RESILIENT VIRGINIA

RESILIENCE IN RURAL COMMUNITIES

A case study on Wytheville, VA

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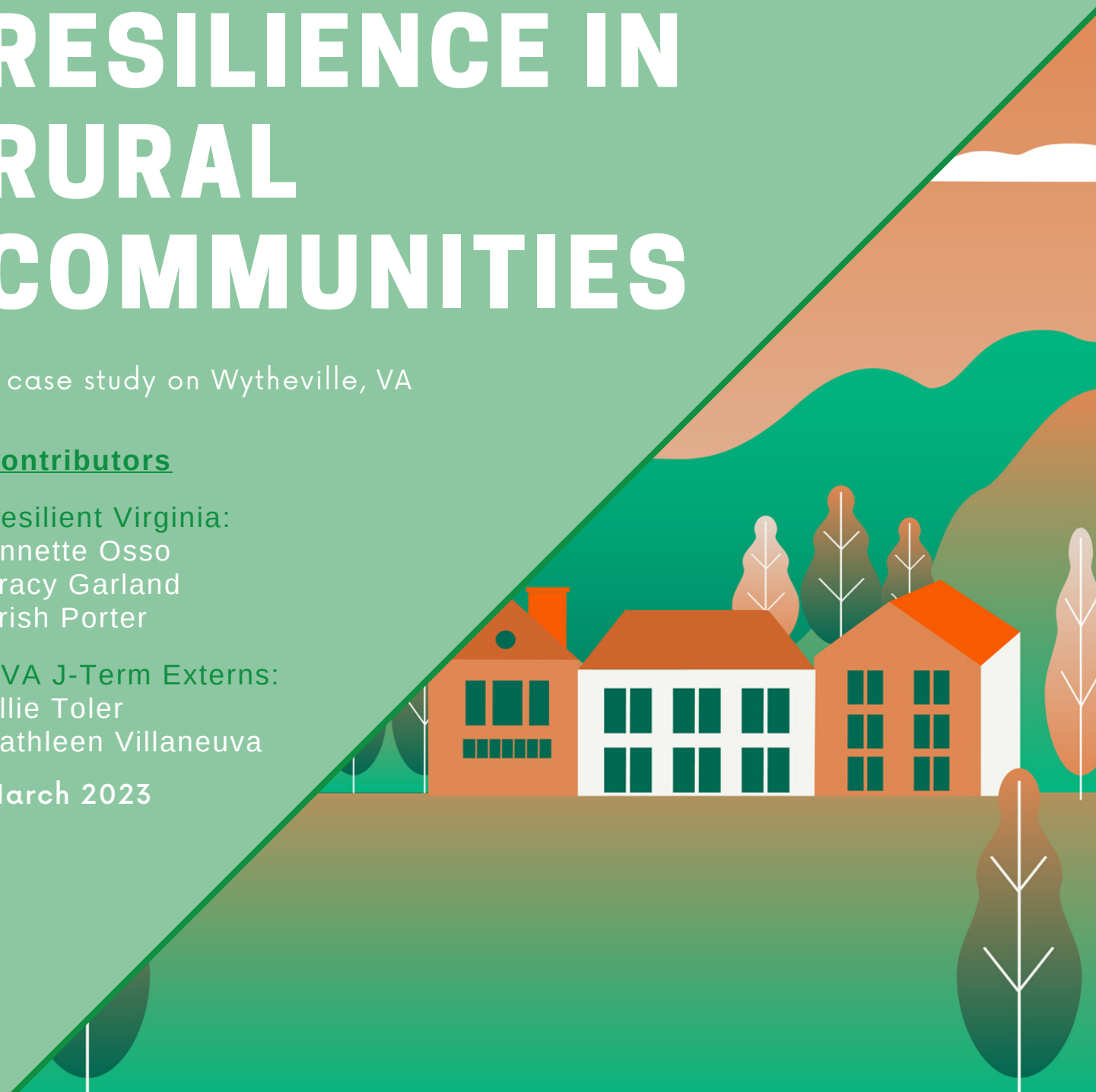

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INTRODUCTION

Climate change mitigation is absolutely critical for mankind's survival. If we continue to emit greenhouse gasses at the rate we are today, we are going to get past a point of no return and the planet is going to be uninhabitable. Mitigating the impacts of greenhouse gas emissions is imperative, however it cannot be the only thing we focus on.

