

DECEMBER 2019

# Climate Change Resilience Plan

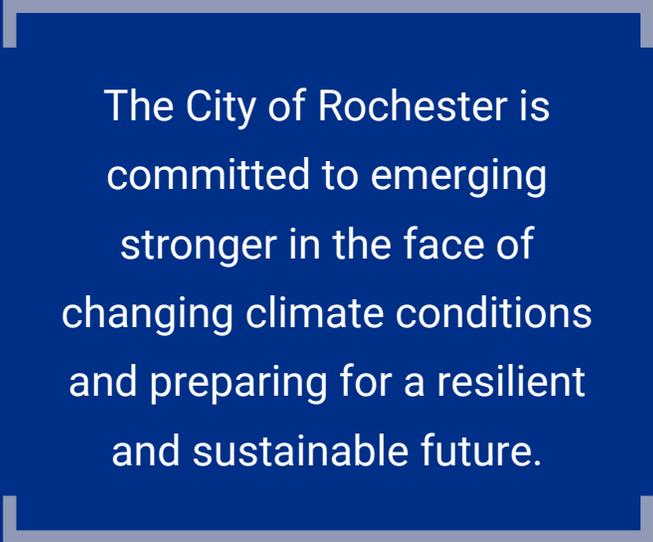
CITY OF ROCHESTER, NEW YORK



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**B**lieve.

 City of Rochester, NY  
Lovely A. Warren, Mayor  
Rochester City Council



The City of Rochester is  
committed to emerging  
stronger in the face of  
changing climate conditions  
and preparing for a resilient  
and sustainable future.



## Letter from the Mayor

DECEMBER 2019



Dear Rochester Residents, Employees, Business Leaders, and Stakeholders:

The City of Rochester developed this Climate Change Resilience Plan to prepare for and respond to the impacts of climate change, which we are already beginning to experience. The plan recommends strategies that our community can collaboratively implement to build resilience throughout Rochester's infrastructure, natural, and socioeconomic resources, which will lead to a healthier, more vibrant, and sustainable community for all of our citizens.

The Climate Change Resilience Plan was developed in partnership with a Technical Advisory Committee comprised of local government representatives, community organizations, non-profits, businesses and educational institutions, and with public input throughout the planning process. The strategies and actions outlined in the plan will play an important role in revitalizing Rochester's neighborhoods and contributing to Rochester's economic development.

The Climate Change Resilience Plan builds on a series of ongoing climate change planning efforts, including the community-wide Climate Action Plan (2017), the Climate Vulnerability Assessment (2018), and is an important component of Rochester 2034, the City of Rochester's Comprehensive Plan (2019). Through adaptation strategies focused on protecting and strengthening our city's infrastructure, natural, and socioeconomic resources, the Plan lays a foundation to build a resilient and sustainable city in the face of climate change.

I want to thank all involved in the planning and development of the Climate Change Resilience Plan, and I look forward to your continued participation and support as we collaboratively implement the plan.

Sincerely,

A handwritten signature in blue ink that reads "Lovely A. Warren".

Lovely A. Warren  
MAYOR, CITY OF ROCHESTER



# Acknowledgements



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And many thanks to all who participated in our engagement efforts at the public open house, those who provided input at public feedback sessions or through surveys, and City staff, who took the time to review, edit, offer comments, and add content.

## Key Terms and Definitions

**Adaptive Capacity** – The ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

**Climate** – The average weather conditions at a particular place over a long period of time.

**Climate Change** – A change in global or regional climate patterns that can be identified (i.e., by using statistical tests) and that lasts for an extended period, typically decades or longer. According to the Intergovernmental Panel on Climate Change (IPCC), climate change may be due to natural internal processes or external forces such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic (human-caused) changes to the composition of the atmosphere or in land use.

**Climate Change Condition** – Direct climate-related consequences of global climate change, such as changes to annual average temperature and precipitation, and frequency and intensity of extreme weather events.

**Climate Change Adaptation** – Efforts generally involve preparing for and/or responding to changing climate conditions and their anticipated impacts.

**Climate Change Mitigation** – Efforts generally involve reductions in emissions of carbon dioxide and other heat-trapping greenhouse gases from sectors such as transportation and energy by limiting, reducing, or stopping fossil fuel combustion.

**Climate Projections** – Model-derived estimates of future climate, which account for the likelihood that something will happen several decades to centuries in the future for given developing conditions. Model projections typically include global temperature and precipitation, extreme precipitations and droughts, and snow and ice.

**Climate Impact** – An effect that results from changing climate conditions. Climate impacts include events such as flooding, drought, heat waves, wildfires, and landslides.

**Planning Subject Area** – overarching framework for Rochester's environmental, social, and economic resources. Various systems representing Rochester's built environment, operational components, and services are grouped under each of the identified planning subject areas: Infrastructure/Built Environment, Natural Resources, and Socioeconomic Resources.

**Resilience** – The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organization, and the capacity to adapt to stress and change.

**Risk** – The likelihood of an event happening, and the consequence should that event take place.

**Sensitivity** – The degree to which a built, natural, or human system will be impacted by changes in climate conditions.

**Sustainability** – Based on the well-recognized Brundtland Commission's 1987 *"Our Common Future"* report, sustainability is defined as the ability of organizations or individuals to meet the needs of the present without compromising the ability of future generations to meet their own needs. It should be noted that sustainability is not only about protecting on the environment, but also ensuring social equity while promoting sound economic development for the community.

**Vulnerability** – The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.

**Weather** – The daily conditions of the atmosphere in terms of temperature, atmospheric pressure, wind, and moisture.



# ROCHESTER NEW YORK

## CLIMATE CHANGE RESILIENCE PLAN

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# 1 | Introduction

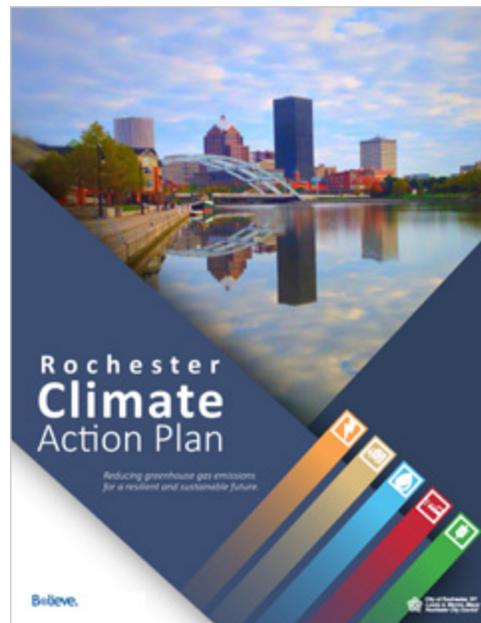
The Rochester Climate Change Resilience Plan (CCRP) is a framework for strategic action to help the City of Rochester (“the City” or “Rochester”) prepare for and respond to the impacts of climate change. The CCRP provides guidance to local decision makers, agencies, community organizations, and residents to enhance resilience throughout Rochester’s infrastructure, natural environment, and social systems. With an understanding of priority goals and strategies, Rochester can dedicate resources to the assets, areas, and populations that need the most support while empowering residents to engage in resilience planning. This collaborative effort will enable the City as a whole to emerge stronger in the face of changing climate conditions, prepared for a resilient and sustainable future.

## 1.1 Rochester’s Climate Planning Efforts & Progress To Date

The CCRP is just one step in a series of ongoing climate change planning efforts in the city and in the region, which heavily informed the CCRP process and recommendations. While this section focuses on recent climate change-related efforts, several additional local and regional plans have played an important role in the development of the CCRP vision and recommendations of goals and actions. Section 2.1 provides additional information on the baseline assessment of existing plans and policies completed as part of the CCRP process.

### 1.1.1 Alignment with Previous and Ongoing Efforts

The City completed three key plans in the last few years that have directly influenced the development and content of the CCRP: a community-wide Climate Action Plan (CAP), a Climate Vulnerability Assessment (CVA), and a Comprehensive Plan (Rochester 2034). All three efforts were grounded in community-driven stakeholder processes. Figure 1 summarizes the relationship between the CCRP process and Rochester 2034, the CAP, and the CVA.



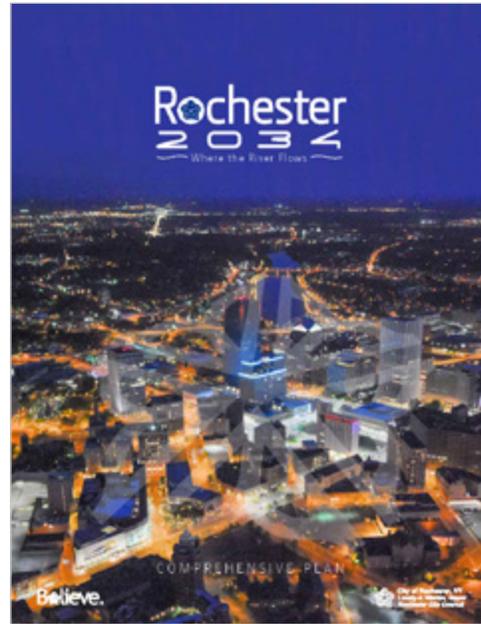
### Climate Action Plan (2017)

With goals of reducing greenhouse gas (GHG) emissions by 20 percent (from 2010 levels) by 2020 and 40 percent by 2030, the community-wide **Climate Action Plan (CAP)** details specific strategies and implementation actions across the focus areas of Energy, Transportation, Waste, Land Use, and Water. The CAP also identifies the impacts of climate change on Rochester’s residents, businesses, and community, and some high-level recommendations of overlapping adaptation actions.



### Climate Vulnerability Assessment (2018)

In 2018, the City conducted a **Climate Vulnerability Assessment (CVA)**, which provided a deeper dive into the adaptation and resilience components of the CAP. The CVA serves as a foundation for the CCRP by helping the City identify potential climate impacts, critical resources and assets throughout the city that are anticipated to be most vulnerable to climate change, as well as develop and prioritize strategies in a way that targets identified vulnerabilities. In the following section, a more detailed summary of the CVA provides further context for the CCRP.

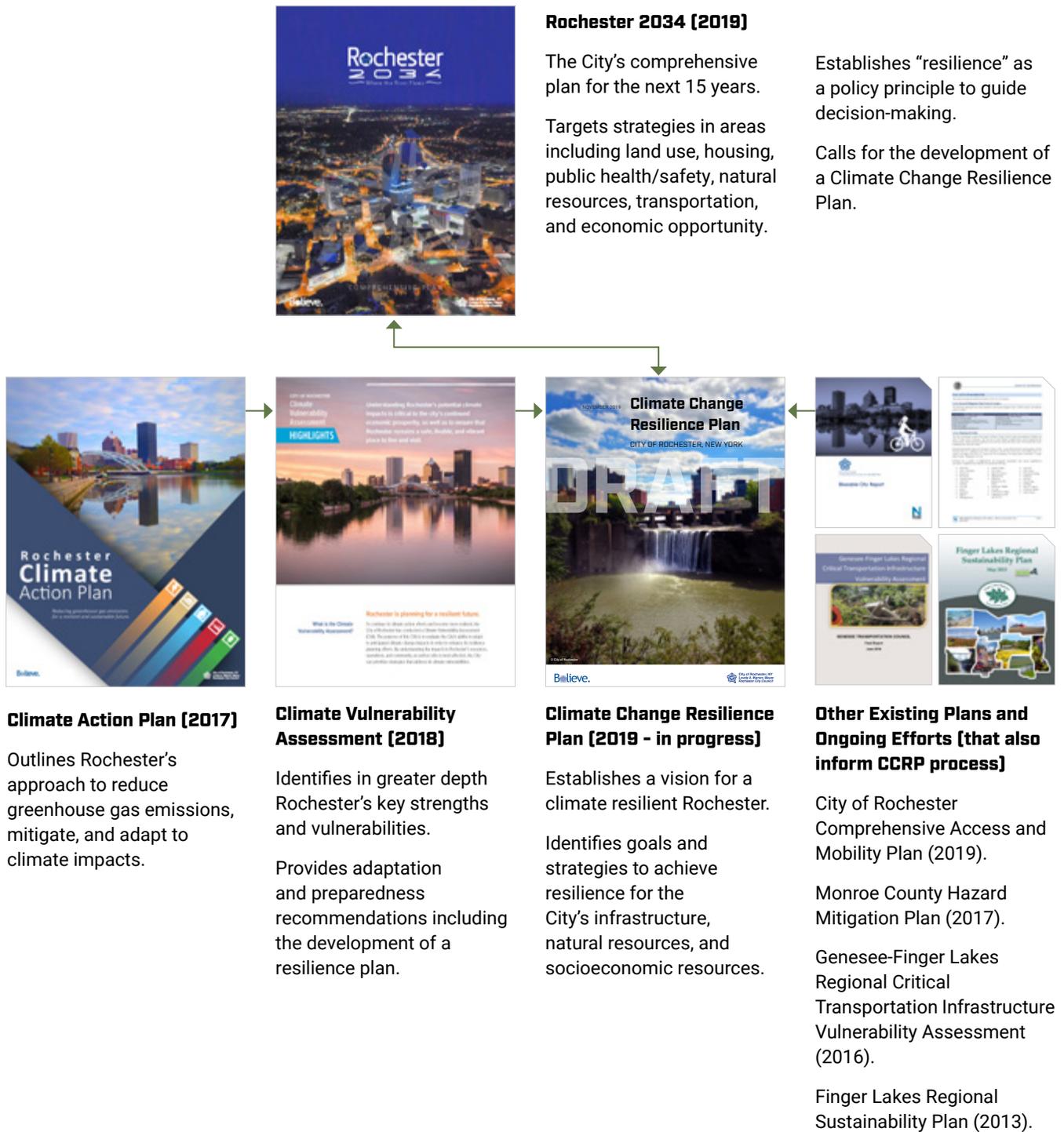


### Rochester Comprehensive Plan (Rochester 2034) (2019)

In 2019, the City of Rochester's Office of Planning completed **Rochester 2034**. This comprehensive plan lays out a vision, principles, and an action plan for Rochester through 2034, the City's 200th anniversary. Initiative areas include: Placemaking, Reinforcing Strong Neighborhoods, Sustaining Green and Active Systems, and Fostering Prosperity and Opportunity.

