

# Building Climate Resilience at Dickinson and in Central PA

## Scope of Work

July 20, 2023

This document describes the need, purposes, principles, approach, scope and timeline for *Building Climate Resilience at Dickinson and in Central PA*, a collaborative initiative of Dickinson College, Carlisle Borough, and Cumberland County to assess climate risks and plan for building climate resilience in the region. These are a starting point for guiding the initiative and are intended and likely to evolve through experience and learning as the initiative unfolds.

### Why Plan for Climate Resilience?

The Earth's climate is warming and changing in ways that are exposing people, economies, and natural systems to greater climate hazards in Central Pennsylvania and throughout the world. Changes observed in Cumberland County include rising average temperatures, more frequent and hotter extreme heat events, less frequent and less extreme cold events, increasing average rainfall, and more frequent heavy rain events that bring heavier rainfall amounts. These and other exposures to climate hazards are already having negative impacts. Looking to the future, if emissions of greenhouse gas pollutants are not sharply reduced, their concentrations in the atmosphere will increase and cause greater warming and amplify risks year-by-year and decade-by-decade.

The risks, while substantial, can be reduced significantly. Success will require strong and urgent actions by public and private sector actors working at local to global levels. Communities and institutions across the United States and in other countries are stepping forward with plans and actions to make deep reductions in greenhouse gas emissions, adapt to climate change, and build community resilience to climate and other hazards. Dickinson College, Carlisle Borough, and Cumberland County have each adopted climate action plans that are focused on reducing greenhouse gas emissions. Largely unaddressed by their action plans are the challenges of adapting to climate change and building resilience.

The climate resilience initiative will fill this gap in our regional response to climate change. Climate resilience is the capacity to prevent, limit, absorb, and recover from impacts of the changing climate and to adapt and flourish in an uncertain future. Building resilience can limit the potential harms from climate change. If we do not account for climate change in our plans and investments, we would put ourselves at greater risk. But by taking climate change into account as we make plans for and invest in our communities, institutions, businesses, lands, and personal lives, we can collectively create a resilient future in which all residents are able to thrive.

Strategies to adapt to climate change and build climate resilience, in addition to making us safer from climate change, can yield many co-benefits. Examples include creating a more resilient and robust local economy, more equitable economic opportunities, improved wellbeing for all residents, more reliable energy, transportation, and water systems, safer infrastructure, improved public health, greater food security, stronger farming and rural communities, and healthier natural systems that provide recreational, wildlife, and other services. Planning for resilience can also increase our abilities to access state and federal funds for community development and can improve bond ratings.

### Purposes and Principles

The purposes of the initiative *Building Climate Resilience at Dickinson and in Central Pennsylvania* are to:

- Enable Dickinson College, Carlisle Borough, and Cumberland County to plan and take effective action for increasing climate resilience in our region;

- Engage students in learning about needs and processes for building community climate resilience; and
- Model and help promote campus-community partnerships for climate resilience.

In December 2022, Dickinson College signed Second Nature's Resilience Commitment. In signing the commitment, the college pledged to engage with community partners to assess climate risks and resilience in the region; identify, evaluate, and prioritize strategies for building resilience; develop, adopt, and implement a Dickinson plan to build climate resilience on its campus; and support resilience planning and action in the wider community. Carlisle Borough and Cumberland County, through their participation in the initiative, will contribute to and gain knowledge about climate risks and resilience strategies and will consider if and how they might integrate climate resilience into their own respective planning processes.

The initiative will be guided by the following principles and practices. The initiative will:

1. Welcome people of diverse identities, experiences, and points of view.
2. Provide meaningful opportunities for people to participate and help shape priorities and strategies.
3. Give emphasis to equitable strategies that benefit people who are disproportionately at risk because of social, economic, racial, cultural, health, and other factors.
4. Give emphasis to systems-based strategies that address multiple interdependent risks and generate co-benefits valued by the community.
5. Use the best available scientific, experience-based, community-based, traditional, and other forms of knowledge and evidence.
6. Balance near term needs with long-term vision.
7. Acknowledge uncertainties while recognizing the need to anticipate plausible future climate and other conditions for effective planning and action.
8. Recognize that inaction is costly in terms of missed opportunities and failures to limit risks.
9. Recognize that success in managing climate change risks requires both mitigation of greenhouse gas emissions and adaptation to changing conditions.
10. Be an iterative process for monitoring, evaluation, learning, and revision.