Climate change has already had a huge impact on our planet - to the extent that we cannot go back to the way things were before. This is where adaptation comes in - we need to adapt to the changes we are already seeing, such as the increase in extreme weather events and the change in seasonal temperatures. These are affecting our communities in ways we may or may not see and ignoring these changes will have detrimental effects. A resilient community is one that has assessed their risks and developed a plan to adapt to the changes they are seeing.

Our mission at Resilient Virginia is to help communities accelerate resiliency planning so they can remain a vibrant place to live for years to come. To this effort, we partnered with University of Virginia's Environmental Resilience Institute in January 2023 to host a group of student interns during their J-Term. These students performed an assessment of the Town of Wytheville's view of and capacity for resiliency planning.

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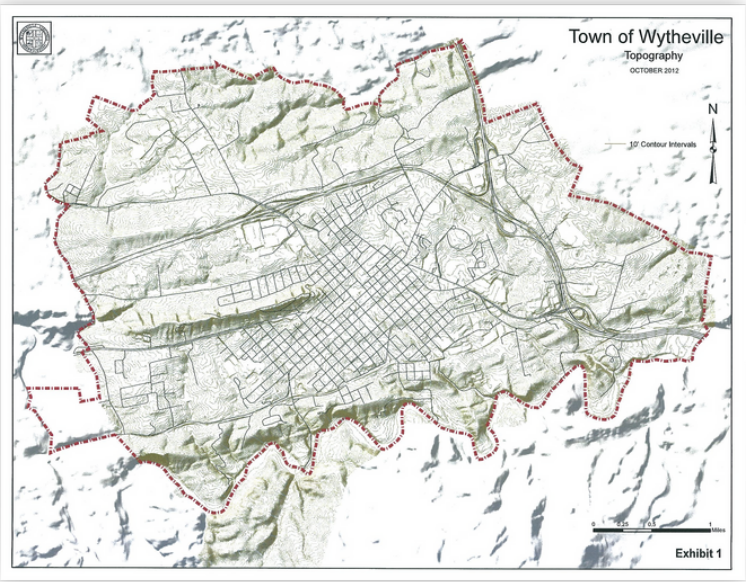
EXECUTIVE SUMMARY

In response to natural, climate-related, and man-made challenges, employing community resiliency planning is crucial to enriching risk-awareness and preparedness of residents and local government entities. For the purposes of this case study, researchers evaluated the status of resiliency in the town of Wytheville, Virginia, along with their overall capacity and resources needed to enhance their readiness for environmental, social, and economic threats. This was possible through an examination of the following resources: Wytheville's Comprehensive Plan from 2013 and draft revisions from 2020, the Mt. Rogers Hazard Mitigation Plan from 2018 (which includes Wythe County), and interviews with the town's current Assistant Town Manager, Elaine Holeton, and the Planning Director, John Woods. Researchers have compared the town's plans with those of other Virginia jurisdictions and spoken with city planners to gain insight into the community's strengths, weaknesses, and needs.

According to key stakeholders, Wytheville is largely unprepared for the threats posed by climate, social, and economic challenges and could greatly benefit from the addition of resiliency strategies in their community planning and policies. These findings are supported by the assessments of the 2013 Comprehensive Plan and the 2020 revisions, as both lack concrete resiliency language in addressing stormwater management, construction safety issues, and potential landslides. Despite the seven-year discrepancy

between these versions, there has been no significant progress in regards to how the community plans to respond to these issues, and there has been a lack of impactful sustainability efforts since the release of the 2013 Plan. The Mt. Rogers Hazard Mitigation Plan similarly lacks actionable language and detailed strategies for localities like Wytheville. There is a need to revise and mobilize a more thorough version of the Comprehensive Plan in the future, although it has been reported that a new version is currently being drafted and should be complete by 2024. This version should consider emerging environmental trends accompanied with action plans, particularly in the SMART goal framework for increased feasibility with the help of an internal resiliency training for community planners. Stakeholders have also identified the need for improved resources regarding disaster preparation, emergency response systems, energy efficiency, sustainability efforts, and flood mitigation in high risk areas. The Assistant Town Manager and the Planning Director also shared that local government has yet to address the impacts of these environmental issues on their constituents and businesses, considering that resiliency is not commonly talked about in their spaces. Moving forward with their goal of achieving resilience, Wytheville should garner and utilize more community input on how to strengthen their current resources and incite conversations about environmental issues to promote collective awareness and action from citizens..



