Second Nature

How to Conduct a Campus-Community Resilience Assessment

INTRODUCTION

This guidance is focused on reporting for the Climate or Resilience Commitment. It is designed to help Signatory institutions complete the second key step in reporting for the Commitments: the Resilience Assessment report. The document provides instructions for completing each section of the Resilience Assessment report, sample completed reports, and suggestions for resources campuses can use.

Climate and Resilience Commitment text:

"Within two years of the implementation start date, lead and complete an initial campus-community resilience assessment, including initial indicators and current vulnerability."

TABLE OF CONTENTS

WHAT IS THE INITIAL CAMPUS-COMMUNITY RESILIENCE ASSESSMENT?

The resilience assessment is meant to provide a baseline of current resilience activities on campus and in the community, develop initial indicators of resilience through a multi-stakeholder process, and identify current vulnerabilities related to climate change. Schools should keep a particular eye on overlaps and gaps in assets and vulnerabilities between the campus and community.

EXAMPLE RESILIENCE ASSESSMENTS

- Arizona State University West Campus
- Portland State University
- Central Community College
- Eastern Connecticut State University
- University of Minnesota-Morris

See a full list of completed Resilience Assessments here.
Download an editable Word document with the Resilience Assessment fields here.

CORE COMPONENTS

- Understand strengths and assets on the campus, in the community, and across both.
- Understand weaknesses and vulnerabilities on the campus, in the community, and across both. This includes climate change hazards, impacts, and existing conditions that may be exacerbated by climate change or affect a school and community's capacity to cope and adapt.
- Develop initial indicators of resilience that help benchmark current status as well as identify where a campus and/or community hopes to improve capacity in the future.
- Identify key overlaps and gaps between the campus and community assets and vulnerabilities.

LAYING THE GROUNDWORK

Responsibilities

Determine who will be responsible for making sure the Campus-Community Resilience Assessment is completed. For example, this may be the entire Campus-Community Task Force, a sub-committee, an individual charged with leading the process, a group of students studying climate resilience, or a different entity.

Scope of Assessment

Consider the boundaries of what is considered the campus and community for the purpose of the Assessment. For example, a school may have a single campus, multiple satellite campuses, or simply a group of buildings. Similarly, the community may include an entire town or city, or be narrowed down to a single neighborhood.

SECTION 1: PROCESS AND OUTCOMES

Section 1: Process & Outcomes

1. Please share key outcomes of completing the resilience assessment process (up to 300 Words)* ⓘ

2. If available, please share any files, reports, or links to information that outlines and captures the resilience assessment process, outcomes, and results

PDF Files only (.pdf) ⓘ

Choose File   No file chosen

Add link

Guidance

This section asks for information about the process and general outcomes from completing the initial Campus-Community Resilience Assessment. Because the Climate and Resilience Commitments emphasize strengthening relationships between the campus and the community, the Resilience Assessment may be very process oriented. The acts of reaching out to partners, convening diverse groups around the topic of resilience, and collecting multi-stakeholder input are an important outcome themselves. The Commitments are designed to be flexible and support different processes.

In the first question briefly describe how the campus approached the initial Campus-Community Resilience Assessment. What processes and resources were used? What are a few of the key lessons learned and takeaways from this?

Existing Process and Tools for Resilience Assessments

3. Were any of the following resilience assessment processes or tools utilized?*

☐ City Resilience Index

☐ Campus Resilience Enhancement System (CaRES) – Meridian Institute

☐ The Nature Conservancy Community Resilience Building Workshop

☐ United States Climate Resilience Toolkit's Framework

☐ University of Notre Dame Global Adaptation Initiative (ND–GAIN)

☐ Other

Guidance

There are many existing tools and resources that can be used to complete the initial Campus-Community Resilience Assessment. Campuses may use any of these existing processes and frameworks, or they can create a new process that fits specific needs. Ideally the process will include representatives from both the campus and the community, and fulfills the Core Components.

