



Building Climate Resilience in Non-Coastal Virginia

Through this project, UVA students worked to better understand the language surrounding resiliency planning and how to most efficiently plan to mitigate and address the impacts of climate change on non-coastal regions of Virginia.

Introduction

As climate change approaches today's society, its various effects have already begun to threaten communities throughout the globe. Within the state of Virginia, the most famously vulnerable area may be its coastal regions, which face loss of habitable land through sea level rise. In response to this new reality for coastal Virginia, local governments and organizations have begun to address the issue with funding, projects, and resilience planning.

While the problems facing coastal Virginia are by no means solved, our time with Resilient Virginia have revealed to us a lack of these same approaches in non-coastal areas of the state, which are also facing growing threats from climate change. Therefore, with this project, our team worked to better understand the language surrounding resiliency planning and how to most efficiently plan to mitigate and address the impacts of climate change on non-coastal regions of Virginia. We read different regions' resiliency plans, such as the Virginia Academy of Science and Engineering Management's *Impact of Climate Change on Virginia's Coastal Areas*, to an area's specific needs impact resiliency planning. We continued by reading resources on how to approach resilience planning, such as the EPA and FEMA's *Regional Resilience Toolkit* in order to learn the essential elements of writing a resilience plan. Thirdly, we conducted research on non-coastal Virginia communities, learning about the specific challenges that they face as a result of climate change. Once we felt that we had a thorough understanding of resilience and resilience planning, as well as how to apply those concepts to inland Virginia, we identified four relevant categories of actions that could be taken to promote resilience in non-coastal Virginia: community organizing, education initiatives, economic productivity, and improving access to resources. We also worked to identify legislation and organizations that could provide support and funding to each specific category in order to ensure that the priorities we set would be able to be properly and thoroughly addressed in the near future.

Community Involvement

One of the main components of a successful and comprehensive resiliency plan is to include the community in the decision-making process. This can manifest itself in a number of ways. For example, bottom-up economic resilience strategies involve communities to focus on meeting real needs, sustainable growth, increasing local capacity, and connecting consumers to producers. Community organizing can also help vulnerable populations within a larger region. Native American, African American, and Latinx communities are more at risk of economic instability and environment-based health issues. Stakeholders, like local residents, industry representatives, activist groups, should be on advisory committees. This ensures that the actions taken will meet the needs of the community. Another key issue that community organizing could address is the urban-rural divide. In Anthony Flaccavento's *Guidebook To Understanding The Problem And Forging Solutions*, he outlines how both political parties have failed rural communities and how many rural communities feel alienated from mainstream urban culture. This causes a rift between rural and urban areas, making it difficult for them to work together towards a common goal: climate resiliency. Education, community organizing, and conversation can help build these bridges.

The [EDA Public Works and Economic Adjustment Assistance Programs including CARES Act Funding](#) via the Department of Commerce could help fund programs in the area. “Grants and cooperative agreements made under these programs are designed to leverage existing regional assets and support the implementation of economic development strategies that advance new ideas and creative approaches to advance economic prosperity in distressed communities, including those negatively impacted by changes to the coal economy and nuclear power plant closures.” This program is designed to help communities like those in rural, non-coastal regions of Virginia. Many of these areas have been “impacted negatively by changes in the coal economy.” Many different entities can qualify including nonprofits, county governments, Native American tribal governments, city or township governments, and state governments.

Education Initiatives

Education is another key component of building resilient communities since if the community does not know the threats ahead, they will lack motivation to act. This component relies on using the proper language by understanding the concerns of rural communities.

These groups are wary of terms such as “climate change” and instead prefer discussing “extreme weather events,” the effects of which they already are witnessing through extreme precipitation and temperatures ([Climate Solutions University](#)). This strategy also emphasizes active listening so that the community recognizes the changes already occurring in their community and develop their own solutions. These conversations help the community also overcome differences such as political divisions since the proper vocabulary and approach makes everyone agree that a problem exists and something must be done ([Voices for Rural Resilience](#)). This process also goes on to develop stronger relationships and partnerships within the community to then build the network required to execute the community solutions. [Sustainable Sandhills](#) also notes that this localized approach has the potential to grow as the solutions begin in the community and then can spread as the region can have communities partner with each other, continuing the process would then impact state strategy and national response to build better resilient communities.