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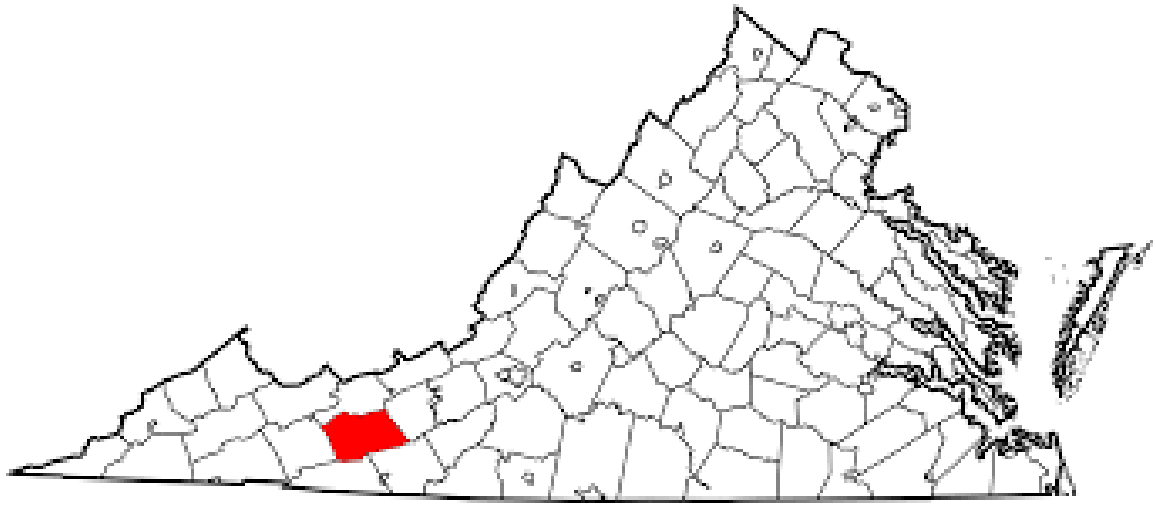
ABOUT WYTHEVILLE, VA



County:	Wythe County
Population:	8,241
Racial Demographics:	approx. 92% White approx. 3% Black or African American approx. 2% Asian approx. 1% Hispanic or Latino approx. 2% two or more races
Owner-Occupied Housing:	54.8%
Households with Broadband Internet Subscription:	77.9%
Median Income:	$41,704
Persons in Poverty:	25.8%

Source: U.S. Census Bureau 2021 Data

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ANALYSIS OF COMPREHENSIVE AND HAZARD MITIGATION PLANS

Town of Wytheville Comprehensive Plan - 2013

Comprehensive Plan's Goal

To effectively manage Wytheville's emerging growth to ensure that each development builds on the framework of planned infrastructure and provides a positive impact on the quality of life for the community.

Current Trends

- Prone to occasional natural hazards like hurricanes and floods
    - Required to have an emergency plan in place
- Potential of radon exposure is high in Wythe County (as per EPA data)
    - Evaluate the intensity of radon emission within its jurisdictional boundary and take measures in case the radon emission levels are found high
- Projected population increase requires more demand for land under residential, commercial, public, and recreational uses

Resiliency Measures & Language Identified in Plan

→ *Preservation and Protection of Natural Resources*

- Protect and conserve surface and groundwater resources through erosion and sediment control enforcement
- Inventory and maintain the town's tree resources located on rights of way and Town owned property
- Revise the Zoning Ordinance to require green space preservation for all new developments
- Identify and protect specific agricultural lands that will be preserved as "open green space" in the future as development expands into town's agricultural areas
- Encourage both localized stream bank repairs and reach-wide stream restoration projects along Cedar Run that reduce nutrient loading to Reed Creek and provide ancillary ecological, water quality, and aesthetic benefits.
- Identify and work to preserve and protect water features, wetlands, forested areas of town, wildlife, birds, etc.
- Utilize the access to, and promotion of, the Town's Crystal Springs Watershed property as a recreational and quality-of-life enhancement.

→ *New Technologies*

- Promote the use of new technologies that will lower impacts of the Town operations (e.g. ultraviolet disinfection at Waste Water Treatment Plant, alternative fuel vehicles, biogas cogeneration projections)
- Require private developers to use new technologies with regard to stormwater management, such as LID (low impact development)

- Promote electric vehicle use by providing charging stations in selected public places.

- Work to provide a focus on technology and encouragements for critical community assets that support the technology, including affordable, reliable training programs, incubators, start-up funds, and other programs to assist and promote tech-based businesses, distance learning programs, etc.