Keep in mind that these processes and resources are not mutually exclusive. Campuses may choose elements from multiple existing tools. Campuses may also utilize more than one tool. For example a campus may begin with a Community Resilience Building workshop to initiate the conversation, and follow up with a more in-depth climate vulnerability analysis using tools from the U.S. Climate Resilience Toolkit.

CITY RESILIENCE INDEX (CRI)

Developed by Arup

CRI is a web-based tool that helps cities to understand and measure their resilience. Through a series of questions, cities rate themselves on indicators that CRI has identified to generate a city resilience profile. CRI is the framework being used by the Rockefeller 100 Resilient Cities to guide development of their Resilience Strategies.

Dickinson College worked with its city, Carlisle, PA, to complete the City Resilience Index and create a profile, demonstrating how a campus can serve as a resource to the surrounding community.

The City Resilience Index is recommended for:
- Campuses in urban centers. **Note that campuses must apply to use CRI and must have approval from or partner with their city to do so.**
- Campuses in cities that are part of Rockefeller's 100 Resilient Cities. These cities may have already completed a city resilience profile through CRI or may be in the process of doing so. In this case campuses can work with their city's Chief Resilience Officer to view the profile.

COMMUNITY RESILIENCE BUILDING (CRB) (Link) WORKSHOP

Developed by The Nature Conservancy

This is a clear and simple tool that guides communities through the process of organizing and executing a community resilience building workshop. During the workshop participants define climate hazards, identify strengths and vulnerabilities, and develop and prioritize actions to build resilience.

See example Summary of Findings from CRB workshops at Eastern Connecticut State University and Tufts University.

The Community Resilience Building workshop process is recommended for:
- Campuses that need a starting place to initiate resilience work with their community
- Campuses looking for a participatory process to engage stakeholders
- Campuses that need guidance on identifying and convening stakeholders

THE U.S. CLIMATE RESILIENCE TOOLKIT (Link)

Developed by the U.S. National Oceanic and Atmospheric Administration

The U.S. Climate Resilience Toolkit outlines a Steps to Resilience framework that begins with hazard identification and ends with implementation. Resources are provided for each step, including data-driven maps of climate impacts and tools for prioritization. There is a wealth of climate information, case studies, and region or sector-specific tools.

The U.S. Climate Resilience Toolkit is recommended for:

- Campuses interested in a more research and data-driven Resilience Assessment process
- Campuses with the capacity to review the many resources the Toolkit includes and choose those applicable to the particular campus-community

URBAN ADAPTATION ASSESSMENT (UAA) (Link)

Developed by Notre Dame Global Adaptation Index (ND-GAIN)

The UAA is a framework and methodology to quantify a city's adaptability to climate risks. ND-GAIN uses the methodology to assess the climate vulnerability and readiness of U.S. cities. Campuses located in cities that ND-GAIN is assessing may be able to utilize the data and scores generated.

The UAA is recommended for:

- Campuses in urban areas that are being analyzed by ND-GAIN
- Campuses interested in a high-level data-driven approach and utilizing quantitative indicators

CAMPUS EVALUATION OF RESILIENCE DIMENSIONS (Link)

Developed by Community Resilience Organizations & Second Nature

The Campus Evaluation of Resilience Dimensions is a checklist to help schools assess resilience in the five dimensions provided by Second Nature: 1) infrastructure, 2) ecosystem services, 3) economics, 4) social equity & governance, and 5) health & wellness.

This tool is recommended for:

- Campuses interested in collecting information from a wide array of stakeholders. This evaluation can be sent out as a survey to campus and community members.
- Campuses looking for a straightforward process to assess local perceptions of resilience.
- Campuses that need help determining thresholds for resilience. The evaluation includes basic guidelines for resilience in each dimension.

