

EPA BUILDING BLOCKS FOR REGIONAL RESILIENCE

What Does Resilience Look Like In Land of Sky Region?

Pre-Workshop 1 Homework



Outline

- Workshop Goals
- What is Resilience?
- Policy Context
- Climate and Non-climate Stressors
- Defining Resilience Locally
- Working with Partners
- Outcomes

Workshop Goals

1. Reduce vulnerability and risk.
2. Continue development of the regional resilience assessment (RRA).
3. Determine clear steps toward region-wide action to reduce risks from flooding, wildfires and landslides for priority assets.
4. Build resilience into current and future regional plans, with an emphasis on economic development and transportation assets.
5. Be proactive and approach resiliency through a positive lens of opportunities.



What is Resilience?

Resilience involves three considerations:

Building resilience to current climate variability or past hazard events

Building resilience to recently observed changing trends in climate threats and non-climate stressors

Building resilience to future projected changes in climate threats and non-climate stressors



Land of Sky Region
Economic Resilience Exposure Analysis
Phase I Report

June 2018





ECONOMIC RESILIENCE EXPOSURE ANALYSIS PHASE I REPORT:

Resilience is defined as the capacity of a community, business, or natural system to prevent, withstand, respond to, and recover from a disruption.



STOCKHOLM RESILIENCE CENTRE:

Resilience is “the capacity of a system....to deal with change and continue to develop. It is about how humans and nature can use shocks and disturbances like a financial crisis or natural hazards to spur renewal and innovative thinking.”



NATURAL HAZARD RESILIENCE GUIDEBOOK:

Resilience is being able to “bounce forward, not back.”



Policy Context

A winter landscape with snow-covered ground, bare trees, and a bright sun low on the horizon. The sun is positioned on the left side, creating a strong lens flare and casting long, dark shadows of the trees onto the snow. The sky is a deep blue with some light clouds. In the background, a dense forest of evergreen trees is visible under the twilight sky.