- Investigate the feasibility of providing broad-band accessibility to key areas throughout town to provide raw infrastructure for economic development.

→ *Address Emergency Management*

- Plan with other emergency providers to have emergency shelters equipped to handle disaster and provide disaster relief.

- Conduct joint training for police and fire departments to hone skills and procedures in the event of natural disaster, hazardous material spills, and etc.

- Study an emergency warning system and evaluate methods of implementation.

→ *Sustainable Development Practices*

- Review the Subdivision Ordinance with respect to low impact development methods, improved stormwater management, and overall conservation practices.

- Annually review and revise, if necessary, the Future Land Use Map to assure orderly growth and development based upon long term plans and recent trends.

→ *Community Input*

- Promote a citizen awareness of planning to educate and solicit citizens' participation in making planning decisions to ultimately promote public support of good planning in all dimensions

- Review the solid waste policy to determine if the methods used are the most efficient and the most citizen friendly.

Comparison to Other Virginia Plans

Town	Environmental Sustainability and Resiliency
Wytheville	Environmental goal: Enhance the environmental quality of the town and its natural resources and promote the positive scenic attributes of the area. • Considers stormwater management • No concrete plans on floodways and floodplains development and water runoff • Does not mention adapting to green building standards and sustainable site planning • Briefly mentions conservation of wildlife with no descriptive language or categories to aid • Encourages preservation of open green spaces • Has plans for green space preservation within the town, including tree planting activities. • While there is a language about maintaining open communications in the event of natural hazards and disasters, there is no solid action plan established in the written plan. • There are multiple attempts on mobilizing technology for the environmental good which in turn can lead to economic and sustainable development. • Significant community input and local government action are also included in the plan.

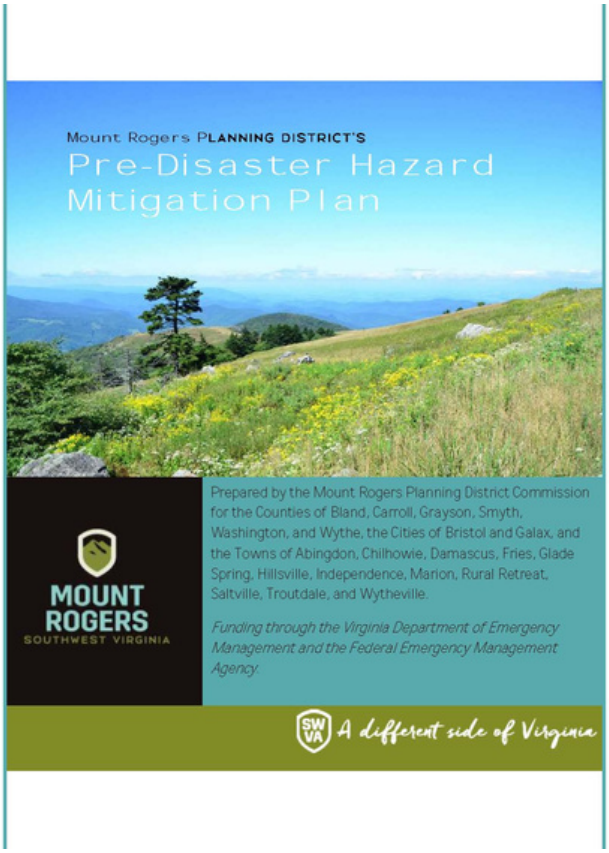
Town	Environmental Sustainability and Resiliency
Roanoke	As the city grows, we need to ensure that an emphasis is placed on protecting our air, waterways, and other natural assets. New development should be energy efficient and resilient to account for more intense rainfall and other effects of climate change. The city will support efforts to recognize the beauty of our city and make it easy for our citizens to make sustainable choices. • Ensure new development manages stormwater appropriately and consider how stormwater is managed for redevelopment and retrofit. • Develop an informed policy for managing development in floodplains and floodways. • Maintain standards to manage and treat water runoff from new impervious surfaces. • Incentivize pre-existing development to incrementally adapt to green building standards and sustainable site designs • Protect and promote native plant species in landscaping requirements and as part of projects in sensitive lands or natural habitats
Norfolk	Meeting the needs of the present without compromising the ability of future generations to meet their needs is the key to preserving the natural environment and preparing for potential risks posed by natural events. In addition to protecting and enhancing the environment, Norfolk strives to conserve resources and reduce the overall impact of the built environment in the natural environment. • Ensure high quality natural resources ◦ Encourage connections of open green spaces throughout the City through the development of pedestrian and bicycle corridors.

