Welcome to the

Rochester Climate Action Plan

Open House

Efficient.

Connected.

Clean.

Healthy.

Inclusive.

Reducing greenhouse gas emissions for a resilient and sustainable future.

Believe.

sustainable rochester

Bergmann associates
architects // engineers // planners

brendle GROUP

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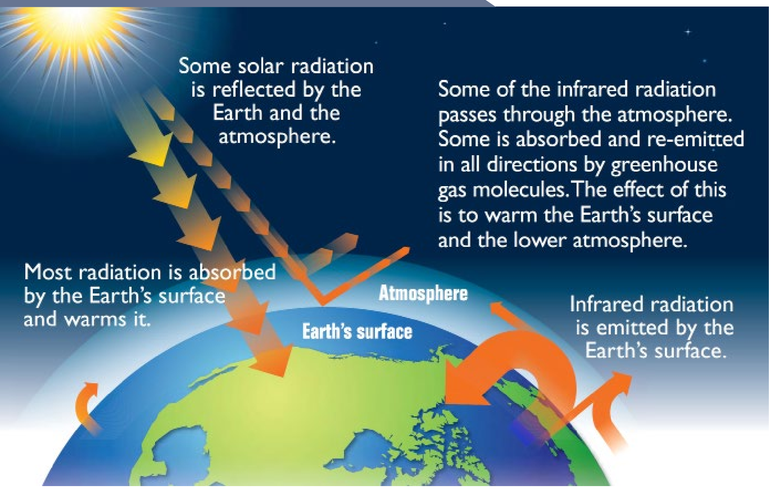
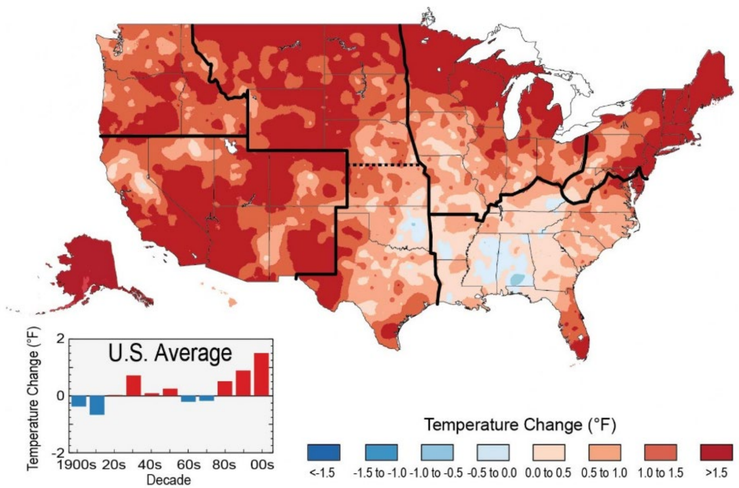
Rochester City Council

