ROCHESTER CLIMATE VULNERABILITY ASSESSMENT

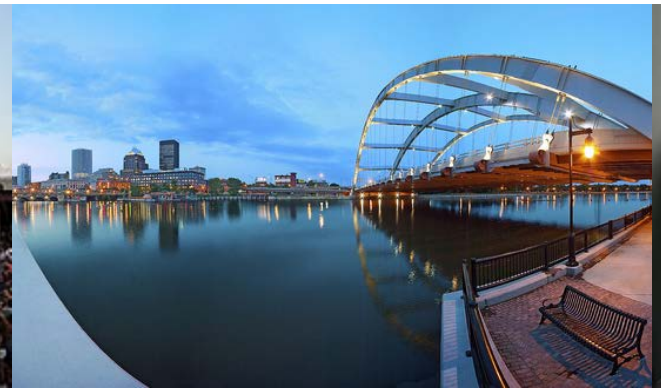
PUBLIC INPUT SESSION

August 29, 2018 | 6-8 PM

200 Years of Douglass 1818 2018

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

sustainable rochester

Agenda

I. Welcome & Introductions
II. Overview of the Rochester Climate Vulnerability Assessment Project
III. Presentation of climate change data & potential implications
IV. Stakeholder engagement
V. Summary findings of Rochester's strengths and vulnerabilities
VI. Next steps

