Climate Resilience in Cumberland County and Carlisle, PA Summary Report of the December 2023 Community Workshop

Neil Leary, Kristen Beach, Heidi Beardsley, Kathryn Hickey, Isabella Moes, and Christian Polk

January 22, 2024

Table of Contents

1. Introduction

Building Climate Resilience at Dickinson and in Central PA, a joint initiative of Dickinson College, Carlisle Borough, and Cumberland County, hosted a workshop on December 15, 2023, in the Allison Community Room on Dickinson's campus. The workshop was open to the public and was attended by 50 people from across the county seeking to learn from each other and share their perspectives about climate risks in our region, strategies for building climate resilience, and priorities for action. The workshop was facilitated by Dickinson students and staff.

The goals of the workshop were to:

- Identify climate risks that are significant concerns to community residents and are priorities for protection,
- Identify existing sources of resilience and opportunities for building resilience, and
- Generate interest in acting to limit climate risks and build climate resilience in Cumberland County.

The 3-hour workshop began with short presentations of climate risks and resilience in the County and then moved into a series of parallel small group discussions that explored five selected climate resilience domains or topics – social equity and vulnerable populations, health and wellbeing, the environment, infrastructure, and economy and finances. Participants selected one of the five topics and sat at a table where their chosen topic was to be the focus of the conversation for the first two rounds of the small group discussions. For the third and final round, participants shifted tables to discuss another climate resilience topic. The workshop closed with a conversation among all workshop participants to share important ideas from the small groups and identify commonalities and differences across the groups.

The following questions were used to guide the small group discussions:

Who and what is at risk from climate stresses?

- What is their current status or condition?
- How might they be impacted by climate and climate change?
- What other stresses are affecting them? How?
- How are people, communities, and businesses affected?
- Who is most affected?

How do we build resilience?

- What existing organizations, programs, and planning processes are already helping to limit climate and other risks?
- What are some strategies for doing more to limit climate and other risks?
- What constraints or obstacles stand in the way? How might they be overcome?

Workshop participants were given worksheets with the above questions and asked to write some of their thoughts on the worksheets in response to the questions, as well as to share their thoughts verbally in the small groups. Highlights from the conversations were captured on flipcharts by the facilitators. In addition, following the workshop, a survey was administered to gather further information about climate risks of concern, priorities for protecting people and assets from climate hazards, and priority strategies for building climate resilience. The online survey was sent to everyone who registered for the workshop, including both those who attended the workshop and those who did not.

This report draws on the facilitators' notes of the small and large group conversations, the completed worksheets, survey responses, and other sources of information.

2. Overview of the Climate Resilience Initiative

Climate hazards have long posed risks to people, economies, and natural systems in Cumberland County, as they have throughout the world. A variety of strategies have been employed to mitigate the risks, build resilience, and limit the harms. But the risks are changing, and many risks are being amplified as the Earth's climate warms and changes in other ways. Strategies for managing climate-related risks that were developed for the climate of the past are likely to be poorly suited and insufficient for the changing and growing climate hazards of the present and future. The risks to our wellbeing, and the wellbeing of our children and future generations, while substantial, can be reduced

significantly. Success will require strong and urgent actions by public and private sector actors working locally, nationally, and internationally.

Action on climate change is typically of two general forms. One is to reduce emissions of greenhouse gas pollutants that cause climate change. This is accomplished by improving energy efficiency and reducing energy demands, transitioning away from fossil energy to clean energy sources, improving land management, and other measures. Another form of action is to limit harms by adapting and building resilience to the changing climate hazards. Building climate resilience is a process of increasing capacities to anticipate, prepare for, prevent, limit, withstand, and recover from impacts of changing climate hazards and to adapt and thrive in an uncertain future.

Both forms of action are needed and progress is being made across the United States and in other countries. But action needs to be scaled up and accelerated if climate risks are to be managed successfully. Locally, Cumberland County, Carlisle Borough, and Dickinson College have each adopted climate action plans that focus primarily on reducing their greenhouse gas emissions (Cumberland County, 2022; Carlisle Borough, 2022; and Dickinson College, 2009). Largely unaddressed by the plans are the challenges of adapting to climate change and building resilience. To address the gap, a joint initiative was launched in spring 2023, *Building Climate Resilience at Dickinson and in Central Pennsylvania*. The initiative seeks to catalyze planning and action for greater climate resilience by improving understanding of how climate hazards have changed and are likely to change in the future, the risks they pose to people, communities, businesses, and the environment in our region, existing sources of resilience, and strategies for building resilience.

Dickinson College is a signatory of the Climate Resilience Commitment of Second Nature and has committed to develop, adopt, and implement an action plan for building the college's resilience and supporting efforts to build resilience in the wider community. Carlisle Borough and Cumberland County, as participants in the initiative, will consider through their respective governance processes whether or not to take action on climate resilience and what form such actions might take. The timeline for the initiative is shown in Figure 1.

Figure 1. Timeline for the Climate Resilience Initiative

Implementation of the initiative is proceeding on schedule. A Climate Resilience Working Group with members from Dickinson College, the Cumberland County Planning Department, and the Carlisle Borough Office was established in spring 2023. A scope of work and approach were developed in summer 2023. In fall 2023, Dickinson students who participated in the Baird Sustainability Practicum course conducted research to assess climate resilience in Cumberland County and Carlisle, reading and drawing from published information about climate risks and resilience in our region, consulting county and borough planning documents, and interviewing numerous community stakeholders from across the county. Their research informed the organization and facilitation of the December 2023 workshop. The students' papers will be published online at Resilience Initiative Documents and Reports.

Community organizations, businesses, municipalities, and individuals are invited to participate in the initiative. You can keep up to date with activities of the climate resilience initiative by subscribing to the Climate Resilience Newsletter and by visiting the Climate Resilience Website. Inquiries and expressions of interest may be sent to sustainability@dickinson.edu.

3. Growing Climate Risks

The global climate warmed during the 20th and early 21st centuries. Several decades of research by numerous scientists and scientific institutions have documented the warming and demonstrated with extensive evidence that the primary cause of the observed warming is the growing atmospheric concentrations of greenhouse gas pollutants such as carbon dioxide, methane, and nitrous oxide. Unless deep reductions are made in annual emissions of these gases, concentrations will continue to grow and the climate will become increasingly hot. The observed and projected warming has been, and will be, accompanied by other changes in climate such as increasing annual precipitation and changes in the frequencies and intensities of heavy rain events, heat waves, droughts, and severe storms. A recent and comprehensive international assessment of findings from over 9,000 scientific studies of the nature, rate, and causes of climate change is provided by the Intergovernmental Panel on Climate Change (IPCC, 2021).