Town	Environmental Sustainability and Resiliency
Norfolk (cont'd)	◦ Implement the Green Infrastructure Plan by restoring trees and vegetation to upland areas where there is adequate space to plant trees. ◦ Encourage the use of native species, for sustainability and drought resistance purposes, wherever possible. • Prepare for the consequences of natural hazards ◦ Develop a stormwater master plan that includes consideration of issues of water volumes and rates of discharge. ◦ Ensure that all new development in designated flood-prone areas complies with the City's flood protection regulations. ◦ Determine the appropriate strategies to mitigate the impact of flooding to existing flood-prone structures. ◦ Ensure that residents and property owners in flood prone areas are notified of the threat to their properties • Incorporate sustainability into daily living. ◦ Continue to monitor changes in technology and legislation to identify opportunities for implementing new "Green" building programs and enhancing existing ones. ◦ Continue to offer, or sponsor in cooperation with local institutions, environmental education and volunteer stewardship opportunities.

Summary

Upon a careful review on the Town of Wytheville's Comprehensive Plan in 2013, it can be established that there is a need to incorporate a more concrete language and specific action plan to cater to their goal: management of the town's emerging growth and positive impact on the community's quality of life in consideration on resiliency and sustainability. While the documents show potential on the grounds of sustainable development and conservation of natural resources (open green spaces and waterways), it is highly suggested that there should be an actionable plan and working vision on important issues such as flooding control and high potential radon exposure (which have been minimally addressed in the plan). In comparison with Norfolk and Roanoke's well-elaborated existing plans and sophisticated resiliency language, Wytheville's general approach impedes its ability to deliver a quality comprehensive plan that aligns with resilient and sustainable action plans needed to address modern problems and existing environmental issues.

Mt. Rogers Planning District Hazard Mitigation Plan 2018



- Mount Rogers Planning District Commissions includes counties:
  - Bland, Caroll, Grayson, Smyth, Washington, and Wythe (which includes town of Wytheville)
- Revision to region's original plan adopted/approved by FEMA in 2005
- Purpose of document: to describe natural hazards and impacts to people and property; recommend mitigations to reduce or eliminate those hazards; and outline the strategy for maintaining and updating the Plan

- 4 Basic Phases of Emergency Management:
  - Mitigation - Mitigation includes the long-term strategies determined to reduce risk to life and property from a disaster event
  - Preparedness - refers to plans and strategies for efficiently handling disasters as they occur
  - Response & Recovery
    - Occur during and after a disaster event, respectively, to return the community to normal operations as quickly as possible

Mitigation

- **Prevention** – those activities that keep hazard areas from getting worse through effective regulatory planning efforts, such as comprehensive planning, building code update and enforcement, burying utility lines and water source planning

- **Property protection** – usually undertaken on individual properties or parcels with coordination of the property owner, such as elevation, relocation and acquisition of frequently flooded or damaged structures, eliminating fuel sources surrounding the property, installing rain catchment systems and purchasing additional insurance

- **Natural resource protection** – seek to preserve or restore natural areas or natural functions of floodplain and watershed areas. They are often implemented by parks, recreation, or conservation agencies or organizations

- **Emergency services** – measures taken during a hazard event to minimize its impact

    - These measures can include response planning, regional coordination and collaboration and critical facilities protection

- **Structural projects** – include activities associated with building new or additional infrastructure or features to minimize impacts from a hazard

- **Public information** – the most important, empowering residents to take action to protect themselves and their property in the event of a hazard event. This category can include additional information available to the public, such as maps, brochures, and workshops

Resiliency Measures and Language

- **Document includes Hazard Risk Assessment for Wytheville**
    - Moderate-to-high likelihood of flooding, severe winter storms, and windstorms
- **Mitigation Strategy**
    - As part of the planning process, Mt. Rogers Planning District Committee mailed copies of the hazard vulnerability assessments to each jurisdiction and encouraged planners, emergency services personnel, and citizens to comment.
    - "All participants in the [planning] process have always recognized that any major undertakings will only be possible with outside funding support (i.e., state and federal grants), since most localities in the Mount Rogers region are sparsely populated, sparsely staffed, and lack the financial means to provide little other than basic government programs and services," (93).
- Goals for all localities in Mount Rogers Region (beginning on pg. 94):
    - Addition of a Nexedge System or the RIOS-Comlinc system (radio communications system) for each locality in the Mount Rogers District
        - Link counties together for a better coverage of communications and reduce response time in times of natural disasters (linking emergency services across counties)
    - Protect Lives and Property from Flooding
        - Increase public awareness regarding need for mitigation
        - Promote planning as well as membership in National Flood Insurance Program
        - Improve data resources to improve the regional Hazard Mitigation opportunities