Welcome & Introductions

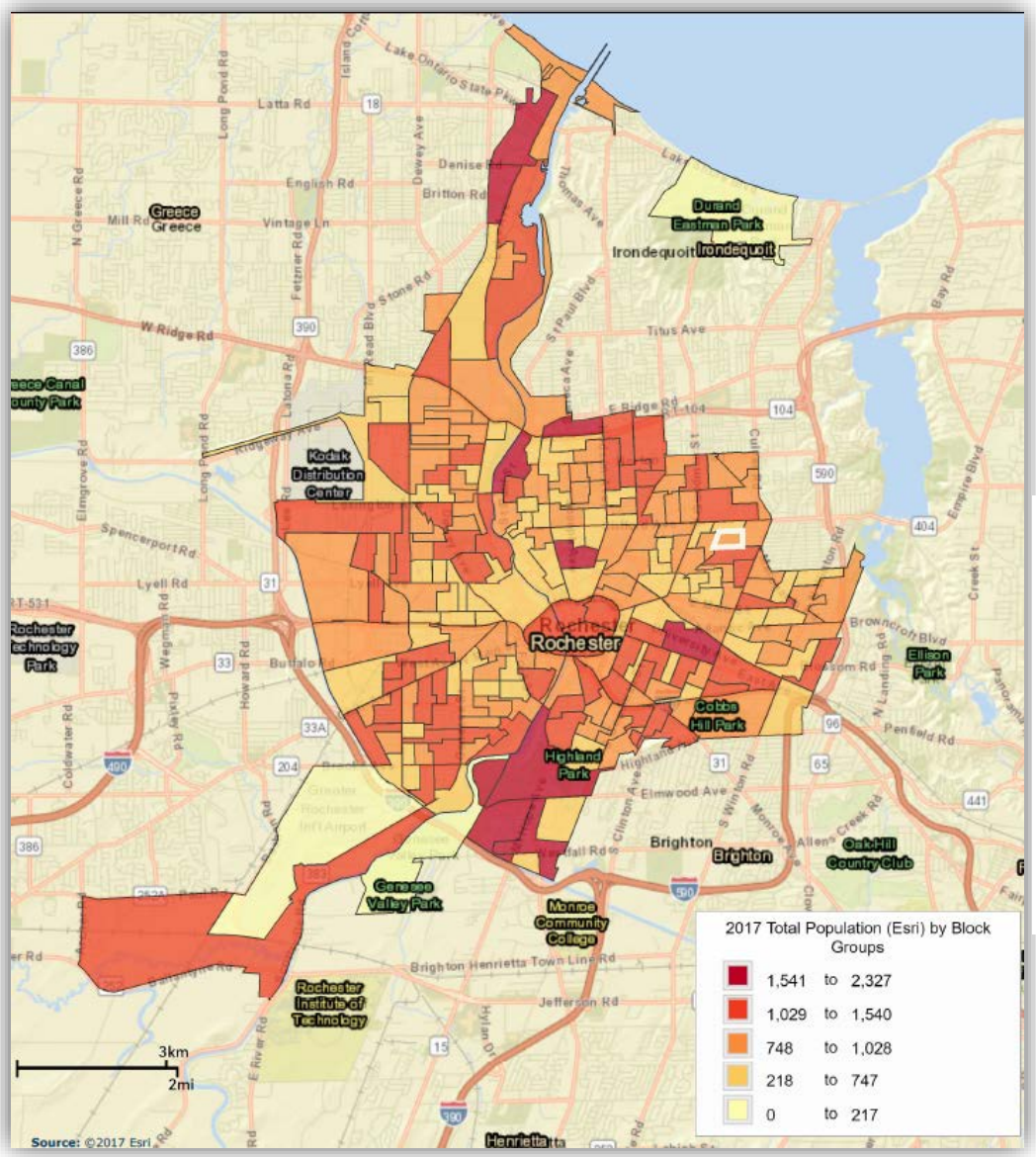
Project Team

Technical Advisory Committee

A fantastic group of technical experts and community stakeholders from various county and city agencies, businesses, educational institutions to provide feedback along the CVA process.

Context

Rochester by the Numbers

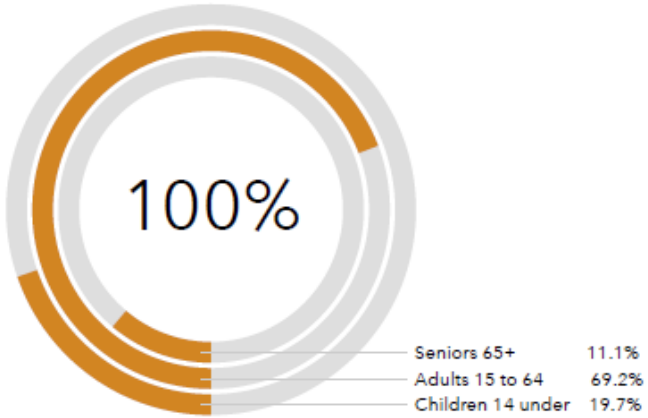


Population and Households

210,249
Total Population

87,262
Total Households

2.29
Average Household Size



26,494
Households With Disability

1,855
Households Without Vehicle

25,478
Households Below the Poverty Level

Source: 2011-2015 and 2017 data; provided by American Community Survey (ACS), Esri, Esri and Infogroup.