State Policy Context

State Policy Context

Executive Order 80

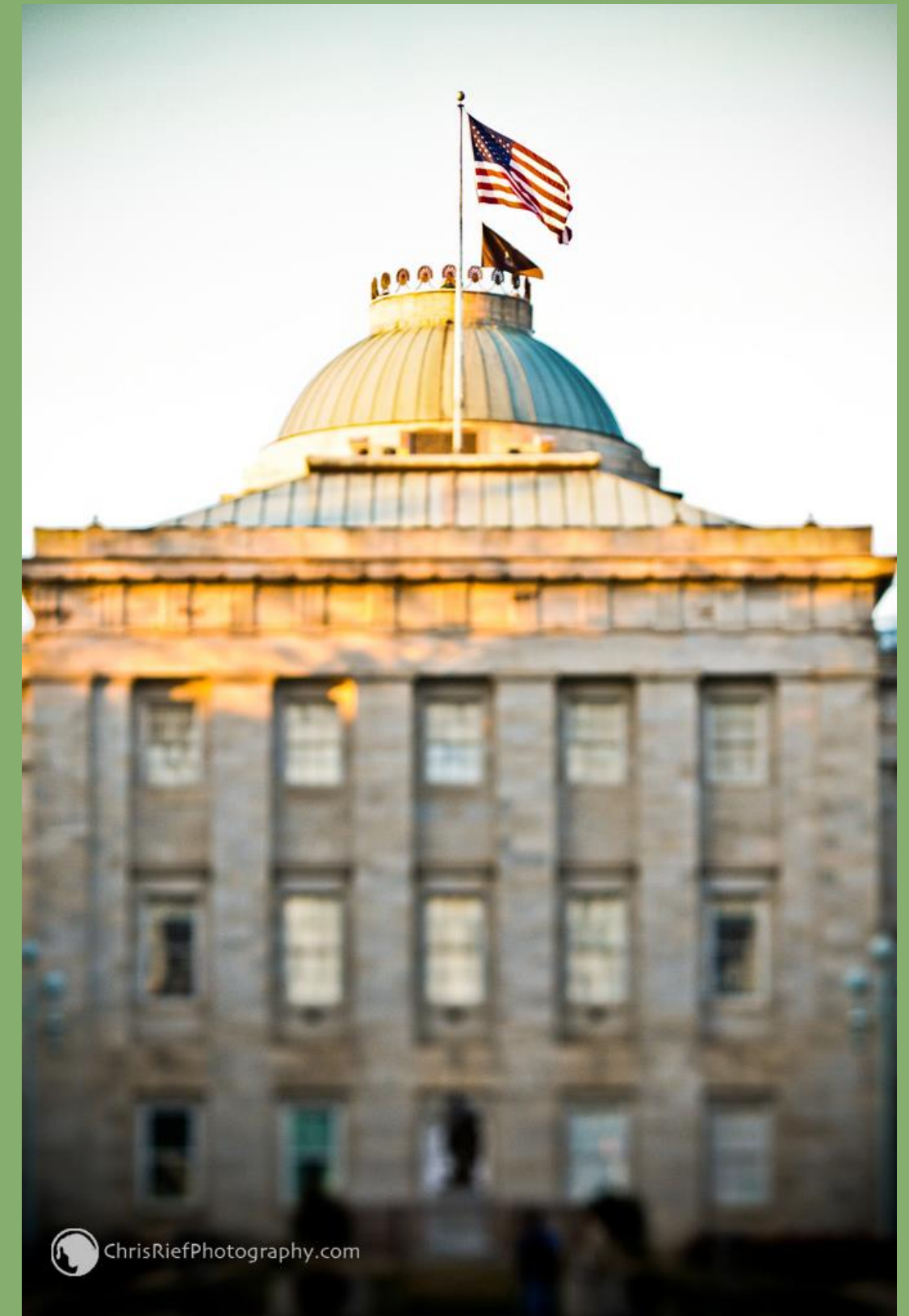
Enhanced
Hazard
Mitigation Plan

NC Climate
Office

NC Office of
Recovery &
Resiliency

NC Climate Risk
Assessment and
Resilience Plan

NC Climate Change
Interagency Council



North Carolina Climate Risk Assessment and Resilience Plan

Principles

- Act quickly and decisively to reduce the most harmful impacts of climate change—flooding, drought, landslides, and wildfires
- Act thoughtfully and collaboratively to develop equitable solutions
- Invest in safe, affordable, and connected communities
- Strengthen regional economies
- Support healthy communities, local identity, and recreational access to nature
- Implement Best Practices

North Carolina Climate Change Interagency Council

- Recommend goals and actions to meaningfully address climate change
- Develop, implement, and evaluate programs and activities that support statewide climate mitigation and adaptation practices