A detailed review of how climate is projected to change in the County is available as a background paper from the climate resilience initiative, Changing Climate Hazards in Cumberland County (Leary, 2023). The review, which draws on global, regional, state, and county level projections of future climate, indicate that Cumberland County is likely to experience changes that will pose significant risks. Climate in in our region will likely be hotter and wetter, have more extreme heat days per year, and have more days of heavy rain and heavier rainfall on those days.

By mid-century, annual average temperature in the County is projected to increase 4° to 7°F above the average for the baseline period 1971-2000 for a scenario of high emissions of greenhouse gases. As average temperatures rise, the frequency and intensity of very hot days are also projected to increase. The average number of days above 90°F is projected to increase from 7 days per year in 1971-2000 in the County to 30 to 60 days per year by mid-century. The number of days above 95°F and above 100°F are also projected to increase.

The higher temperatures will increase evaporation and transpiration of water into the atmosphere, which is likely to cause average annual rainfall to increase. By mid-century, average annual rainfall is projected to increase 2% to 16% relative to the County baseline. The average number of days with

heavy rain, or more than 0.8 inches in 24-hours, is projected to increase 20% to 65% from the baseline period. The amount of rain that falls during heavy rain events is also likely to increase.

Other changes in climate are also possible in the County, though are less certain than rising temperatures and rainfall. These include more frequent and more severe river floods, flashfloods and stormwater floods, more frequent and severe droughts, and thunderstorms and hurricanes with greater windspeeds and greater rainfall volumes. Also possible are more frequent and severe compound events in which multiple hazardous events occur together, such as a combination of a heat wave, drought, and hazardous air quality.

4. Areas of Risk, Sources of Resilience, and Resilience Building Strategies

Climate risks and vulnerabilities of concern, existing strengths that contribute to climate resilience, and strategies for building resilience were explored through small group conversations at the workshop, each focusing on one of five broad topics: social equity and vulnerable people, health and wellbeing, the environment, infrastructure, and the economy and finances. Highlights of the conversations are summarized below.

4.1. Social Equity and Vulnerable People

Several groups of people were identified during the workshop as being particularly vulnerable to climate hazards. They include people who are unhoused, lack secure housing, live in mobile homes, or live in riverfront communities, people who are underemployed or unemployed, people who are Asset Limited, Income Constrained, and Employed (ALICE), people with medical disabilities, farmers and other outdoor workers, young children, African Americans, People of Color, people of minority faiths, recent immigrants, and refugees. In many instances, people in these groups have heightened vulnerability because they lack access to financial assets, support networks, secure food, secure housing, and other resources that are important for coping with and recovering from a climate event that, for example, damages their home or other property, disrupts electric power to their home, requires medical attention, or causes them to lose time from work or lose income. In some cases, heightened vulnerability is due to high exposure to hazards like flooding, extreme heat, or poor air quality because of where someone lives or works. People with compromised health conditions, physical and mental disabilities, and young children can be vulnerable because of high biophysical sensitivity to climate and other stresses, difficulties evacuating hazardous places, traveling to obtain healthcare and other services, needing access to specialized medical equipment, and making decisions in emergencies.

A variety of stresses other than climate hazards also affect these vulnerable groups and interact with climate to amplify risks. Economic instability, child poverty, lack of access to prenatal care and other healthcare, health effects of poor air quality, shortage of affordable housing, high housing costs, job shortages, jobs that pay low wages, lack of access to a personal vehicle, lack of public transit, population and development pressures, and unsafe roads were noted as sources of stress that limit the ability of people to respond to and recover from the impacts of climate and other hazards. More information about social and economic factors that influence vulnerability to climate in Cumberland County can be found in Leary and Messimer (2023).

Existing local sources of resilience were identified that help vulnerable populations who struggle with poverty, housing security, food security, mental health, addiction, and other stresses. Helping

vulnerable populations to manage these challenges and satisfy basic needs also serves to increase their resilience for managing climate hazards. Identified sources of resilience include community organizations such as Community CARES, the Cumberland County Housing Authority, Domestic Violence Services, emergency medical services, Employment Skills Center, New Hope Ministries, New Life Community Church, Partnership for Better Health, Project SHARE, Sadler Health Center, Safe Harbor, Salvation Army, and Samaritan Fellowship, among others. Also important are supports for people in need from the Supplemental Nutrition Assistance Program (SNAP), reduced and free lunch programs and other programs of public schools, and housing choice vouchers.

Suggested strategies for building resilience of vulnerable groups include:

- Economic development that provides greater opportunity, including people who are Asset Limited, Income Constrained, and Employed.
- Strengthen programs for affordable housing, rental assistance, prevention of evictions, and inspections of rental housing.
- Improve food security and provide food assistance.
- Improve medical and public health resources.
- Improve access to physical and mental healthcare and medications.
- Strengthen air quality standards and improve air quality.
- Provide affordable childcare and other child-focused services.
- Provide emergency shelters and equip them with lifesaving equipment.
- Improve public transportation and road safety.
- Support re-entry programs for formerly incarcerated people.
- Incorporate anti-racism and inclusion practices in programs and community engagement activities of public agencies and other organizations.
- Draw on successful examples of inclusive community engagement and community empowerment from Harrisburg and elsewhere.
- Make information about assistance programs more visible and accessible.
- Improve coordination among organizations that provide services to vulnerable populations.

A number of constraints were noted that could impede efforts to build climate resilience. These include lack of financial resources, coordination, political consensus, expertise, training, and knowledge of existing programs and available resources. Income cutoffs and complex rules for food and other assistance programs limit access to the benefits of the programs. Limited racial, social, and economic diversity among participants in public meetings, workshops, and planning activities were noted as posing substantial challenges for developing shared goals and support for mobilizing effective action.

4.2. Health and Wellbeing

Impacts of climate change on air quality, healthcare services, food security, farms, farmers, and farm workers were identified as important concerns for the county.