Resilience plays a key role in the Rochester 2034 plan. "Resilience" is listed among the plan's guiding principles, developing and implementing the CCRP is specifically listed as one of the plan's strategies, and several of the plan's "Initiative Areas," including "Sustaining Green and Active Systems," present adaptation actions related to climate change resilience. Also as noted, "Rochester 2034 contains an overarching theme to grow the population of the city, with a particular emphasis on walkability and mixed-use development, which in effect can make the region more resilient in the face of climate change." Throughout this document, there are references as to how the CCRP aligns with Rochester 2034, including a Strategies Implementation Matrix in Section 5 that identifies overlap or alignment of CCRP strategies with strategies from Rochester 2034.

**FIGURE 1**  
**Relationship between the CCRP and Key Climate Planning Efforts**



### 1.1.2 Findings from the Climate Vulnerability Assessment

The CVA established the foundation for the CCRP by identifying Rochester’s critical systems and assets, and their ability to recover, accommodate, or adapt to the changing climate. To facilitate a more comprehensive understanding of Rochester’s sensitivity, adaptive capacity, and overall vulnerability, cross-cutting considerations including equity, accessibility, and public health were applied to the analysis of potential climate implications. The City also engaged and sought input from stakeholders across the community throughout the CVA process, including through workshops with a Technical Advisory Committee (TAC), interviews and focus groups with local businesses and community organizations, and a public input session.

**Figure 2** summarizes key vulnerabilities and strengths for systems within the three planning subject areas: Infrastructure/Built Environment, Natural Resources, and Socioeconomic Resources. Overall, Rochester may experience relatively moderate impacts from climate change, in comparison to other parts across the country (coastal areas, drought-prone regions, etc.). A **final full report** and **highlights report** summarize the findings and priorities to incorporate into the CCRP.

As noted in the CVA, climate change can also have positive impacts. For example, warming temperatures may mean longer growing seasons and less snow/ice during winter. In light of the range of potential impacts for Rochester, the strategies presented in the CCRP strive to both address challenges and take advantage of opportunities associated with changing conditions.

## Over the next 50 years, Rochester may experience



warmer winters and hotter summers.



more short-duration summertime droughts.



more days with temperatures above 90° F and longer heatwaves annually.



about 10% increase in average annual rainfall.



two to three times more frequent extreme weather events.

**FIGURE 2 Snapshot of CVA Findings for Rochester’s Assets**



## INFRASTRUCTURE



### Vulnerabilities

Stress on power grid due to higher cooling demand during heat waves

Flooding of local roadways due to increased heavy rains

Increased risk of damage to transportation infrastructure due to extreme storm events

### Strengths/Opportunities

Ongoing efforts to increase power transformers’ capacity

Good systems in place for dams during emergency overflow

Bike/pedestrian network in good condition/ bridges have sufficient redundancies



## NATURAL RESOURCES



### Vulnerabilities

Threat to tree species (maple, beech, birch) due to extreme temperatures

Potential sediment issues in canal/river with increased heavy rains

Increased risk of shoreline erosion along Lake Ontario and severe flash flooding due to extreme storms

### Strengths/Opportunities

Urban Forest Master Plan (completed 2012)

Rochester has more than 3,500 acres of open space and parkland

Majority of parks and recreational facilities are well-suited and have capacity for increased users



## SOCIOECONOMIC RESOURCES



### Vulnerabilities

More frequent disruption to production/services due to extreme storm events

Threat to safety of individuals with limited access to resources to manage impacts of extreme heat

Individuals with language barriers or disabilities disproportionately affected by extreme storm events

### Strengths/Opportunities

Existing healthcare facilities and services have high capacity to address increase in service demands

Redundancies and back up systems already built-in for most of the City’s physical infrastructure systems

City and RG&E deployed “Cool Sweep” program to help residents find relief from summer heat

# WELCOME - ROCHESTER CENTER CITY

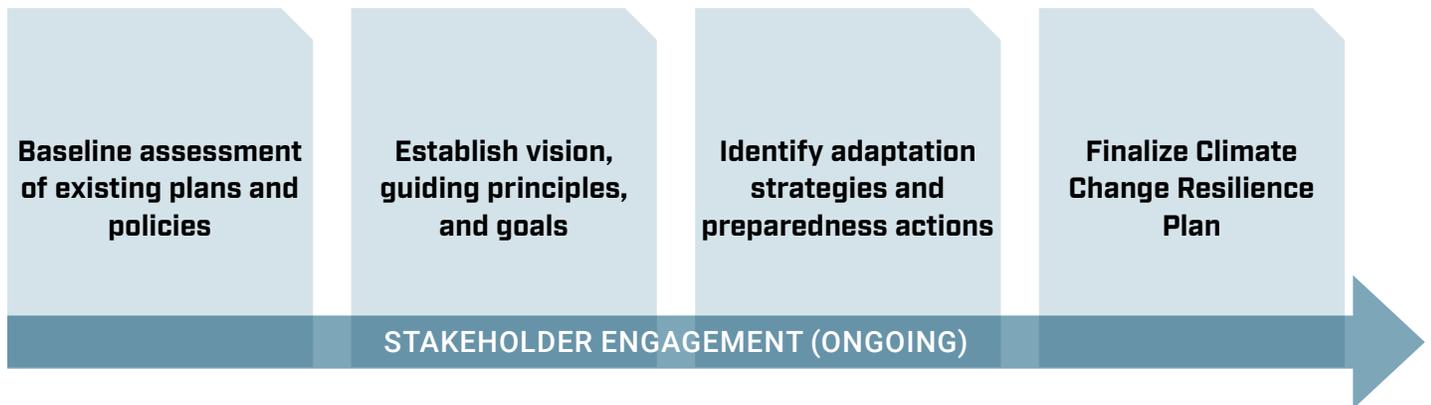


## 2 | Climate Resilience Planning Framework

Led by the City of Rochester’s Office of Energy and Sustainability and supported in part by the New York State Climate Smart Communities Grant Program, this Climate Change Resilience Plan (CCRP) project is the result of a multi-month stakeholder engagement process involving assessment of past sustainability and climate action planning efforts and engagement of technical experts, advocates, and community representatives.

Conducting a **baseline assessment**, establishing a **vision, goals**, and **guiding principles**, and identifying **adaptation strategies** and **preparedness actions** were all central steps in the CCRP process. Throughout, the City solicited feedback from stakeholders, including the TAC committee and members of the public. Figure 3 summarizes the CCRP process.

**FIGURE 3**  
Climate Change Resilience Planning Process

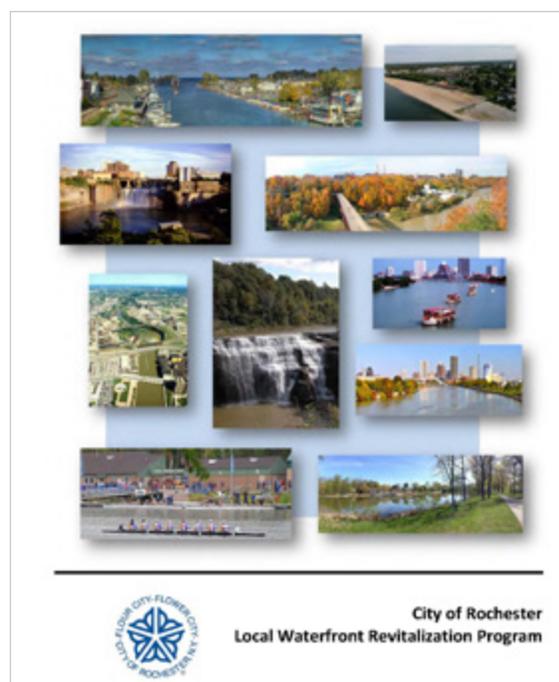
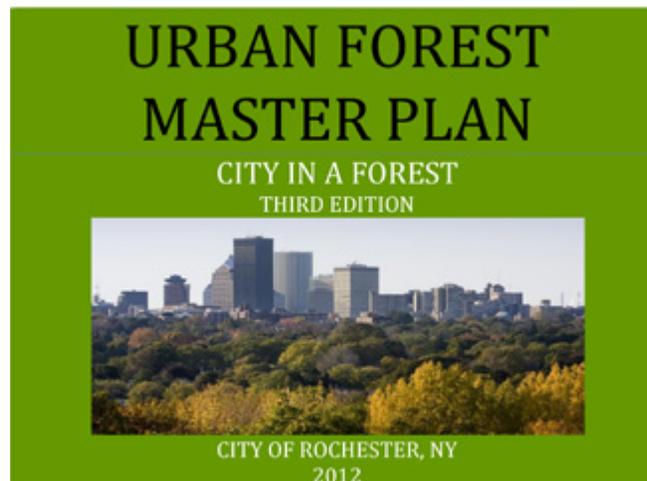


## 2.1 Baseline Assessment

The City undertook a comprehensive inventory of planning documents relevant to the CCRP process, including local, regional, and state plans and studies. To initiate this baseline assessment, the City developed a list of resources with themes relating to climate change and resilience, or whose scope in some way implicated critical assets and populations throughout Rochester and the surrounding region.

Key documents reviewed include:

- › Draft Rochester 2034 Comprehensive Plan (2019)
- › City of Rochester Climate Vulnerability Assessment (2018)
- › City of Rochester Consolidated Community Development Plan (2018)
- › Local Waterfront Revitalization Program (LWRP) Update (2018)
- › Community-wide Climate Action Plan (2017)
- › Monroe County Hazard Mitigation Plan (2017)
- › New York State Open Space Conservation Plan (2016)
- › Genesee-Finger Lakes Regional Critical Transportation Infrastructure Vulnerability Assessment (2016)
- › Genesee-Finger Lakes Region Long Range Transportation Plan 2040 (2016)
- › Center City Master Plan Update (2014)
- › City of Rochester Municipal Operations Climate Action Plan (2013)
- › Finger Lakes Regional Sustainability Plan (2013)
- › Urban Forest Master Plan: City in a Forest (2012)
- › City of Rochester's Renaissance Plan (2010)
- › City of Rochester's Flood Damage Prevention Ordinance (amended in 2008)



Each document was reviewed for information identifying climate hazards or risks, potential climate impacts to the community, strategies or actions related to adaptation and resilience, primary stakeholders, and alignment with other plans or studies.

As part of this review, the City utilized the New York State Department of Environmental Conservation's (DEC's) *Climate Smart Resiliency Planning* Community Plan Checklist to better understand how to align the CCRP process with that of the State. Completion of the Checklist and an associated Gap Analysis helped to inform the City of opportunities to reduce

vulnerabilities and enhance the City’s resilience. The Gap Analysis revealed that although several of these existing plans and studies do specify efforts related to climate change adaptation, these actions are not necessarily comprehensive in addressing the city’s vulnerabilities to climate change. Furthermore, they focus largely on mitigation rather than adaptation measures. Many actions that are related to resilience may not be framed or scoped with the primary goal of resilience, and as a result do not capture the extent of climate vulnerability.

The CCRP therefore is a crucial opportunity to unify, expand, and reframe these existing efforts. Accordingly, the strategies presented in the following sections endeavor both to acknowledge and build upon these existing efforts.

## 2.2 Establish Vision, Guiding Principles, Resilience Concepts, and Goals

The City established the vision, guiding principles, resilience concepts, and goals for the CCRP through an iterative process, synthesizing multiple rounds of input from the TAC (see **Section 2.4.1**, Technical Advisory Committee Role and Workshops for details), as well as the general public through an open survey. The Vision, Guiding Principles, Resilience Concepts and Goals are described in **Sections 3** and **4**. It was important to the CCRP Team and stakeholders to stress that while the CCRP is focused on climate change adaptation strategies, it closely aligns with, and is a subset of Rochester 2034. As mentioned in **Section 1**, developing and implementing the CCRP is specifically listed as one of the Rochester 2034 strategies, and many of Rochester 2034’s adaptation actions are related to climate change resilience.