### **Collaboration and Coordination**

Dickinson College, Carlisle Borough, and Cumberland County will work collaboratively to implement the initiative. Each has designated representatives to serve on the Climate Resilience Working Group that is overseeing and guiding the initiative. The Working Group, established in spring 2023, is a subcommittee of the President's Commission for Environmental Sustainability (PCES) at Dickinson. Responsibilities of members are to attend meetings of the Working Group, provide advice and assistance for activities of the initiative, coordinate the participation of Dickinson, Carlisle, and Cumberland County, serve as champions for climate resilience in the community, communicate information about the initiative to relevant constituencies, help engage and seek input from community and college stakeholders, and assist with drafting and reviewing reports and plans.

Dickinson, Carlisle, and Cumberland County will also involve, as feasible, other members of their staffs in the collaborative work, with the understanding that other responsibilities and priorities will dictate how much and when staff will be able to engage in the work. The collaborative work includes, for example, providing and assisting with the collection of relevant data, assisting with assessment of climate risks and resilience, evaluating climate resilience strategies, helping to raise awareness of the initiative in the community, and organizing, attending, and facilitating community engagement events.

Other community organizations and community members are welcome to participate in the initiative. Input from community members will be invited throughout the process and several open meetings offering opportunities for meaningful involvement will be scheduled. Organizations and individuals wishing to engage in these or in other

ways are encouraged to contact the Resilience Working Group co-chairs, Neil Leary ([learyn@dickinson.edu](mailto:learyn@dickinson.edu)) or Ken Shultes ([shultes@dickinson.edu](mailto:shultes@dickinson.edu)).

Financial costs for the initiative, which do not include implementation of resilience plans, are expected to be minimal. The minimal anticipated costs will be covered by Dickinson College. Other partners make no commitment to fund the initiative but may be asked to help pay for some costs as they are able and as fits their organizational missions.

Members of the Working Group:

- Marisa Arreola '24, Dickinson College student
- Allyssa Decker, Dickinson College, professor of Environmental Studies
- Elizabeth Grant, Cumberland County Planning Department, Planning Specialist
- John Henson, Dickinson College, professor of Biology
- Caroline Krauth '26, Dickinson College student
- Lauren Lasater, Dickinson College, Compliance & Risk Management
- Neil Leary\*, Dickinson College, Center for Sustainability Education
- Lindsey Lyons, Dickinson College, Center for Sustainability Education
- Jillian Mann '26, Dickinson College student
- Lindsay Mintz, Dickinson College, Dean of Students Office
- Sara Markowitz, Dickinson College, Clarke Forum
- Olivia Ngai '26, Dickinson College student
- Sumaiya Quayum, Dickinson College, Center for Sustainability Education
- Hanna Roman, Dickinson College, professor of French
- Ken Shultes\*, Dickinson College, Sustainability & Facilities Planning
- Kristin Strock, Dickinson College, professor of Environmental Studies
- Jill Swartz, Dickinson College, Public Safety
- Jared Woolston, Carlisle Borough Manager's Office

\* Designates co-chairs of the Working Group

### Building on Past Work

Dickinson, Carlisle, and Cumberland County have significant past experience responding to climate change on which to build. The new resilience initiative will draw on knowledge and lessons gained from these experiences.

- **Dickinson Climate Action Plan:** Adopted by Dickinson in 2009 and updated since then, the Dickinson Climate Action Plan committed the college to integrate climate change and sustainability in its educational programs and set targets for reductions in greenhouse gas emissions by 2020. The targets were achieved, with gross emissions being reduced over 40% from their 2008 level and net emissions being reduced to zero in 2020.
- **Carlisle Climate Action Plan:** Carlisle's climate action plan, adopted in 2022, set targets to reduce community-wide greenhouse gas emissions 26% by 2025 and 80% by 2050 from their 2005 level. The plan was developed by the Borough with participation from Dickinson College students, faculty, and staff, as well as many Carlisle community members, under the Local Climate Action Program of Pennsylvania's Department of Environmental Protection (PA DEP).
- **Cumberland County Climate Action Plan:** The County's climate action plan, *Green Up the Footprint*, adopted in 2022, presents goals, strategies and actions organized by sector for local governments, businesses, and residents to consider for adoption. The County plan was also produced under the PA DEP Local Climate Action Program and Dickinson students, faculty, and staff again played roles in helping develop the plan. Also

participating were students, faculty, and staff from Shippensburg University and numerous community stakeholders.

