Supply	Sn Sanitation	Hs Health Services	Ed Education	Ps Public Safety
Sw Stormwater Management	Wm Waste Management	Sp Social Protection	Re Recreation (parks etc)	Cc Community Centres
En Energy	Hi Housing Infrastructure	Gi Green Infrastructure	Bi Blue Infrastructure	Aq Air Quality Monitoring
Tp Transport	ICT Information & Comms	Zu Zoning & Urban Land Use	Up Urban Planning	Es Ecosystem Services
Cs Climate Services	In Inclusion Services	Dr Disaster Risk Reduction Systems	Go Governance Infrastructure	Ft Financing Tools

Environmental Justice

RECOMMENDATIONS:

- Create Emergency Response Toolkit for residents to increase their emergency preparedness
- Develop communication plan to reach vulnerable populations with limited access to the internet, have language barriers or disabilities
- Create an accessible guide for vulnerable communities to access basic and emergency services
- Partner with community networks to test strategies that support vulnerable populations



Social Vulnerability Index

Socioeconomic Status

Below 150% Poverty

Unemployed

Housing Cost Burden

No High School Diploma

No Health Insurance

Household Characteristics

Aged 65 & Older

Aged 17 & Younger

Civilian with a Disability

Single-Parent Households

English Language Proficiency

Racial and Ethnic Minority Status

Hispanic or Latino (of any race)

Black or African American, Not Hispanic or Latino

Asian, Not Hispanic or Latino

American Indian or Alaska Native, Not Hispanic or Latino

Native Hawaiian or Pacific Islander, Not Hispanic or Latino

Two or More Races, Not Hispanic or Latino

Other Races, Not Hispanic or Latino

Housing Type and Transportation

Multi-Unit Structures

Mobile Homes

Crowding

No Vehicle

Group Quarters

Social Vulnerability

RECOMMENDATIONS:

- Evaluate transportation networks in highest vulnerability areas
- Evaluate access to critical services in highest vulnerability areas
- Identify food deserts characterized by lack of grocery stores and access to fresh foods

Critical Services and Critical Infrastructure

RECOMMENDATIONS:

- Identify critical infrastructure and conduct assessments to determine vulnerabilities
- Develop facility specific flood risk analysis
- Development plans to ensure critical facilities continue to provide vital services during and after extreme weather events
- Identify emergency shelters, including cooling and heating shelters

Parks - Recreation and Food Programs

RECOMMENDATIONS:

- Evaluate feasibility of a permanent Farmers' Market location, including four-season market
- Develop conservation plan for existing green spaces; open City owned land
- Develop a native species/desired species vegetation plan
- Evaluate potential partnerships with community groups to create vegetation planting, gardening and composting events/classes
- Support community farms, local food systems and food production programs
- Support cooking, pollinator friendly vegetation classes/workshops in libraries and neighborhood parks
- Re-evaluate the City's code of ordinances to allow urban chickens



Community Livability

A livable community is one with multiple modes of transportation, different types of housing and destinations located within an easy distance of homes.

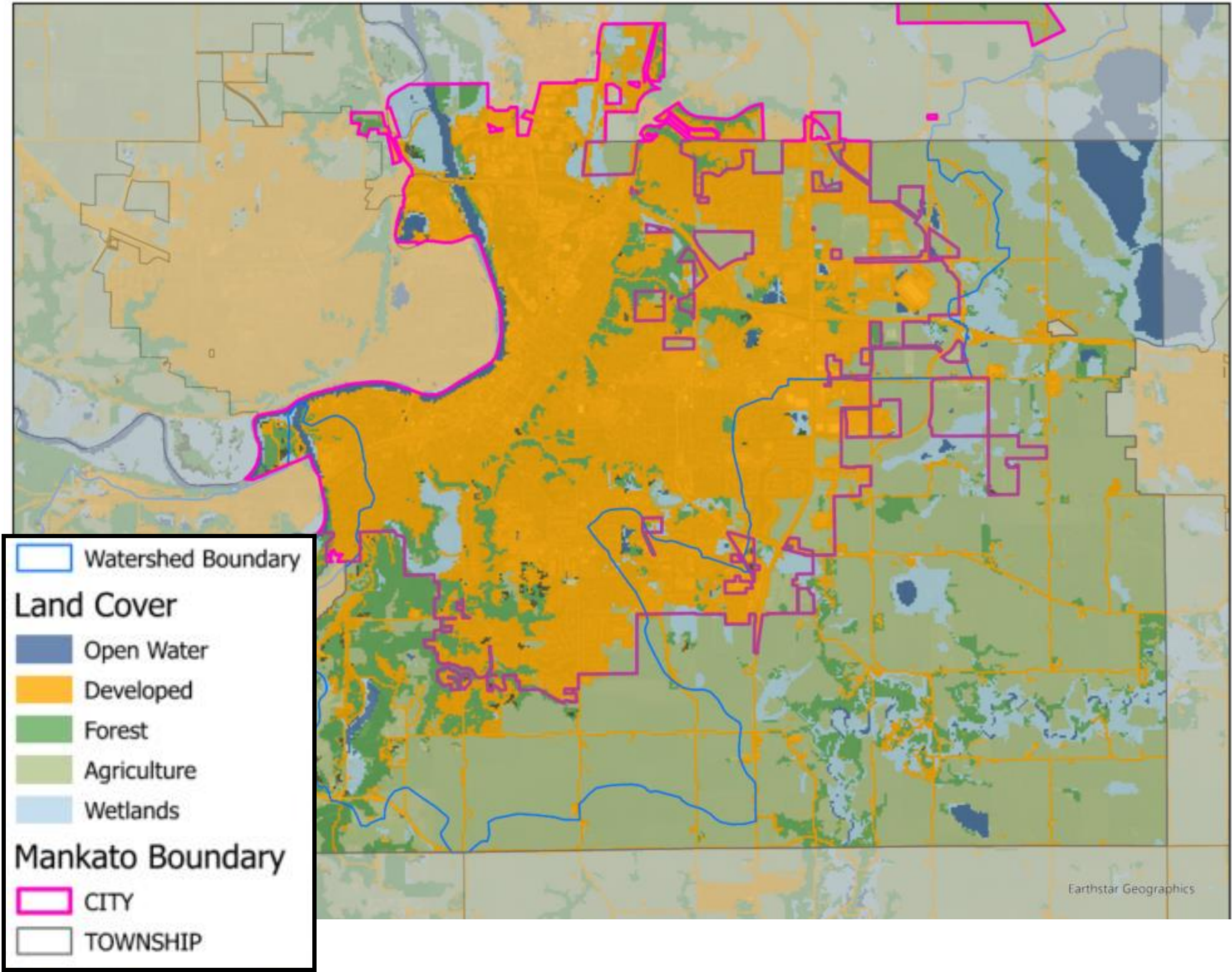
RECOMMENDATIONS:

- Develop a walkability plan for downtown and commercial districts
- Support affordable family home subdivisions
- Centralize economic development along high-use corridors such as Madison Avenue, Riverfront Drive and Stadium Road, developing walkability/bikeability plans
- Educate developers on potential grant funding sources for sustainable development practices

Land Use

Land use decisions directly affect community health and the environment. In Mankato, land use analysis tracks impervious surface (*hard surfaces that prevent water from soaking into the ground like roadways and sidewalks*) growth and its impact on natural resources.

Land Use by Type		
	Area (Acres)	Ratio %
City of Mankato	12,735	--
Impervious/Developed	9,209	72%
Wetland	628	5%
Open Water	281	2%
Forest	877	7%
Agriculture/Crop	1,681	13%