Establishing these elements of the CCRP first was essential to framing the development of all strategies for resilience in Rochester, as follows:

- › **Vision:** The vision is the direction Rochester aspires to move in by developing and

implementing the CCRP. To understand what vision would be most appropriate for Rochester, the City asked questions of the TAC and other stakeholders such as “what does a resilient Rochester look like to you?” The CCRP vision aligns with Rochester 2034’s vision as described in **Section 3**.

- › **Guiding Principles:** The CCRP follows the guiding principles of Rochester 2034, which are the values that guide us as we implement the CCRP.
- › **Resilience Concepts:** The resilience concepts set a standard for the CCRP strategies, reflecting the values that Rochester cares about as a community. Every goal identified in the plan must meet the guiding principles and resilience concepts to be in line with the intent of the CCRP.
- › **Goals:** The goals are the expected or anticipated outcomes that the CCRP intends to achieve in order to make Rochester more resilient to climate change. The goals were organized into the planning subject areas of Infrastructure/ Built Environment, Natural Resources, and Socioeconomic Resources for consistency with the CVA.

## 2.3 Identify Adaptation Strategies and Preparedness Actions

Following revisions to and establishment of the vision, guiding principles, and goals, the City solicited input from the TAC and the public regarding **adaptation strategies and preparedness actions** to help Rochester achieve its resilience goals. This process involved several rounds of TAC and public feedback, captured through workshops, surveys, and other outreach efforts (described in **Section 2.4**, Public Engagement). The strategies, presented in **Section 4**, are recommendations for actions, initiatives, and potential partners to support the implementation efforts. See the full Strategy Implementation Matrix in **Section 5** for additional details regarding the development of these strategies, relevant cross cutting themes, and resources for potential implementation.



Attendees participate in an interactive “cardstorming” session at TAC Workshop 1.

## 2.4 Public Engagement

The City recognized that planning for community resilience would require input from a broad array of stakeholders, and that a successful plan would be one that engages residents to be stewards for their communities’ resilience. To that end, the public engagement process included the following major components:

- › Three workshops with a Technical Advisory Committee;
- › Two online surveys;
- › A Community Engagement Toolkit; and
- › An Open House for stakeholders and interested members of the public.

A copy of the Public Participation Plan (PPP) can be found in Appendix A, Stakeholder Engagement/Workshop Notes.

### 2.4.1 Technical Advisory Committee Role and Workshops

The City invited key community stakeholders to form a Technical Advisory Committee (TAC); many of these individuals also participated in the CVA process. The purpose of the TAC was to provide first-hand, on-the-ground understanding of climate impacts throughout the city and to assist in identifying potential solutions that respond to Rochester’s unique strengths and challenges. Representatives from the following groups were invited to participate in the TAC:

- › State, regional, and local agencies;
- › Businesses or business groups;
- › Non-profits and advocacy organizations;
- › Neighborhood associations and community groups;
- › Educational institutions; and
- › Other individuals with knowledge of climate change planning and response, or key communities and resources in Rochester.

TAC members convened for three workshops throughout the CCRP process, in March, May, and October 2019. The primary roles of the TAC were to:

- › Provide guidance, technical expertise, and feedback on the CCRP planning process;
- › Connect the CCRP Team with key stakeholder groups in Rochester;
- › Participate in public engagement activities; and
- › Participate in three workshops.

### **Workshop #1: March 21, 2019,**

The purpose of TAC Workshop 1 was to provide a brief recap of the climate vulnerability assessment process and findings, share CCRP purpose and expected outcomes, and gather feedback from TAC members to develop a vision, guiding principles, resilience concepts, and goals for the CCRP.

At the workshop, TAC members participated in a “Cardstorming” exercise in which they were asked to describe their vision for a climate resilient Rochester. These notes were grouped into several categories (e.g., equity/inclusion, accessibility/mobility, natural resources, safety, health), which served as the basis for the development of the vision, guiding principles, and goals for the CCRP.

### **Workshop #2: May 20, 2019**

The purpose of TAC Workshop 2 was to finalize the draft vision, guiding principles, resilience concepts, and goals for the CCRP based on feedback from TAC members and prioritize potential adaptation strategies/preparedness actions for each goal within the three planning subject areas (Infrastructure/Built Environment, Natural Resources, and Socioeconomic Resources).

The CCRP Team facilitated an interactive brainstorming exercise in which participants proposed strategies to achieve the CCRP goals. TAC members discussed each strategy idea in small groups using several prompting questions to build out the strategy’s details and potential implementing partners and ensure its alignment with the CCRP resilience concepts and Rochester 2034 guiding principles. The results from this exercise served as the basis for the development of the recommended strategies for the CCRP.

### **Workshop #3: October 29, 2019**

The purpose of the third TAC Workshop was to present a complete draft of the CCRP. During this meeting, TAC members had the opportunity to provide initial thoughts and feedback on the draft plan and implementation matrix. TAC members also assisted with providing more details related to the priority strategies identified as potential immediate implementation steps.

Summaries of all TAC meetings can be found in Appendix A, Stakeholder Engagement/Workshop Notes.

### **2.4.2 Online Surveys**

Two online surveys were created to help revise the draft vision and goals, and to give the public an opportunity to suggest strategies for each goal.

#### *Survey #1*

The purpose of this survey was to collect public feedback on the vision, resilience concepts, and goals for Rochester’s climate change adaptation strategies. The survey had sixty-nine (69) respondents. Respondents were overall “Satisfied” with the vision, resilience concepts, and goals, and provided feedback that was used to refine the material prior to TAC Meeting #2.

#### *Survey #2*

The purpose of this survey was to collect ideas and strategies from the public to accomplish the resilience goals. The survey had 179 respondents from individuals. The top three most important goals according to respondents were to maintain and protect water resources, to ensure basic access to needs and services for all neighborhoods, and to maintain and improve Rochester’s infrastructure. A majority of actions suggested by the public aligned with strategies that were developed in response to earlier CCRP engagement activities. Suggestions addressed the themes of building reuse, transportation improvements, regulatory/zoning changes, and climate change mitigation.

Full survey results can be found in Appendix A, Stakeholder Engagement/Workshop Notes.

### 2.4.3 Community Outreach

The CCRP Team created a toolkit to facilitate additional discussions with stakeholders about strategies to accomplish the resilience goals. The toolkit contained background information on the CCRP and suggested activities and discussion prompts to solicit participant feedback.

The following meetings were facilitated:

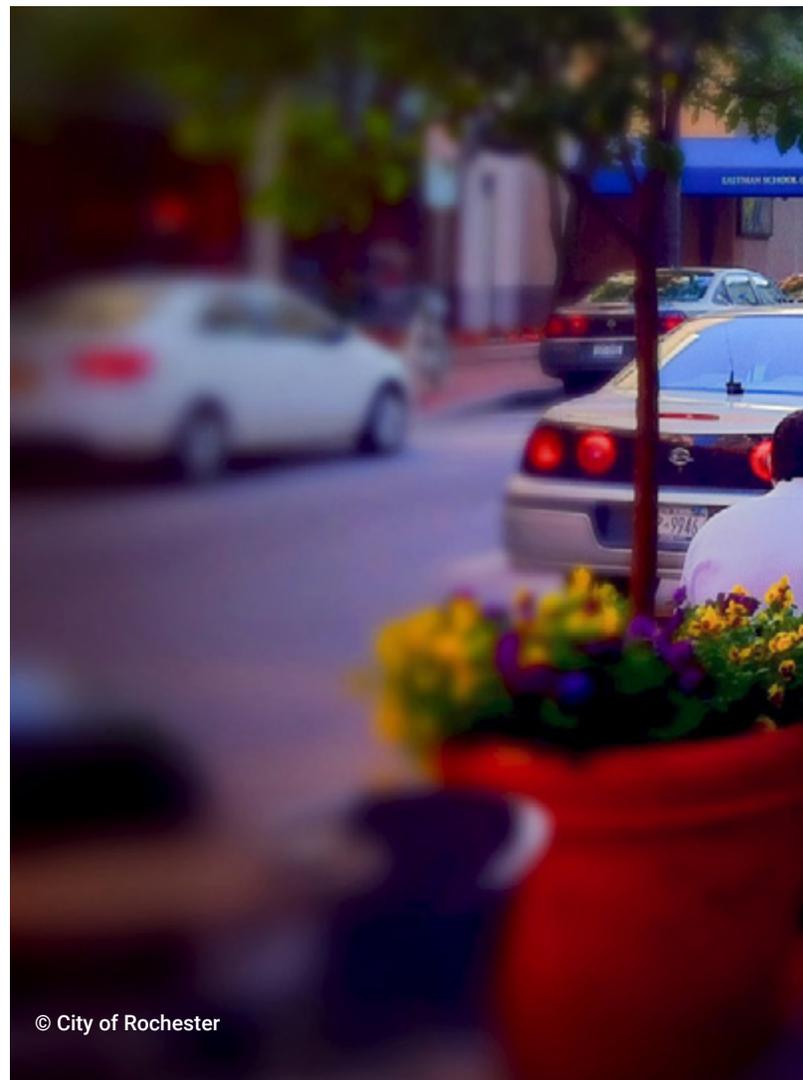
- › Rochester 2034 Meetings at Phillis Wheatley Library (30 attendees)
- › Rochester People’s Climate Coalition (RPCC) Meeting at I-Square (20 attendees)
- › Student and Faculty Workshop at University of Rochester (20 attendees)
- › RPCC: A Five Year Anniversary Celebration (15 attendees)
- › Climate Change and Human Health Conference (approx.100 attendees)

Participants’ top three most important goals were to ensure basic access to needs and services across all neighborhoods; maintain and protect water resources; restore and strengthen the city’s natural systems; and develop a sustainable and resilient transportation system. A copy of the toolkit and a summary of the meeting results can be found in Appendix A, Stakeholder Engagement/Workshop Notes. Although the City is no longer collecting feedback for the CCRP, groups are encouraged to make use of the community outreach toolkit to inform specific community climate resilience projects.

### 2.4.4 Open House Session

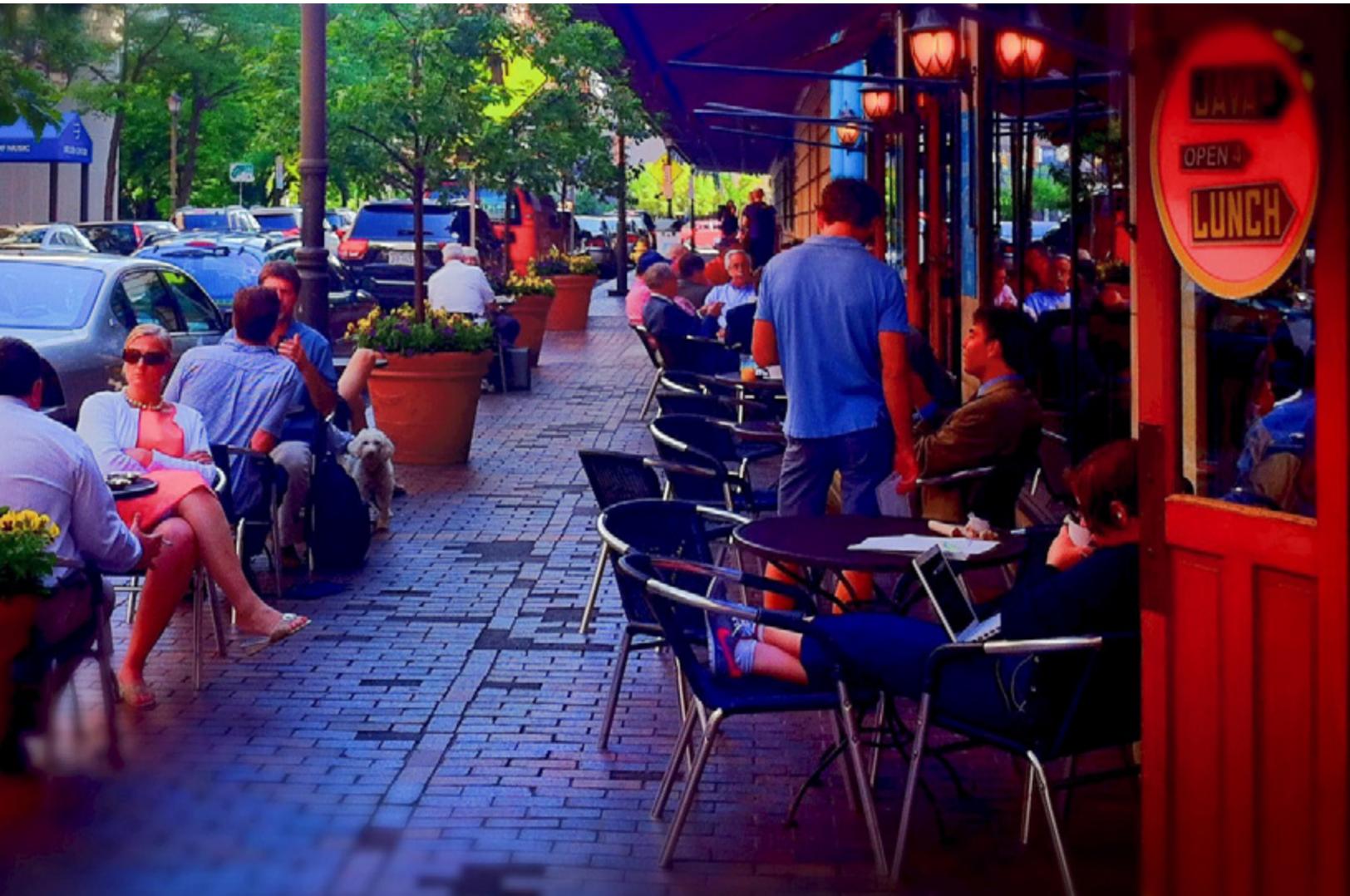
The City hosted a public Open House on October 29, 2019 at the Rochester City Hall Atrium. The purpose of the Open House was to share information about the CCRP process and seek feedback on the draft plan. A powerpoint slideshow provided CCRP background on an ongoing basis during the open house. Participants were invited to review project information presented on poster displays throughout the room, ask team members questions about the project, and provide feedback on comment cards and sticky notes.