Rochester by the Numbers

BUSINESS

8,554
Total Businesses

168,068
Total Employees

31,005
Median Household Income

9.3%
Unemployment Rate

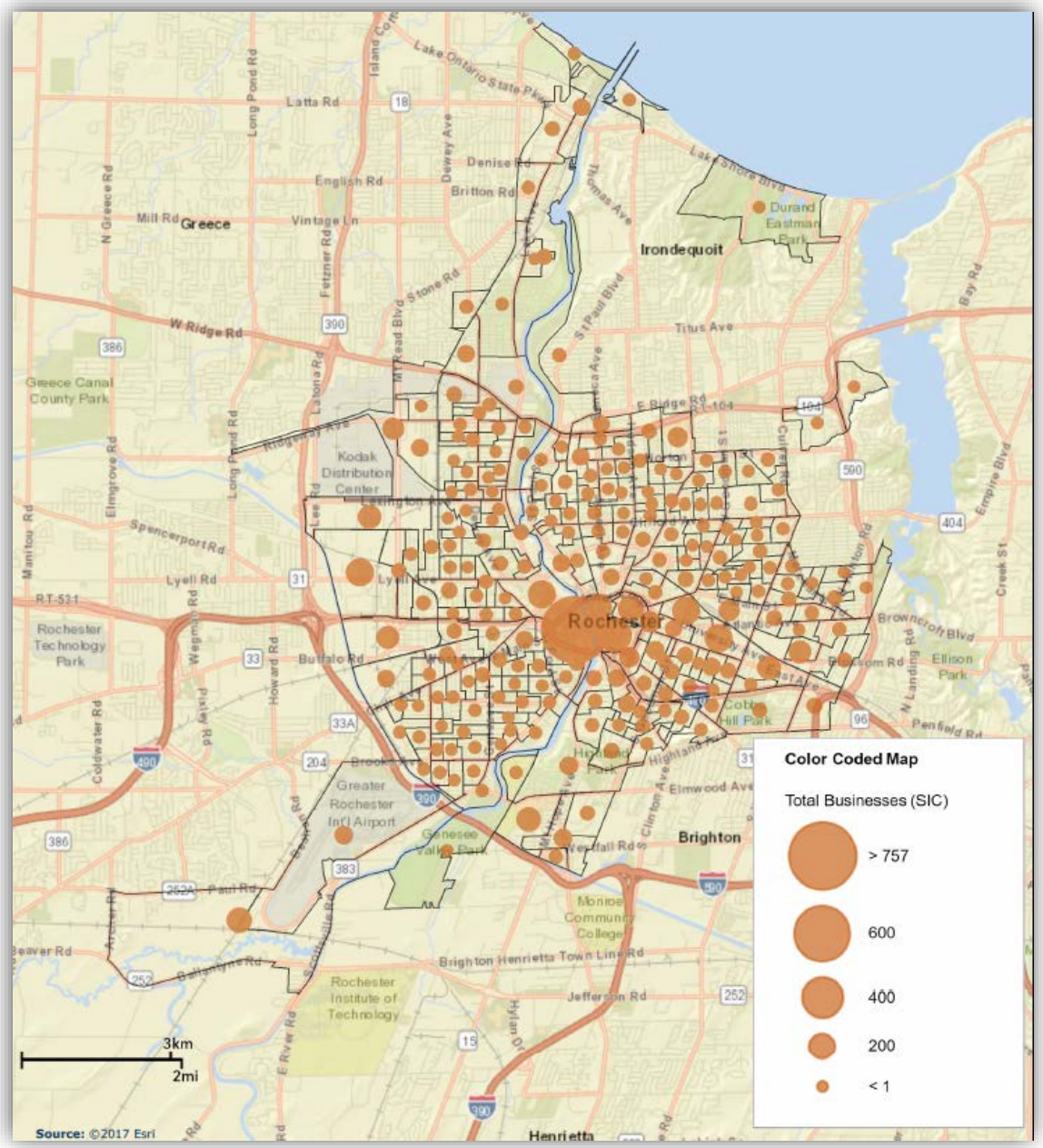
TRANSPORTATION TO WORK

8.8%
Took Public Transportation

10.9%
Carpooled

6.6%
Walked to Work

1.2%
Bike to Work



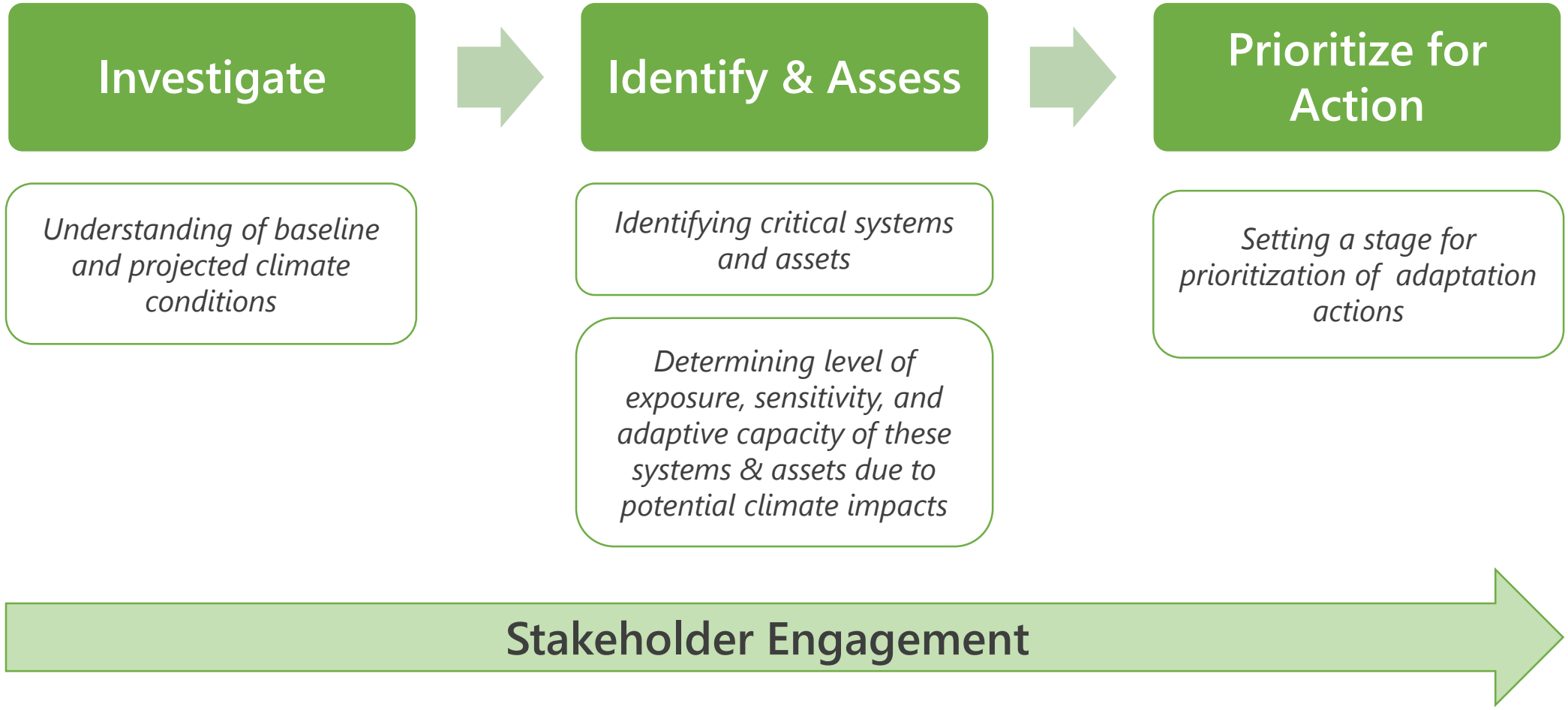
Source: 2011-2015 and 2017 data; provided by American Community Survey (ACS), Esri, Esri and Infogroup.

Overview of the Rochester Climate Vulnerability Assessment Project

Rochester Climate Vulnerability Assessment (CVA)

- Continuation of the City of Rochester's climate planning efforts
  - *Supporting the adaptation and resiliency component of the Community-wide Climate Action Plan*
- Better understanding of the City's vulnerabilities and adaptive capacity
- Serving as guide to the City's capital project planning
- Making sure Rochester is a resilient city

Rochester CVA Approach



Sensitivity

How a system or sub-system might be affected by the climate impacts to which it is exposed.

Sensitivity Levels	
S0	System will not be affected by the impact
S1	System will be minimally affected by the impact
S2	System will be moderately affected by the impact
S3	System will be largely affected by the impact
S4	System will be entirely affected by the impact

Adaptive Capacity

A system's ability to accommodate changes, manage damages, take advantage of opportunities, or cope with various climate impacts

Adaptive Capacity Levels	
AC0	System is not able to accommodate or adjust to impact
AC1	System is minimally able to accommodate or adjust to impact
AC2	System is somewhat able to accommodate or adjust to impact
AC3	System is mostly able to accommodate or adjust to impact
AC4	System is able to accommodate or adjust to impact in a beneficial way

Vulnerability Ranking

How vulnerable a system or sub-system is to the effects of climate change based on rankings of sensitivity and adaptive capacity.

		Sensitivity (Low to High) →				
		S0	S1	S2	S3	S4
Adaptive Capacity (High to Low) ↓	AC4					
	AC3					
	AC2					
	AC1					
	AC0					

Vulnerability Ranking Table
Potential Opportunity
Low Vulnerability
Medium-Low Vulnerability
Medium-High Vulnerability
High Vulnerability