Land Use

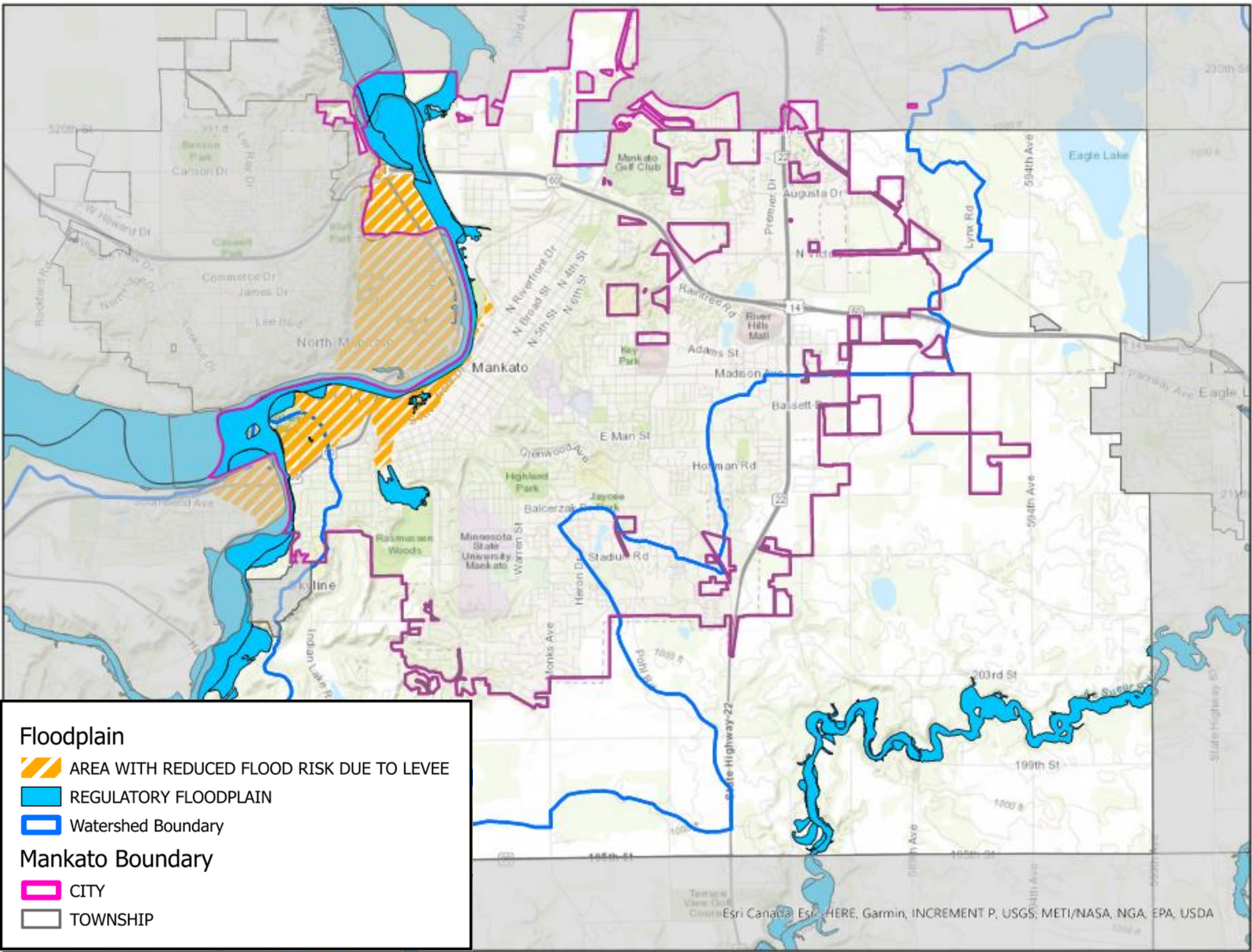
RECOMMENDATIONS:

- Continue to update protection and conservation methods, including limitations on new development within wetland, floodplains and forest areas
- Identify wetland, floodplain, and forest restoration opportunities
- Develop a Natural Resource Inventory to track gains and losses of wetlands, forest and open water
- Develop an inventory of City owned parking lots and buildings to evaluate impervious surfaces retrofit opportunities
- Increase urban tree and prairie planting density, using natural ecosystem services to capture carbon and reduce heat island effects

Floodplains

Floodplains are analyzed based on the National Flood Hazard Layer provided by FEMA. The data has been used to understand the level of flood risk and type of flooding in each area.

Floodplains		
	Area (Acres)	Ratio %
City of Mankato	<u>12,739</u>	==
Minnesota River Regulatory Floodplain	<u>658</u>	<u>4%</u>
Area with reduced flood risk due to Levee	<u>490</u>	<u>5%</u>



Floodplains

RECOMMENDATIONS:

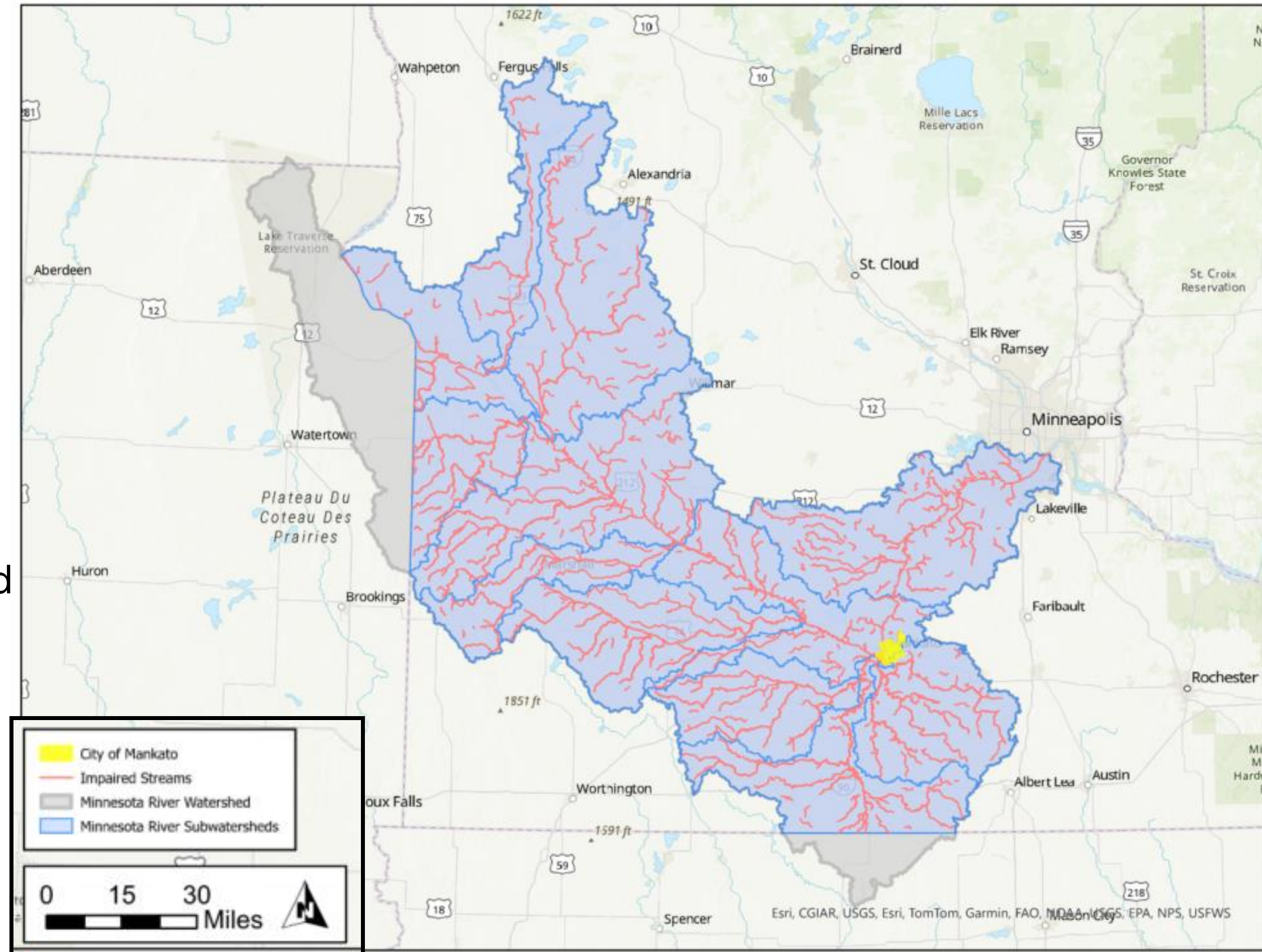
- Analysis of riverine floodplain restoration opportunities within the City, including stream buffers, stream bank erosion mitigation and ecological habitat enhancement
- Incorporate floodplain restoration into stormwater management projects
- Evaluate opportunities on City owned land and properties within the floodplain
- Inventory infrastructure within regulatory floodplains and vulnerability analysis.
- Expand existing stormwater retention areas within floodplains and heavily developed areas

Water Management

Minnesota River Watershed

- 860,000 Acres
- 1,564 Miles of Streams

The watershed is diverse in landscape, topography and land use. As such the goals and values of water quality vary across the watershed, making consensus a challenge.