A summary of feedback received at the Open House can be found in Appendix A, Stakeholder Engagement/Workshop Notes.



“Ask community members  
what natural resources they  
value and what they’d like to see  
in their communities”

FEEDBACK FROM A TAC MEMBER





## 3 | Vision, Guiding Principles, and Resilience Concepts

The City, in collaboration with key stakeholders and the public, developed the following vision and guiding principles to drive the CCRP.

### 3.1 Vision

The CCRP vision is the result of a process involving stakeholder feedback, capturing the range of meaning that resilience holds for people who live, work and play in Rochester and reflective of the many cross-cutting themes that informed the direction and development of the CCRP. The CCRP vision aligns closely with the broader vision of Rochester 2034:

“Rochester is a beautiful, progressive, lively, healthy, and welcoming city. We build from strength – leveraging our assets to grow our population, local business community, and tax base. We celebrate our 200th birthday in 2034 as a resilient and confident community where diverse neighborhoods are engaged and thriving; downtown is the vibrant heart of our region; our unique network of active waterfronts is accessible to all; and innovation, adaptation, and inclusion drive us forward.”

The CCRP vision statement:

Rochester will be a safe, inclusive, and vibrant place to live, work, and visit in the face of a changing climate. Our community will thrive today and into the future by minimizing risks to our infrastructure, enhancing health and mobility, creating equitable access to resources, and valuing regenerative practices for our natural environment.



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## 3.2 Guiding Principles

The CCRP will follow Rochester 2034’s broader guiding policy and placemaking principles to which decision-makers will be committed throughout future planning efforts.

### 3.2.1 Rochester 2034 Policy Principles

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**HEALTHY LIVING** We will strive to be a city where all residents, regardless of age, income, and ability, live active lives in a healthy environment, have access to community-based health services, healthy food, and healthy housing, and where they have equitable economic and social opportunities.

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**EQUITY** We will promote equity, inclusion, and environmental justice by working to reduce disparities, extend community benefits, ensure access to housing, and include traditionally underrepresented populations.

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**RESILIENCE** We will reduce risk and improve the ability of individuals, communities, economic systems, and the natural and built environments to withstand, recover from, and adapt to natural hazards, human-made disasters, climate change, and economic shifts.

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**PROSPERITY** We will support a diverse, low-carbon economy, and foster employment growth, competitive advancement, and equitable prosperity.

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**PARTNERSHIP** We will join with neighborhood, government, business, not-for-profit, and institutional partners to implement this plan and enjoy the results of reaching our goals together.

### 3.2.2 Rochester 2034 Placemaking Principles

**Design at the pedestrian scale.** We will prioritize development and design that is pedestrian-scaled and generates street-level activity in order to promote walkability and healthy lifestyles, and to create an attractive and welcoming built environment.

**Create beautiful spaces.** We will design our streetscapes and public spaces to be vibrant, playful, and environmentally sustainable, to reflect, cultivate, and celebrate the unique identities of our city and neighborhoods.

**Provide diverse housing options.** We will work to preserve our existing housing stock while also providing more diverse, accessible options within all neighborhoods that expand our range of housing types, densities, and prices.

**Celebrate assets.** We will capitalize on our existing unique assets, including natural and scenic amenities, cultural heritage, and distinctive historic structures and landscapes, recognizing that these assets enhance neighborhood pride, foster a strong cultural identity, and attract visitors, new residents, and investment.

**Strengthen multi-modal travel.** We will strengthen multiple modes of transportation and promote more sustainable transit options by improving walkability and accessibility, and increasing bus and bicycle access throughout the city.

**Focus growth.** We will focus population growth and commercial development along key transportation corridors and within mixed-use centers in order to capitalize on existing infrastructure and a critical mass of activity.

### 3.3 Resilience Concepts

The CCRP goals and adaptation strategies were specifically built upon the following key resilience concepts, aligning with Rochester 2034's broader guiding principles:

- › **Just transition** – fairness and equity in promoting a clean, healthy, and resilient economy and environment now and into the future.
- › **Accountability** – collaboration and transparency to maximize benefits and minimize impacts across all members of the community.
- › **Regenerative practices** – protect and enhance adaptive natural, physical, and social systems.
- › **Equity, inclusion, and empowerment** – promoting advancement of vulnerable and/or disenfranchised communities currently in or entering Rochester.





## 4 | Goals and Recommended Strategies

As described above, the City established CCRP goals within the three planning subject areas of Infrastructure/Built Environment, Natural Resources, and Socioeconomic Resources for consistency with the organization of the CVA.

The following section describes climate resilience strategies for each of these goals, along with information regarding the motivations behind the development of each of the goals (i.e., findings from the CVA and other planning and research efforts in Rochester).



Goals and recommended strategies for each of the planning subject areas are organized as follows:

Goal identification number and statement

Description of goal

Recommended strategies and descriptions



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### INFRASTRUCTURE/BUILT ENVIRONMENT

#### 4.1 Infrastructure/Built Environment (IB)

The goals for Infrastructure/Built Environment address the physical and organizational components of Rochester's transportation network, energy systems and utilities, water infrastructure, and buildings and facilities. Based on the findings from the CVA, the goals leverage both the vulnerabilities and challenges present across these systems.

## Rochester Green Infrastructure Retrofit Manual

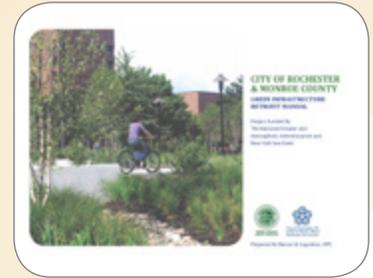
Working with Monroe County and funded by New York Sea Grant and the National Oceanic and Atmospheric Administration, in 2016, the Rochester Office of Energy and Sustainability developed a Green Infrastructure Retrofit Manual. The Manual provides guidance for developers and contractors introducing green infrastructure

technologies into retrofits and redevelopment projects. By leveraging the capacity of natural systems to manage stormwater, these techniques can help the City address flood risk more efficiently and effectively. Examples of green infrastructure include wetlands and stream restoration in rural settings, and green

roofs, rain gardens, open space, and stormwater planters in urban settings.

For more information and to access the Manual, check out:

<https://www.cityofrochester.gov/giretrofitmanual.aspx>



### IB-1: Fortify and build flexibility into critical infrastructure/assets

Climate change impacts have the potential to severely impact important physical structures in Rochester. Increased temperatures and intense precipitation, specifically, can cause cascading effects on infrastructure systems, many of which are intricately connected. The CVA found evidence of these types of risks to Rochester's transportation infrastructure, utilities, water infrastructure, and buildings/facilities. The purpose of this goal and its associated strategies is to anticipate these issues by minimizing the severity and occurrence (if possible) of impacts to Rochester's physical structures.

#### Recommended Strategies for Goal IB-1

##### IB-1.A Establish a multi-jurisdictional stakeholder group to identify critical infrastructure and implement resilience improvements.

This taskforce would be comprised of representatives from city and county agencies to address resilience challenges and opportunities related to key assets and resources such as transportation, utilities, etc.

**IB-1.B Upgrade flood maps using precipitation data projections, and re-assess or update requirements for elevation certificates for assets in/near floodplain.** As climate science and associated projections are constantly evolving and becoming increasingly accurate at more specific geographic scales over time, it will be critical to reference the latest data as much as possible. The City should require the use of updated maps and elevation design as part of the building permit process going forward.

**IB-1.C Develop resilient design standards for public facilities and infrastructure projects (that are inclusive of flood resilience, materials selection, HVAC sizing/setpoint recs, right-sized culverts, etc.).** Designs for City projects should take into consideration future climate conditions and considerations. Climate resilient design should also be prioritized for critical infrastructure and facilities and/or those with existing occupant comfort issues.

**IB-1.D Continue to monitor harbor infrastructure to protect against flood risk.** Following recommendations of the City's Harbor Management Plan to enhance Rochester Harbor's infrastructure in light of anticipated increases in precipitation and frequency of extreme storm events.

**IB-1.E Codify, enforce and implement stormwater and green infrastructure best management practices in public and private development.**

Adopt, as part of the City Code, and enforce, through the City’s Site Plan Review process, stormwater and green infrastructure best management practices on public and private development projects. Green infrastructure utilizes vegetation, soils, and landscaping to allow for pervious surfaces that help absorb and filter pollutants, and therefore improve quality of stormwater runoff. Green infrastructure techniques including porous pavement, rain gardens, vegetated swales, green roofs, rain water harvesting and recycling, and other methods will help increase pervious surface area. The City has developed and can encourage increased awareness and implementation of its Green Infrastructure Retrofit Manual to promote use of green infrastructure techniques in development projects. Going forward, the City should also ensure public rights of way and/or other strategically protected lands can be utilized for green infrastructure development.

**IB-1.F Encourage development of both private and public multi-use assets/facilities that can be used for more than one purpose or re-purposed after a certain period of time.**

This approach to development will enhance the longevity and adaptive capacity of Rochester’s physical structures by promoting private development of multi-use assets and evaluating City-owned facilities for their ability to serve as multi-use assets. Repurposing of existing building stock and brownfields in Rochester should be an integral part of this strategy. Current and/or future uses might include community centers, health clinics, day care, or emergency shelters.

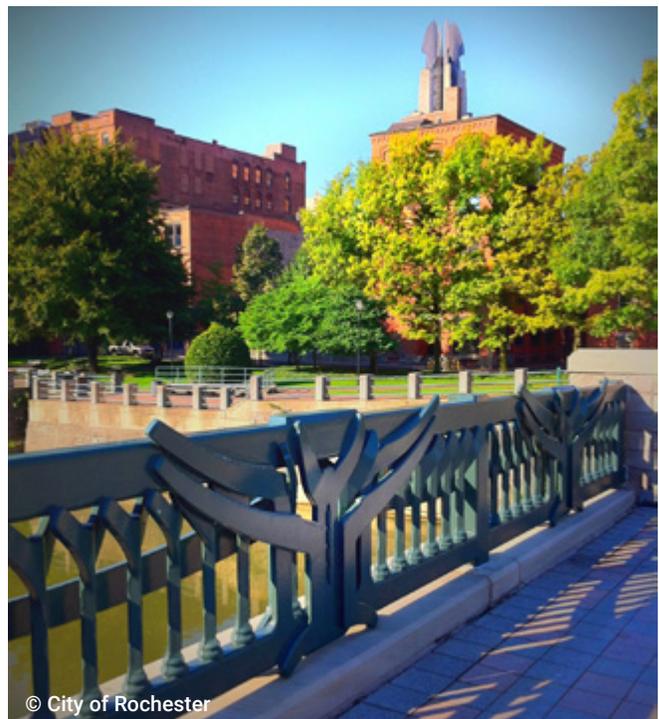
**IB-1.G Explore opportunities for off-grid local renewable energy sources for emergency energy generation/back-up power systems and potential battery storage.**

Back-up power systems are essential for keeping central businesses and services running, especially critical facilities, during power outages and

other emergency events. These systems should include redundancy loops when possible, especially for critical facilities. Back-up energy generation and/or energy storage should be operated independent from the main power grid, and also run on renewable energy sources, in support of the City’s efforts to reduce greenhouse gas emissions. The City should partner with key businesses and institutions (higher education and hospitals) to explore feasible locations for onsite renewable energy generation.

**IB-2: Improve public-private communication and coordination for emergency management**

Organized, clear, and accessible channels of communication will become increasingly crucial for an effective response to emergencies exacerbated or provoked by climate change. To best disseminate the information and resources that will help people prepare and respond, the City can take advantage of both public and private networks. The strategies under this goal call for coordinated technological solutions, trainings, and emergency planning efforts to promote better collaboration among Rochester’s diverse organizations, institutions, and communities.