① Science of Climate Change

The Greenhouse Effect

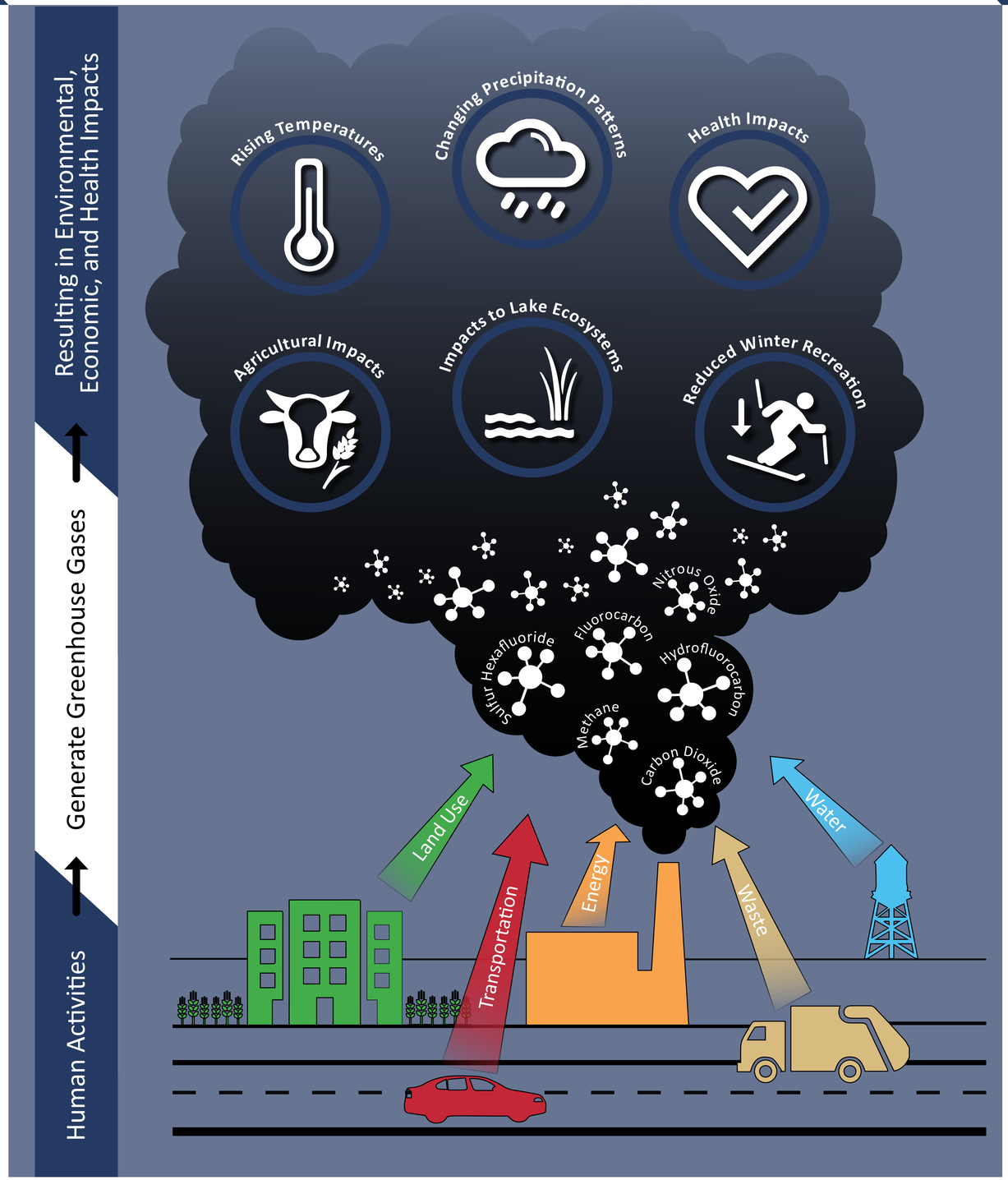


Temperature Changes from 1991-2012



US temperatures have warmed by 1.3 to 1.9 degrees since 1895, with the most increase since 1970. The colors on the map show temperature changes over the past 22 years. The bars on the graph show the average temperature changes by decade.

Impacts of Climate Change



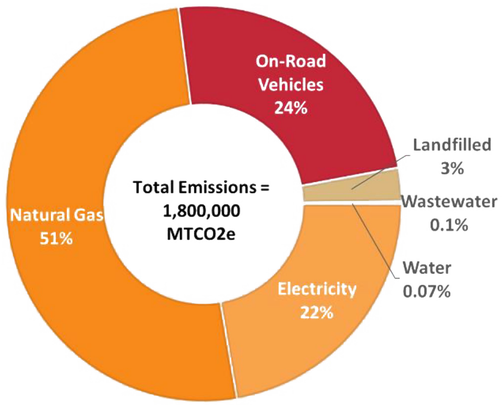
Benefits of Climate Action

- Local job creation and economic development
- Improved air quality and public health
- Reduced utility costs for homes and businesses
- Diversified energy supply
- Improved water quality and ecosystems
- Improved risk management and resiliency

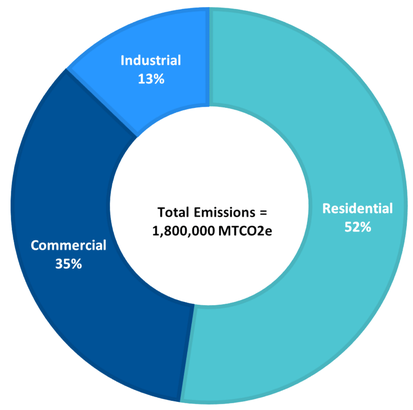
② Where are we now?

Rochester's total emissions were **1.8 million MTCO2 in 2014**, which is the equivalent of 380,000 passenger vehicles being driven in any given year or the energy used by 190,000 homes for one year. The figures below summarize the total GHG emissions for 2014 by source/activity, as well as the overall trends in emissions since 2010.