CAPACITY ASSESSMENT MATRIX

The Capacity Assessment Matrix is a tool to help schools identify, organize, and map out existing resilience activities on campus. The Capacity Assessment Matrix is a template that can be modified by schools to best fit the needs of their campus.

This tool is recommended for:

- Large schools where there may be several existing projects or initiatives focused on climate resilience. The template can help organize and compile many resources, and can be useful to map out existing activities.
- Campuses looking for a way to collect and organize input from various stakeholders across campus, focusing especially on identifying existing capacities.

There are many more resources available to help communities complete a climate resilience assessment. See Second Nature's website for a more extensive list of resources. While many of the toolkits and frameworks for assessing resilience and adaptability are designed for towns and cities, campuses can use these resources to initiate resilience work with their surrounding communities.

SECTION 2: STRENGTHS/ASSETS AND VULNERABILITIES

Section 2: Strengths/Assets and Vulnerabilities

1. List current strengths/assets for the campus and the community that support resilience. At this point in the resilience planning process, these strengths can be either assets on the campus, community, or shared. ⓘ

See example of campus – community strengths/assets from Eastern Connecticut State University and the Town of Windham. This is a result of a climate resilience workshop using the Community Resilience Building guide, a resource designed by The Nature Conservancy.

Please list at least 3 campus–community strengths/assets. You may list up to 10*

1 [   ]

2 [   ]

3 [   ]

This section asks for information about the strengths, assets, and vulnerabilities identified during the initial Campus-Community Resilience Assessment. In the first question provide at least three strengths or assets. These can be strengths or assets specific to the campus, specific to the community, or shared across both.

Identifying Strengths/Assets

Strengths and assets include features, capacity, characteristics, and resources that will help a campus and its community cope with climate change. A campus and community will need to leverage and draw upon their strengths and assets to adapt and thrive in the face of climate impacts. Second Nature suggests that campuses begin by identifying strengths and assets (rather than vulnerabilities). This helps create a more positive and proactive mindset when later developing Climate Action Plans.

Suggestion: *For a comprehensive assessment consider strengths and assets that correspond to each of the 5 Dimensions of Resilience identified by Second Nature:*

- Social Equity & Governance
- Health & Wellness
- Ecosystem Services
- Infrastructure
- Economic

Identifying Vulnerabilities

Climate Change Hazards*	Climate Change Impacts	Climate Change Additional Exacerbating Factors
☐ Drought	☐ Disease Outbreak	☐ Declining Population/Human Capital Flight
☐ Extreme Cold	☐ Fire	☐ Displaced Populations/Migrants
☐ Extreme Heat	☐ Infrastructure Failure	☐ Drug/Alcohol Abuse
☐ Rainfall Flooding	☐ Invasive Species	☐ Earthquake
☐ Sea Level Rise/Coastal Erosion	☐ Landslide	☐ Economic Inequality
☐ Blizzard	☐ Liquefaction	☐ Energy Insecurity
☐ Coastal/Tidal Flooding	☐ Loss of Biodiversity	☐ Environmental Degradation
☐ Hurricane/Typhoon/Cyclone	☐ Poor Air Quality	☐ Ethnic Inequality
☐ Severe Storms	☐ Power Outage	☐ Financial/Economic Crisis
☐ Tornado	☐ Storm Surge	☐ Food Insecurity
☐ Other	☐ Subsidence	☐ Hazardous Materials Accident
	☐ Water Insecurity	☐ Homelessness
	☐ Other	☐ Inadequate Educational Systems
		☐ Inadequate Health Systems
		☐ Inadequate Infrastructure

This section asks campuses to list up to 10 vulnerabilities. Vulnerabilities include direct hazards from the changing climate (such as drought, heat waves, and severe storms), impacts from climate change or from climate change-related events (such as infrastructure failure and disease outbreak), and factors that are exacerbated by the effects of climate change.