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## Recommended Strategies for Goal IB-2

“Create or enhance a database of emergency management resources”

FEEDBACK FROM A  
PUBLIC SURVEY PARTICIPANT

- IB-2.A Maintain a City-managed climate change adaptation and resilience webpage with a resource repository for use by public and private entities.** In addition to including information related to preparedness and responses in the event of an emergency, this climate change adaptation and resilience webpage will also provide resources and guides for how Rochester residents can take action to better prepare for the changing climate and its potential impacts.
- IB-2.B Continue training for appropriate personnel in emergency planning efforts across multiple sectors.** The City should continue to engage first responders, the fire department, and commercial/residential representatives alike to promote better coordination among authorized personnel and residents.
- IB-2.C Harden the telecommunication grid to ensure information and resources can continue to be disseminated through various communication channels, especially during emergencies.** Fortification of telecommunications infrastructure will help prevent and/or minimize damage from extreme storm events. The ability to maintain mass cell phone reception and services will be critical during emergencies.
- IB-2.D Establish a multi-pronged emergency communication strategy, ensuring that communication channels are accessible to all populations, including non-native English speakers and other vulnerable groups.** This

multi-pronged emergency communication strategy would include public messaging/alerts and various communication channels between officials and residents/businesses. The strategy would be accessible to vulnerable populations and non-native English speakers.

## IB-3: Ensure land use regulations and building standards prepare Rochester for the next century

The purpose of this goal is to leverage regulatory mechanisms to ingrain climate change preparedness into Rochester’s systems for decades to come. Rochester can introduce or strengthen existing tools such as building code; guidelines for resilient design; and zoning and flooding ordinances. Through these mechanisms, the strategies under this goal hold accountable those responsible for constructing, repairing, and maintaining Rochester’s physical fabric.

### Recommended Strategies for Goal IB-3

- IB-3.A Develop and adopt resilient design guidelines for private development (new construction and existing building retrofit projects).** The guidelines should build on existing City guides (Green Infrastructure Manual, Sustainable Practices for Building Owners and Occupants) to provide methodology for how a building project (new or retrofit) can incorporate climate change projections and assess potential risks in order to consider appropriate resilient design strategies, based on the building’s proposed location and uses. The guidelines should also provide a consistent approach for considering future climate conditions when addressing existing zoning, building codes, and standards.
- IB-3.B Update the City of Rochester’s Flood Damage Prevention Ordinance (amended in 2009) for future flood potential based on climate projections.** Assess flooding conditions in light of up-to-date precipitation projections and identify mechanisms to strengthen the Flood Damage Prevention Ordinance. Update floodplain maps to account for changing

conditions. Reference case studies of other local ordinances or codes with flood prevention provisions.

**IB-3.C Incentivize the use of Low Impact Design principles and the application of green/resilient rating systems (e.g., LEED) for new building development and renovation, where appropriate.** The City should incentivize new development or renovation projects to incorporate high-performance design and construction standards (e.g., alternative design considerations, sustainable materials selection, use of permeable pavement, floodproofing, etc.). Different kinds of incentives (such as public recognition, expedited permitting and approval processes, priority access to financing opportunities, etc.) can be offered based on various levels of improvement over the standard practices or requirements.

**IB-3.D Evaluate opportunities to introduce easements to accommodate future resilient infrastructure needs.** The City should leverage zoning or other regulatory mechanisms to allow for infrastructure that accommodates energy storage, electric vehicle charging stations, etc.

**IB-3.E Develop a zoning code to implement Rochester 2034 strategies to encourage mixed-use and high-density residential development along high-frequency transit corridors.** Rochester’s zoning code, as specified in Rochester 2034, should drive the development of dense, transit-oriented, and mixed-use residential communities. The accessibility of a diversity of services and resources (e.g., affordable housing, medical care, food, commercial activities) will be increasingly important for Rochester’s population, particularly as future climate conditions create more uncertainty. Accordingly, any changes to the zoning code should also consider measures and best practices to enhance the resilience of Rochester as a whole.

## **IB-4: Improve the long-term functioning of infrastructure through maintenance and adaptive reuse**

Climate change adaptation is not about a one-time intervention; continual and ongoing investment is needed to ensure that the City’s efforts under the CCRP are successful in sustaining Rochester’s long-term resilience. Furthermore, the CVA revealed that good portions of Rochester’s water, transportation, and energy systems are in good repair or have existing redundancies. This investment, as the strategies under this goal suggest, should take the form of financing, training, and assessment to maintain Rochester’s existing resilience measures, as well as to ensure the efficacy of the new initiatives that the CCRP proposes.

### **Recommended Strategies for Goal IB-4**

“Explore innovative finance mechanisms to fund ongoing maintenance of infrastructure”

FEEDBACK FROM A TAC MEMBER

**IB-4.A Develop maintenance programs for City-owned infrastructure with supporting financing mechanisms and climate resilience measures identified to strengthen critical infrastructure and assets.** For effective ongoing maintenance, it is critical to have funding identified and/or dedicated to a project upfront to ensure proper maintenance work can be carried out. These maintenance programs should also have climate resilience measures identified and prioritized to help strengthen and prolong the useful life of these key assets that keep the city running.

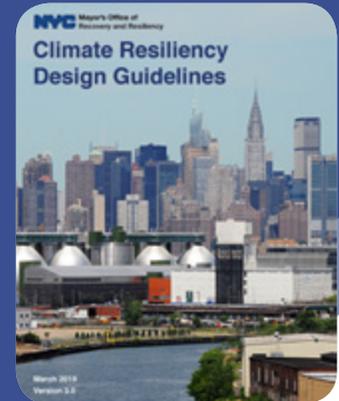
**IB-4.B Build networks of technical experts to provide guidance and/or training for infrastructure resilience.** Technical expertise can be developed by leveraging partnerships with

## New York City Climate Resiliency Design Guidelines

New York City introduced Climate Resiliency Design Guidelines, which help designers and engineers make buildings that can withstand high winds, increased rain, higher temperatures, and flooding related to sea level rise. The Guidelines also help project teams think about their project-specific considerations and constraints and how to manage uncertainty and risk to properties.

For more information:

[https://www1.nyc.gov/assets/orr/pdf/NYC\\_Climate\\_Resiliency\\_Design\\_Guidelines\\_v3-0.pdf](https://www1.nyc.gov/assets/orr/pdf/NYC_Climate_Resiliency_Design_Guidelines_v3-0.pdf)



local higher education institutions, trade schools, and trade associations. Example training topics to consider include (but are not limited to) flood risk management; residential and occupational environmental health; adaptive design and construction; and energy/water/waste management. Training opportunities should extend to developers, building managers and contractors, inspectors, homeowners, etc.

### IB-5: Develop a sustainable transportation system to support future needs and functions under changing climate conditions

Improving the mobility of goods and people will support Rochester through gradual climate shifts as well as acute disruptions. Better connectivity can also support the resilience of the surrounding region, facilitating mutual support in climate crises. The strategies under this goal help to ensure a safe, reliable, and adaptive transportation system, which is crucial to sustaining local and regional economies, public health, and social well-being.

### Recommended Strategies for Goal IB-5

- IB-5.A Incorporate resilient transportation topics into existing transportation planning groups to evaluate specific vulnerabilities and strengthen the transportation system's capacity to respond and adapt to anticipated climate change impacts.** Incorporating resilience into transportation planning can identify actions to address vulnerabilities specified in the Genesee-Finger Lakes Regional Critical Transportation Infrastructure Vulnerability Assessment as well as other efforts to support future resilient transportation resources.
- IB-5.B Expand infrastructure that promotes multimodal transportation and mobility options.** The City should continue to consider a variety of robust transportation options that can help increase connectivity and resource redundancy, including bikeable and walkable infrastructure, as well as explore additional public transit options and opportunities for more multimodal transportation hubs.
- IB-5.C Maintain and improve cooling and heating systems on buses and at bus stations.** Public transit amenities should be standardized, ensuring that buses and bus stations protect passengers from extreme temperatures and other severe weather conditions.



# NATURAL RESOURCES

## 4.2 Natural Resources [NR]

The resilience goals for natural resources focus on Rochester’s ecological resources, natural habitats, and recreational and open spaces. They build on the findings of the CVA by leveraging Rochester’s existing wealth of natural systems to both mitigate climate change impacts and protect against future harms.

### NR-1: Ensure equitable distribution of recreational and environmental resources

Rochester’s rich natural resources, including parks, fields, and other open spaces, are not evenly distributed throughout the city. For populations already vulnerable to climate change impacts, including low-income and minority populations and individuals with respiratory illnesses, the lack of access to these resources can significantly impact their ability to adapt to extreme heat and flooding. The strategies under this goal involve assessment and outreach to better understand the distribution of recreational and environmental resources, engagement of residents in stewardship, and targeting investment in areas that most need it. Several of the strategies also overlap with and augment the strategies under Goal 2 of the Parks, Recreation, and Open Space Action Plan in the Rochester 2034 Comprehensive Plan.

#### Recommended Strategies for Goal NR-1

**NR-1.A Conduct a tree canopy assessment and expand street tree planting program, with a particular focus on residential neighborhoods with high concentrations of low-income individuals, high rates of respiratory illness, and other vulnerable populations.** Using available GIS data, the City can conduct a gap and trend analysis to assess available urban forest and open space resources by

“Recreational and environmental resources should be considered part of the commons to be enjoyed and cared for by all of us.”

FEEDBACK FROM PUBLIC SURVEY PARTICIPANT



neighborhood and/or demographic group. When considering tree species for the tree planting program, future climate change impacts and opportunities should also be taken into consideration.

**NR-1.B Preserve public access to open spaces in private redevelopment wherever possible.**

The City should leverage regulatory tools including zoning to require or incentivize developers to retain publicly-accessible open space (e.g., parks, forests, wetlands, waterways) on private properties.

**NR-1.C Develop a community-wide education and engagement program that promotes and empowers involvement of community members, particularly youth, in care for green spaces.** To foster local stewardship and ownership of natural resources, residents and youth should be engaged and participate in caring for community, public green, and open spaces. As part of the outreach and engagement program, community members can provide feedback regarding types of resources, programs, and initiatives that they value and would like to prioritize and/or deploy in their communities.

**NR-1.D Plan and create more pocket parks in areas with high pedestrian traffic.** Pocket parks, or mini, neighborhood-scale open spaces, can be installed throughout the city and serve the immediate local population. These pocket parks will provide a more convenient “daily” green or open spaces that are sometimes easier and simpler to create and maintain.

**NR-1.E Identify funding mechanisms to ensure adequate resources are available for public space maintenance and for preservation of green spaces for recreation.** Example funding mechanisms include user fees, developer impact fees, and incentives for care of green space in neighborhoods.

**NR-1.F** Ensure all residents are served by and have access to public parks via a 10-minute walk and/or public transit. Study open space

inventory to understand and address gaps in access to parks (including accessibility of parks); communicate currently available transit options and develop a “10-minute Walk to Parks” access and activation plan.”

**NR-2: Maintain and protect water resources**

With the increased occurrence of extreme storms and intense precipitation, Rochester may see challenges related to stormwater management, runoff, and water pollution. Furthermore, the CVA found that increasing temperatures and increases in periods of drought could lead to increases in algal blooms and more concentrated pollutant loads, which threaten water quality. The strategies under this goal consist of a mix of education, resource protection, restoration, and conservation measures. Several of the strategies overlap with and augment the strategies under Goals 1, 2, 4, and 5 of the Natural Resources Action Plan in the Rochester 2034 Comprehensive Plan.

**Recommended Strategies for Goal NR-2**

“Water is Rochester’s and Western New York’s most significant natural resource. Protecting water systems needs to be at the forefront of any development and redevelopment...”

FEEDBACK FROM PUBLIC SURVEY PARTICIPANT

**NR-2.A Continue to work with the Monroe County Stormwater Coalition to raise awareness of water resources protection issues specific to Rochester.** The City should continue working with the Monroe County Stormwater Coalition to build out a public education campaign that explains the impact of both point and non-point pollution on stormwater and water resources for recreation, household use, etc.

**NR-2.B Continue to work with the Monroe County Stormwater Coalition to promote rain barrel use and/or other stormwater diversion techniques.** Rainfall captured in rain barrels can be saved and used for irrigation of lawns and gardens during dry periods, reducing the demand on potable water supplies. Rain barrels can also reduce erosion, pollution and the chance of flooding by reducing the total amount of stormwater runoff across the community, protecting nearby water bodies. Continue to promote use of rain barrels as well as any other stormwater diversion techniques so that the community can take advantage of available opportunities as well as deploy these techniques properly.

**NR-2.C Work with county and state partners to prioritize restoration of wetland areas that are integral to watershed management objectives for water quality/quantity as well as flood risk management.** The City should prioritize restoration of wetland areas as part of City development projects. Working with regional partners, the City can contribute to broader goals and directives relating to wetlands management that relate to pollution prevention, water supply, and flood prevention and mitigation.

**NR-2.D Ensure ongoing funding for programs that protect water resources by increasing the resilience of Rochester's water supplies, as well as wastewater and stormwater systems.** Support efforts to secure funding for potable water, wastewater, and stormwater project maintenance costs accounting for future challenges due to changing climate conditions and population increases. Prioritize allocation of funds to water and septic system upgrades, and sanitary and stormwater pipe maintenance.

**NR-2.E Identify priority areas for enhanced riparian buffers in the city and pilot priority areas for adaptive and resilient vegetation strategies.** The City should explore efforts to introduce adaptive / resilient vegetation or other strategies to protect key water resource areas.