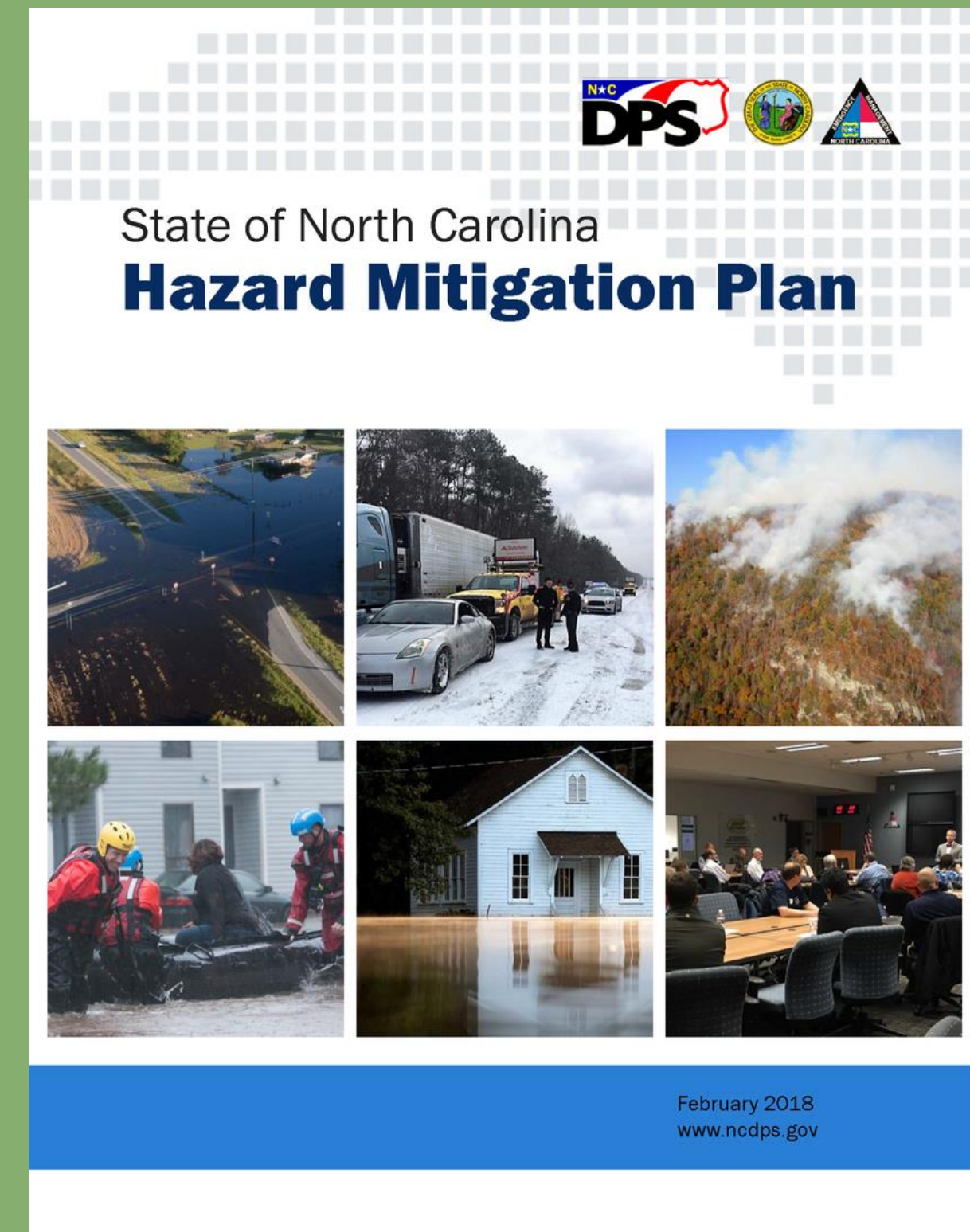


Enhanced Hazard Mitigation Plan 2018

This plan includes a consideration of future conditions (i.e. climate change).

Goals

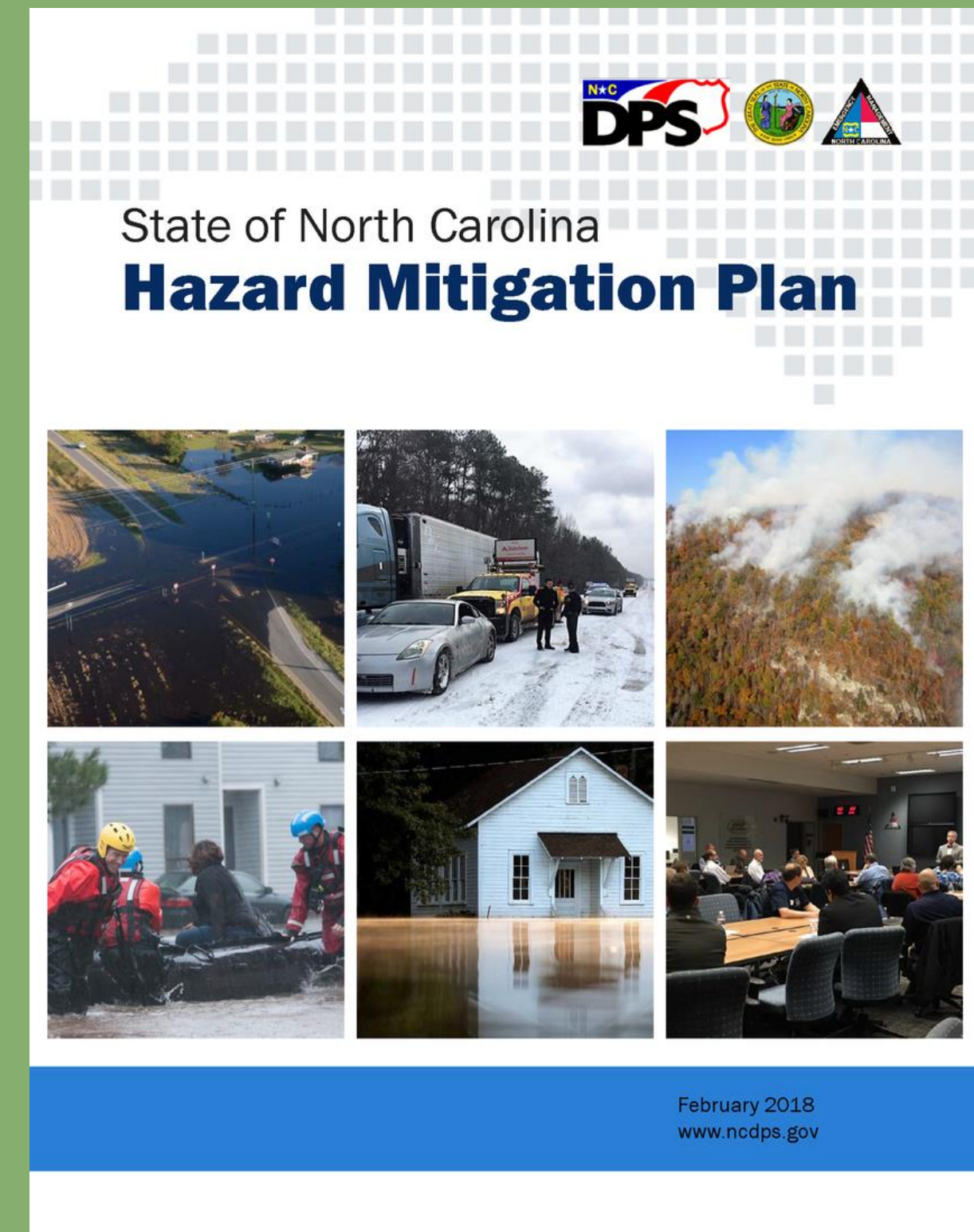
- Support mitigation planning at all levels of government
- Provide the public with proper risk information and availability of early warning systems for events
- Ensure community level resilience through empowering individuals and communities to make informed decisions to facilitate actions as necessary to adapt to, withstand, and quickly recover from future incidents.
- Achieve a measurable decrease in the long-term vulnerability of North Carolina against all hazards.
- Identify all threats and hazards most likely to impact North Carolina based on sound science and through coordination and collaboration with local, state, and federal agencies.
- Complete risk and disaster resilience assessments at the local level, defining localized vulnerabilities and consequences associated with potential hazards.