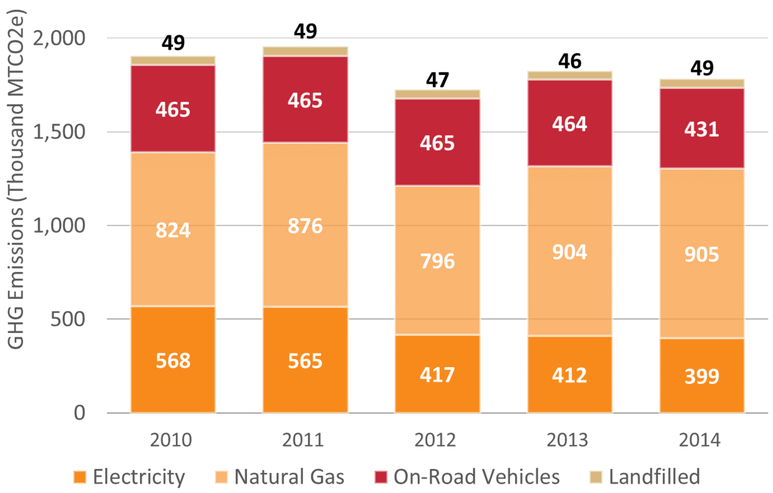
Emissions ***Sources/Activities***:



Emissions by ***Sector***:



Historical Emissions **Trend** by Source/Activity, 2010-2014



Where do we want to be?