- **Cumberland County Climate Change Vulnerability:** In fall 2021, Dickinson students participating in the Baird Sustainability Fellows program conducted research to assess climate change vulnerability, resilience, and adaptation at the request of the Cumberland County Planning Department. Their findings were presented at a public meeting in December 2021 and in a draft report. The draft report is currently being revised.
- **Cumberland County Hazard Mitigation Plan:** The 2020 update to Cumberland County's Hazard Mitigation Plan (HMP) identifies climate change as a major issue that can affect the environment, economy, and quality of life for county residents. The plan includes assessment of how climate change may impact the frequency and severity of several of the hazards facing Cumberland County. Dickinson students conducted research in 2018 on the implications of climate change for natural hazards that helped inform the update to the County HMP.
- **Carlisle Borough Comprehensive Plan:** The 2019 update to Carlisle's Comprehensive Plan includes a section on community resilience with 7 objectives and 14 actions for community resilience. The objectives and actions focus on hazards assessed in the Cumberland County Hazard Mitigation Plan. Groundwork for the addition of a section on community resilience to the Borough's comprehensive plan was laid by the Borough's participation in the Resilience Dialogues program in 2018 and a study of community resilience conducted by Dickinson students in 2016.
- **Resilience Dialogues:** In 2018, Dickinson's Center for Sustainability Education convened Carlisle and Cumberland County community leaders to participate in two weeks of Resilience Dialogues as part of a program sponsored by the U.S. Global Change Research Program. The Dialogues produced a report that informed the update to Carlisle's comprehensive plan in the following year.
- **Community Resilience in Carlisle:** In 2016, Dickinson students assessed community resilience in Carlisle to climate, economic, and other disturbances using the City Resilience Index (CRI) and conducted a workshop attended by more than 30 community stakeholders to validate their findings. Their report was an input to the Resilience Dialogues held in 2018. Dickinson and Carlisle were the first to pilot the CRI for a small town, a tool developed by Arup International for the Rockefeller Foundation's Resilient Cities initiative.

### Steps to Resilience and Timeline

The Resilience Initiative will be informed by several frameworks, processes, and tools for climate resilience assessment and planning. They include:

- Second Nature, Resilience Planning Process, <https://secondnature.org/climate-action-guidance/resilience-landing-page/>
- Climate Ready Communities, Practical Guide to Building Climate Resilience, <https://climatereadycommunities.org/>
- U.S. Climate Resilience Toolkit, Steps to Resilience, <https://toolkit.climate.gov/#steps>
- ICLEI Local Governments for Sustainability, Vulnerability Assessment Toolkit, <https://icleiusa.org/resources/preview-vulnerability-assessment-toolkit/>

The resilience initiative will follow the steps and timeline outlined below.

Spring 2023      **Launch the Initiative (completed)**  
Engage Dickinson, Carlisle, and Cumberland County.  
Establish the Climate Resilience Working Group.

Kick-off the initiative with a public meeting of community members.

**Summer 2023    Develop Scope of Work and Information Materials (in process)**

Produce a Scope of Work for the initiative.

Produce information “primers” on climate change and community trends.

Update the 2021 Cumberland County climate vulnerability assessment.

Research and select methods and tools for assessing climate stressors, vulnerabilities, and resilience.

Fall 2023 –  
Spring 2024

**Assess Climate Resilience**

Dickinson students will assess climate stressors, vulnerability, and resilience as part of Dickinson courses. Efforts will focus on Cumberland County and Carlisle in fall 2023 and on Dickinson College in spring 2024. The assessment activities will include interviews, focus groups, and workshops with diverse community stakeholders to identify vulnerabilities of greatest concern to community members and important sources of resilience.

**Summer 2024    Synthesize Assessment Findings**

Findings from the resilience assessment and other information sources will be synthesized to produce a report on climate vulnerabilities and resilience at Dickinson and in Carlisle and Cumberland County. The draft report will be shared widely and a community meeting/workshop will be convened to engage community members and receive feedback. The assessment report will be updated following the community meeting.

Fall 2024 –  
Spring 2025

**Investigate Climate Adaptation and Resilience Strategies**

Dickinson students will investigate and evaluate adaptation and resilience strategies as part of Dickinson courses. The investigation and evaluation will include interviews and meetings with diverse community stakeholders and subject matter experts. Resilience strategies will be prioritized for Dickinson and a draft resilience plan for Dickinson College will be prepared, circulated, and discussed in open meetings.

Carlisle Borough and Cumberland County may also investigate and evaluate strategies as part of resilience planning efforts that they may choose to undertake for their jurisdictions.

**Summer 2025    Revise Draft Dickinson Resilience Plan**

The draft resilience plan for Dickinson College will be circulated for comment, discussed in open meetings, and revised.

Fall 2025

**Adopt Dickinson Resilience Plan**

The Dickinson Resilience Plan will be presented to PCES and other relevant all-college committees for consideration and adoption.

Spring 2026

**Begin Implementation of Dickinson Resilience Plan**

Implementation of Dickinson’s resilience plan will begin in spring 2026, which will include processes to monitor, evaluate, and improve implementation of plan strategies. Some resilience actions can and should be implemented prior to formal adoption of Dickinson’s resilience plan.