Enhanced Hazard Mitigation Plan 2018

Objectives

- Develop new and maintain/enhance existing applications and software to assist local officials, state officials, and other stakeholders in reducing risk.
- Carry out risk assessments for each of the hazards identified in this plan and help local governments use this information to mitigate these hazards.
- Provide technical assistance and training to local governments and other state agencies to help utilize state tools and information and conduct outreach to receive feedback from these stakeholders.
- Appoint a Chief Resiliency to direct the state's initiative to help storm-impacted communities rebuild smarter and stronger in the face of future natural disasters and long-term climate change.



North Carolina Climate Office

State Climatologist



The State Climatologist, located in the North Carolina Climate Office at NC State, provides outreach and assistance, research and education on the following climate topics:

- Topographic Features
- Temperature
- Precipitation
- Other Climatic Factors
- Severe Storms
- Agriculture
- Air Quality
- Tourism, Recreation, and Retirement



North Carolina Office of Recovery & Resiliency (NCORR)

- The North Carolina Office of Recovery and Resiliency (NCORR) leads the state's efforts in rebuilding smarter and stronger.
- NCORR manages both HUD and FEMA funding aimed at making North Carolina communities safer and more resilient from future storms.

FEMA programs administered by NCORR:

- Hazard Mitigation Grant Program (HMGP)
- BRIC (a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program)
- Flood Mitigation Assistance