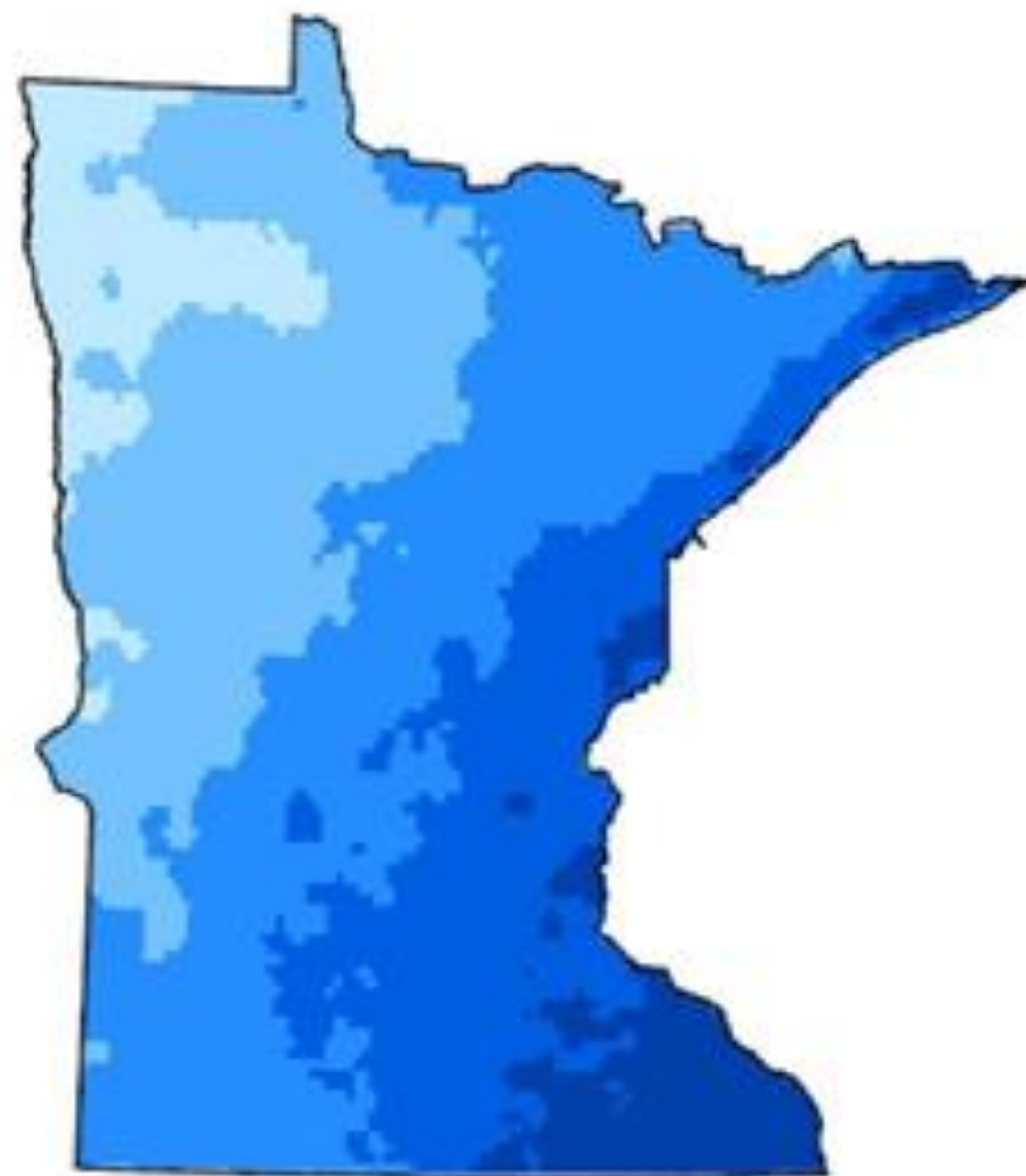
Water Quality and Wetlands

RECOMMENDATIONS:

- Analyze water quality parameters to identify best management practices as part of watershed specific and permanent stormwater management projects and improvements
- Seek partnerships with local soil and water conservation groups to educate landowners to implement agricultural and urban best management practices
- Consider a rate differential for irrigation water to discourage unnecessary water usage
- Wetland analysis to identify wetland restoration opportunities
- Continue to seek funding for implementation of the South Mankato wetland restoration project



Projected Difference in Annual Average Precipitation by End-of Century (2080 - 2099)



Intermediate Emissions Scenario
(SSP 245)



Very High Emissions Scenario
(SSP 585)

Difference (in.) from Historical Simulations (1994-2014)



**Stormwater
Management
Green and Blue
Infrastructure**

Stormwater Management

RECOMMENDATIONS:

- Develop a stormwater resilience plan that includes analysis of existing infrastructure, vulnerability assessment, flood risk analysis, climate projections
- Incorporate stormwater reuse and bioretention practices in City owned facilities and properties
- Build water storage into City parks and lands including rain gardens, vegetated swales, bioretention cells
- Integrate green infrastructure into roadways and street reconstruction projects
- Improve soil health by reducing use of nutrients, fertilizers and herbicides
- Re-evaluate code of ordinance to diversify lawns and increase native vegetation (trees, shrubs, vegetables and flower gardens)

Green and Blue Infrastructure

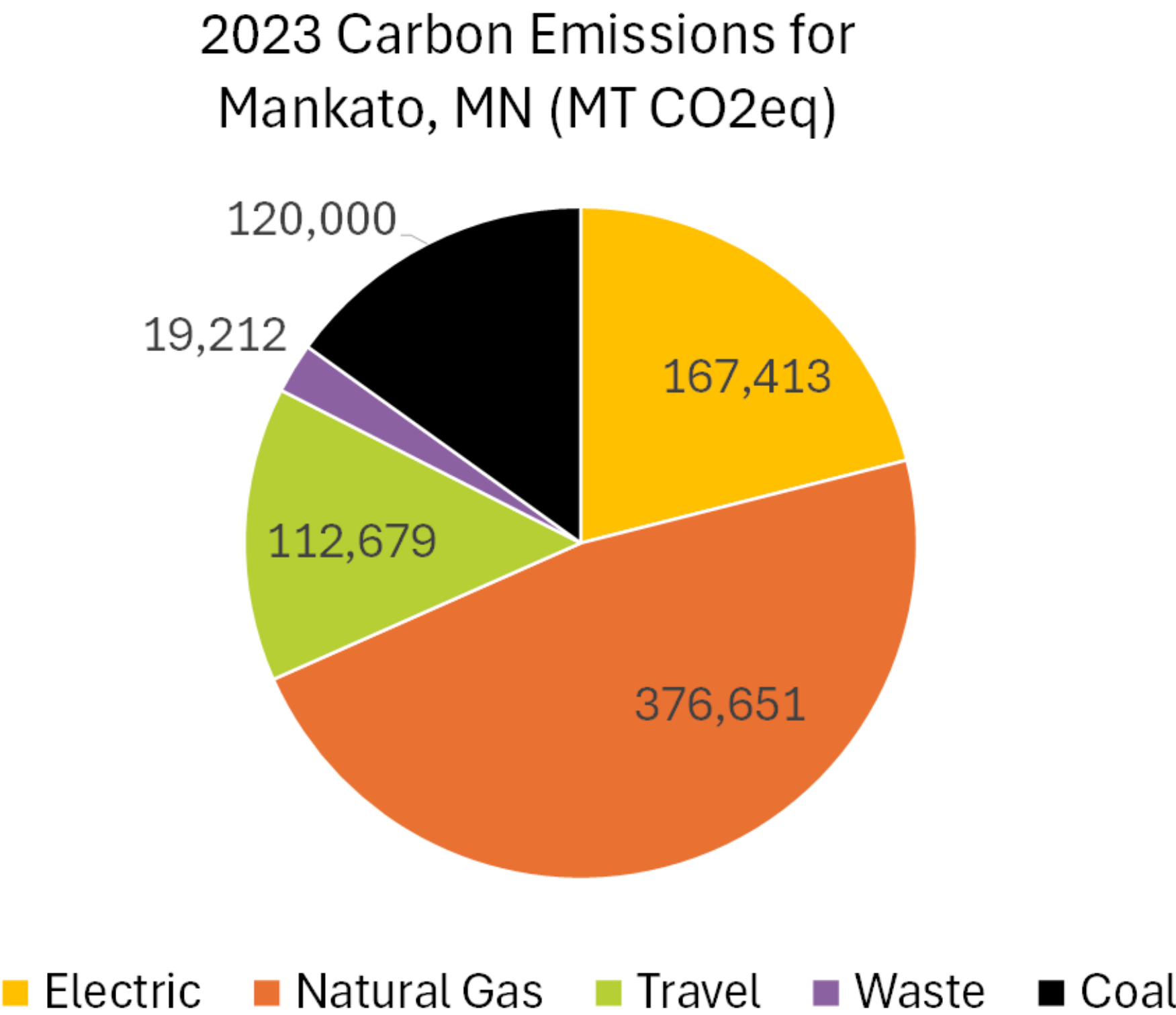
RECOMMENDATIONS:

- Integrate vegetation and urban trees into roadways and street reconstruction projects
- Integrate tree trenches into street and parking lot development and redevelopment projects
- Replace mowed grass areas along City streets and roadways with native vegetation including wildflowers, providing habitat for pollinators
- Evaluate bus stops tree coverage and integrate tree planting with Transportation Improvement Plan

Greenhouse Gas Emissions

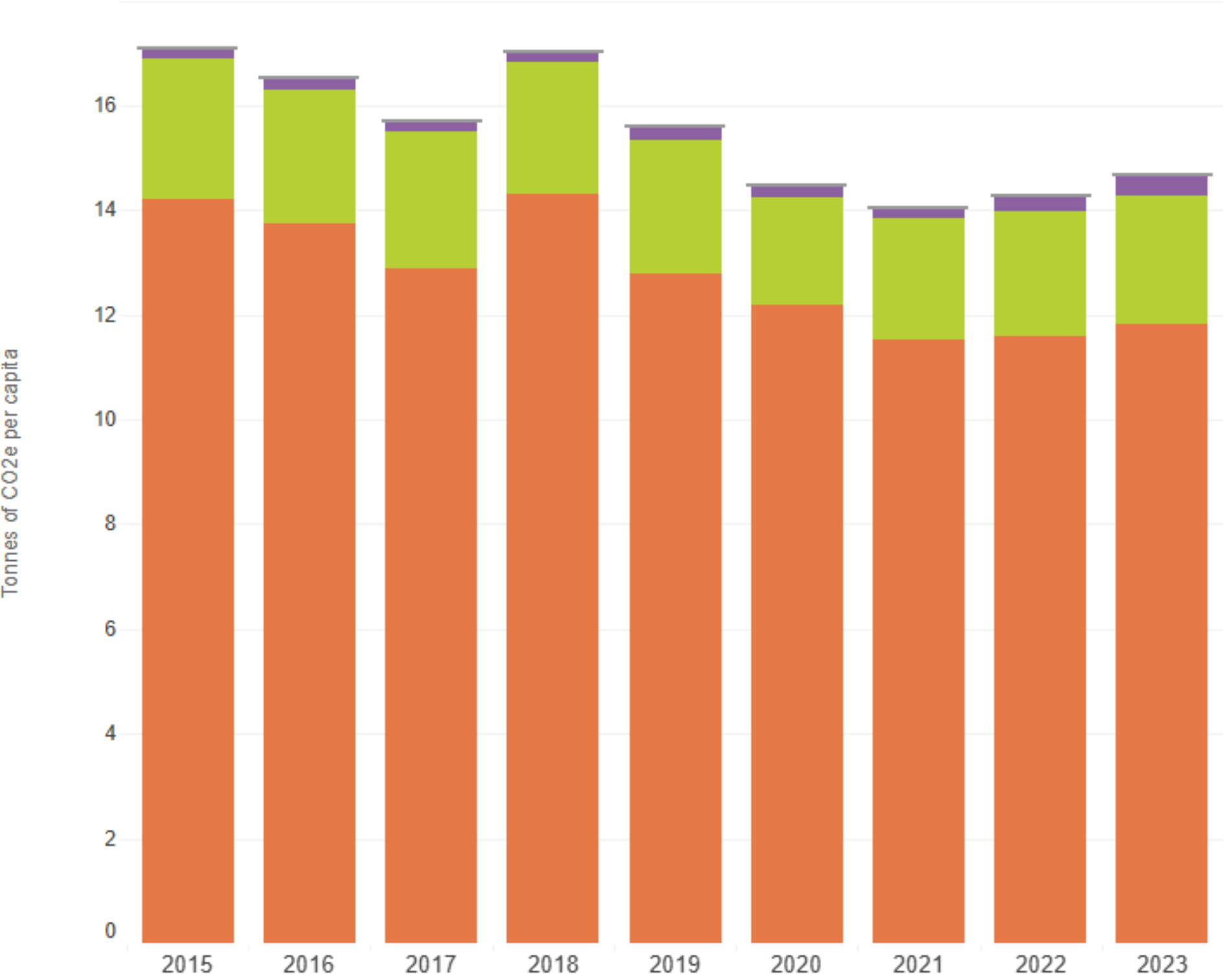
We reviewed historical, current emission inventories, their trends and community comments.

Note: 2023 was the last complete year that coal was used in Mankato.



Greenhouse Gas Emissions

community-wide greenhouse gas emissions from building energy, vehicle travel, and the management of municipal solid waste



Key

Waste

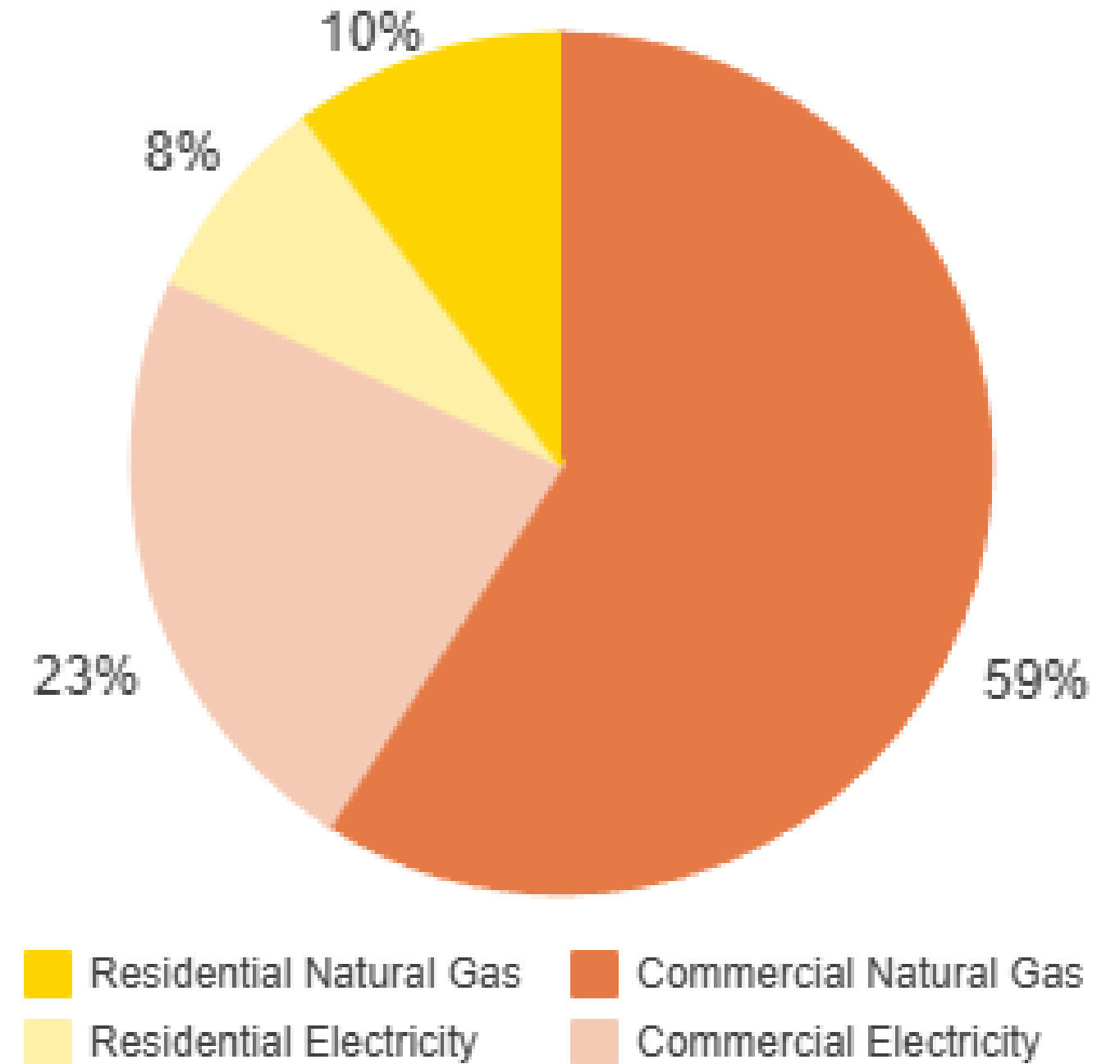
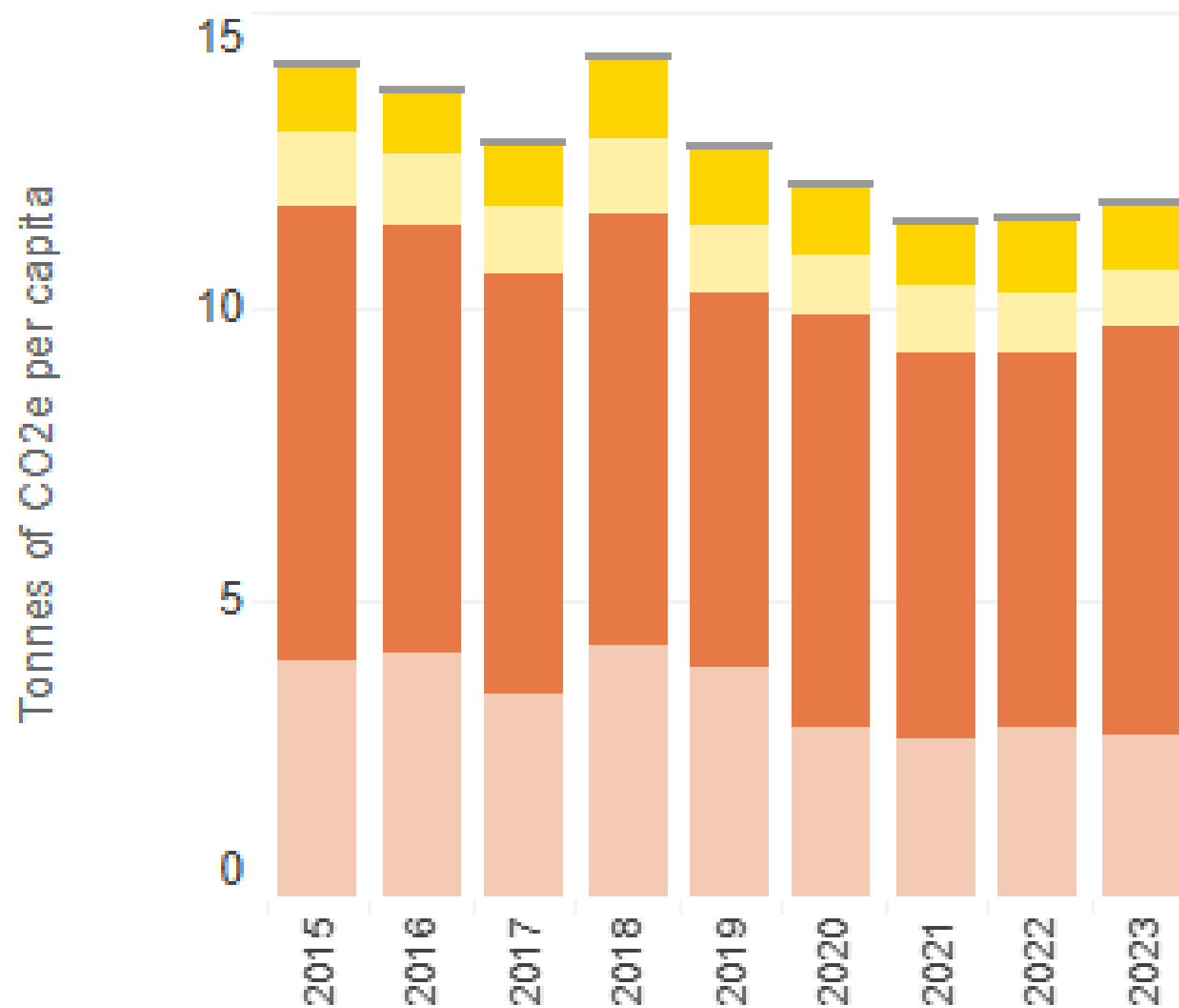
Travel