- Further develop local capacity to document the number, size, age, and value of approx. 1,400 (PDC total) structures located in the floodplain

- Provide opportunities for property owners of flood prone and/or repetitive loss properties to acquire and relocate from the flood plain, elevate structures, acquire and demolish, flood proof their property, or apply for funds to construct minor localized flood control projects

- **Minimize the Impact of Wildfires on Woodland Communities**

  - Educate homeowners on Firewise and Department of Forestry programs on methods to cope with drought

  - Projects creating perimeters around homes, structures, and critical facilities through the removal of flammable vegetation

  - Projects that apply ignition resistant techniques and/or non-combustible materials on new and existing homes, structures, and critical facilities

  - Projects that remove vegetative fuels proximate to the at-risk structure that, if ignited, pose significant threat to human life and property, epically critical facilities

- **Minimize Damage due to Thunderstorms as well as Tornadoes/Hurricanes**

  - Support and encourage existing efforts by the American Red Cross to educate homeowners on retrofitting and mitigation

- **Reduce risk of hazards on new buildings and infrastructure**

  - Incorporate hazard mitigation plan into comprehensive planning

  - Use hazard mitigation plan in the permit process for new construction in floodplain or high hazard areas

- **Assessment of Capabilities**
  - "All localities in the Mt. Rogers Planning District have little to no staff dedicated to work on natural hazards and mitigation planning," (99).
- **Recommended Mitigations for Wythe County**
  - Main hazards include flooding, severe winter storms and ice, high winds, drought, and undetermined hazards from karst terrain (130)

Comparison to Other Virginia Plans

Region/Planning District	Hazard Mitigation Plan
Central Shenandoah Hazard Mitigation Plan	**Purpose:** to increase the resilience of all the communities in the Central Shenandoah Region **Goals:** • Mitigation Education and Awareness Program goals ◦ Assist with emergency planning, preparedness, education, and hazard mitigation to individuals with access and functional needs and service providers (V:7). • Local Plans and Regulations, Natural Systems Protection, and Infrastructure Projects ◦ Improve local government operations, planning, zoning, land use regulations, and code enforcement to reduce the impact of natural and manmade hazards and disasters (V:3).

Region/Planning District	Hazard Mitigation Plan
Central Shenandoah Hazard Mitigation Plan (cont'd)	• Structure and Infrastructure Projects ◦ Implement activities that promote resilience in the Region by enabling communities to better prepare, adapt to changing conditions, and become stronger to withstand and recover rapidly from stresses, shocks, and adverse situations (V:14). Ex. Local Mitigation Strategy: Rockingham County Seek funding to continue county-wide residential flood mitigation project that calls for acquisition, elevation, floodproofing of properties identified as at-risk of future flooding. Most of these houses are located in the Naked Creek, Rawley Springs, and Bergton/Criders area of the county (V:15).
Mt. Rogers Planning District Hazard Mitigation Plan	**Purpose:** to describe natural hazards and impacts to people and property; recommend mitigations to reduce or eliminate those hazards; and outline the strategy for maintaining and updating the Plan Ex. Local Mitigation Strategy: Wythe County/Wytheville Conduct hydrological/engineering studies to determine Base Flood Elevations in watersheds containing estimated flood plains (133).

Summary

The Mount Rogers Planning District Hazard Mitigation Plan includes the majority of the same key components that the Central Shenandoah Plan does (i.e. identification and analysis of hazards, regional and local mitigation goals and strategies, and evaluation of each jurisdiction's resiliency status). This demonstrates a strong foundation for future resiliency planning. However, the Central Shenandoah Plan includes mitigation goals and strategies organized by priority, as well as more specific and actionable language compared with the Mount Rogers Plan. Each jurisdiction within Central Shenandoah has more detailed local strategies. Furthermore, many of the projects listed in the Mount Rogers Plan have not yet been started, while many projects in the Central Shenandoah Plan are marked as ongoing or complete. It is clear that many of these discrepancies in resiliency language are due to the lack of information and resources in jurisdictions like Wytheville.

