

# Chattanooga Resilience Plan

## *Developing Your Resilience Actions*

February 3<sup>rd</sup>, 2021

Time	Item
2:00	Welcome & Opening Remarks – Mayor Andy Berke & Jermaine Freeman
2:10	Resilience Planning Overview – Josh Human
2:15	Hear from Community Members doing Resilience!
3:00	Building Resilience Actions for Pandemics – David Paschane
3:30	Resilience Actions Overview – Josh Human
4:00	Close

# Safety Moment

## Handling Swollen Laptop Batteries:

Our laptops use lithium-ion polymer batteries. Unfortunately, inherent to lithium-ion polymer battery technology is the potential for swelling of the battery cells. Swollen batteries should not be used and need to be replaced and disposed of properly.

- Symptom: Laptop case is bulging. This will occur around the keyboard or mouse trackpad, sometimes can be visible underneath the laptop.
  - Symptom: Laptop screen is bulging. With tablets when the battery is located behind the device screen, the screen may begin to distort when a bulge becomes present.
- ✓ Do not use tools of any type to pry on or against the battery.
  - ✓ Contact IT professional to help solve the problem and remove the battery.
  - ✓ If a battery gets stuck in a device as a result of swelling, do not try to free it – puncturing, bending, or crushing a battery can be dangerous.
  - ✓ Swollen batteries are vulnerable to compromise as their casing is under stress from built up gasses within.

# Resilience Planning Overview

# Resilience Planning

Resilience planning empowers a diverse stakeholder group to evaluate plans and data, set strategic actions, and implement **projects** that will enable communities to adapt and thrive during adverse situations (disasters, economic disruptions, environmental clean up, pandemics etc.)

Resilience planning promotes the integration of resilience thinking into other planning mechanisms (land use, disaster management, public health and others)

A resilience plan provides the community with an understanding of policies, programs, and other actions that can be taken across many sectors to improve the community's resilience to hazards and changing conditions

Resilience Planning can reduce future disaster/disruption related response and recovery costs and improve recovery time following natural or human-caused events

# Goals of this Process:

## Develop a Resilience Plan with a focus on Climate Change

### Task 1.0: Data and Plan Analysis

- The main outcomes of this task were to develop a leadership team to help create the Chattanooga Regional Resilience Plan and a baseline of current data, policies and programs. Included in this task was a data overview that included a data gap analysis to identify current climate hazard data and a plan Integration report that will review all of the strategies within other reports to identify existing strategies that can be used within the Chattanooga Resilience Plan.

### Task 2.0: Resilience Action Assessment and Identification

- The main outcomes of this task are to provide a set of tools and processes that can help assess and prioritize the actions selected for the Chattanooga Resilience Plan. Each one of the tools is designed to help provide criteria for screening and guidance for proven action selection.

### Task 3.0: Resilience Action Plan/Report Development

- The main outcomes of this task are to provide a prioritized Resilience Action Plan that is influenced by the tasks completed in Tasks 1 and 2. In addition, Stantec will develop a Regional Resilience Plan connecting all of the key elements from the previous tasks into one cohesive planning document.

# Purpose of Today

- Hearing from others within the community and learning about Resilience Actions happening in Chattanooga – spur conversation and collaboration
- Hearing from a Pandemic expert on how you can make your community more resilient to pandemics
- Identifying and developing Resilience Actions for the Chattanooga Resilience Plan
  - We will provide an overview of Resilience Action development, including an overview of Actions from other places and ones we have already heard from you
  - We will provide a tool to capture Resilience Actions that will be screened and added to the Chattanooga Resilience Plan

In short, we want to provide you with tools, to provide us with the Best Resilience Actions...creating a more resilient Chattanooga

Hearing from our Community Members

Building Resilience Actions for Pandemics



# Resilience Actions Overview

# Risk Assessment

## Hazards for Assessment

Heatwaves

Extreme Cold

Flooding

Severe Storms (Thunderstorms)