**NR-2.F Participate, where applicable, in regional efforts to manage waterways.** Participate in watershed programs and build upon existing relationships for watershed management in the region. Support enhanced NYS level legal protection of water bodies.

### **NR-3: Increase amount and enhance connectivity of green spaces**

Parks, preserves, and urban forests provide important benefits to Rochester and its residents. They provide spaces for people to cool off during times of extreme heat, provide shelter and habitat for wildlife, and absorb stormwater, among other benefits. Areas of continuous green space, in particular, can be critical to the success of these resources in the context of an urban environment. The strategies under this goal concern research, education, and development to strategically protect and expand green spaces in the city. Several of these strategies overlap with and augment the strategies under Goal 3 of the Natural Resources Action Plan and Goals 2, 4, and 5 of the Parks, Recreation, and Open Space Action Plan the Rochester 2034 Comprehensive Plan.

#### **Recommended Strategies for Goal NR-3**

**NR-3.A Implement Rochester 2034's Placemaking Plan.** Align this effort with related 2034 Plan Placemaking strategies that will help ensure a focus on connectivity of greenspaces. This effort contributes to Rochester's resilience by promoting better access to greenspace across the city, improving multi-modal and sustainable travel options, and creating more environmentally sustainable public spaces.

**NR-3.B Identify productive land with potential to transition to conservation land or climate buffers.** This strategy expands upon the Rochester 2034 Comprehensive Plan land use strategies that target vacant lands, with a focus on temporarily or permanently transforming lands into climate buffers: "natural areas specifically designed to reduce the impacts of climate change." The aim

is to build long-term transitions into leases to designate use for both productive and preservation purposes.

#### **NR-4: Restore and strengthen the city's natural systems that best protect from future climate conditions**

Many environmental resources can specifically serve important functions in reducing the severity of climate change impacts. Urban forests slow and reduce stormwater runoff, improve air quality, store carbon, and reduce the urban heat island effect which can exacerbate warming temperatures. Shoreline vegetation prevents erosion, and wetlands can serve as buffers to prevent major flooding. The strategies in this goal target regional planning, smart resource management, and community led efforts to ensure that existing natural systems continue to protect Rochester.

#### **Recommended Strategies for Goal NR-4**

**NR-4.A Increase awareness around local reforestation efforts and continue exploring funding opportunities for long-term maintenance, specifically focusing on reforestation in the northeast portion of Rochester.** Local reforestation efforts are especially critical to preserve the history, culture, and character of Rochester, the "City in a Forest." The City should continue working with appropriate local and regional partners on outreach and engagement efforts, as well as exploring funding opportunities to ensure long-term maintenance of existing and future urban forest in both the city and the region. Existing programs to build upon include Reforest Rochester Fund and Refine (Reforestation in the Northeast).

**NR-4.B Leverage regional planning efforts to integrate resilience measures into natural resource protection efforts.** Major planning efforts to improve access to natural resources (e.g., ROC the Riverway Program) exist throughout the city. However, they may not necessarily factor climate change resilience

into specific projects or initiatives. The City should inventory these efforts to determine effective and targeted ways to ensure flood protection, water quality, heat mitigation, etc.

**NR-4.C Develop a citizen science program to inventory natural resources with the goals of educating the public and prioritizing preservation/restoration efforts; make inventory publicly available.** Citizen science programs are simultaneously an engaging way to educate and spark public interest in science while crowdsourcing data collection on important issues. Leveraging public participation, including from students at K-12 schools and local higher education institutions, the City can develop a program through which participants help to inventory types and locations of natural resources in the city. This program could also educate the public about the impacts of climate changes on these resources.

**NR-4.D Support state and regional invasive species management initiatives.** Climate changes are predicted to worsen invasive species issues in Rochester and the surrounding region. This effort will help build on existing programs that target invasive species in Rochester (e.g., Finger Lakes Partnership for Regional Invasive Species Management).

**NR-4.E Promote the utilization of native and naturalized non-invasive plants.** Native and naturalized non-invasive plants are uniquely suited to our geography, geology, and climate. Their use will conserve water, reduce maintenance costs, protect our soils, clean our air, provide habitat for wildlife, and promote and celebrate our unique natural environment. The City can develop lists of native and naturalized non-invasive tree, shrub, grasses and wildflowers and education materials to support their use and implementation. Where feasible and practicable, invasive species should be removed.

## Cool Sweep Program

Extreme heat is of particular concern in Rochester as climate change leads to more days above 90°F, longer and more frequent heat waves, and overall hotter summer temperatures. Rochester’s Cool Sweep Program, which began in 2008, provides residents with relief from summer heat. During declared Cool Sweep events, the City offers extended

hours at public pools, cooling sprays from fire hydrants, spray parks, and additional spray features around Rochester. The Cool Sweep Program is an example of a successful resilience initiative that the City intends to continue in the coming years to help Rochester adapt to a changing climate.

More information is available at:

<https://www.cityofrochester.gov/cool sweep/>



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## SOCIOECONOMIC RESOURCES

### 4.3 Socioeconomic Resources (SR)

The goals and strategies for Socioeconomic Resources focus on how climate change affects Rochester’s communities, public health, and economy. They emphasize that Rochester’s residents are crucial to the city’s resilience. As a result, it will be critically important for Rochester to uphold the principles of environmental justice, providing resources and support for those who may have a more difficult time adjusting to climate change than others due to historical injustices, health challenges, and other socioeconomic issues.



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## SR-1: Enhance the ability of all populations to prepare for and respond to climate impacts

Climate change impacts everyone, but it disproportionately impacts some populations more than others. Individuals may be more vulnerable if they have limited financial, physical, or social means to prepare for and recover from acute climate events. Vulnerable populations in Rochester may include the elderly, those without easy access to capital or credit, non-native English speakers, immigrants, and refugees, disabled individuals or those with chronic health issues, and historically disenfranchised communities such as communities of color and other minority groups. Strategies that target support to these groups can help to reduce existing socioeconomic disparities, enabling Rochester as a whole to be more resilient in the face of climate change.

### Recommended Strategies for Goal SR-1

- SR-1.A Assess available resources for climate change preparedness across Rochester neighborhoods to identify gaps and additional needs.** The City should undertake a comprehensive research effort to gather data on existing programs and resources (e.g., cooling centers, emergency shelters, back-up energy supplies) by neighborhood. A public survey could supplement desktop research.
- SR-1.B Expand and raise awareness of existing financial programs (such as first-time homebuyers programs, energy efficiency programs, etc.) to assist low-income homeowners or owners of low-income rentals with preparing their properties for (or protecting them from) potential extreme weather events (e.g., floodproofing, HVAC system upgrades, etc.).** Potential funding focus areas include: expanded access to existing grant funding for building upgrades to incorporate resilience strategies; purchasing co-ops to lower the cost of building materials; grant funding targeting renters and low-income home owners to include measures such as mold abatement and infrastructure improvements.

**SR-1.C Expand outreach programs to assist climate refugees with transition to the Rochester community.** Rochester has and will continue to see increased immigration to the area due to extreme events such as Hurricane Maria. The City should foster and/or continue collaboration among community social services and non-profit organizations to provide resource toolkits, housing assistance, workforce development opportunities, etc.

**SR-1.D Provide technical assistance to low-income populations for preparedness efforts prior to extreme weather events.** In addition to providing neighborhood-based support services and supplies at affordable rates (reduced cost or free of charge), outreach and engagement efforts should also continue raising awareness regarding financing and funding opportunities available for deep retrofits or upgrades, especially for low-income residences.

**SR-1.E Develop a heat emergency plan to prepare residents, businesses, and institutions for increased instances of extreme heat, with a focus on assisting vulnerable populations in the community.** Having a heat emergency plan in place will equip city agencies, businesses, and residents with proper protocol and procedures to prepare for as well as quickly respond to heat emergencies. Components of the overarching plan might include the development of appropriate infrastructure and services, as well as a communication and education plan for residents regarding what to expect for future conditions.

## SR-2: Emphasize public health protection and improvement in planning for the future

The CVA identified vulnerabilities within the context of public health in Rochester. More days of extreme temperature will degrade air quality, exacerbating and inciting respiratory issues: increased precipitation can worsen mold exposure in buildings; and longer breeding seasons will increase the prevalence of vector borne diseases like West Nile virus and Lyme disease, among

## Climate Change and Health Equity (CCHE) Study: University of Rochester Collaboration

Working with City staff and local organizations, students at University of Rochester developed a study to explore the health impacts of environmental determinants on Rochester's most vulnerable communities.

The study featured a public survey, geographic and socioeconomic data analysis, and literature review to understand four major areas of climate impact:

- Extreme Heat Events;
- Extreme Storm and Weather Events,
- Air Quality; and
- Ticks, Mosquitoes, and Pollen Counts

One highlight of the collaboration included the use of the New York State Department of Health's Heat Vulnerability Index (HVI) to understand what neighborhoods in Rochester

are home to populations most at risk of health impacts, including those with asthma and other respiratory issues.

The CCHE study is an example of a successful research partnership that is both an educational tool and can inform how decisionmakers target adaptation resources.

other impacts. The strategies within this goal emphasize coordination across the major institutions in Rochester whose work touches public health in order to support community well-being and safety.

### Recommended Strategies for Goal SR-2

**SR-2.A Collaborate with healthcare institutions and county and state public health departments to assess public health impacts of climate change and develop response plan with strategies to mitigate impacts.** This effort can build upon existing research efforts (e.g., University of Rochester Climate Change and Health Equity study) to understand priority areas of concern with respect to climate change impacts on public health such as reduced air quality and increases in vector-borne diseases. Representatives of relevant public health institutions should work together to identify strategies and an implementation plan.

**SR-2.B Ensure that City employee safety policy accounts for issues related to climate change impacts (e.g., increased heat stress, changing biological factors, etc.).** The City should evaluate existing policies at public agencies across Rochester, and where feasible, incorporate resilience considerations through policy, staff education, and trainings.

### SR-3: Engage and educate the community on climate change and its implications for the future of Rochester

Critical to making Rochester more resilient is keeping residents continually informed about the latest climate science, what it means for daily life in Rochester, and what resources are available to help individuals and communities prepare and adapt. With a more engaged public, both decisionmakers and community members can more easily implement resilience efforts at local and city-wide scales. The strategies for this goal include education and outreach for residents of all ages.

### Recommended Strategies for Goal SR-3

**SR-3.A Develop curriculum on climate science and the economic, environmental, and social implications of climate change to disseminate to organizers of afterschool and summer programs.** Having a better understanding of the climate science, climate change conditions and impacts, as well as the associated economic, environmental, and social implications on Rochester and the surrounding area will empower the city youth to take action and participate in the city's sustainability and resilience efforts. This strategy can be developed in alignment with the environmental curriculum specified in the Rochester 2034 Comprehensive Plan.

**SR-3.B Continue disseminating outreach materials to engage residents, businesses, and institutions in citywide climate change initiatives, as well as to raise awareness on climate change preparedness and resilience. Implement a clear communication and messaging campaign that is accessible to all Rochester residents, including vulnerable populations, in order to raise awareness about climate change and its potential impacts.** Opportunities include: developing educational materials/training programs on climate preparedness for major employers; and providing technical assistance to help residents understand energy bills and how to reduce energy consumption.

**SR-4: Invest in workforce development and job creation aligned with future industry and economic conditions**

Climate change will require Rochester’s economy to adapt to a shifting status quo, as well as more uncertainty. Rochester will need to train workers to accommodate changes in existing jobs as well as create jobs in new fields in order to prepare for the impacts of climate change. For example, ensuring Rochester’s built environment can withstand increasing extreme weather events requires a workforce that is trained to fortify and repair infrastructure. The strategies under this goal aim to boost the workforce in expanding green industries, including building retrofits, new construction, energy management, and development of apprenticeship programs that offer training to students in careers benefiting Rochester’s resilience.

**Recommended Strategies for Goal SR-4**

**SR-4.A Identify potential opportunities and develop training programs to equip the local workforce with the appropriate skills to support expanding green industries (new construction, building retrofit, energy management/ technical assistance, renewable energy, etc.).** Expanding opportunities in green industries to be

inclusive of all skillsets and people from all backgrounds (youth, women, veterans, etc.), and provide opportunities for climate refugees to enter the workforce. Potentially work with the Chamber of Commerce, and existing companies to determine gaps in technical skillsets to inform worker training programs that support green industry expansion.

“We should be working on both business attraction and workforce development. A good workforce could attract companies. Focus on attracting the kind of jobs and companies we want, not just predicting what we are going to get.”

FEEDBACK FROM A TAC MEMBER

**SR-4.B Pursue partnerships with local businesses/ companies to introduce education and/or apprenticeship programs for high school students related to expanding green industries and/or careers in natural resource management.** Cultivate a pipeline for green careers by targeting outreach for student job fairs to local and regional businesses in green industries; and identifying specific businesses to pilot a green jobs internship or apprenticeship program for high school and college students. Target students in tech and vocational high schools and associate’s degree programs, in addition to students attending four-year college programs.