4.2.1. Air Quality

Air quality in southcentral Pennsylvania is among the poorest in the nation due to the physical geography of Cumberland Valley and high levels of emissions of air pollutants from car and truck

traffic, agriculture, and other sources. Climate change is expected to worsen air quality by increasing ground level ozone, particulate matter, and allergens. The effects of climate change will add to the effects of potential increases in pollution from the growing logistics and trucking industry, rapid development in the county, and population growth. Wildfires, which may become more frequent in the warming climate, can result in extremely hazardous air quality days even when fires are distant from the county, as happened in summer 2023.

Worsening air quality would adversely affect the health of people living in the county, causing and aggravating a variety of health conditions that include asthma, heart disease, stroke, lung cancer, and other diseases. More frequent and hotter heat waves can also aggravate the health impacts of hazardous air quality. All are at risk from poor air quality, but some are more vulnerable than others. Vulnerable groups include people with existing medical conditions, elderly people, children, people who are unhoused, and farmers and other outdoor workers. The health effects of air pollution can result in losses of school days and workdays, impaired cognitive development, and reductions in worker productivity.

The Clean Air Board of Central Pennsylvania is an important organization that advocates for clean air to protect public health and works to educate and inform the public about the benefits of clean air. The Cumberland Conservation Collaborative, its member organizations, and other groups are also local resources that can play roles in protecting air quality in the county.

Strategies suggested during the workshop for building resilience with respect to air quality include:

- Give emphasis to improvement of air quality in zoning, planning, and development activities.
- Support transition to electrify energy end-uses, including electric vehicles, electric lawncare equipment, and electric appliances for heating homes, water heating, and cooking.
- Support transition to solar electricity and community solar legislation.
- Enforce anti-idling legislation.
- Increase greenspaces and tree canopies in the county; develop a county park.

Constraints identified in the workshop as possible impediments to action on county air quality include monied interests of the logistics and trucking industry, lack of charging infrastructure for electric vehicles, lack of community solar legislation in Pennsylvania, inequality, lack of awareness, and complacency.

4.2.2. Healthcare Services

Cumberland County has a strong healthcare system with a history of collaboration among healthcare providers and community organizations that provide a variety of human and social services. Health care providers and facilities include the Carlisle Regional Medical Center, UPMC West Shore, and other UPMC facilities, Wellspan primary care offices, Sadler Health Center, Cumberland Goodwill Emergency Medical Services, and, in nearby Franklin County, Keystone Health. Partnership for Better Health, the United Way of Carlisle and Cumberland County, the county's Emergency Operations Center, and other organizations help to coordinate efforts to support community health.

Despite a strong healthcare system, accessing quality affordable healthcare services and emergency services are continuing challenges for many residents of Cumberland County. These challenges could be exacerbated by climate change. Climate change impacts on health could increase the demand for

healthcare services of vulnerable people who struggle to afford healthcare, placing added burdens on healthcare services in the county. Severe heat waves, extremely hazardous air quality days, and severe storms could strain the capacity of healthcare services during emergency events. Severe weather can damage healthcare facilities and disrupt the provision of healthcare services, and people who lack reliable transportation may have difficulties accessing healthcare services in emergencies. Some people may experience adverse economic impacts from climate change, eroding their ability to afford healthcare.

Suggested strategies for building resilience to protect community health include:

- Strengthen programs to provide equitable access to healthcare, including mental healthcare.
- Build relationships and improve coordination among organizations that provide human and social services.
- Fund emergency medical services the same way we fund police.
- Develop a registry of people who are particularly vulnerable to natural hazards who may need assistance in emergencies.
- Assist people of vulnerable groups to develop leadership skills for advocating and mobilizing resources to address healthcare and other community needs.

4.2.3. Food Security, Farmers, and Farmworkers

Climate change poses risks to food security, the ability to produce local, healthy, and affordable food, and the livelihoods of farmers and farmworkers. High temperatures, excessive rains, and droughts can cause crop losses, animal stress, reduced livestock productivity, soil erosion, and increased runoff of nutrients and sediments to surface waters. Adverse impacts on food production could increase food prices, which would amplify food insecurity for those who are currently food insecure and could tip some who are food secure into insecurity. Farmers may experience reduced production, higher costs, and reduced net incomes, with small farms being particularly impacted.

Organizations that help serve county farmers include the Cumberland Conservation District, Penn State Extension Services, Capital RC&D, and the county office of USDA's Natural Resources Conservation Service. Keystone Health Agricultural Worker Program and the Pennsylvania Office of Rural Health assist migrant, seasonal, and other farmworkers to access healthcare and other services. Farmers on the Square in Carlisle, other farmers' markets, and community supported agriculture programs provide means for small produce and livestock farms to market directly to consumers. The Cumberland County Food System Alliance brings organizations together to support a local sustainable food system. Food insecure families and individuals can get assistance from the USDA's Supplemental Nutrition Assistance Program (SNAP), Tapestry for Health WIC program, Project SHARE, and other food pantries. The LEAF Project and other organizations provide opportunities for youth to learn about local, healthy, and sustainable food systems.

Strategies for building the resilience of food insecure people, farmers, and the county's food system include:

- Maintain, improve, and increase participation in programs that assist food insecure people.
- Provide education to youth and others about healthy eating and the importance of local foods through public schools, Project SHARE, programs like the LEAF Project, and partnerships with area colleges and universities.

- Promote regenerative farming practices through information resources, training, financial support, and other means.
- Continue and increase support for the Agriculture Conservation Assistance Program (ACAP) and other programs that assist farmers in using best management practices.
- Continue and expand the farmland preservation program.

4.3. The Environment

Environmental risks from climate change that were discussed at the workshop include impacts to water resources, forests, wildlife, biodiversity, recreation, and urban environments. The South Mountain Partnership's State of the Region Report Card provides measures of recent changes in environmental and other valued resources in the South Mountain Region, which includes parts of Adams, Cumberland, Franklin, and York Counties (South Mountain Partnership, 2023).

4.3.1. Water

Cumberland County has nearly 800 miles of streams, including the Conodoguinet Creek, the Yellow Breeches, and LeTort Spring, many of which support high quality trout fisheries and recreational activities. The county also has plentiful groundwater. However, 30% of stream miles are degraded and do not meet water quality standards and some sources of groundwater are contaminated. Water quality in county streams is degraded by runoff of nitrogen, phosphorous, and sediments from agricultural lands, stormwater from urban areas, discharges of treated sewage water, and other sources. Pollutants carried downstream to the Chesapeake Bay negatively impact water quality in the Bay and are regulated under the Chesapeake Bay Program. Population growth, development that increases the area of impervious surfaces, deforestation, loss of riparian buffers, increasing road traffic, and poorly managed lands have increased pollutant loads to county streams. PFAS contamination of streams and drinking water is another emerging issue in the region.