Severe Winter Storms (Snow/Ice)

Wildfires / Droughts

Erosion / Sinkholes / Subsidence

Tornadoes

Earthquake

Pandemic



**ASSESSING THE DAMAGE**  
CHATTANOOGA

WVLT 8 6:01 45°

OTHER LAFOLLETTE TUESDAY WEDNESDAY THURSDAY  
HI 50 LOW 31 HI 55 LOW 35 HI 58 LOW 43

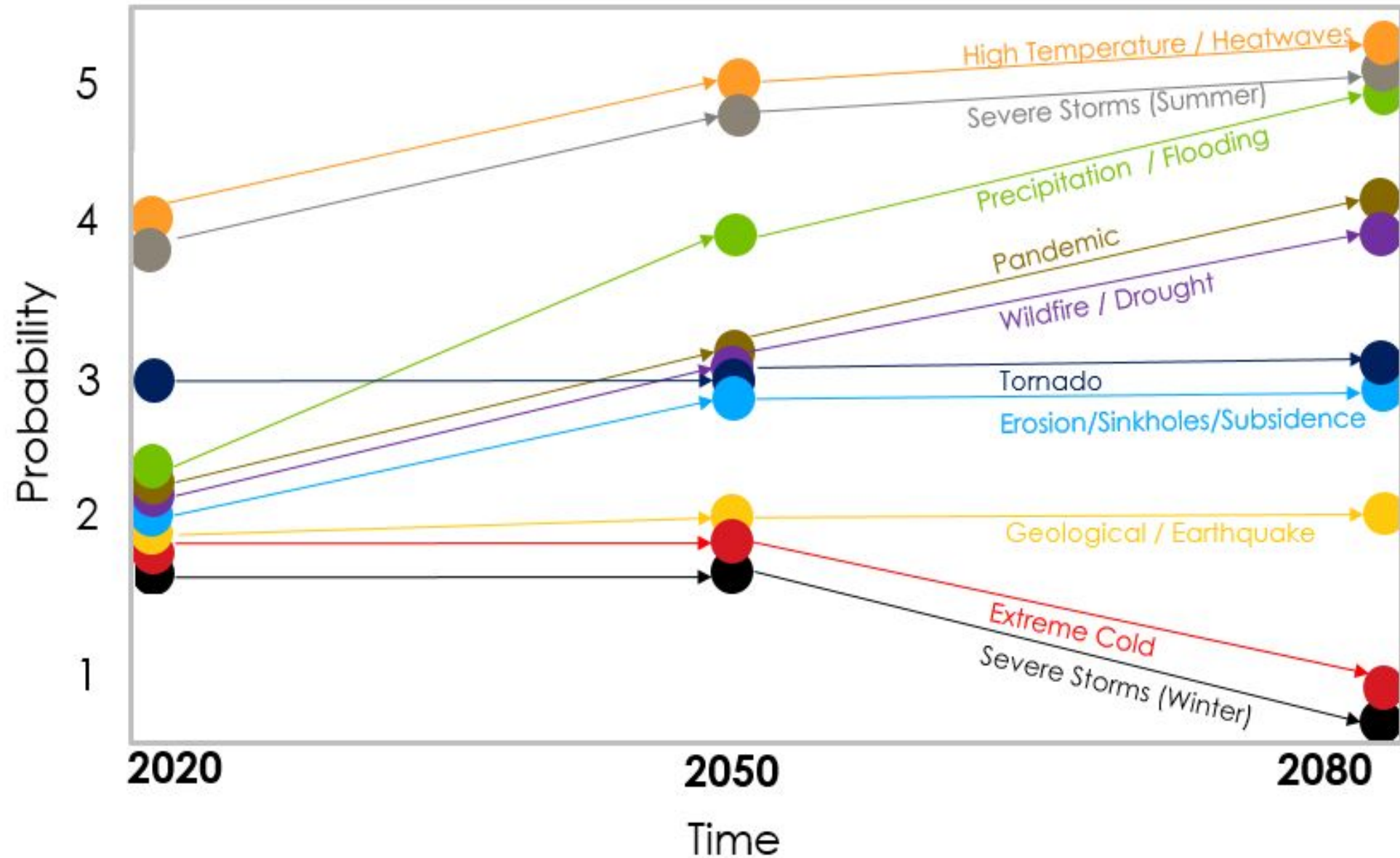
MORGAN; WAYNE; WHITLEY | FREEZE WARNING



**RESIDENTS EVACUATED AS FIRE GROWS**  
LITTLE BEND ROAD, SIGNAL MOUNTAIN

# Probabilities and Trends

Risk  
Assessment



# Resilience Action

## Sound Resilience Actions

- Result in less physical, economic, environmental, and social damage and impact;
- Support a fuller, more robust, speedier recovery;
- Preserve and enhance community functions, such as health and education;
- Require less time and money to be spent on relief efforts and repairs; and
- Promote “co-benefits,” such as a livable, walkable community connected to the natural environment.

# Resilience Action

## Example Resilience Actions:

### New Orleans:

- Implement Urban Water Plan
- Launch Downtown Energy Efficiency Challenge
- Launch Microgrid pilot project

### Louisville

- Develop and preserve new and/or rehabilitated quality and affordable housing
- Prioritize areas with low tree canopy
- Improve and maintain a stable, multimodal transportation system that effectively integrates all modes of mobility, from walking, biking, and transit to driving to ensure availability, accessibility and affordability.
- Address the aging wastewater, stormwater, and flood protection infrastructure
- Identify and remove barriers to racial equity in procurement and contracting processes

# Resilience Action

## Example Resilience Actions:

### Los Angeles

- Increase access to emergency preparedness and mitigation resources for businesses
- Expand electric fleets, charging infrastructure, and energy backup to reduce emissions and support emergency and response services
- Encourage increased access to emergency power for critical services