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SUMMARY OF WYTHEVILLE'S RESILIENCY STATUS

- **Strengths**
  - Relatively strong support regarding implementation of resiliency policies from elected officials

  - On the DCR list of participating localities and get regular updates from DCR regarding floodplain efforts, funding, and training in the Commonwealth

  - Have specifically identified privately owned structures which are vulnerable to threats from flooding, including:

    - Buildings that are highly vulnerable to flooding:
      - "We have identified 7 homes, 5 commercial structures, 4 sheds or barns and 1 historic structure that is currently in a nonprofit use, which are highly vulnerable to flooding. One of the commercial structures was a mill historically, which was purpose designed for the location and is probably resilient in its own right" - John Woods

    - Buildings in mapped floodplains that are located above expected flood levels (based on historical levels, as base flood elevations have not been established for these locations):
      - "We have identified another 11 residential dwellings, 3 commercial structures, and 1 nonprofit group, that are located within a designated floodplain, but which are located at an elevation that is unlikely to be below a base flood elevation" - John Woods

- **Strengths (cont'd)**
  - Buildings in minor drainage basins with some potential for flooding:
    - "We have identified an additional 13 homes, 5 commercial structures, 4 industrial buildings, and 11 minor outbuildings, and 1 nonprofit structure that are located in mapped flood zones, but those flood zones will be eliminated from flood zone mapping when the flood maps are revised. These structures are located in drainage basins of less than one square mile. Any flooding at these locations would likely be at the level of minor street flooding, but there may be some of these locations that could see water enter a building" - John Woods

  - Other areas prone to flooding in the community:
    - Town has created CAD map representing locations where flooding complaints have been filed
    - "There are 11 minor outbuildings that are located in areas with a high risk of flooding, but which appear to be abandoned or otherwise unused" - John Woods

  - Municipal facilities located (entirely or partially) within the floodplain:
    - Water and sewer treatment plants are at risk (some operations have been impacted in the past)
      - This issue has been partially addressed by connecting Wytheville's water system to a nearby facility that lies outside of the flood zone
    - Police, fire, and Public Works facilities are partially located in the floodplain

- **Weaknesses**
  - No ordinances specific to resiliency or hazard mitigation at this time

  - No independent government units/nonprofits involved in supporting resilience efforts

  - Lack of citizen awareness regarding benefits and affordability of National Flood Insurance Program

- **Weaknesses (cont'd)**
  - Very few FEMA designated SFHA or regulatory floodplains located in the town
    - Plans only referenced areas in Wythe County which are outside of Wytheville's concern or jurisdiction.
  - Stormwater issues
    - Legacy stormwater systems and impact to the Town Branch which drains most of Wytheville and feeds into Reed Creek to the south of Town.
    - Addressing its impact to citizen and business properties in town is an area of concern.

- **Community Needs**
  - More preparation for natural and manmade disasters (e.g. electric supply, resiliency of water and wastewater systems, and citizen awareness)
  - Better emergency response system (We would enjoy learning of any resources/ideas that you have for the best systems - Elaine Holton)
  - Resources to assist localities with energy efficiency and sustainability efforts
  - Resources to mitigate flooding in high risk areas (i.e. Town Branch/Cedar Run in the Downtown which include police, fire, rescue, and public works facilities)
    - "We need resources to establish stormwater detention facilities upstream from Downtown to reduce the potential threat to these structures" - John Woods

- **Action Plans**
  - Current resiliency measures being taken:
    - Rewriting Comprehensive Plan and incorporating and strengthening policies related resiliency (estimated to be complete by the end of 2024)
    - Repealing and replacing Subdivision and Zoning Ordinances and incorporating resiliency (estimated to be complete by the end of 2023)
    - Remapping of flood maps
      - Could make flood insurance more affordable for some property owners

- **Action Plans (cont'd)**
  - Incorporate concepts of resiliency into future planning efforts
  - Joined Resilient Virginia to keep up to date on sustainability and resiliency efforts across the state in particular federal and state support, funding and resources that can assist localities with becoming more sustainable and preparing for future hazards.
  - Updating floodplain overlay to match most recent NFIP regulatory standards/updates as part of town's zoning ordinance rewrite this year.
  - Currently working to obtain funding for BMP improvements to improve resiliency Downtown