Energy



**The Regional Indicators Initiative provides local governments and community members with city-wide data and tools to inform their climate planning and action.*

Energy Emissions

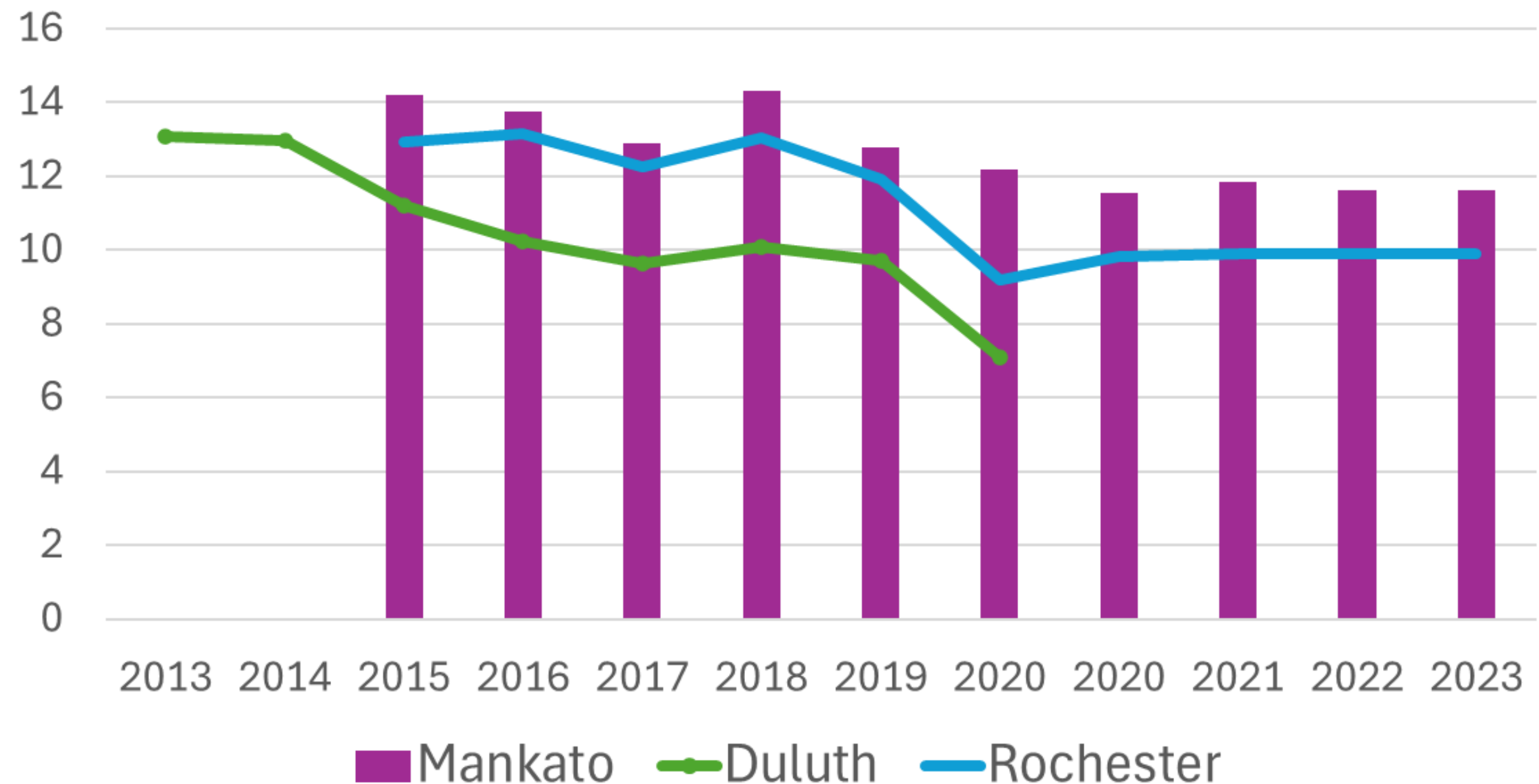


- Residential gas use up about 10%
- Residential electric use down about 10%
- Commercial gas use unchanged
- Commercial electric use down 25%