Increasing heavy rains from a warming climate are likely to increase pollutant loads to streams from farmland runoff and urban stormwater. Higher air temperatures will increase water temperatures, which adds to eutrophication and oxygen depletion of waters. Aquatic ecosystems will be stressed by the greater pollutant loads, higher temperatures, and reduced oxygen levels, negatively impacting trout fisheries and trout fishing. Other forms of water recreation may be impacted by more variable stream flows, including higher high flows and lower low flows. Degraded water quality in county surface waters could increase the costs for treating drinking water and groundwater contamination problems could be worsened.

The County Wide Action Plan of the Clean Water Cumberland Coalition and the Municipal Separate Storm Sewer Systems (MS4) Program provide protections for water quality and aquatic ecosystems in the county and the Chesapeake Bay. Floodplain management, zoning ordinances, and comprehensive plans of local jurisdictions in the county also provide protections. The Cumberland County Conservation District, Conodoguinet Creek Watershed Association, the Yellow Breeches Watershed Association, the LeTort Regional Authority, the Central Pennsylvania Conservancy, Capital RC&D, South Mountain Partnership, Cumberland Conservation Collaborative, and Cumberland Valley Trout Unlimited advocate for and implement actions to help protect waters in the county. Many of the activities focus on promotion and support of best management practices for farms and grazing lands to limit runoff of nutrients and sediments.

Strategies for protecting water quality from climate change and other pressures that were discussed include:

- Give emphasis to protecting water quality in zoning, planning, and development activities.
- Reduce the runoff of nutrients and sediments from farms by promoting more widespread and effective use of best management practices through education, training, and incentives.
- Reduce the use of fertilizers and pesticides.
- Use more green infrastructure to manage stormwater runoff in developed areas of the county.
- Improve monitoring of surface and groundwater quality.
- Create new partnerships for working together on water quality and other issues.

4.3.2. Forests

Roughly 30% of Cumberland County is covered by forests and woodlands. This includes Michaux State Forest, Pine Grove Furnace State Park, Kings Gap Environmental Center, Mount Holly Marsh Preserve, and private forest lands on South Mountain and, on Blue Mountain, Tuscarora State Forest, state game lands, and extensive private forest lands. Stresses operating on county forests include development pressures to convert forest lands to other uses, development of new roads, invasive plant species, pests and disease, heavy recreation use, wildfire, and air pollution.

Climate change will be an additional stress on county forests. Forest communities are adapted to specific climates. Changes in annual and seasonal averages and extremes in temperatures, rainfall, and drought conditions can weaken the ability of tree and plant species to compete, grow, and reproduce and can make them more vulnerable to pests, disease, and fire. Shifting seasonality can result in mismatches in the timing of emergence of leaves and flowers, pollination, migration, nesting, and other processes that can disrupt ecosystem functions and success of wildlife. Wildfire risk may also increase. As the climate warms and changes, some forest species will adapt or migrate, with generalist species tending to thrive, specialist species struggling, and the species compositions of area forests changing as a result. The changes may cause forest health to degrade, negatively impacting their recreational value, wildlife populations, timber production, carbon storage, and the protections forests provide for watersheds, fisheries, groundwater, and erosion control.

Organizations that manage and help to protect forest lands in the county include the Pennsylvania Department of Natural Resource Conservation and non-profit conservancy organizations. The county's comprehensive plan includes strategies for protecting natural resources, including forest lands.

Strategies for protecting forest lands from climate change and other stresses that were discussed include:

- Give emphasis to preserving and protecting forest lands in zoning, planning, and development activities.
- Monitor and respond to changes in forest health.
- Monitor and manage invasive plant species.
- Assist forests and wildlife to adapt to the changing climate through use of genomics, planting species that will do well in the changing climate, habitat mosaics, and other methods.
- Develop a strategy or management plan for wildfire risks.

- Educate the public and landowners about risks.
- Provide resources to landowners for best management practices for forested lands.
- Participate in carbon credit markets to obtain revenue for forest management.

4.3.3. Urban Environments

Climate change will impact urban environments by increasing the frequency and severity of extreme heat events, flashfloods, river floods, and hazardous air quality days. It can also negatively impact the health of city street trees and landscaping. Population growth and development can amplify these impacts by reducing urban tree canopies and green spaces, increasing impervious surface areas, increasing urban heat island effects, and increasing pollution. Places where urban heat island effects, flooding, and poor air quality are problems can often correlate with neighborhoods that are low income and have high populations of African Americans and People of Color, raising environmental justice concerns.

Strategies discussed for building resilience in urban areas of the county include:

- Managing growth and development through zoning and planning to cool urban heat islands, improve stormwater management, and improve air quality.
- Encourage compact urban development to limit sprawl and car dependency.
- Plant trees, expand urban tree canopies, and expand urban green spaces.
- Provide emergency shelters that are accessible by all communities.

4.4. Infrastructure

More frequent and more severe heavy rains, river floods, flashfloods, stormwater floods, erosion, windstorms, heatwaves, and droughts in the warming climate can damage infrastructure of all types in Cumberland County. Potentially impacted assets include residential, commercial, and public buildings, healthcare facilities, and infrastructure for stormwater management, flood control, transportation, energy, communications, public water supplies, public wastewater, private water wells, private septic systems, and recreation. Impacts on infrastructure can disrupt commuter, commercial, and other travel, disrupt access to healthcare, emergency services, electricity, natural gas, drinking water and other services, reduce property values, and put people's lives and safety at risk.

Aging infrastructure that is in poor condition, not adequately maintained, and not well-matched to current and future demand volumes and climate stresses add to the risks. Maintaining, updating, and replacing aging infrastructure are substantial costs for public agencies, private institutions, and individuals. Often, more emphasis has been placed on expansion of infrastructure than on maintaining infrastructure and adapting infrastructure to changing needs.

Cumberland County is heavily structured around the use of personal vehicles and lacks significant public transportation. While bus lines do exist in the county, they are extremely limited, forcing most residents to rely on personal vehicles. Commercial development, particularly warehouses and distribution centers, have increased the demand for land and have converted significant surface areas into impervious surfaces. As a result, stormwater runoff volumes have increased and have overwhelmed transportation infrastructure as well as stormwater management systems.