Economic Productivity

As climate change continues to bring new threats to infrastructure throughout the nation, it is important to consider how economic systems will be impacted. In their 2020 [Climate Vulnerability Assessment](#), the town of Blacksburg identified three main environmental threats to inland Virginia: hotter summers, warming winters, and changing precipitation patterns. The assessment enumerates a multitude of dangerous impacts of climate change on infrastructure and the economy. These include higher prices of produce and crop yields decrease, strain on energy suppliers to maintain air conditioning, threats to the health of vulnerable populations under higher risk of heat-related illness, damage to the winter sports industry, impacts on insect populations, and increased chances of both drought and flooding as precipitation changes specific to different areas of Virginia. As is evidenced by these approaching threats, climate change threatens not just natural environments, but all areas of infrastructure.

It is thus necessary to work to identify and strengthen the areas most threatened by climate change. This process is exemplified in the Triangle J [Triangle Regional Resilience Partnership Final Report](#), which demonstrates how local governments may assess the vulnerability of specific assets through considering the potential impact of threats to the infrastructure or population and the adaptive capacity of the asset to respond to the threat. In the case of non-coastal regions of Virginia, potential risks include those listed above and threaten the agricultural industry, the healthcare industry, residential property, the tourism industry, and many more economic sectors. Funding for initiatives that aim to strengthen these sectors may include that from the [Availability of Disaster Relief](#)

Act 2019, the goals of which include improving quality of life and supporting a rural workforce. Also available for funding is Virginia's Community Flood Preparedness Fund, which provides grants to strengthen infrastructure that is threatened by floodplains and features a specific focus on low-income geographic areas. This funding could be used to provide extra resources, such as water for crops, to local farmers, resources to flood proof houses and businesses at risk of flooding, and create better public access to hydration and air conditioning during warmer summers in order to prevent labor shortages under harsher conditions. As the climate continues to change, it is absolutely necessary that local governments consider the looming damage to the economy that threatens to wreak havoc on local communities.

Access to Resources

While the above mentions different strategies to build resilient communities, they can only be achieved if rural areas also receive an increase in resource accessibility. For instance, rural areas broadband access is significantly lacking, preventing rural communities from creating connections with others since they do not have the infrastructure to make those connections. Addressing the issue of technology then will better allow for research and education to occur in these areas as a wealth of information would become more easily accessible to rural areas. The Bipartisan Infrastructure Bill passed in 2021 though invests billions of dollars into improving access to high-speed internet to improve connectivity both among people and information. Healthcare access is also crucial as many hospitals which close in rural areas are in locations with highly vulnerable populations, essentially taking away the very help which the community needs from those who need it most (The Daily Yonder). Increasing access to the internet and healthcare also will improve emergency preparedness in rural areas as these areas will enable better communication and strategy to adapt to extreme weather events. FEMA provides funding in order to prepare communities ahead of disasters in order to minimize the financial assistance required to repair damages from worsening weather events.

Conclusion

As a result of this project, our team has come to better understand the process, goals, and vital importance of resilience planning. After studying the work that has been done to mitigate and prepare for the impacts of climate change along the coast of Virginia, we took steps to apply these same processes to non-coastal sectors of Virginia, and feel that we have identified important areas of action for developing resilient communities within that region.

Our research indicates that the main concern for non-coastal regions in Virginia is more extreme weather patterns. This puts the agricultural industry under a lot of stress as well as weakening infrastructure and decreasing the health and safety of residents. Additionally, non-coastal Virginia possesses unique needs that must be addressed in a manner that differs from processes applied to coastal Virginia. For example, communities in non-coastal Virginia have a more urgent need for access to broadband, a larger divide between rural and urban areas, education on climate change, and a more significant economic dependency on agriculture.

In this report, we have outlined the main items that a non-coastal Virginia resiliency plan should cover: community organizing, education initiatives, economic productivity, and providing greater access to resources. We believe that these categories not only apply to the entire region, but can be tailored to the needs of specific communities and towns. Furthermore, the aforementioned funding sources are not the only options, but prominent examples of possible grants, programs, and other funding options that have the potential to provide financial support for resiliency projects in non-coastal Virginia. We believe that the suggested areas of action will allow non-coastal Virginia communities to develop strong programs and to bolster their journey towards resiliency.

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