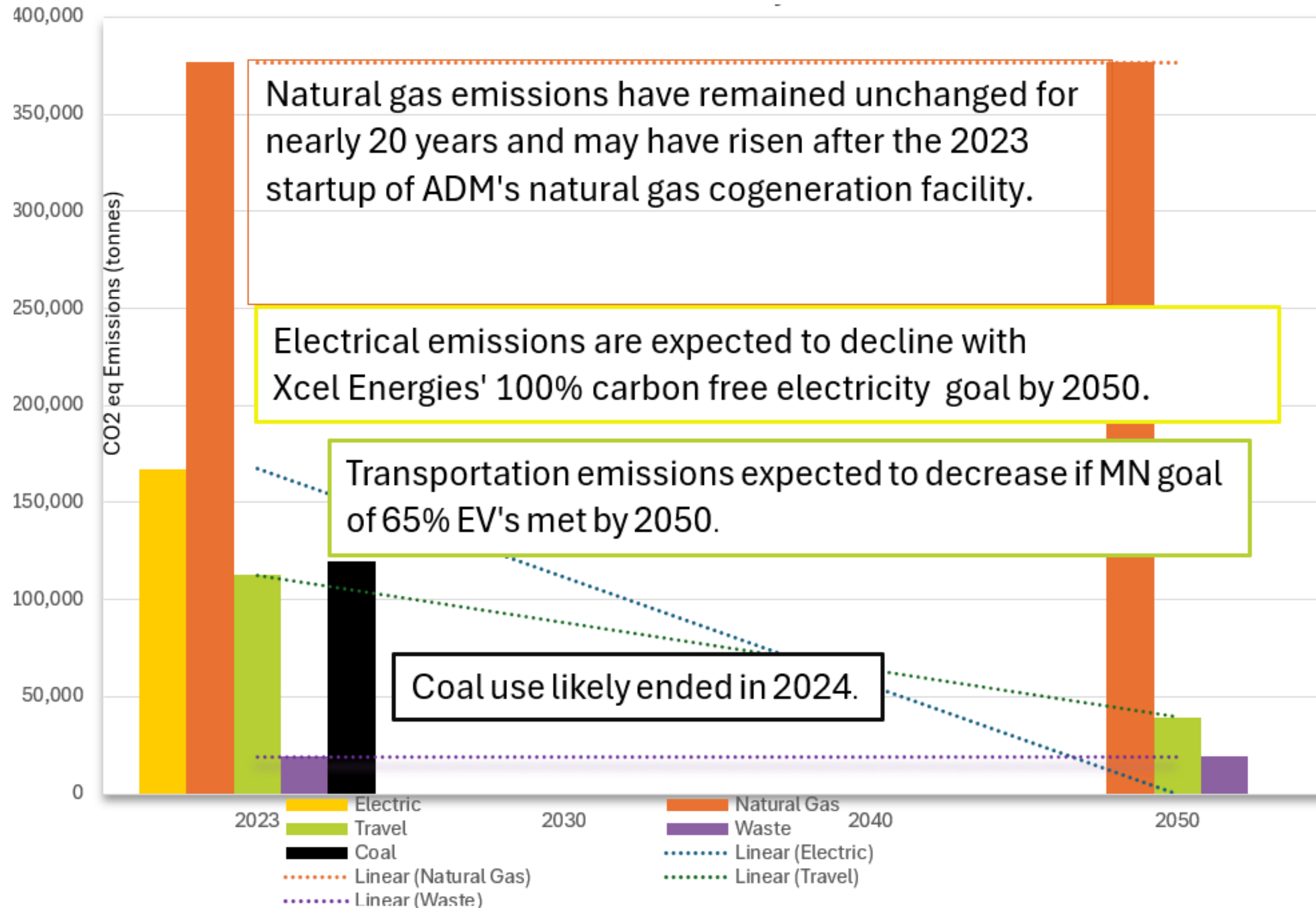
Energy Emissions

- **Mankato** trends similar to Duluth and Rochester
- **Mankato** *decreased* energy emissions about **10%** since 2015

City of Mankato Emissions Trends
Compared with Similar Minnesota
Communities (MT/Person/Yr)



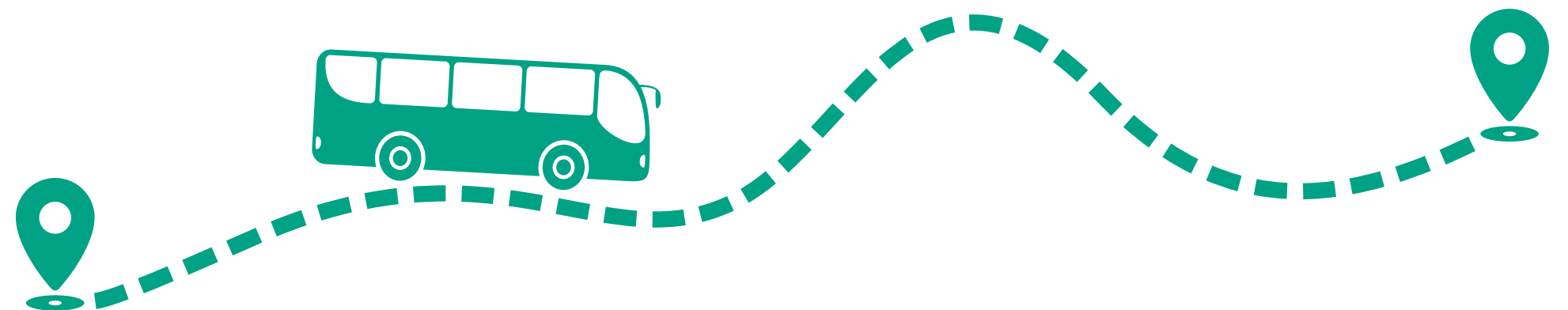
Mankato Emission Projections



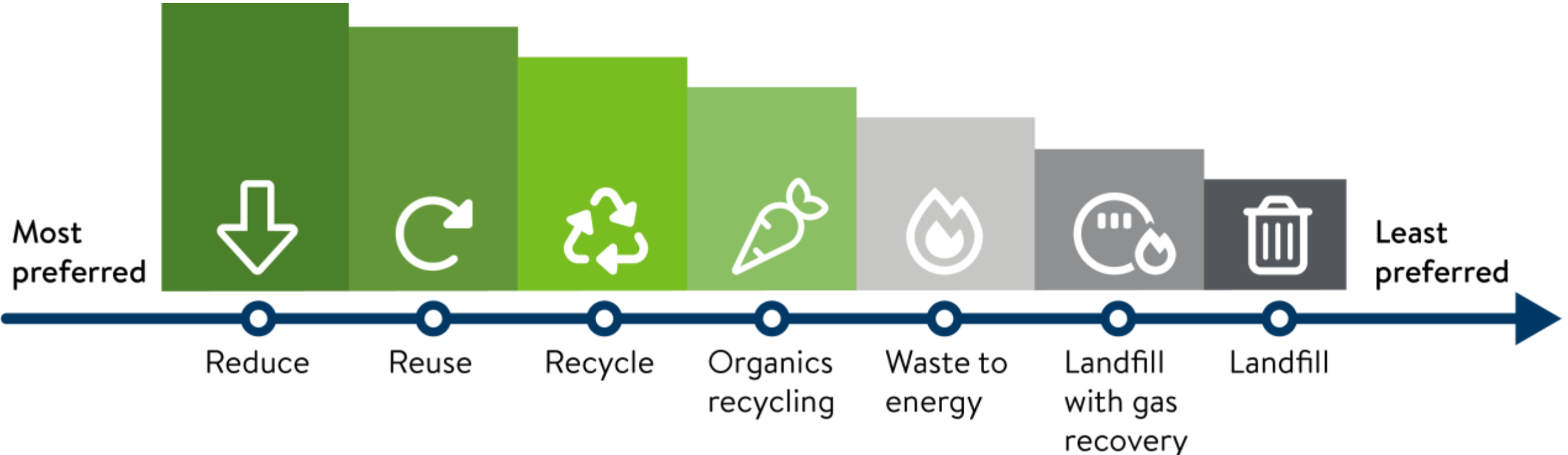
Energy Emissions

RECOMMENDATIONS:

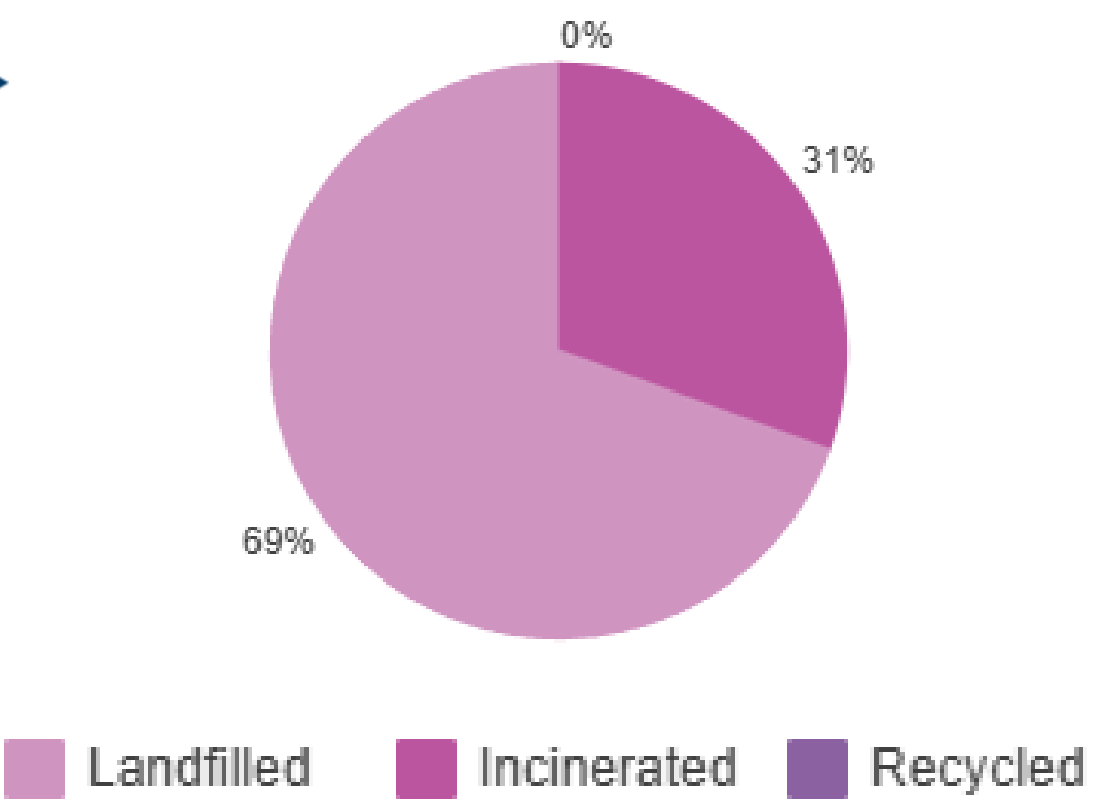
- Continue identifying funding opportunities to enhance the City's fleet with alternative energy vehicles
- Improve energy efficiencies of existing buildings and systems as budgets allow through equipment and management software upgrades
- Consider updating City ordinances regarding acceptable use of "last mile" transportation alternatives
- Consider development of sustainable materials procurement plan which can reduce the impact of material procurement, use and re-use/disposal



Minnesota's Waste Management Hierarchy



Management of municipal solid waste generated within City boundaries

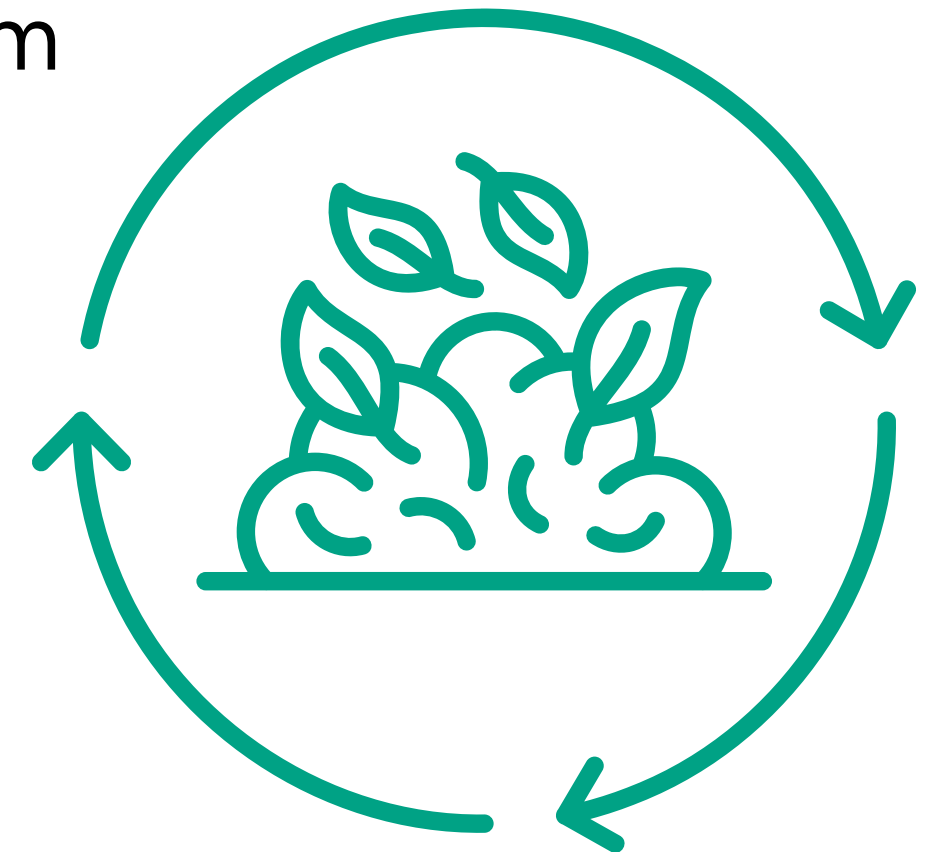


NOTE: 0% recycled due to recyclables processed outside City limits

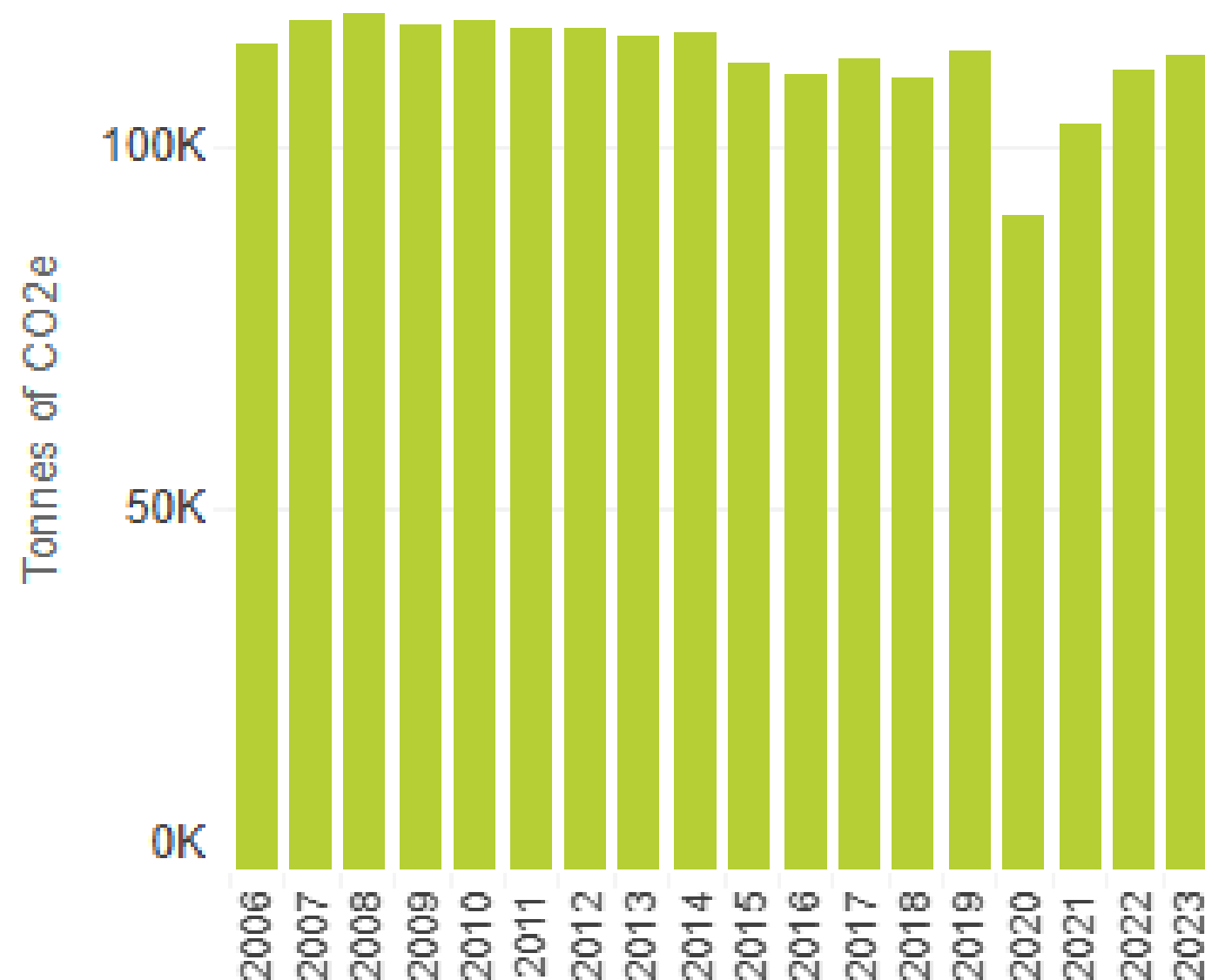
Waste Management

RECOMMENDATIONS:

- Identify local initiatives to increase participation in recycling programs
- Educate community on effects of using single use plastic bags and Styrofoam
- Evaluate additional options for community composting programs
- Continue supporting Blue Earth County compost bin program