- Increase neighborhood outreach and education around wildfire and mudslide risk reduction in our most vulnerable neighborhoods

### Chicago

- Create a Green Stormwater Infrastructure Strategy 2.0
- Fund Clean Commercial Vehicle Fleets
- Modernize Chicago's Industrial Corridors
- Foster Community Preparedness for Stormwater Events



# Resilience Action

## Example Resilience Actions:

- Floodproof key critical facilities to avoid future flooding events
- Develop climate change models, data and GIS mapping to use as a tool(s) for future planning activities
- Engage minority and socially vulnerable groups with preparedness training
- Develop tabletop exercises and identify neighborhood ambassadors to complete preparedness trainings in neighborhoods
- Enhance internet access across the community
- Develop better continuity of operations plans for future pandemics
- Enhance our building codes to promote more resilience in our buildings and infrastructure
- Enhance our backup power capabilities within our key critical facilities

# Resilience Action Materials

## Adaptation Planning

### RESILIENCE ACTION DEVELOPMENT QUESTIONS

1. What existing gaps or outstanding needs does your department, organization, community, facility, and or asset have to enhance the resilience against potential shocks/hazards or stresses?
2. Consider shock/hazard events, economic or social stresses that have impacted or may impact your department, organization, community, facility, and or asset.
  - a. Are any studies or exercises needed to determine the extent of hazard risks and potential impacts to the city and or region of Chattanooga?
  - b. Is there currently a plan in place to deal with a specific shock or stress and the potential impacts?
  - c. Is there any capital project (i.e. culvert replacement, safe room, education program, policy) that would mitigate the effects of the identified shocks and stresses?