Some existing policies and management systems are in place that help mitigate impacts of climate hazards on infrastructure. Municipalities in the county have ordinances for floodplain management and participate in the National Flood Insurance Program. Recent updates to floodplain maps in the county are being used to improve floodplain management. Municipal Separate Storm Sewer Systems (MS4) Programs, which are required by state and federal environmental regulations, are implemented by local jurisdictions in the county to manage stormwater runoff, with some jurisdictions charging stormwater fees to generate revenue for this purpose. Carlisle Borough is also working to retrofit 1.5-2 miles of underground stormwater pipes each year to accommodate for current and future stormwater runoff volumes.

Pennsylvania Act 89, enacted in 2013, allows counties to levy a $5 annual fee on vehicle registrations to help fund local transportation projects. Cumberland County adopted a fee in 2015 to support retrofitting bridges and other projects in the county. Increasing non-motorized modes of transportation, including creating more and safer bike lanes, are currently being discussed in Carlisle.

Strategies discussed for building resilience of county infrastructure include:

- Address infrastructure needs and changing climate risks to infrastructure through county and local comprehensive, MS4, floodplain management, and other planning processes.
- Improve inspections and maintenance of existing infrastructure.
- Improve monitoring of groundwater and surface water quality and quantity, working with colleges, universities, and other potential partners.
- Use green infrastructure, diversion channels, and retention ponds to manage stormwater and flash floods.
- Establish/improve regulatory standards for private groundwater wells and septic systems.
- Educate the public and stakeholders about climate risks and resilience for infrastructure.

4.5. The Economy and Finances

Discussion of threats to the economy from climate change at the workshop focused largely on agriculture. In addition to agriculture, climate risks noted in previous sections of this report are all likely to have economic consequences by harming the health and increasing healthcare costs for workers and residents, reducing worker hours and productivity, damaging infrastructure, impacting water quality, and disrupting energy, transportation, and other services. These and other economic effects of climate change could slow economic growth in the county. Low-income families and small businesses would be particularly vulnerable to economic harms from climate change.

Agriculture is an important part of the county's economy, uses approximately 40% of the county's land area, and generates significant income for county residents. The sector is highly sensitive to variations in weather and climate. Heavy rains, drought, and extreme heat can negatively impact crop yields, dairy production, soil health, operating costs, and net farm revenues. Runoff of nutrients from farmland are likely to increase unless mitigating measures are taken, which could be required by the Chesapeake Bay Program. Extreme heat can also harm the health of farmers, farm workers, and other outdoor workers, reduce the number of workdays, and reduce worker productivity. Additional stresses acting on farms, farmers, and rural communities include aging farmers, volatile prices for farm outputs and inputs, rising energy prices, environmental regulations, limited access to healthcare services, and pressures to sell farmland for development. Small farms are particularly vulnerable to climate and

other stresses, and the economies of rural communities can suffer if the agriculture sector is negatively impacted.

A variety of programs assist farms and farmers in the county and contribute to resilience of the farm sector. Farmers' markets, like Farmers on the Square in Carlisle, and community supported agriculture programs help small farms market their products and encourage people to buy food locally. The farmland preservation program provides financial incentives for keeping farmland in farming. The Cumberland County Conservation District, USDA Natural Resource Conservation Service, Capital RC&D, and others provide technical assistance to support farmers in the use of best management practices for soil conservation and watershed protection. Funds are available through the Agriculture Conservation Assistance Program and other programs for regenerative farming, the use of conservation practices, and watershed protection. Farmers can obtain crop insurance through the federal crop insurance program to manage risks of potential crop losses.

Strategies discussed for building resilience of the county's economy include:

- Engage municipalities across the county in joint economic planning that includes economic diversification and climate resilience as goals with a long-term outlook.
- Promote the use of local expertise for adapting to the changing climate through, for example, conservation practices and regenerative agriculture.
- Expand conservation programs.
- Help small communities, small businesses, and small farms to access state and federal funding for building climate resilience.
- Support legislation for community solar and take other steps to enable community solar projects in the county.
- Educate the public and stakeholders about climate risks and resilience for infrastructure.

5. Post-Workshop Survey

A survey was sent following the workshop to all 60 people who registered for the workshop, including those who attended the workshop and those who did not. Responses were received from 28 people. Qualitative responses to multiple choice questions were converted to numeric scores and average scores were calculated to rank responses and are summarized below. The survey also included three open-ended text questions about the most urgent resilience strategies to implement in the near term, next steps, and other comments. Responses to the open-ended questions are provided in the Appendix of this report.

How concerned are you about climate-related hazards impacting the following?
(Scale: very concerned = 4; concerned = 3; somewhat concerned = 2; not concerned = 1)

	Average Score
Human health & wellbeing	3.7
The environment	3.7
Social equity	3.4
Infrastructure	3.4

The economy	3.0

Survey respondents indicated that they are concerned or very concerned about all five impact categories. Impacts to human health & wellbeing and the environment tied as the highest concerns, each receiving an average score of 3.7 on a scale of 1 to 4 points. Social equity and infrastructure tied for second place with average scores of 3.4. The economy is ranked as the lowest concern with an average score of 3.0, though it is still an issue of concern to most respondents. 22 of the 28 respondents rated impacts on the economy as an issue about which they are concerned or very concerned.

How high of a priority do you place on protecting the following from climate-related hazards in Cumberland County?
(Scale: very high = 5; high = 4; medium = 3; low = 2; very low = 1)

	Average Score
Drinking water quality and safety	4.7
People who are highly vulnerable to climate hazards	4.6
Streams, lakes, and watersheds	4.6
Wildlife and biodiversity	4.6
Local farms, farmers, and agriculture	4.5
Forests	4.5
Human health	4.5
Air quality	4.4
Workers	4.3
Water availability	4.1
Healthcare facilities	4.0
Housing	4.0
Electric power infrastructure	3.7
Communications infrastructure	3.7
Transportation infrastructure	3.6
Recreation opportunities	3.5
Businesses	3.3

Respondents were asked to rate the priority they would assign to protecting 17 different assets from climate related hazards. Of the 17 listed assets, 12 received average scores of 4.0 or greater on a scale of 1 to 5 points, indicating high or very high priority for protection. The remaining 5 assets all scored between 3.3 and 3.7, indicating greater than medium priority on average. Protecting drinking water is ranked as the highest priority with an average score of 4.7. Also rated as very high priorities for protection are people who are highly vulnerable to climate hazards, streams, lakes, and watersheds, and wildlife and biodiversity, each with an average score of 4.6. These are closely followed by local farms, farmers and agriculture, forests, and human health, with average scores of 4.5, and air quality at 4.4. Infrastructure of various types have average scores ranging from 3.6 to 4.0. Protecting recreation opportunities and businesses received the lowest average scores but still are rated as greater than medium priorities.