Transportation



In-town travel in Mankato has returned to pre-pandemic levels

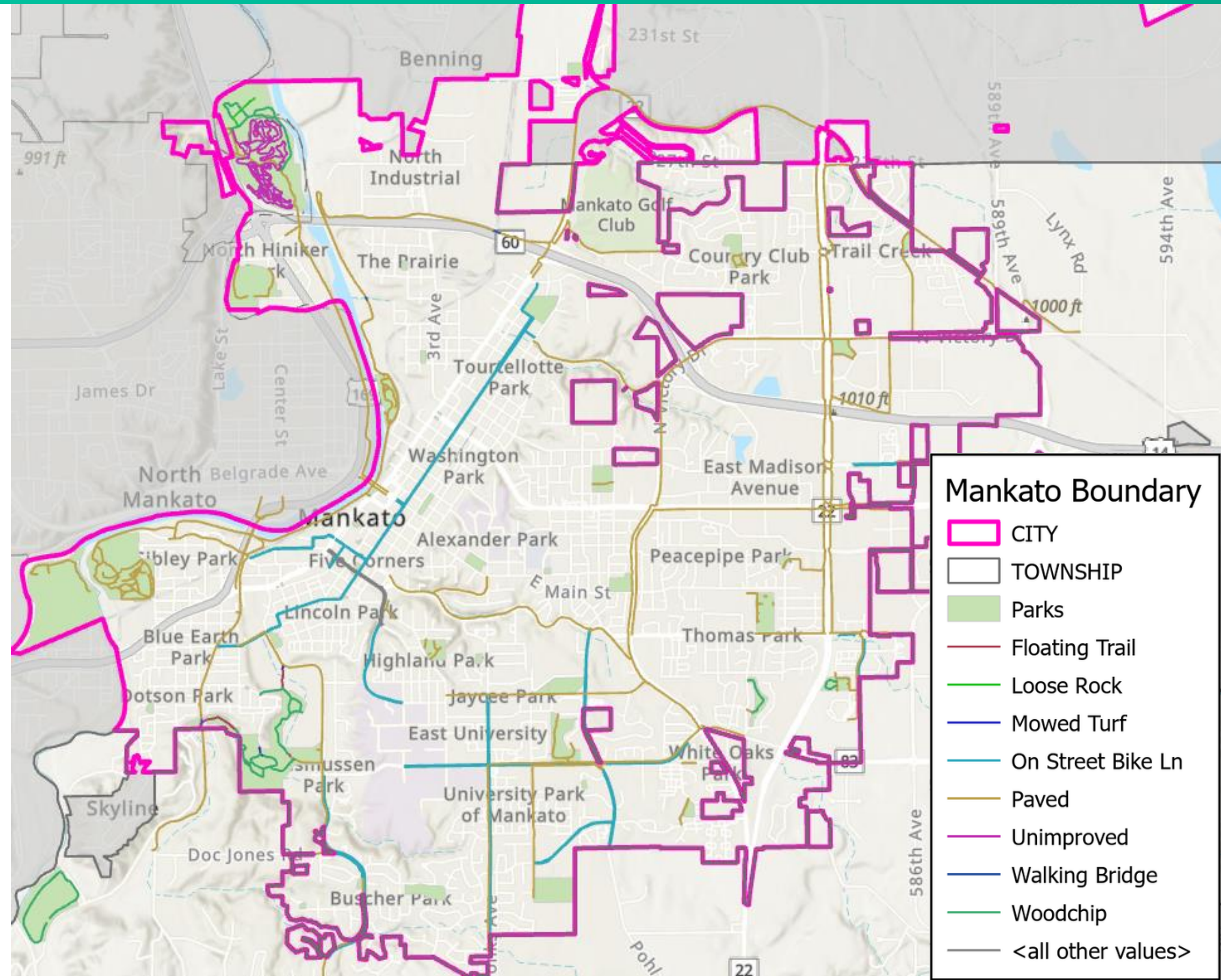
- Public transportation
- Personal vehicles
- Low emission vehicles
- Electric vehicles and charging stations
- Biking corridors

RECOMMENDATIONS:

- Evaluate the feasibility of a microtransit system to increase ridership, reduce emissions and improve service
- Continue to expand City's hybrid and electric vehicles fleet
- Monitor grant programs for opportunities to upgrade the City's fleet or charging infrastructure
- Support continued expansion of electric vehicle charging stations

Biking Corridors

Investments in transit and infrastructure for pedestrian and cyclist help lower emissions and offer additional benefits making communities healthier and more options for travel.



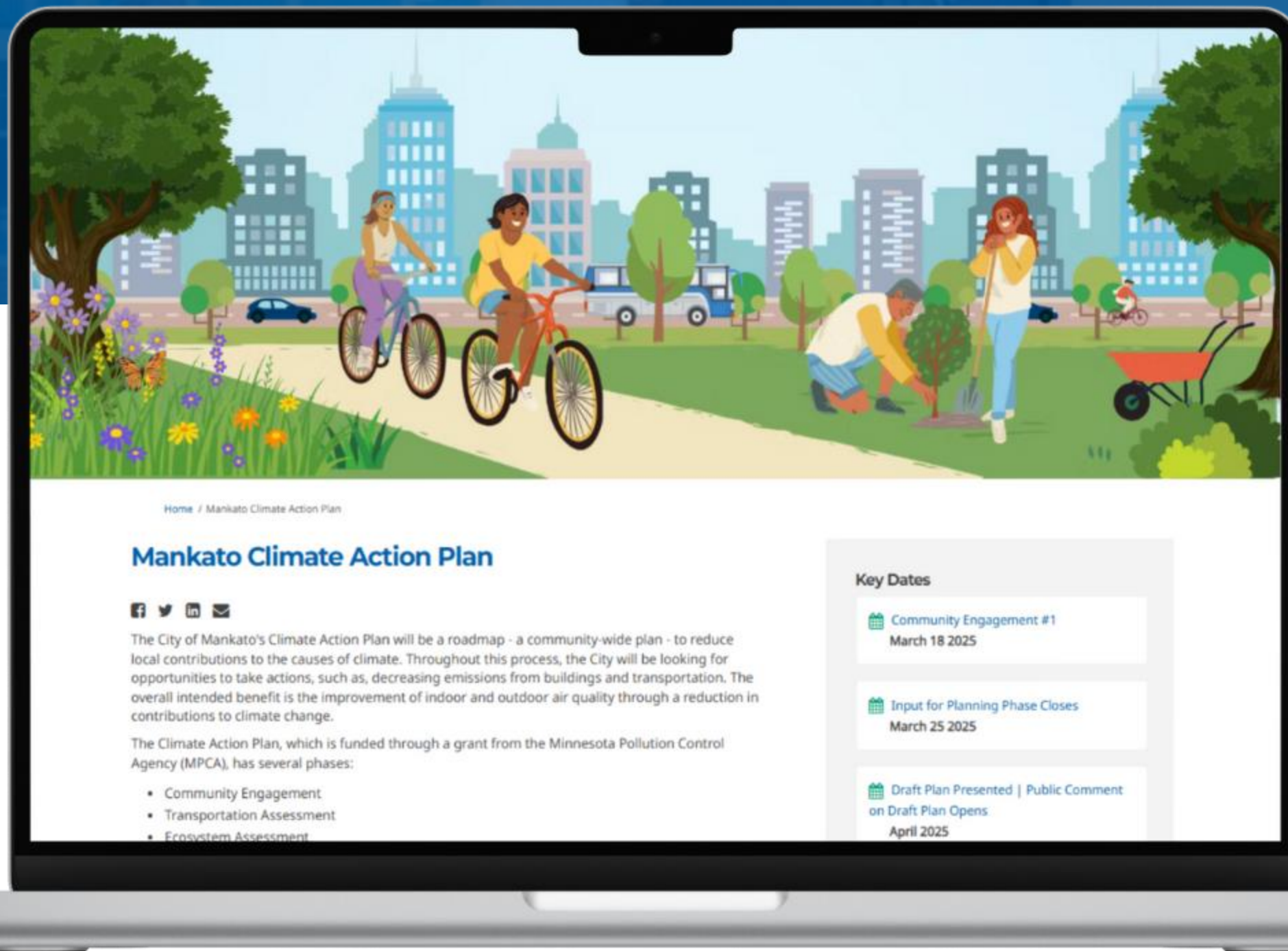
Biking Corridors

RECOMMENDATIONS:

- Analyze upcoming road reconstruction projects for the opportunity to incorporate additional bike lanes
- Further analyze and develop metrics by neighborhood to assess the need and benefit of providing more bike lane infrastructure
- Seek opportunities to provide bike parking in common destination areas to encourage biking as an alternative mode of transportation



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everyvoice.mankatomn.gov