Laws and Federal Notices

Learn about regulatory requirements



Action Plans

Review draft, amended and approved action plans



Program Manuals

Learn more about program operations



Environmental Reviews

Review public notices and other documents



CDBG-DR Reporting

View required CDBG-DR reporting



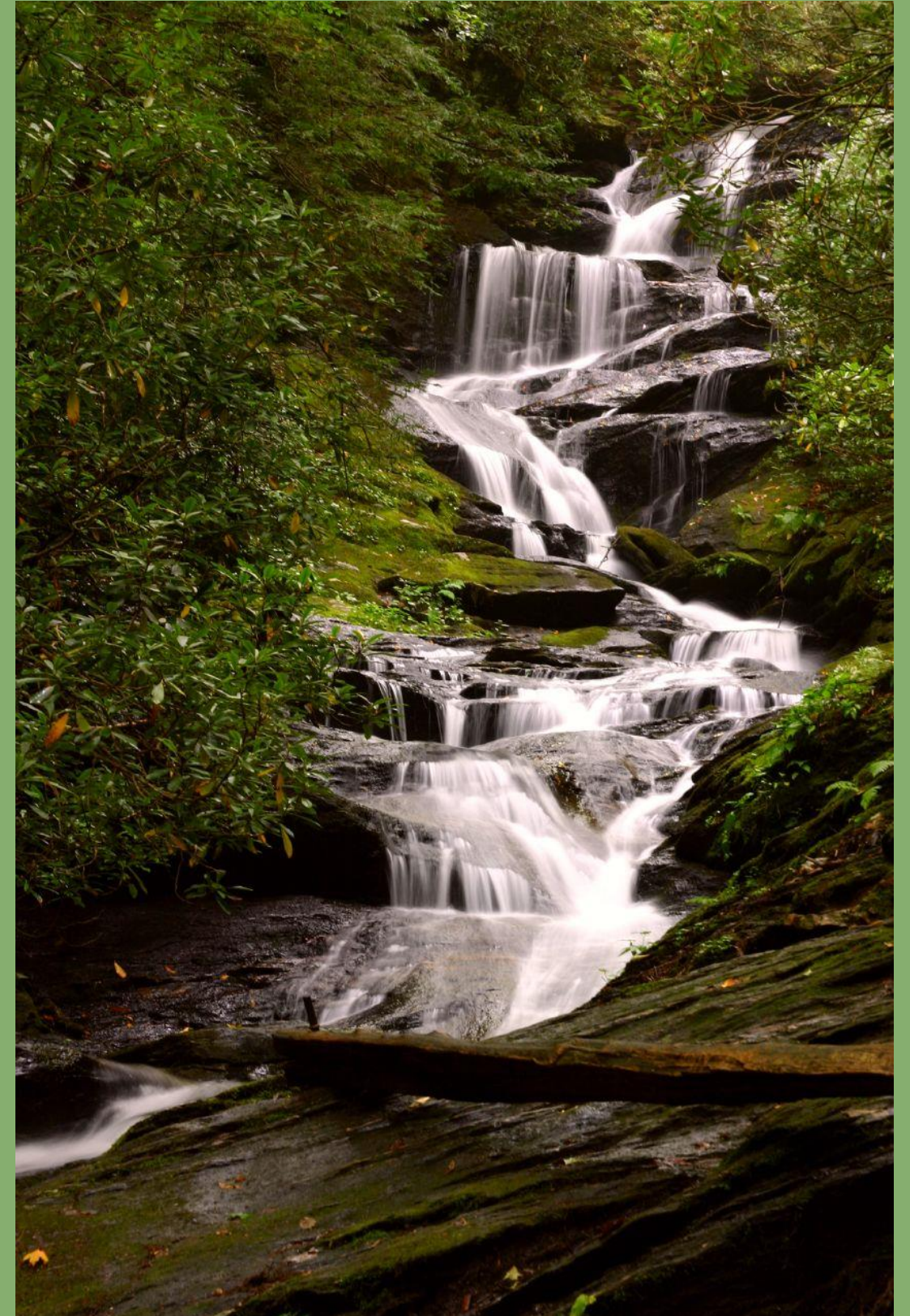
Policies and Procedures

Review our program framework

A winter landscape with snow-covered ground, bare trees, and a bright sun low on the horizon. The sun is positioned on the left side, creating a strong lens flare and casting long, dark shadows of the trees onto the snow. The sky is a deep blue with some light clouds. In the background, a dense forest of evergreen trees is visible under the twilight sky.

Regional and Local Policy Context

Regional and Local Policy Context



South Mountains HMP (2020)



Goals

- Improve public education/awareness.
- Protect human life, safety and welfare by minimizing the potential for damage to personal property, infrastructure, and loss of life due to natural and human caused hazards.
- Protect and maintain emergency services infrastructure and equipment to support emergency responders and improve disaster response time/operations.
- Improve technical, legal, and institutional capability to respond to and recover from disasters.
- Reduce or eliminate the risk of natural disasters.

Smoky Mountains Regional HMP (2017)



Goals

- Increase public awareness of hazard mitigation and hazard risk
- Enhance or create new policies that will help reduce the damaging effects of all hazards including natural, man-made and technological hazards
- Increase capabilities to support and implement effective mitigation measures.
- Identify and mitigate development and infrastructure in known hazard areas and consider the risks, impacts, and potential mitigation measures to incorporate if proposing to build new structures in known hazard areas
- Improve emergency service capabilities by identifying and seeking funding for necessary equipment as well as fostering regional cooperation for response and recovery.

LOSRC CEDS (2020)

Vision

A resilient, dynamic economy that develops, attracts, and retains talent with quality jobs, smart infrastructure investments, healthy, inclusive communities while protecting our natural and cultural resources.