Families experiencing homelessness and trout fisheries were written in as priorities for protection, each being rated as very high priorities by the individuals who added them to the list.

How high of a priority do you place on the following strategies for building climate resilience in Cumberland County?
(Scale: very high = 5; high = 4; medium = 3; low = 2; very low = 1)

	Average Score
Connect organizations to work together to limit harm from climate hazards	4.6
Use trees, green spaces, and green infrastructure to reduce urban heat island effects and control stormwater	4.5
Protect and restore ecosystems	4.5
Reduce air pollution	4.5
Provide greater and more equitable access to health care and affordable housing	4.4
Limit new development in areas of growing flood risks	4.3
Reduce poverty and food insecurity	4.3
Protect, maintain, and upgrade infrastructure	4.1
Improve the reliability of the electric power grid	4.1
Educate the public about climate risks and resilience strategies	4.0
Increase the number and accessibility of shelters for storm and extreme heat events	4.0
Flood proof structures in areas of growing flood risks	3.6

Respondents were asked to rate the priority they would assign to 12 different strategies for building climate resilience. Eleven of the 12 are rated as high or very high priorities with average scores of 4.0 or higher on a scale of 1 to 5 points. Connecting organizations to work together to limit harm from climate hazards was ranked as the highest priority, with an average score of 4.6. The next highest priorities are assigned to using trees, green spaces, and green infrastructure to reduce urban heat island effects and control stormwater, protecting and restoring ecosystems, and reducing air pollution, each with average scores of 4.5. They are closely followed by providing greater and more equitable access to health care and affordable housing, limiting new development in areas of growing flood risks, and reducing poverty and food insecurity, with average scores of 4.3 to 4.4, and protecting, maintaining, and upgrading infrastructure, improving the reliability of the electric power grid, educating the public about climate risks and resilience, and increasing the number and accessibility of shelters for storm and extreme heat events, with average scores of 4.0 to 4.1. Flood proofing structures in areas of growing flood risks is ranked as the lowest priority, with an average score of 3.6.

Strategies that were written in by respondents include advocating for system change, organizing politically, reducing car dependence, and a combination of actions for reducing emissions of greenhouse gas pollutants that include electrification of energy uses, reducing fossil energy demand,

increasing solar and wind jobs, and getting Pennsylvania to join the Regional Greenhouse Gas Initiative. Each of these were rated as a very high priority by the individuals who wrote them in.

6. Conclusions and Next Steps

The workshop conversations and post-workshop survey revealed that risks from climate-related hazards are concerns to county residents for all five of the impact categories that were discussed: social equity and vulnerable populations, health and wellbeing, the environment, infrastructure, and the economy. Among these, health and wellbeing and the environment ranked as the highest concerns in the post-workshop survey, closely followed by social equity and vulnerable populations and infrastructure. Protecting many of the county's assets from climate-related hazards were rated as high and very high priorities. Rated as the highest priorities are protecting drinking water, people who are highly vulnerable to climate hazards, streams, lakes, and watersheds, wildlife and biodiversity, farms, farmers and agriculture, forests, and human health. Protecting infrastructure of various types, recreation, and businesses were rated as greater than medium priorities.

A number of other issues emerged in the workshop as significant concerns that may interact with climate-hazards in ways that can amplify vulnerability and erode climate resilience in the County. These include issues of inequality in access to economic opportunities, healthcare, affordable housing, and healthy foods, lack of diversity among people who participate in community forums and decisions, rapid development that is placing pressures on air quality, water quality, local resources, and public services, growth in the logistics, warehousing, and trucking industries, traffic safety, heavy dependence on cars, limited public transportation, and limited infrastructure for active transportation modes. Needs and strategies for reducing emissions of greenhouse gas pollutants were also discussed, including support for improving energy efficiency, weatherizing homes and commercial buildings, electrifying energy end-uses, generating electric power with solar and wind energy, improving public transportation, and supporting active transportation. Some of the strategies for reducing greenhouse gas pollution would also contribute to building resilience by, for example, improving air quality and improving energy security and mobility for vulnerable people. There was a strong sense that local actions to reduce emissions and build resilience are both needed and should be pursued together.

It was evident from the conversations that Cumberland County has many strengths that can be enlisted in helping to build resilience. These include a relatively resilient local economy with diverse employers, a skilled and knowledgeable workforce, low unemployment rate, numerous community organizations that offer services to support people in need, organizations that advocate and support conservation goals, county and municipal agencies that are effective and responsive to the community, and county and local plans and planning processes that can be adapted to address changing climate hazards. Local resources are supplemented by state and federal agencies and programs that provide funding and assistance for economic development, food security, affordable housing, transportation and other infrastructure, farmland preservation, agricultural best management practices for soil conservation and water quality protection, crop insurance, flood insurance, and flood management.

An overarching principle for climate action that emerged as important is the need for inclusive processes that respect different points of view and actively engage people from all races, age cohorts, and social, economic, and educational backgrounds. A wide range of strategies for building resilience were discussed at the workshop and suggested in survey responses. Some of the broad strategies for which support was voiced include:

- Building relationships among organizations representing diverse interests to work together on climate resilience, share perspectives, learn from each other, build trust, identify common goals, build support for action, help mobilize resources for action, and coordinate efforts.
- Integrating climate resilience and climate mitigation into existing plans, planning processes, and ordinances of Cumberland County and municipalities within the County, including comprehensive plans, hazard mitigation plans, floodplain management, water quality plans, municipal separate stormwater system (MS4) programs, land use plans and ordinances, transportation plans, and building codes.
- Promoting economic development in the County that diversifies the local economy, provides equitable opportunities, takes a long-term view, limits climate risks, and increases climate resilience.
- Improving programs that help to support vulnerable people. People are more resilient to climate hazards and other pressures if they are food secure and have access to affordable housing, quality healthcare, transportation, and other essential services.
- Protecting and restoring watersheds and other ecosystems in the County.
- Improving air quality in the County.
- Expanding the use of green infrastructure to better manage stormwater and reduce urban heat island effects.
- Monitoring, maintaining, and updating infrastructure to be resilient in the changing climate.
- Helping communities, businesses, and farms access state and federal funds and technical assistance for building climate resilience.
- Building greater public awareness and understanding of changing climate hazards, the risks they pose for people, businesses, and the environment in the County, and effective strategies for reducing the risks.