Climate Trends & Projections

Regional and Local Climate Projections

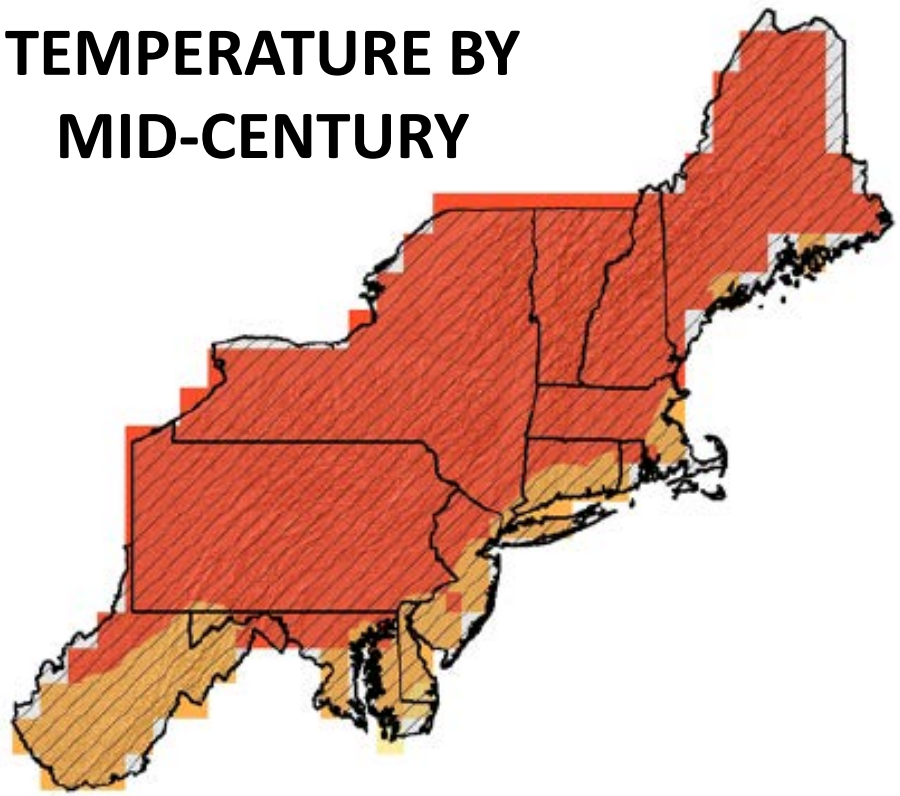
Increase in temperatures

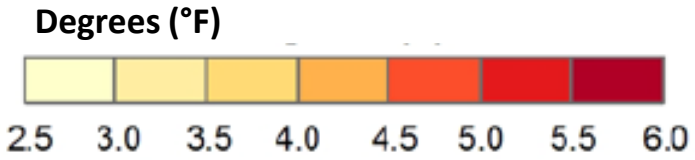
	Baseline (1971 – 2000)	Mid-Century (2050 – 2079)	End of Century (2080 – 2100)
Average Annual Temperature	47.7°F	52°F to 54°F	54°F to 59.4°F
Number of Days ≥ 90°F	8 days	22 to 34 days	27 to 57 days
Number of Days ≤ 32°F	133 days	86 to 96 days	68 to 88 days
Number of Heatwaves	≤ 1 event	3 to 4 events	3 to 8 events
Duration of Heatwaves	4 days	4 to 5 days	4 to 6 days

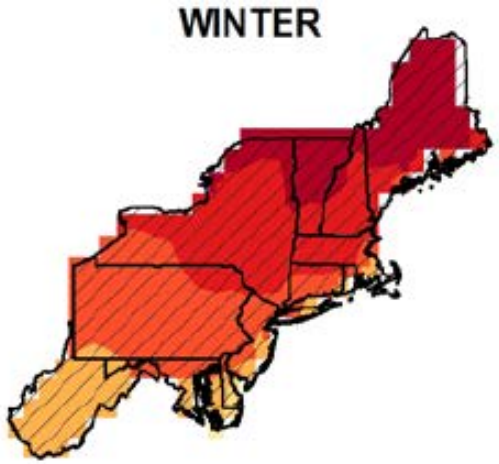
Source: NYSERDA ClimAID 2014 Report
NOAA
NCA 3