Rochester's Greenhouse Gas Emissions Reduction **Goals**

by 2020
20%
reduction in GHG emissions
from 2010 baseline

by 2030
40%
reduction in GHG emissions
from 2010 baseline

Goals in Other **Communities**

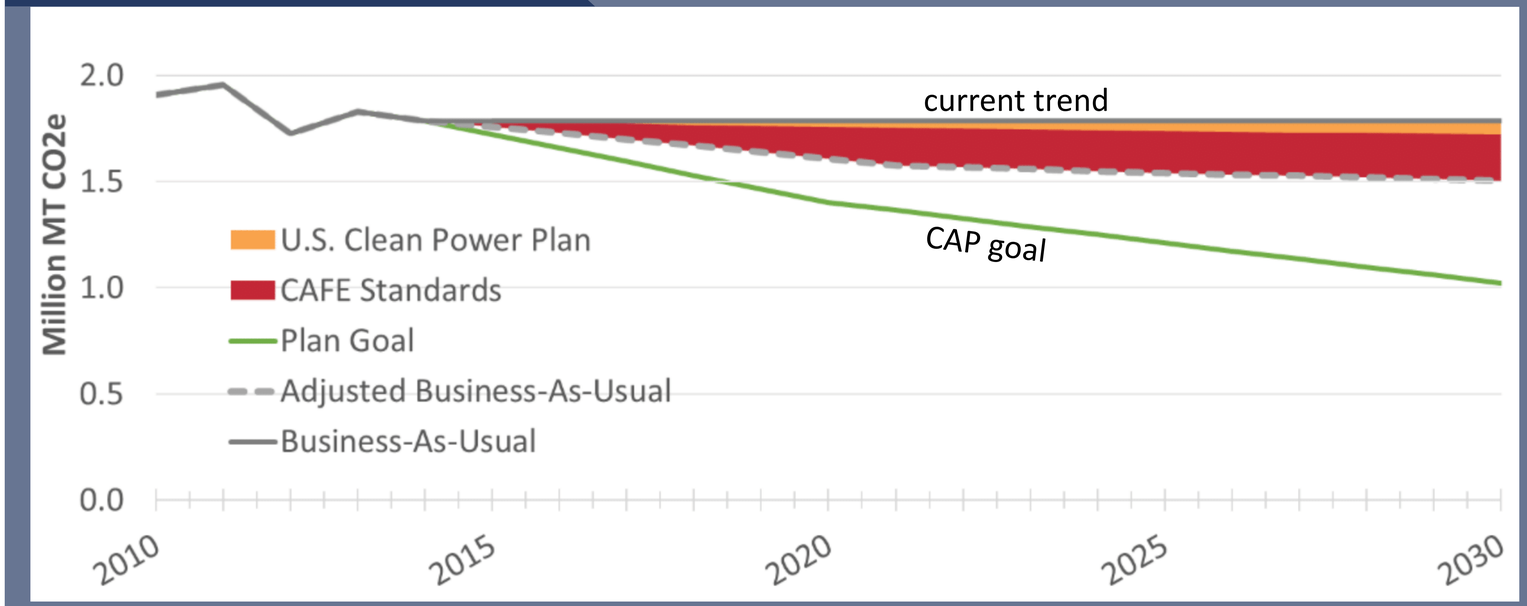
Minneapolis, MN
↓ **30%** by **2025**

Cincinnati, OH
↓ **40%** by **2028**

Atlanta, GA
↓ **40%** by **2030**

Washington, DC
↓ **50%** by **2032**

Future **Goal** versus Current **Trend**



③ How do we get there?

The Climate Action Plan includes an implementation framework designed to achieve community-wide goals for greenhouse gas reduction and sustainability. The CAP is organized around a unifying framework that ties together a multitude of inputs including:

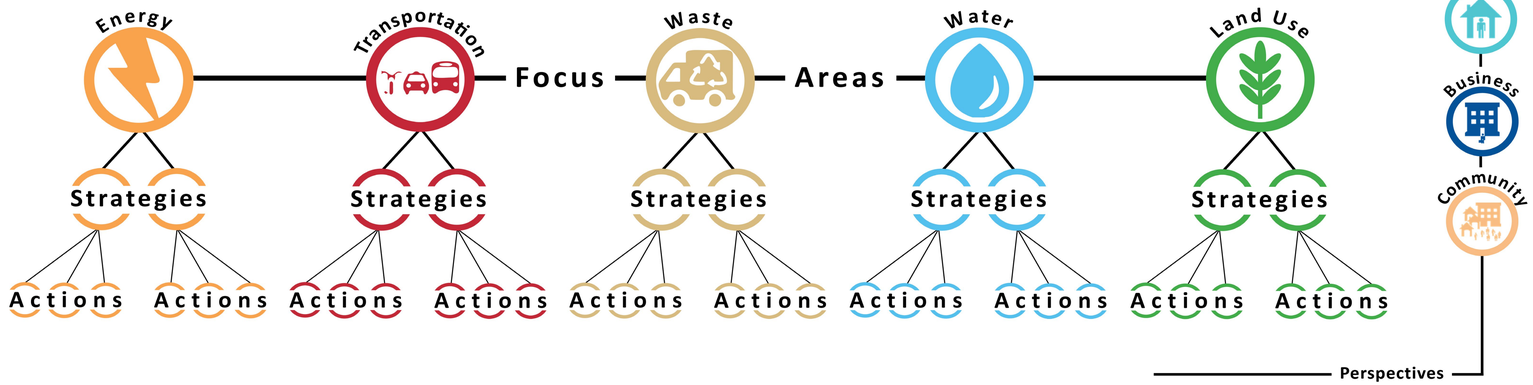
- technical analysis
- policy evaluation
- stakeholder engagement

FRAMEWORK

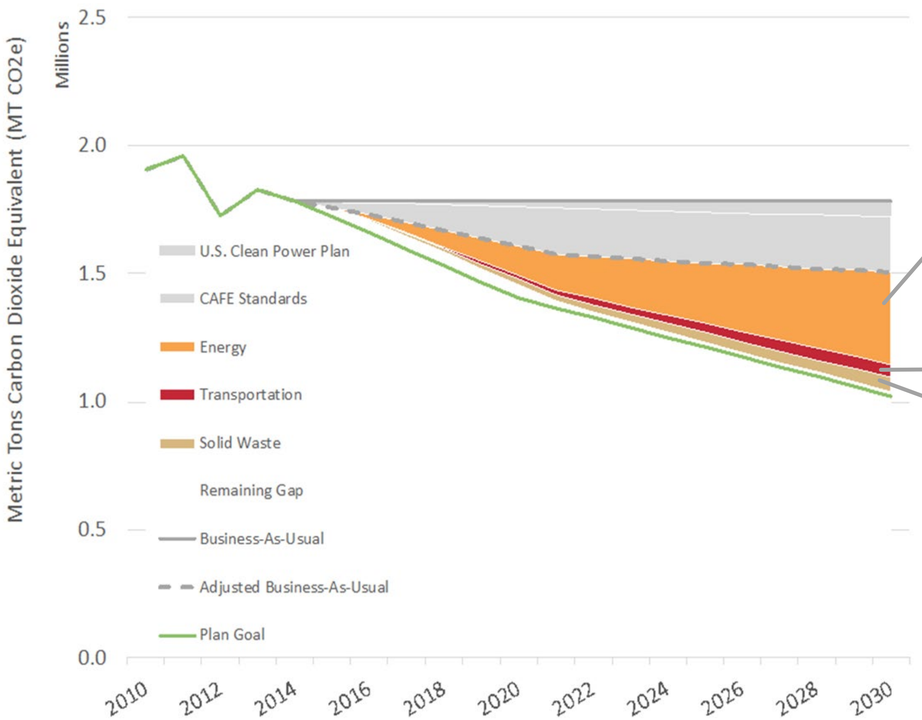
Efficient. Connected. Clean. Healthy. Inclusive.