Next steps for the climate resilience initiative are to widely share the workshop report and the students' papers summarizing their findings regarding climate risks and resilience, invite organizations to help disseminate the report and papers, consult with partners, other organizations, and individuals about shared goals, strategies, and opportunities for action, and plan future events to bring more voices, and more diverse voices, into expanding conversations about climate risks and resilience.

7. Workshop Participants and Facilitators

Shamma Alam, Dickinson College, Carlisle
Asunsion Arnedo, Dickinson College, Carlisle
Jill Sunday Bartoli, Cumberland Valley Rising, Carlisle
Ann Basehore, Capital RC&D, Lower Frankford
Kristen Beach*, Dickinson College, Carlisle
Heidi Beardsely*, Dickinson College, Carlisle
Makayla Carchidi, Enola
Bill Chain, Swift Aeroseed LLC, Dickinson Twp
Julia Chain, South Mountain Partnership, Appalachian Trail Conservancy, York County
Meghan Clark, South Mountain Partnership & Gettysburg College, Gettysburg
Rebecca Connor, Dickinson College, Greencastle
Julia Dierwechter, East Pennsboro
Vonny Eckman, Dickinson parent/retiree, Carlisle

Ben Edwards, Dickinson College, Carlisle
Rachel Eng, Dickinson College, Carlisle
Kassie Fenn, Chesapeake Bay Foundation, Orrtanna
Ed Franco, Cumberland County Planning Commission Member, Lower Frankford Twp
Elizabeth Grant, Cumberland County Planning Department, Dickinson Twp
Suzanne Hartley, Resident, Carlisle
Russ Hedberg, Shippensburg University, Carlisle
John Henson, Dickinson College, Carlisle
Kathryn Hickey*, Dickinson College, Carlisle
Joel Hicks, Carlisle Borough Council Member, Carlisle
Hal Kuhns, Resident, Carlisle
Brenda Landis, Deputy Mayor, Carlisle Borough, Dickinson College, Carlisle
Neil Leary*+, Dickinson College, Carlisle
Erik Love, Dickinson College, Carlisle
Lindsey Lyons*, Dickinson College, Chambersburg
Lizi Maisashvili, Dickinson College, Carlisle
Sara Markowitz, Dickinson College, Carlisle
Jen McDuffie, Carlisle Quaker Meeting, Carlisle
Izzy Moes*, Dickinson College, Carlisle
Mary Moll, Dickinson College, Carlisle
Kelly Palmer, PPL Electric Utilities, Silver Spring Township, PA
Andy Parker, Letort Regional Authority, South Middleton
Pat Pehlman, Retired, Carlisle
Christian Polk*, Dickinson College, Carlisle
Sumaiya Quayum*, Dickinson College, Carlisle
Eric Saunders, New Hope Ministries, Dillsburg
Gerald Schultz, Cumberland Valley Rising, Mechanicsburg
Mitch Shiles, Carlisle Climate Action Committee, Carlisle
Ken Shultes*+, Dickinson College, Carlisle
Sean Shultz, Mayor, Carlisle Borough, Carlisle
Deb Sinha, Dickinson College, Carlisle
Holly Smith, Shippensburg University, North Middleton Township
Morgan Stellfox, Enola
Ed Webb, Dickinson College, Carlisle
John Werner, Carlisle Tool Library/Cumberland Conservation Collaborative, Carlisle
Nora White, Dickinson College, Carlisle
Jared Woolston, Carlisle Borough Office, Carlisle
Karen Wronski, CVR and Hope Station, Dickinson township

* Workshop Facilitators
+ Climate Resilience Working Group Co-Chair

Information Sources

Carlisle Borough. (2022). Climate Action Plan, Local Actions and Policies to Reduce Carlisle Borough's Greenhouse Gas Emissions. https://www.carlislepa.org/government/climate_action_plan.php.

Cumberland County. (2022). Green Up the Footprint, Cumberland County Climate Change Action Plan. https://www.cumberlandcountypa.gov/4898/Climate-Action-Plan.

Dickinson College. (2009). Climate Change Action Plan, Climate Neutral by 2020. https://www.dickinson.edu/info/20052/sustainability/2566/climate_action_plan.

IPCC (2021). *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. https://www.ipcc.ch/report/ar6/wg1/.

Leary, N. (2023). Changing Climate Hazards in Cumberland County, A Review of the Evidence. Climate Change in Cumberland County Background Paper, August 14, 2023.

Leary, N., and G. Messimer (2023). Social Vulnerability, Resilience, and Equity. Climate Change in Cumberland County Background Paper, September 15, 2023.

South Mountain Partnership (2023). State of the Region, Report Card. https://www.southmountainpartnership.org/wp-content/uploads/2023/09/State-of-the-Region-Report-Card-2023.pdf.

Appendix: Survey Responses

Following are the responses to open-ended questions of the post-workshop survey.