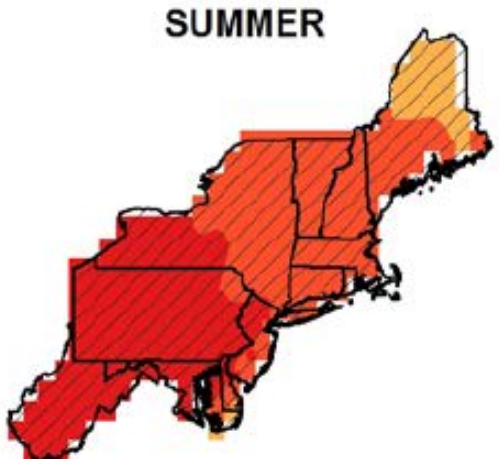
Regional and Local Climate Projections

INCREASE IN ANNUAL TEMPERATURE BY MID-CENTURY









Climate projections for annual and season annual temperature using the A2 (high) emissions scenarios. Sources: NOAA

Regional and Local Climate Projections

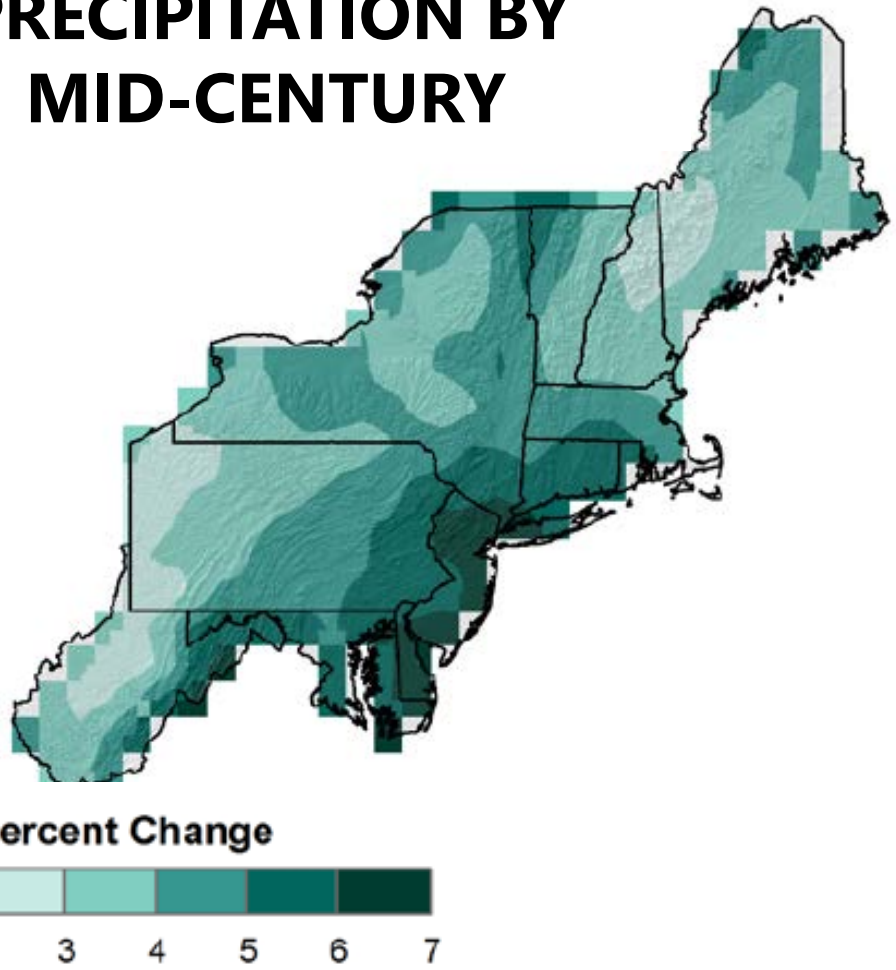
Changes in precipitation

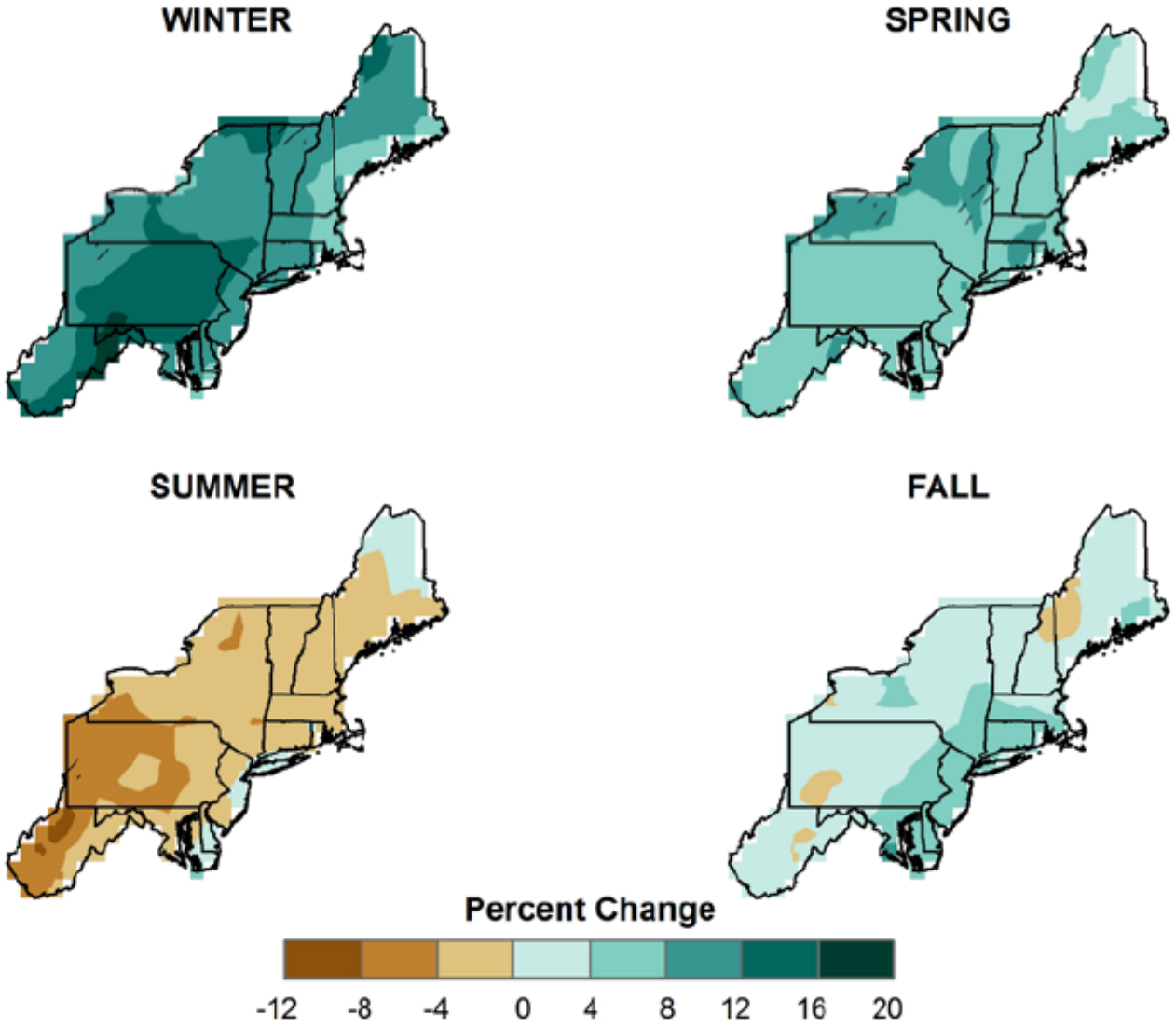
	Baseline (1971 – 2000)	Mid-Century (2050 – 2079)	End of Century (2080 – 2100)
Average Annual Precipitation	34 inches	4% to 10% increase	4% to 19% increase
Days per Year with Over 1" Rainfall	5 days	5 days	5 to 6 days
Extreme weather events	2-3 times more frequent by end of century		
Annual snowfall	Less frequent snowfall, shorter snow season		
Drought	Increase in short-duration drought during summer season by end of century		

Source: NYSERDA ClimAID 2014 Report
NOAA
NCA 3

Regional and Local Climate Projections

CHANGES IN ANNUAL PRECIPITATION BY MID-CENTURY





Climate projections for annual and season annual temperature using the A2 (high) emissions scenarios. Sources: NOAA

Planning Subject Areas, Systems and Sub-systems

Planning Subject Areas

	PLANNING SUBJECT AREAS		
	INFRASTRUCTURE	**NATURAL RESOURCES**	**SOCIOECONOMIC**
SYSTEMS	Transportation	Environmental Resources	Public Health
	Utilities/Energy	Natural Habitat	Economy
	Water	Recreational & Open Spaces	Cultural Resources
	Building & Facilities		Social System/Human Services