**SR-5: Ensure that infrastructure and services support access to basic needs across all neighborhoods**

Geographic disparities across Rochester may impact specific neighborhoods’ abilities to recover from an extreme event or prolonged period of stress due to climate change. The strategies under this goal focus

## NYSERDA Solar for All Program

“Solar for All” is a program administered by the New York State Energy Research and Development Authority (NYSERDA) that gives low-income households free community solar subscriptions. By funding solar throughout towns and municipalities in the state, the program helps residents invest in solar energy to reduce their energy bills and improve energy resilience in the event of grid failure.

For more information:

<https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Home/Community-Solar/Solar-for-All>



on ensuring that residents of all neighborhoods across the city can access food, transportation, medical care, and other basic necessities, even as conditions change.

### Recommended Strategies for Goal SR-5

**SR-5.A Increase access to healthy food and implement programs to increase food security and social resilience.** Implement Rochester 2034’s Public Health and Safety strategy PHS-6A to work with partners to help fundraise and expand initiatives that provide access to fresh and nutritious food in neighborhoods and to underserved youth, families, seniors, and people with disabilities.

**SR-5.B Identify gaps and implement programs or enhance resources to make medical services more accessible throughout the city.** Implement Rochester2034’s goal of improving understanding of community health conditions, needs, service provision and access in the city and improve access to overall community health. And strategy PHS-5A Work with health care and health planning partners to inventory health facilities in the city, and document major health conditions, trends, utilization, needs, gaps, and opportunities to better inform City efforts to integrate health into its policies, programs, and neighborhood development efforts. Conduct an inventory of medical facilities throughout Rochester’s

neighborhoods, identifying any gaps in access to critical health care by location as well as demographic group. Develop a plan to address these gaps through the establishment of neighborhood health centers and/or expansion of branch locations of Rochester’s existing health care institutions.

**SR-5.C Identify neighborhoods with the highest incidence of health issues related to heat stressors and prioritize the use of funds for resilient infrastructure investments to mitigate the vulnerabilities in these areas.** Use existing research and readily available data (e.g., census data, NYS heat vulnerability index) to correlate socioeconomic factors with environmental stressors. Target support and intervention accordingly (e.g., focus cooling in low-income populations with heat-related illness)

**SR-5.D Conduct frequent needs assessments of transportation options as climate conditions evolve.** Establish ongoing evaluations of ridership, destinations, repairs, and other metrics to understand changing needs in the context of climate changes that could impact service provision (structural damage due to extreme storms, insufficient protection from extreme heat, etc.)



# 5 | Implementation Plan

Implementation of the CCRP will need close coordination and collaboration within City Departments, as well as with other state and regional planning efforts. Furthermore, effective implementation of the identified strategies (as well as the timeframe for implementing them) will depend on their financial feasibility and available of funding.

## 5.1 Overview of Strategy Implementation Plan

The recommended strategies presented in **Section 4** are part of a larger Strategy Implementation Matrix. This matrix contains three sections, one for each of the three planning subject areas (Infrastructure/Built Environment, Natural Resources, and Socioeconomic Resources). The purpose of this implementation matrix is to identify all necessary parties and resources for effective execution/deployment of each of the recommended strategies. Key components that will inform and drive the effectiveness of these strategies include (but are not limited to) available technical and financial resources, appropriate organizations/staff/stakeholders that should be engaged or collaborated with, and alignment with existing key planning efforts or actions (such as Rochester 2034, *Community-wide Climate Action Plan*, etc.).

An abbreviated version of this matrix is presented below, which includes details for each Strategy, including Potential Key Partners / Implementers, Implementation Timeframe, and Alignment with Rochester 2034 Goals and Strategies.

### 5.1.1 Potential Key Partners/Implementers

The City of Rochester is home to a robust network of neighborhood organizations, business organizations, block clubs, and community development organizations. These organizations can be leveraged during implementation to broaden the reach of involvement and amplify the benefits of the recommended strategies and actions.

Similar to the 2017 CAP, the City has identified the following potential stakeholders to support implementation of the CCRP:

#### Local

- › Faith-based organizations
- › Professional organizations
- › Advocacy groups
- › Non-profit organizations
- › Higher education institutions
- › Private developers
- › Local businesses
- › Rochester City School District (RCSD)
- › Neighborhood associations

#### Regional

- › Telecommunications providers
- › Media organizations
- › Workforce development organizations
- › Rochester-Genesee Regional Transit Authority
- › Rochester Regional Transit Service (RTS)
- › Genesee Transportation Council
- › Rochester Gas & Electric (RG&E)
- › Monroe County (Planning & Development Department, Department of Environmental Services, and Health Department)

### **Regional (continued)**

- › Finger Lakes Regional Economic Development Council
- › Genesee-Finger Lakes Regional Planning Council
- › Towns and municipalities in Monroe County

### **New York State**

- › New York State Energy Research and Development Authority (NYSERDA)
- › New York State Department of Environmental Conservation (NYSDEC)
- › New York State Department of Health (NYSDOH)
- › New York State Department of Labor (NYSDOL)

### **Federal**

- › Federal Emergency Management Agency (FEMA)
- › Army Corps of Engineers

The City will also continue leveraging its communication channels to help Rochester residents and businesses stay informed and have an active role in enhancing Rochester’s resilience.

### **5.1.2 Implementation Time Frame**

For each strategy, the following recommended implementation time frames are considered:

- › Short = 1-2 years
- › Intermediate = 3-5 years
- › Long = 5+ years
- › Ongoing = Expanding on existing efforts (at local, regional, and state levels)

### **5.1.3 Alignment with Rochester 2034**

As noted in Sections 2 and 3, the CCRP is closely aligned with Rochester 2034. Resilience plays a key role in the Rochester 2034 plan as a guiding principle for the recommended goals and strategies and several Rochester 2034 adaptation actions are related to climate change resilience. For each CCRP strategy, the Strategy Implementation Matrix notes what, if any, overlap exists with goals or specific strategies in Rochester 2034. By identifying these overlaps, the CCRP encourages key partners to align planning efforts and resources for more successful and efficient strategy implementation.



## 5.2 Strategy Implementation Matrix

| ID   | Strategy   | Potential Key Partners /Implementers   | Implementation Time Frame | Alignment with Rochester 2034                                  |
|--|--|--|---------------------------|--|
| <b>INFRASTRUCTURE/BUILT ENVIRONMENT (IB)</b>                                   |  |  |                           |  |
| <b>IB-1: Fortify and build flexibility into critical infrastructure/assets</b> |  |  |                           |  |
| IB-1.A   | Establish a multi-jurisdictional stakeholder group to identify critical infrastructure and implement resiliency improvements.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Towns and municipalities in Monroe County</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> <li>› Rochester-Genesee Regional Transit Authority</li> <li>› Genesee Transportation Council</li> <li>› RG&amp;E</li> <li>› Hospitals/Universities</li> </ul> | Intermediate              | Goal CC-1  |
| IB-1.B   | Upgrade flood maps using precipitation data projections, and re-assess or update requirements for elevation certificates for assets in/near floodplain.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> <li>› NYSDEC</li> </ul>   | Intermediate              | Goal CC-1  |
| IB-1.C   | Develop resilient design standards for public facilities and infrastructure projects (that are inclusive of flood resilience, materials selection, HVAC sizing/setpoint recs, right-sized culverts, etc.). | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Professional associations</li> </ul>   | Intermediate              | Strategy CC-2e   |
| IB-1.D   | Continue to monitor harbor infrastructure to protect against flood risk.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Army Corps of Engineers</li> <li>› NYSDEC</li> </ul>  | Long-term/<br>Ongoing     | Strategies NR-1d, e  |
| IB-1.E   | Codify, enforce and implement stormwater and green infrastructure best management practices in public and private development.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Towns and municipalities in Monroe County</li> <li>› Professional associations</li> </ul>   | Ongoing                   | Strategies CC-2j, k<br>Strategy CC-3g<br>Strategies NR-1a, b   |
| IB-1.F   | Encourage development of both private and public multi-use assets/facilities that can be used for more than one purpose or re-purposed after a certain period of time.                                     | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> </ul>   | Long-term                 | Goal SCC-3   |
| IB-1.G   | Explore opportunities for off-grid local renewable energy sources for emergency energy generation/back-up power systems and potential battery storage.   | <ul style="list-style-type: none"> <li>› City</li> <li>› RG&amp;E</li> <li>› Higher education institutions</li> <li>› Healthcare institutions</li> <li>› Local businesses</li> <li>› NYSERDA</li> </ul>  | Long-term                 | Strategy CC-1f<br>Goal CC-2 (all strategies)<br>Strategy CC-3f |



| ID   | Strategy   | Potential Key Partners /Implementers  | Implementation Time Frame | Alignment with Rochester 2034                 |
|--|--|---|---------------------------|---|
| <b>IB-2: Improve public-private communication and coordination for emergency management</b>            |  |   |                           |   |
| IB-2.A   | Maintain a City-managed climate change adaptation and resilience webpage with a resource repository for use by public and private entities.  | <ul style="list-style-type: none"> <li>› City</li> </ul>  | Ongoing                   | Goal CC-4                                     |
| IB-2.B   | Continue training for appropriate personnel in emergency planning efforts across multiple sectors.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Neighborhood associations</li> <li>› Building managers</li> <li>› Local businesses</li> </ul>   | Ongoing                   | Goals PHS-1                                   |
| IB-2.C   | Harden the telecommunication grid to ensure information and resources can continue to be disseminated through various communication channels, especially during emergencies.                           | <ul style="list-style-type: none"> <li>› Telecommunication providers</li> <li>› Monroe County</li> <li>› City</li> <li>› Local businesses</li> <li>› Major institutions (hospitals, schools, etc.)</li> </ul>                       | Long-term                 | Goal SC-2                                     |
| IB-2.D   | Establish a multi-pronged emergency communication strategy, ensuring that communication channels are accessible to all populations, including non-native English speakers and other vulnerable groups. | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Neighborhood associations</li> <li>› Faith organizations</li> <li>› Media organizations</li> <li>› Workforce development organizations</li> </ul> | Intermediate              | Goals PHS-1 and 3<br>Strategy BCC-3d          |
| <b>IB-3: Ensure land use regulations and building standards prepare Rochester for the next century</b> |  |   |                           |   |
| IB-3.A   | Develop and adopt resilient design guidelines for private development (new construction and existing building retrofit projects).  | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> <li>› Local businesses</li> <li>› Towns and municipalities in Monroe County</li> <li>› Professional associations</li> </ul>                        | Intermediate              | Goal CC-2<br>Strategy CC-3g<br>Strategy NR-1a |
| IB-3.B   | Update the City of Rochester's Flood Damage Prevention Ordinance (amended in 2009) for future flood potential based on climate projections.  | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSDEC</li> <li>› FEMA</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> </ul>  | Short-term                | Strategy CC-2e                                |
| IB-3.C   | Incentivize the use of Low Impact Design principles and the application of green/resilient rating systems (e.g., LEED) for new building development and renovation, where appropriate.                 | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> </ul>  | Short-term/<br>Ongoing    | Strategy CC-2e<br>Strategies CC-3H and CC-3F  |
| IB-3.D   | Evaluate opportunities to introduce easements to accommodate future resilient infrastructure needs.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> </ul>  | Intermediate              | Goal CC-2                                     |



| ID   | Strategy  | Potential Key Partners /Implementers   | Implementation Time Frame | Alignment with Rochester 2034                   |
|--|---|--|---------------------------|---|
| IB-3.E   | Develop a zoning code to implement Rochester 2034 strategies to encourage mixed-use and high-density residential development along high-frequency transit corridors   | <ul style="list-style-type: none"> <li>› City</li> <li>› Community partners</li> </ul>   | Intermediate              | Strategies TRN-4b and PMP-1d                    |
| <b>IB-4: Improve the long-term functioning of infrastructure through maintenance and adaptive reuse</b>                          |   |  |                           |   |
| IB-4.A   | Develop maintenance programs for City-owned infrastructure with supporting financing mechanisms and climate resilience measures identified to strengthen critical infrastructure and assets.  | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSDEC</li> </ul>   | Intermediate              | Goal CC-1                                       |
| IB-4.B   | Build networks of technical experts to provide guidance and/or training for infrastructure resilience.  | <ul style="list-style-type: none"> <li>› Local businesses</li> <li>› Higher education institutions</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> <li>› CCRP Technical Advisory Committee members</li> </ul> | Ongoing                   | Goal CC-3                                       |
| <b>IB-5: Develop a sustainable transportation system to support future needs and functions under changing climate conditions</b> |   |  |                           |   |
| IB-5.A   | Incorporate resilient transportation topics into existing transportation planning groups to evaluate specific vulnerabilities and strengthen the transportation system's capacity to respond and adapt to anticipated climate change impacts. | <ul style="list-style-type: none"> <li>› RTS</li> <li>› Genesee Transportation Council</li> <li>› Non-profit organizations</li> <li>› Advocacy groups</li> <li>› County DOT</li> </ul>                                       | Ongoing                   | Goals TRN-1 and 4                               |
| IB-5.B   | Expand infrastructure that promotes multimodal transportation and mobility options.   | <ul style="list-style-type: none"> <li>› City</li> <li>› RTS</li> <li>› Genesee Transportation Council</li> <li>› Advocacy groups</li> </ul>   | Intermediate/<br>Ongoing  | Goals TRN-1, 2, 3, and 5<br><br>Strategy PMP-5d |
| IB-5.C   | Maintain and improve cooling and heating systems on buses and at bus stations.  | <ul style="list-style-type: none"> <li>› RTS</li> </ul>  | Intermediate              | Strategy TRN-4a                                 |