### RESILIENCE ACTION WORKBOOK INSTRUCTIONS OVERVIEW

The following document provides the instructions and definitions for each of the required elements to be captured in the 'Resilience Action Workbook' (excel document). The Resilience Action Workbook will be used to capture resilience actions for Chattanooga's Regional Resilience Plan. The Resilience Action Workbook is to be used as part of a strategic planning process and is designed to be:

- Completed electronically
- Developed and reviewed with your departments/colleagues/partners
- Returned to contact person identified below

**Please return all completed worksheets no later than February 16, 2021 to:**

Kristen Hewes  
Kristen.hewes@stantec.com

### INSTRUCTIONS

Use the Resilience Action Workbook to provide resilience actions to be included in the Chattanooga Regional Resilience Plan. Proposed actions should consider any needs that may reduce current and or future impacts of climate related shock events as well as other types of stress events. Each resilience action should be entered as a separate project, policy, or program within the spreadsheet. Ultimately, the Resilience Action Workbook is intended to compile all of Chattanooga's identified resilience needs into a single section of the plan and serve as a blueprint for reducing Chattanooga's overall vulnerability and enhance the community's resilience.

**Action Description:** Identify a specific action that, if accomplished, will enhance the resilience of Chattanooga. Actions may be in the form of policies (i.e., regulatory or incentive-based measures), programs (i.e., education, outreach, social, or greenhouse gas reduction) and/or structural projects (i.e., asset enhancements, new infrastructure, or environmental restorations). Include key details such as site location (i.e., building(s), road(s), region), type of action (i.e., reduce the occurrence of, enhance the education level of, create new policy for), and information on what is to be accomplished (i.e., more food locations for the homeless, new generators for critical facilities to reduce power outages during storm events, new flood structure to reduce flooding at a certain location).

**Why is it Important:** Discuss the benefits of this resilience action to the community, including specifically who or what it will serve (i.e., whole community, socially vulnerable, air quality enhancements). This description should help you better understand the action item and who should be a partner during implementation.

Please add your Resilience Actions below starting on Row 5. Rows 5-8 are examples. See Resilience_Action_Workbook_Instructions_Chattanooga_2021 (resilience document) and Resilience_Action_Development_Questions_2021 for action development guidance.							
Action Description	Why is it Important (Qualities)	Shock or Stress Addressed	Estimated Cost	Benefits	Potential Funding Source	Lead Implementer and/or Partner	Timeline
Improve backup power options for EIT Center and communication building during power outage events.	This measure will directly benefit from this action through the redundancy in the system. This action item will also help the general public as it will make our first responder network more resilient.	Power Outage, Severe Storms, Tornado, Aging Infrastructure, Crime and Violence	\$50,000 - \$100,000 (High)	High	General Fund	IT, Police, Fire	1 year
Improve renewable energy at multiple scales.	Currently less than 2% of the city's electricity consumption comes from renewable energy sources. Increasing our use of renewable energy will help reduce greenhouse gas emissions and limit our effects on climate change. This will also help in making our city more sustainable and improve our air quality.	Climate Change, Air Quality/Pollution	\$250,000 - \$500,000 (Very High)	Moderate	Asset Maintenance, Energy Grant, Green Purchasing Local (City), General Fund	Local Utility Provider, Sustainability Office, Mayor's Office	5-10 years
Enhance community education on the benefits that affect our community and how we can complete mitigation measures to make us more resilient (i.e., building codes, energy policies, land-use decisions).	This action is desired to help educate our city decision makers as well as the public on the benefits of resilient measures. Enhancing our building codes will make our community stronger and more resilient in future disasters. Educating the general public on energy efficiency methods will save them money and make our community more sustainable. Helping our decision makers understand where risks and vulnerabilities are located will help the region will help develop smarter land-use decisions that will decrease the effects of future disaster events.	SE Flooding, Inequality, Climate Change, Aging Infrastructure	\$5,000 - \$50,000 (Moderate)	High	General Fund, FEMA Grant	Public Works Department, SE Department, Emergency Management Department, University Partner	2-5 years



# Resilience Planning Team:

## City of Chattanooga Contacts:

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<https://connect.chattanooga.gov/regionalresiliency/>