What climate resilience strategies do you think are most urgent to implement in the near term?
I think understanding which strategies are within our collective or organizational capacity is an important place to start, and then working on creating priority actions from there.
I think organizing the right partners and having a resiliency plan is important.
Developing a county-wide comprehensive plan which sets the foundation on which all subsequent initiatives are rooted in.
Respect for people with differing opinions and accepting that these people will decline participating in your strategies.
Flooding is an increasingly growing problem, I think we should prioritize using trees, green spaces and green infrastructure to help reduce extreme heat impacts and flooding. Also ensuring everyone has access to affordable housing.
Development of more affordable shared and multiple family housing, and more inclusive opportunities to share ideas and strategies.
We need to make sure that all populations are heard and have a voice. Am concerned that we don't use a "top-down" approach which can be very off-putting to underrepresented populations. We need to go to those spaces of those who are not usually "at the table" and build relationships, spend more time listening to their concerns, and solicit their thoughts on solutions and resources. Building relationships and human networks are the most important for community resiliency.
Stop new warehouse construction and develop an economic diversification plan
Organizing politically. Perhaps at the federal level we can *count* on the democrats as our party. But this isn't the case locally where they are disempowered and incompetent outside of the borough of Carlisle. Everything else is downstream from this.
Working to build this into existing plans and plans being developed for other purposes. Work into other strategies versus isolating this on its own.
Solar and Wind Electrical Production, Consider low head hydro . Reduce Air and Water Pollution
Protecting open space and utilizing green infrastructure design elements in public infrastructure development
Emphasize climate risk in development decisions
Reducing car dependency, increase green spaces, prepare infrastructure, prepare healthcare institutions.
Food and water security
Tree planting; reducing truck traffic in Carlisle
1) Electrify everything (as above in other); this will improve air and water quality. 2) PLANT TREES (10 million tree project). 3) Get landlords & owners to weatherize their buildings. Weatherization is a win-win for both landlords and tenants and SHOULD be a no-brainer. 4) In addition to decreasing use of fossil fuels for heat, educate on & encourage folks on EV's & infrastructure, planting pollinator & vegetable gardens and buying local as often as possible. Yes, this will hurt the logistics industry here, but big diesel trucks need to be a thing of the past. There is a ton of federal money for wind and solar, Cumberland County & PA should go after it. Write Shapiro to forget his "alternative" plan and just sign on to RGGI.
conversion from fossil fuels to "green" methods for energy source
Human health and environment: water , air and land
Building coalitions. partnrships and other trusting relationships to build whole community knowledgeand suppor.
strategies that reduce social and economic inequality
Preserve and Protect our environment, Ag and Forest protection with vegetation, cover crops, and trees particularly stream corridors. Similar in Suburban and Urban, plant trees and rain gardens to provide cooling and handle storm water management.

What next steps would you like to see to generate interest in acting to limit climate risks and build climate resilience in Cumberland County?
Thank you for convening and planning this great event! I am curious about the future of this group, and appreciate the cross sectorial invitations and interest in continuing to expand the attendees to new groups. Wonder if the group could create a climate pledge for Cumberland county businesses or some other way to begin to spread this initiative beyond those who are working on climate resilience daily.
To do a better job at providing/informing residents of access to resources that mitigate risks. I'd rather see climate resilency look like meeting people's needs (ie resilency) vs educating them on the risks of climate change where they feel hopeless.
Formation of a workgroup/committee to start developing a comprehensive plan.
More workshops inviting more people
Building a strong youth-led movement to inspire others to get engaged.
Continue positing numbers of: Air quality, flooding areas, energy usage AND highlighting areas of improvements and the invitation to join in - Carlisle Strong and Healthy. Highlight areas where we all benefit, and then addressing the needs of those negatively impacted by climate change - such as heat relief shelters, incentives to plant trees, incentives for solar and reduction of impervious surfaces.
Improve communication and information sharing among government entities (all levels) and civil society to better coordinate resilience activities and more efficiently use resources.
Continued meetings like this directed at people who aren't in government/nonpprofits/education. Meetings oriented around conversation and not *educating* a largely imagined subject who is totally ignorant of what's going on.
I think the interest is there, but the general public needs actionable steps to take. What three things should they be doing?
Municipalities control land use and development in Pa. They need to be at the forefront of education, demonstration projects and ordinances to protect the environment in general. Many see Climate Change as a polarizing political issue rather than an important non political public safety issue. Enlisting the many volunteer public safety groups (fire companies etc) to advocate for local simple and small climate resilience acts is crucial. This approach would need to focus on reducing "hazards" and public safety , not "climate change" which is seen as a hot political button.
County planning department initiate open space preservation funding source similar to York COunty
Safe streets, to allow active transportation with less threat from motorized vehicles
improve transportation options that don't involve a car, such as walking, biking, busses, and passenger rail.
Minimize development in the county and especially in sensitive & important resource areas.
public education events on global warming
As before, encourage everyone/thing to go electric, moving sources of electricity to wind and solar, building these jobs so workers in the fossil fuel industry don't lose their jobs by phasing out oil & natural gas. The easiest next step here is the weatherization I talked about above.
economic encouragement for "green" methods -- e.g. tax breaks for solar panels, TVs
Education through community efforts like the workshop on Climate Change
choose a local issue that is high on everyone's list--maybe air quality--and explore a wide range of individual and group actions
Efforts to build solidarity/alliance with diverse social groups
I think we need to prioritize and develop action plans with measurable goals and timelines. Solicit committee members to take responsibility over plans

What other comments would you like to share?
South Mountain Partnership recently published a "Report Card" of the region evaluating the health of the region on a variety of climate resilience factors, could you please share this with the group: https://www.southmountainpartnership.org/state-of-the-region/
Public transportation needs to improve, to limit car traffic. Is anyone addressing bad/toxic-smeling odors in Carlisle (from Syntec, other industry, or highways)?
Thanks for hosting the workshop! I really enjoyed it!
I was unfortunately unavailable to attend the 12-15-23 workshop. Since this topic is not one I lose sleep over, your terms and assumptions are unfamiliar to me. For that reason I am at a loss to respond to this survey. In the second question, there are several things I consider important (air quality, drinking water quality, farms, electric grid,, transportation, communication, housing, forests and wildlife). I do not see that these are threatened by the climate, either exclusively or at all.
Thank you for leading such an interesting and important workshop!
Congratulations to Neil and his students for great research and facilitation of community dialogue.
Thank you for the opportunity to learn from my neighbors and renew my commitment to work together for a healthier community
I enjoyed the meeting and thought it was a productive use of time and a good event.
The students did an excellent job and Neil, your brief presentation was very informative. While it would be a very challenging effort, I think it would be extremely educational for these students to make presentations with your help at the Townships surrounding Carlisle, especially the more rural ones.
Cumberland county is to car dependent it makes people vulnerable who cannot drive, don't have, or lose an automobile.
Education on the most important aspects of resilient environment important - such as moving away from development and activities that deplete important resources.
On the event itself, 1)many important sections of Cumberland County's population was not there - Black, Latino, lower SES, military - they needed to be there, 2) I would have liked each of the table sessions to have been shorter, so I could have gotten to more topics, 3) These ideas need FUNDING or they won't go anywhere; Duke University used to have a bunch of feel good community seminars but never funded any of them from their endowment - not even start-up funds, which left the City of Durham holding the bag to try to fund some great ideas; 4) It would have been nice if the report-outs had a more consistent structure, e.g., top three problems and top three fixes. I'm full of constructive criticism :-), but the seminar/workshop was very good, regardless!
Thank you for bringing together a community on Climate Action
Tterrific student-led and community engaged workshop, Neil
I think next steps need to be advertised widely to generate additional interest and support.