Goal 1

Adaptive Regional Economy – includes a strategy to facilitate regional economic and infrastructure resilience planning



French Broad River MPO MTP (2020)

Objective

Improve system resilience to incidents



Resiliency Recommendations

- Conduct a vulnerability assessment to create foundation for a region-wide Hazard Mitigation Plan
- Include resiliency in scoring projects
- Create or maintain alternate routes to key transportation corridors and repair/replace bridges that serve as major connection points
- Consider identifying metrics to measure resilience, based on robustness, redundancy, resourcefulness and rapidity
- Work with state and local partners to identify and secure funding for recurring natural disaster hot spots
- Identify gaps in local and statewide plans for emergency planning
- Identify transportation system elements for evacuation planning

City of Asheville Resilience Assessment (2018)

Goal

Become more resilient to climate-related threats and hazards, and to integrate the results into City's comprehensive planning process



Planning for Climate Resilience
City of Asheville, North Carolina

Final Assessment Report

April 2018



THE CITY OF ASHEVILLE
NORTH CAROLINA



NEMAC
NATIONAL ENVIRONMENTAL
MODELING & ANALYSIS CENTER



Climate and Non-Climate Stressors

Climate Stressors



Frequency and intensity of severe thunderstorms in North Carolina are very likely to increase

Extreme precipitation frequency and intensity in North Carolina will is very likely increase

Increases in extreme precipitation is likely to increase inland flooding

Frequency of climate conditions conducive to wildfires in North Carolina are likely to increase

More intense droughts are likely

Average temperature for the region has been increasing since the mid-1980s; however, the increase is variable rather than a steady, year-to-year progression

Non-Climate Stressors



Population

High Growth

Land Use

Conversion – from farm to residential, increase in imperious surface

Income

Median income is relatively high, but rural/urban divide with high median home value