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INTERVIEW QUESTIONS

- How do you define resiliency? Do you think that the town is practicing resiliency measures in its planning?
- What is the significance of practicing resiliency in your town? What would be the projected outcome if the town will practice resiliency planning?
- What kind of local government units or nonprofits support exists in Wytheville currently regarding sustainability and resiliency?
- Are there policies or ordinances in place to support the town's sustainability efforts?
- What resources are available to mobilize for resiliency and sustainability planning?
- Do you think Wytheville can benefit from an internal resiliency training program?
- Do you have any plans to update your Comprehensive and Hazard Mitigation Plans? (Plans on adding resiliency language and more specific action plans)
- What stakeholders do you feel are most affected by flooding in the area?
    - What are the strengths and weaknesses of your emergency response systems?
    - How effective has your participation in the National Flood Insurance program been thus far? What kind of gaps have you seen and how do you plan to address them?
- There are a number of flood mitigation projects that are ranked as high priority for Wythe County in the Mt. Rogers Hazard Mitigation Plan. However, many of these projects have not been started. Do you feel that you are receiving sufficient federal/state funding for these projects? What other resources do you need to get these projects off the ground?
    - For example, the Mt. Rogers Hazard Mitigation Plan mentions a project to further develop local capacity to document approximately 1400 structures located in the floodplain. It mentions that funding is needed from FEMA and that the project has not yet been started.
- How is Wytheville planning to move forward with resiliency planning in the coming years?
    - Has the city outlined any resiliency goals for the future, and if so, is there a timeline for achieving these goals?

7
GLOSSARY

Term	Definition
Adaptation	The process of adjusting to new (climate) conditions in order to reduce risks to valued assets.
Adaptative Capacity	The ability of a person, asset, or system to adjust to a hazard, take advantage of new opportunities, or cope with change.
Assets	People, resources, ecosystems, infrastructure, and the services they provide. Assets are the tangible and intangible things people or communities value.
Climate Stressor	A condition, event, or trend related to climate variability and change that can exacerbate hazards.
Consequence	A subsequent result (usually negative) that follows from damage to or loss of an asset. Quantifying potential consequences is an important part of determining risk.
Ecosystem Services	Benefits that humans receive from natural systems.
Exposure	The presence of people, assets, and ecosystems in places where they could be adversely affected by hazards.
Hazard	An event or condition that may cause injury, illness, or death to people or damage to assets.
Impacts	Effects on natural and human systems that result from hazards. Evaluating potential impacts is a critical step in assessing vulnerability.
Mitigation	Processes that can reduce the amount and speed of future climate change by reducing emissions of heat-trapping gases or removing them from the atmosphere.

7 GLOSSARY

Term	Definition
Non-Climate Stressor	A change or trend unrelated to climate that can exacerbate hazards.
Probability	The likelihood of hazard events occurring. Probabilities have traditionally been determined from the historic frequency of events. With changing climate and the introduction of non-climate stressors, the probability of hazard events also changes.
Projections	Potential future climate conditions calculated by computer-based models of the Earth system. Projections are based on sets of assumptions about the future (scenarios) that may or may not be realized.
Resilience	The capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption.
Risk	The potential for negative consequences where something of value is at stake. In the context of the assessment of climate impacts, the term risk is often used to refer to the potential for adverse consequences of a climate-related hazard. Risk can be assessed by multiplying the probability of a hazard by the magnitude of the negative consequence or loss.
Sensitivity	The degree to which a system, population, or resource is or might be affected by hazards.
Uncertainty	A state of incomplete knowledge. Uncertainty about future climate arises from the complexity of the climate system and the ability of models to represent it, as well as the inability to predict the decisions that society will make.
Vulnerability	The propensity or predisposition of assets to be adversely affected by hazards. Vulnerability encompasses exposure, sensitivity, potential impacts, and adaptive capacity.

Glossary from U.S. Climate Resilience Toolkit: toolkit.climate.gov

8
RESOURCES

- Wytheville Comprehensive Plan - 2013
  https://www.wytheville.org/docs/general/comprehensive-plan-2013.pdf

- Mt Rogers Planning District Hazard Mitigation Plan
  https://mrpdc.org/docs/2018%20Hazard%20Mitigation%20Final%20Plan,%2002-06-19.pdf

- Central Shenandoah Hazard Mitigation Plan 2020 Update
  https://www.cspdc.org/wp-content/uploads/2021/03/CSHMP_2020_Final-compressed.pdf

- City Plan 2040 – City of Roanoke's Comprehensive Plan
  https://planroanoke.org/city-plan-2040/

- PlaNorfolk2030 - Norfolk's General Plan
  https://www.norfolk.gov/1376/plaNorfolk2030