| ID   | Strategy  | Potential Key Partners /Implementers   | Implementation Time Frame | Alignment with Rochester 2034               |
|--|---|--|---------------------------|---|
| <b>NATURAL RESOURCES (NR)</b>  |   |  |                           |   |
| <b>NR-1: Ensure equitable distribution of recreational and environmental resources</b> |   |  |                           |   |
| NR-1.A   | Conduct a tree canopy assessment and expand street tree planting program, with a particular focus on residential neighborhoods with high concentrations of low-income individuals, high rates of respiratory illness, and other vulnerable populations. | <ul style="list-style-type: none"> <li>› City</li> <li>› Non-profits</li> <li>› Higher education institutions</li> </ul>   | Short-term                | Strategies NR-3a and 3c<br>PR-2b-d          |
| NR-1.B   | Preserve public access to open spaces in private redevelopment wherever possible.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> <li>› Community partners</li> </ul>   | Long-term/<br>Ongoing     | Strategy PR-1d                              |
| NR-1.C   | Develop a community-wide education and engagement program that promotes and empowers involvement of community members, particularly youth, in care for green spaces.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Non-profits</li> <li>› Higher education institutions</li> <li>› Neighborhood associations</li> </ul> | Short-term/<br>Ongoing    | Strategies PR-3d, PR-4e, NR-5b, CC-4a       |
| NR-1.D   | Plan and create more pocket parks in areas with high pedestrian traffic.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Neighborhood associations</li> </ul>  | Intermediate              | Strategy PR-2e;<br>Goals VNT-2 and VNT-3    |
| NR-1.E   | Identify funding mechanisms to ensure adequate resources are available for public space maintenance and for preservation of green spaces for recreation.  | <ul style="list-style-type: none"> <li>› City</li> </ul>   | Ongoing                   | Strategies PR-1c, d, and f;<br>PR-2a, PR-3a |
| NR-1.F   | Ensure all residents are served by and have access to public parks via a 10-minute walk and/or public transit.  | <ul style="list-style-type: none"> <li>› City</li> <li>› RTS</li> </ul>  | Intermediate              | Strategy PR-2d                              |
| <b>NR-2: Maintain and protect water resources</b>                                      |   |  |                           |   |
| NR-2.A   | Continue to work with the Monroe County Stormwater Coalition to raise awareness of water resources protection issues specific to Rochester.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› Non-profits</li> </ul>   | Ongoing                   | Strategies NR-1c, NR-5a                     |
| NR-2.B   | Continue to work with the Monroe County Stormwater Coalition to promote rain barrel use and/or other stormwater diversion techniques.   | <ul style="list-style-type: none"> <li>› City</li> </ul>   | Short-term                | Strategy NR-1b                              |
| NR-2.C   | Work with county and state partners to prioritize restoration of wetland areas that are integral to watershed management objectives for water quality/quantity as well as flood risk management.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County</li> <li>› NYSDEC</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> </ul>                          | Intermediate              | Strategy NR-1d                              |



| ID   | Strategy  | Potential Key Partners /Implementers  | Implementation Time Frame | Alignment with Rochester 2034  |
|--|---|---|---------------------------|--|
| NR-2.D   | Ensure ongoing funding for programs that protect water resources by increasing the resilience of Rochester’s water supplies, as well as wastewater and stormwater systems.                                  | <ul style="list-style-type: none"> <li>› Monroe County</li> <li>› City</li> <li>› NYS Environmental Facilities Corporation</li> </ul>   | Ongoing                   | Strategies NR-1b and d   |
| NR-2.E   | Identify priority areas for enhanced riparian buffers in the city and pilot priority areas for adaptive and resilient vegetation strategies.  | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSDEC</li> </ul>  | Intermediate              | Strategy NR-1e   |
| NR-2.F   | Participate where applicable in regional efforts in the management of waterways. Support enhanced NYS level legal protection of water bodies.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Monroe County towns and municipalities</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> <li>› NYSDEC</li> <li>› U.S. Army Corps</li> </ul>     | Intermediate              | Strategy NR-1c, CC-1c  |
| <b>NR-3 Increase amount and enhance connectivity of green spaces</b>   |   |   |                           |  |
| NR-3.A   | Implement Rochester 2034’s Placemaking Plan.  | <ul style="list-style-type: none"> <li>› City</li> </ul>  | Short-term                | Initiative Area 2 (The Placemaking Plan)<br><br>Strategies PR-2b, c, and d |
| NR-3.B   | Identify productive land with potential to transition to conservation land or climate buffers.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Private developers</li> <li>› Non-profits</li> </ul>   | Long-term                 | Strategies VNT-1b-d<br><br>Strategies VNT-4c and e                         |
| <b>NR-4 Restore and strengthen the city’s natural systems that best protect from future climate conditions</b> |   |   |                           |  |
| NR-4.A   | Increase awareness around local reforestation efforts and continue exploring funding opportunities for long-term maintenance, specifically focusing on reforestation in the northeast portion of Rochester. | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSDEC</li> <li>› Advocacy groups</li> </ul>   | Ongoing                   | Strategies NR-3a, NR-5a  |
| NR-4.B   | Leverage regional planning efforts to integrate resilience measures into natural resource protection efforts.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Genesee/Finger Lakes Regional Planning Council</li> </ul>  | Ongoing                   | Goal NR-1  |
| NR-4.C   | Develop a citizen science program to inventory natural resources with the goals of educating the public and prioritizing preservation/restoration efforts; make inventory publicly available.               | <ul style="list-style-type: none"> <li>› City</li> <li>› RCSD</li> <li>› Higher education institutions</li> <li>› Neighborhood associations</li> <li>› Advocacy groups</li> <li>› Non-profit organizations</li> </ul> | Short-term                | Strategy NR-5b   |

NATURAL RESOURCES



| ID     | Strategy   | Potential Key Partners /Implementers                                       | Implementation Time Frame | Alignment with Rochester 2034 |
|--------|--|--|---------------------------|-------------------------------|
| NR-4.D | Support state and regional invasive species management initiatives.    | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSDEC</li> </ul> | Ongoing                   | Strategy NR-3d                |
| NR-4.E | Promote the utilization of native and naturalized non-invasive plants. | <ul style="list-style-type: none"> <li>› City</li> </ul>                   | Ongoing                   | Strategy NR-3d                |



## SOCIOECONOMIC RESOURCES

| ID   | Strategy   | Potential Key Partners /Implementers  | Implementation Time Frame | Alignment with Rochester 2034 |
|--|--|---|---------------------------|-------------------------------|
| <b>SOCIOECONOMIC RESOURCES (SR)</b>  |  |   |                           |                               |
| <b>SR-1: Enhance the ability of all populations to prepare for and respond to climate impacts</b>                |  |   |                           |                               |
| SR-1.A   | Assess available resources for climate change preparedness across Rochester neighborhoods to identify gaps and additional needs.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Non-profits</li> <li>› Higher education institutions</li> </ul>  | Short-term                | N/A                           |
| SR-1.B   | Expand and raise awareness of existing financial programs (such as first-time homebuyers programs, energy efficiency programs, etc.) to assist low-income homeowners or owners of low-income rentals with preparing their properties for (or protecting them from) potential extreme weather events (e.g., floodproofing, HVAC system upgrades, etc.). | <ul style="list-style-type: none"> <li>› City</li> <li>› NYSERDA</li> <li>› RG&amp;E</li> <li>› Non-profits</li> <li>› Neighborhood associations</li> <li>› Faith-based organizations</li> <li>› Advocacy groups</li> <li>› Local non-profit organizations</li> </ul> | Short-term/<br>Ongoing    | Strategies CC-3b-d            |
| SR-1.C   | Expand outreach programs to assist climate refugees with transition to the Rochester community.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Non-profits</li> <li>› Workforce development organizations</li> </ul>  | Ongoing                   | Strategy WRK-3a               |
| SR-1.D   | Provide technical assistance to low-income populations for preparedness efforts prior to extreme weather events.   | <ul style="list-style-type: none"> <li>› Non-profits</li> <li>› Neighborhood associations</li> </ul>  | Ongoing                   | N/A                           |
| SR-1.E   | Develop a heat emergency plan to prepare residents, businesses, and institutions for increased instances of extreme heat, with a focus on assisting vulnerable populations in the community.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Non-profits</li> <li>› Neighborhood associations</li> <li>› Faith organizations</li> </ul>   | Short-term                | N/A                           |
| <b>SR-2: Emphasize public health protection and improvement in planning for the future</b>                       |  |   |                           |                               |
| SR-2.A   | Collaborate with healthcare institutions and county and state public health departments to assess public health impacts of climate change and develop response plan with strategies to mitigate impacts.   | <ul style="list-style-type: none"> <li>› Health care institutions</li> <li>› Higher education institutions</li> <li>› Monroe County</li> <li>› NYSDOH</li> </ul>  | Intermediate              | Strategy PHS-5a and b         |
| SR-2.B   | Ensure that City employee safety policy accounts for issues related to climate change impacts (e.g., increased heat stress, changing biological factors, etc.).  | <ul style="list-style-type: none"> <li>› City</li> </ul>  | Short-term                | N/A                           |
| <b>SR-3: Engage and educate the community on climate change and its implications for the future of Rochester</b> |  |   |                           |                               |
| SR-3.A   | Develop curriculum on climate science and the economic, environmental, and social implications of climate change to disseminate to organizers of afterschool and summer programs.  | <ul style="list-style-type: none"> <li>› City</li> <li>› RCSD</li> <li>› Non-profits</li> <li>› Higher education institutions</li> </ul>  | Short-term                | Strategy NR-5c and CC-4a      |



## SOCIOECONOMIC RESOURCES

| ID   | Strategy  | Potential Key Partners /Implementers  | Implementation Time Frame | Alignment with Rochester 2034 |
|--|---|---|---------------------------|-------------------------------|
| SR-3.B   | Continue disseminating outreach materials to engage residents, businesses, and institutions in citywide climate change initiatives, as well as to raise awareness on climate change preparedness and resilience.  | <ul style="list-style-type: none"> <li>› City</li> <li>› Finger Lakes Regional Economic Development Council</li> <li>› RG&amp;E</li> <li>› Non-profits</li> <li>› Neighborhood associations</li> <li>› Higher education institutions</li> <li>› Advocacy groups</li> <li>› Faith organizations</li> </ul> | Ongoing                   | Strategy NR-5a and b, CC-4a   |
| <b>SR-4: Invest in workforce development and job creation aligned with future industry and economic conditions</b> |   |   |                           |                               |
| SR-4.A   | Identify potential opportunities and develop training programs to equip the local workforce with the appropriate skills to support expanding green industries (new construction, building retrofit, energy management/ technical assistance, renewable energy, etc.). | <ul style="list-style-type: none"> <li>› City</li> <li>› Higher education institutions</li> <li>› Finger Lakes Regional Economic Development Council</li> <li>› New York State Department of Labor</li> <li>› Workforce development organizations</li> <li>› NYSERDA</li> </ul>                           | Short-term                | Strategies WRK-3a-e           |
| SR-4.B   | Pursue partnerships with local businesses/ companies to introduce education and/or apprenticeship programs for high school students related to expanding green industries and/or careers in natural resource management.  | <ul style="list-style-type: none"> <li>› City</li> <li>› RCSD</li> <li>› Monroe County</li> <li>› Higher education institutions</li> <li>› Local non-profit organizations</li> </ul>  | Intermediate              | Strategy WRK-2a               |
| <b>SR-5: Ensure that infrastructure and services support access to basic needs across all neighborhoods</b>        |   |   |                           |                               |
| SR-5.A   | Increase access to healthy food and implement programs to increase food security and social resilience.   | <ul style="list-style-type: none"> <li>› City</li> <li>› Neighborhood associations</li> <li>› Non-profits</li> </ul>  | Intermediate              | Strategies PHS-6a, b, c       |
| SR-5.B   | Identify gaps and implement programs or enhance resources to make medical services more accessible throughout the city.   | <ul style="list-style-type: none"> <li>› Monroe County</li> <li>› Health care institutions</li> </ul>   | Short-term/ Intermediate  | Strategy PHS-5a               |
| SR-5.C   | Identify neighborhoods with the highest incidence of health issues related to heat stressors and prioritize the use of funds for resilient infrastructure investments to mitigate the vulnerabilities in these areas.   | <ul style="list-style-type: none"> <li>› Monroe County</li> <li>› NYSDOH</li> <li>› Higher education institutions</li> </ul>  | Intermediate              | Strategy PHS-5a               |
| SR-5.D   | Conduct frequent needs assessments of transportation options as climate conditions evolve.  | <ul style="list-style-type: none"> <li>› RTS</li> <li>› Genesee Transportation Council</li> </ul>   | Ongoing                   | Strategy TRN-1i               |