Education

High with a significant rural/urban divide

Commute

Asheville and Henderson are hubs with congestion

Water

Water usage increasing with population growth



Defining Resilience Locally



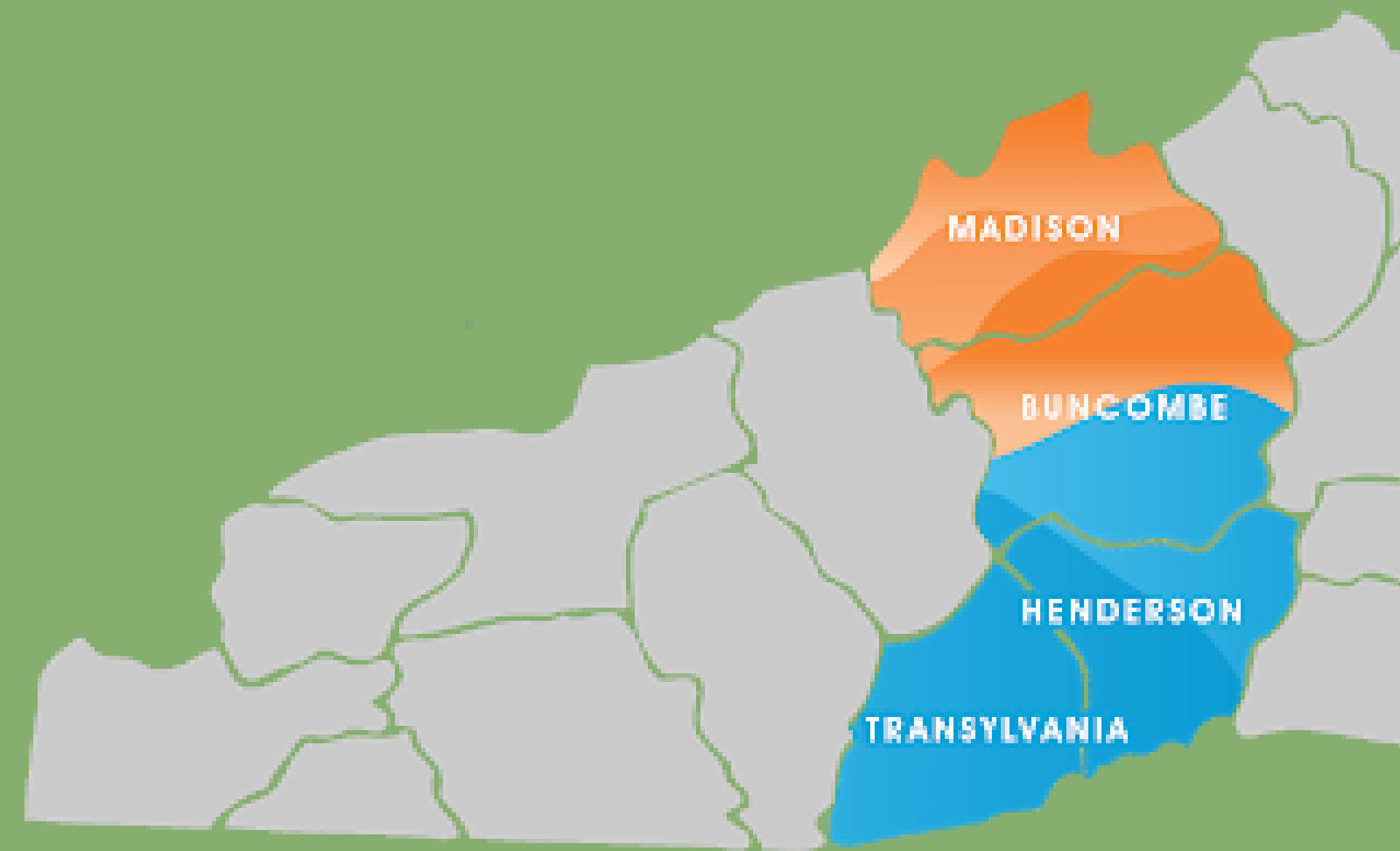
Defining Resiliency Locally

**Buncombe
Haywood
Henderson
Madison
Transylvania**

Land of Sky Resilience Planning

Key findings from threats and exposure analysis:

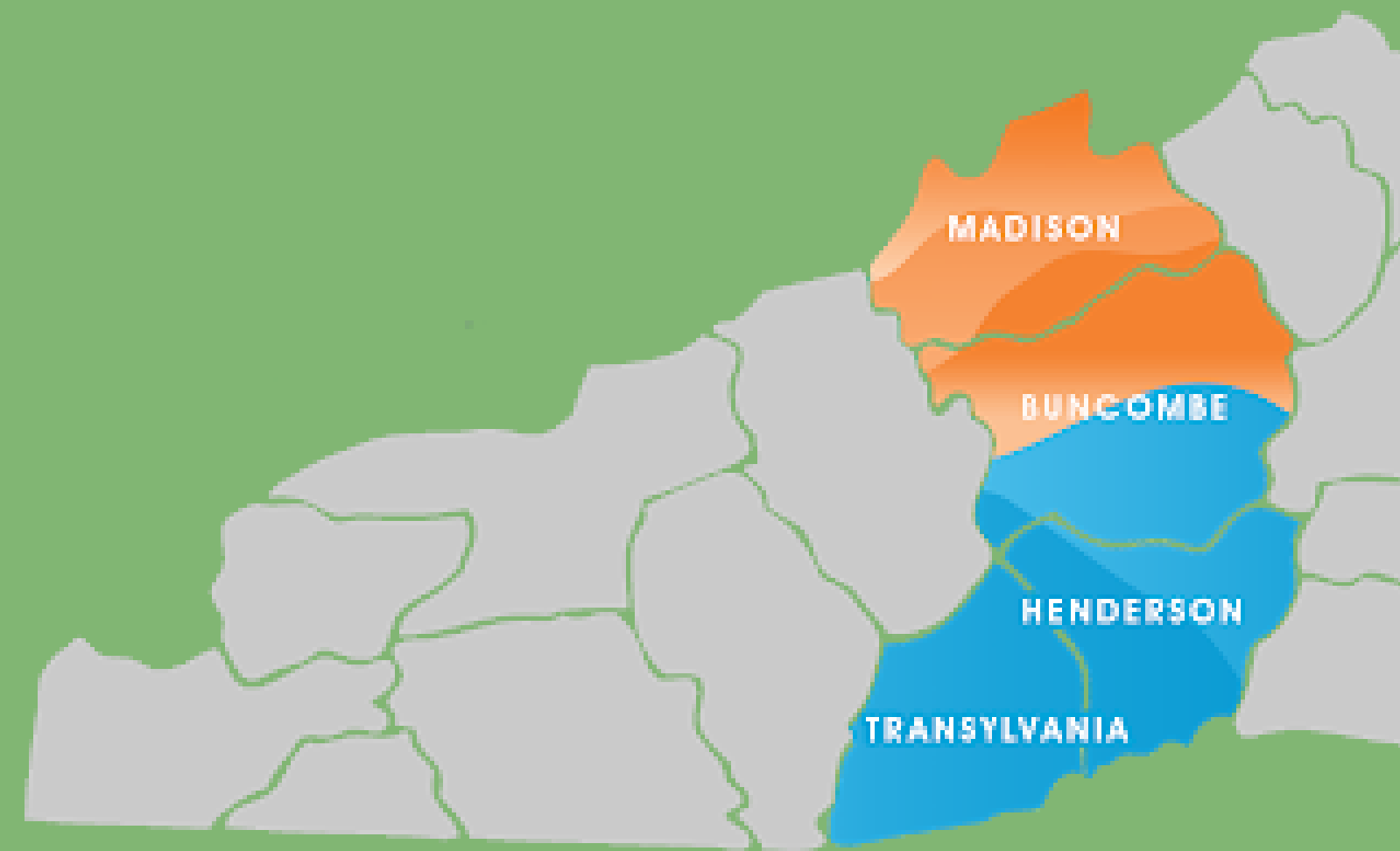
- Landslides, wildfires and flooding are the most significant region-wide threats
- Five (5) asset groups were analyzed for exposure: commercial properties, residential properties, natural properties, government-owned and critical facilities and roads
 - Commercial and residential properties are exposed to flooding and wildfire across most of region.
 - Commercial property has highest percentage of exposure to flooding.
- Regional exposure to wildfire is very high, especially for residential property
- Transportation and economic factors (including jobs and business interruption) are important to consider when examining exposure, vulnerability and risk.