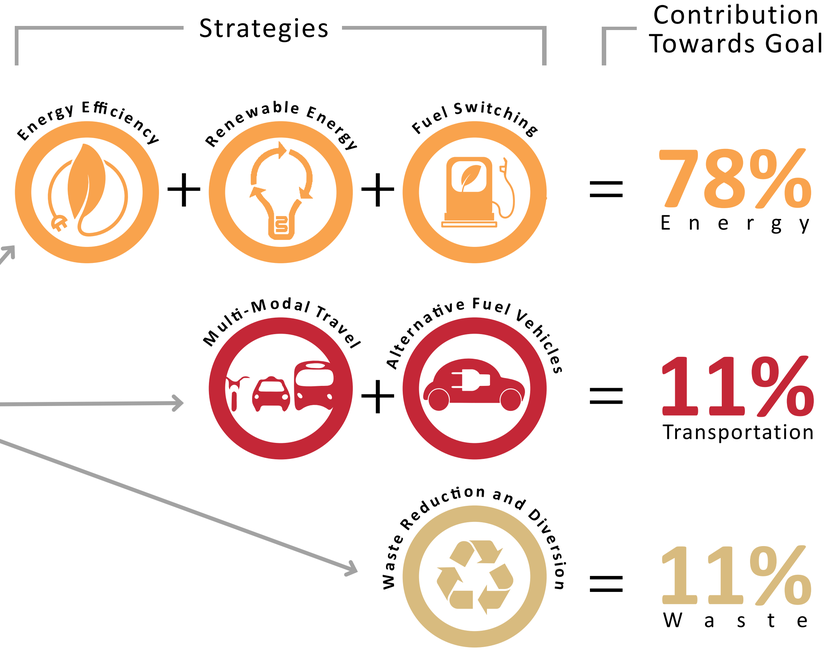
Reducing greenhouse gas emissions for a resilient and sustainable future.

Vision



Contribution to Emissions Reduction





Greenhouse Gas Equivalents

What does reducing CO_2 emissions mean in every day terms?

1 MT CO_2 = 41 propane tanks used for BBQ

1 MT CO_2 = 2,397 miles driven by the average passenger vehicle

10 MT CO_2 = 1 home's energy use for one year

$MTCO_2e$ is the term for the quantity of any greenhouse gas translated to an equivalent quantity of CO_2.

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Energy

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Strategies

Energy Efficiency

If a 25 percent reduction in home and business energy use is achieved city-wide by 2030, a cumulative **reduction of 1.9 million MT CO_2e** will be realized.

Renewable Energy

If the City is able to achieve a 1 percent annual adoption of renewable energy by residents and businesses by 2030, a cumulative **400,000 MT CO_2e could be eliminated** from Rochester's contributing emissions.

Fuel Switching

If 1 percent of Rochester residents and businesses participate in fuel switching annually, by 2030 a cumulative **540,000 MT CO_2e could be removed** from the community's emissions.

Actions

Rental Property Energy Efficiency Program
address barriers to investment in rental properties; require upgrades at time of certification

Homeowner Energy Efficiency Program
provide education and technical assistance about funding and rebate programs

PACE Commercial Financing
help commercial property owners finance capital costs of energy efficiency improvements

Voluntary Commercial Building Benchmarking and Disclosure Program
track private sector building energy use

Energy Density Map
map energy density/intensity by neighborhood or district to inform program prioritization

Sustainable Development Guide
materials that inform sustainable design practices for new development in the city

Building-scale Renewable Energy
increase the adoption of rooftop solar installations by residents and businesses

Utility-scale Renewable Energy
identify options for increasing the level of renewable energy within the city's supply