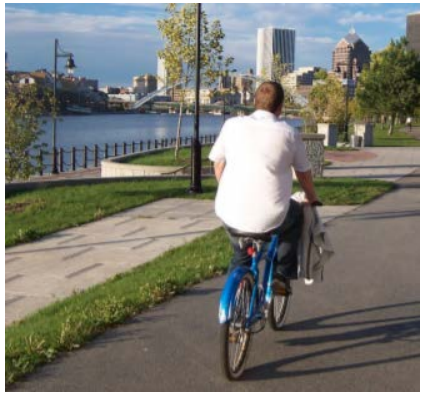



Cross-cutting Considerations

EQUITY

ACCESSIBILITY

PUBLIC HEALTH



Summary of Findings

Vulnerabilities

- Increased stress on existing systems
- Uncertainty about resources needed for repair and maintenance
- Uncertainty about the ability to accommodate increased demands
- Public health and safety risks – especially for vulnerable populations

Strengths & Potential Opportunities

- High adaptive capacity for most systems – redundancies are in place in the event of emergency
- Available technical ability & know-how expertise
- Best practices available in other regions/areas with similar climate (as projected for Rochester)
- New economic opportunities

Stakeholder Engagement: What we heard so far

Benefits of Stakeholder Engagement

- ✓Moving the conversation beyond the “choir”
- ✓Shape future funding priorities for infrastructure, emergency preparedness and response
- ✓Opportunity to improve/update environmental infrastructure
- ✓Plan for ways to use/reallocate existing resources to help the most vulnerable
- ✓Build on emergency preparedness planning and strengthening partnerships with Monroe County and State agencies

Technical Advisory Committee

I. Provide guidance, technical expertise, and feedback on the Climate Vulnerability Assessment process
II. Connect the Project Team with key stakeholder groups
III. Participate in two workshops
IV. Participate in Project outreach

Interviews/focus groups

- ✓ City code enforcement
- ✓ Fire department/emergency management
- ✓ Operations
- ✓ Arborist
- ✓ Disability community
- ✓ Chamber of commerce
- ✓ Common Ground Health
- ✓ Refugee community
- ✓ Foodlink
- ✓ RIT/UR
- ✓ RMAPI
- ✓ Monroe County Planning Department

How is Rochester most vulnerable?

- ✓ Flooding
- ✓ Increased temperatures
- ✓ Energy grid
- ✓ Disruptions to agriculture
- ✓ Influx of people who have been impacted due to impacts of climate change in other locations (i.e. Puerto Rico)
- ✓ Already strained services become even more strained during a crisis

Vulnerable Populations

- ✓ Seniors/elderly
- ✓ Children
- ✓ Low-income residents
- ✓ People without access to vehicles
- ✓ Disabled
- ✓ Visually/hearing impaired
- ✓ Those with mental illness
- ✓ Those dealing with substance abuse
- ✓ Non-native English speakers
- ✓ Undocumented immigrants
- ✓ Refugees
- ✓ Those without the ability to access resources in a crisis (i.e. family, friends, financial resources)

Key vulnerabilities

Related to…

- Aging housing stock (older roofs, windows, insulation, mechanical systems)
  - Lack of cooling/heating systems
  - Increased risk of mold/illness
  - Acute damage from extreme weather
- Transportation (potential disruptions)
  - Access to employment
  - Access to medical facilities
  - Access to locations with internet/libraries
- Less engagement with local government/fear of seeking help

We want to hear from you!

I. How do you think you might personally be affected?

II. How will your business/workplace be affected?

III. Do you have concerns, ideas or strategies for the City to consider?

Next steps

CVA Engagement & Schedule

- ✓ Pre-Engagement Interviews – February
- ✓ Technical Advisory Committee Workshop #1 – March 14, 2018
- ✓ Stakeholder interviews – March/April
- ✓ Technical Advisory Committee Workshop #2 – June 6, 2018
- → Public Open House – August 29th, 2018
- Final CVA Report – September
- Adaptation Planning – Fall 2018

Stay engaged!

Send us your comments and ideas:

https://www.surveymonkey.com/r/RochesterCVA

Make sure your family, friends, and fellow Rochester residents share their suggestions as well!