Land of Sky Resilience Planning

Key findings from vulnerability and risk assessment for commercial properties and flooding:

- Commercial properties are vulnerable throughout region.
- Impacts include impacts to major corridors and impacts to smaller communities.
- Social vulnerability is an important consideration for all threats.
- Key services and resources provided by commercial assets (e.g. food or critical supplies) should also be considered.
- Additional vulnerability and risk assessments need to be performed on other asset/threat pairs.





Working with Partners

Working with Partners

PARTNERSHIPS HAPPEN AT MANY LEVELS

- Within an agency/organization
- With decision makers, in and out of the agency
- With involved stakeholders
- With the community as a whole

THROUGHOUT THIS PROCESS, PARTICIPANTS SHOULD

- Identify these different groups of people
- Understand their role in the process
- Prioritize the engagement needed for a successful process



Working with Partners

IDENTIFYING STAKEHOLDERS FOR
LAND OF SKY REGION, NC

Broad Community Engagement

Community-wide: workshops, open houses, online engagement, city-wide communications, website, mailings, text campaigns, and general outreach.

Targeted Community Outreach

Go to the community, including underrepresented communities: farmer's markets, local events, coffees shops, faith-based, school, & sports events, etc.

TARGETED STAKEHOLDERS

Project Team

Staff, consultants, and other technical experts who will participate on a regular basis.

Leadership & Decision-Makers

Engage decision-makers at all government levels to ensure buy-in and support of plan to implement.

Special Interest Groups

Involve cohorts of special interest groups through small meetings to better understand needs and insights.

Underrepresented Groups

Use focused efforts to reach out to and listen to under-represented audiences that are particularly vulnerable.

Advisory Group

A committed group of community and technical stakeholders who will work on the project for the duration.

Working with Partners

WHO

Identify stakeholders who should be involved, including the broader public and groups who are often underrepresented and hard to reach. Engage a broad range of stakeholders with the necessary expertise, values, and viewpoints at each stage of assessment and implementation.

WHAT

Identify what each stakeholder or stakeholder group's role is in the resilience building process, in implementing strategies, and within the community.

WHEN

For identified stakeholders, determine the level of input and outreach that is appropriate and necessary based on their desired level of engagement and planning role. Align stakeholder expectations with the planning requirements, budget and resources available.

HOW

Finally, determine the best approaches to engaging and reaching the stakeholders. Certain processes, and certain stakeholders may prefer a traditional formal outreach approach while others prefer digital tools, videos, short interactions, or other mechanisms.



Workshop Outcomes

EXPECTED OUTCOMES FOR WORKSHOPS



Shared Understanding

A shared understanding of regional, local and parcel level exposure, vulnerability and risk for three major hazards: flooding, wildfire and landslide.



Vulnerable Populations

Insight into specific risks these pose for vulnerable populations



Asset Prioritization

A regional inventory of essential services, critical facilities and infrastructure that need to be prioritized for resilience-building investments.



AccelAdapt

Understanding value of AccelAdapt



Actions

Specific recommendations on tangible mitigation and adaptation actions the region can take in both the near and long-term for 5 prioritized assets.



Implementation Tools

Identification of key planning mechanisms, funding sources and partners to implement specific priority adaptation/resilience objectives.

See you September 16, 2020 1pm

**For more information, to register, and view workshop materials, please
visit the project webpage:**

brsinc.com/landofsky