Municipal Climate Action Plan
implement a variety of actions across focus areas such as energy, transportation, and waste

Targeted Energy Outreach
develop targeted programs for reaching specific commercial/institutional groups

Community Shared Solar
aggregate customer demand by allowing shared ownership of a system

Community Choice Aggregation
energy procurement model that pools demand and replaces the utility with the municipality as the default supplier

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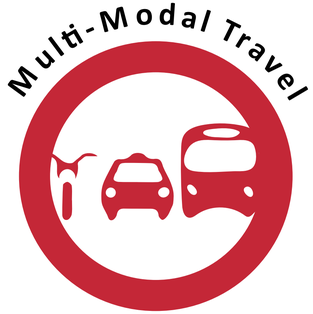
Transportation

Strategies



With an aim to reduce vehicle miles traveled one percent per year through implementation of the CAP, the Rochester community could **reduce emissions 350,000 MT CO_2e** by 2030, the equivalent of a cumulative 1.7 million mile reduction in automobile travel.

If the Rochester community can increase the average fuel economy of the community's vehicle stock by 2 percent annually (over already established federal efficiency standards), while also achieving a target for 3 percent of all new vehicles purchased in the city to be alternatively powered, a **reduction of 50,000 MT CO_2e** by 2030 can be achieved.

Actions

Alternative Fuel Vehicle Education
raise awareness about tax credits and other benefits of electric and alternative vehicle options

City-wide EV Charging Station Access
increase ease of use of electric vehicles, making consumers more likely to purchase them

Anti-Idling Education
education program about reducing idling of motor vehicles

Car and Ride Sharing Programs
encourage residents to avoid the use of single occupant vehicles as much as possible

Vanpool Program
program that allows residents to share costs of transportation

Encourage Transit Use
identify policies and actions to improve the transit experience and increase ridership

Bicycle Master Plan
implementation of the City's existing Bicycle Master Plan

Complete Streets Program
increase options for biking and walking while also addressing green infrastructure

Trail Connections
planning and construction of critical trail connections

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Waste

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As organic material decomposes in a landfill it releases GHG in the form of methane. Recycling, composting, and other waste reduction and diversion efforts are important strategies for reducing GHG emissions, prolonging the life of landfills, and reducing disposal costs. With a target to increase the current 8 percent diversion rate to 40 percent by 2030, a **reduction of 420,000 MT CO_2e** could be achieved (a 52,000 MT CO_2e annual reduction in 2030) which would also keep 970,000 tons of solid waste out of landfills.

Actions

Mixed Recycling
expand on the City's pilot program in order to make recycling easier and more convenient

Creative Reuse and Upcycling
community-led activities that transform waste into new materials of higher value and quality

Organic Materials Collection
collect organic materials at a community-wide scale for use in a composting program

Recycling Education
develop a robust and ongoing education program about various methods of waste diversion

Consumer Return of Universal Wastes and Electronics
used for materials not included in curbside collection

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Water

Because of its limited impact on GHG emissions in Rochester, there are **no water-related GHG emission reduction strategies** included in the CAP. There are, however, three implementation actions focused on opportunities to improve resiliency and climate adaptation in Rochester. Each is described in more detail below.

Actions

Green Infrastructure Portfolio Standard
expand use of more natural ways to manage water that runs off streets and other paved areas

Water Supply System Climate Impact Study
address climate impacts from extreme events and changes in water quality

Integrated Water Management Practices
regional watershed management and water supply development that is aligned with land use planning

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Land Use

To achieve the goal of reducing GHG emissions, there are transportation-related **reductions that can be achieved through coordinated land use policies**. There are multiple **co-benefits** associated with land use planning, including improved environmental health, public health, and economic vibrancy. In the context of adaptation, land use policy is critical to improving the community's resiliency and ability to adapt to the effects of climate change.

Actions

Coordinated Land Use and Transportation Policies
land use policies that lower vehicle miles traveled

Transit-Oriented and Mixed Use Development
compact development that encourages use of alternative modes of transportation

Redevelopment of Brownfields and Vacant or Underutilized Properties
redevelopment of existing buildings and vacant land

EcoDistricts
neighborhood-scale sustainable development model for revitalization

Parks and Open Space Planning
ongoing maintenance and improvement of parks within the city

Urban Agriculture
allow residents to grow, process, and distribute agricultural products on vacant properties

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