The vulnerabilities listed in the Reporting Platform are derived from challenges identified by the 100 Resilient Cities. The lists provide a starting place and there may be additional vulnerabilities not included, especially exacerbating factors that are unique to a particular campus or region. Campuses may add new vulnerabilities, or they may select options provided. Campuses should identify at least 1 vulnerability that is a direct Climate Change Hazard in order to reflect the underlying changes in climate that are most impacting their region.

Suggestion: *How to Identify Vulnerabilities:*

- Campuses that complete a Community Resilience Building workshop can report on the hazards identified during the workshop.
- Campuses located in one of the 100 Resilient Cities can use the challenges identified by their city.
- Campuses can refer to the Second Nature's regional climate impact guide for anticipated changes in their region.

Remember this is the initial Campus-Community Resilience Assessment. Campuses may decide to later complete a more focused vulnerability assessment that explores in depth how climate change is expected to impact their campus and immediate community.

SECTION 3: INITIAL INDICATORS OF RESILIENCE

This section asks for initial indicators of resilience. At this point, indicators may be qualitative or quantitative. They can represent strengths, assets, and vulnerabilities. The goal here is to consider each of the 5 dimensions of resilience and report on the current status of at least one indicator for each. Campuses may choose indicators that apply to the campus, the community, or both.

NOTE: The 5 dimensions of resilience are not mutually exclusive. Indicators may fall into more than one of these dimensions. The goal of stating these five categories is to create a framework that encourages campuses to think comprehensively about the varied, intersectional aspects of climate resilience.

The reporting platform asks campuses to list the indicator and to provide a brief description of the current status. Under "Indicator," write what the campus is measuring or assessing. See examples of indicators for each dimension of resilience. Under the description, briefly describe the current status of the indicator. Include whether the indicator is qualitative or quantitative. For quantitative indicators, include a value or estimated value if possible. For current qualitative indicators, consider metrics to measure this in the future.

Social Equity and Governance

Social Equity and Governance includes the systems of governance on campus and in the community, levels of engagement among campus and community members, and the ability of different groups to adapt and respond to climate change. Campuses should consider the social fabric of the campus-community, education levels and opportunities, active networks among different groups in the campus-community, and social justice dynamics that may be present such as historic inequities and institutional racism.

Example Indicators

These indicators and accompanying descriptions are examples designed to help campuses envision what a complete report may look like. For each indicator there are many metrics campuses can use to measure current status and progress. For the initial Campus Community Resilience Assessment, campuses may provide a qualitative description of the indicators they choose. However, campuses should begin to think about metrics to measure these indicators and how they plan to track progress.

	Indicator	Please describe the current status and metric of measurement
1	Community connections and engagement	Qualitative. There is high participation on local committees. Many students volunteer and are involved in the community, on campus and beyond, can use metrics currently used on campus.
2	Civic engagement (voter turnout)	Quantitative. 75% of the population voted in the last federal election, and 50% voted in the last local election
3	Education Level	Quantitative. 65% of young people in the community have a high school degree or GED. 50% have a degree beyond high school.
4	Emergency planning capabilities	Qualitative. The campus and community coordinate on emergency plans and have experience responding to disasters.
5	Vulnerable populations	Quantitative. An estimated 40% of the population is considered vulnerable. This includes populations of elderly people, people living below the poverty line, and people who don't speak english.
6	Awareness of climate change	Quantitative. An estimated 60% of the community believes climate change is a risk compared to an estimated 90% of campus residents.
7	Crime prevention /policing	Qualitative. There is high mistrust between campus and community residents and police.
8	Institutional engagement (participation in networks)	Qualitative. The campus actively participates in several networks and associations addressing climate change and sustainability.
9	Income disparity	Quantitative. 10% of the community population earns 200% of the income.
10	Climate Centers	Qualitative. There are multiple campus and/or community centers offering programs on adapting to climate change

Health and Wellness

2) Health & Wellness

Please share at least 1 indicator. * Up to 10 indicators may be added*

	Indicator	Please describe the current status and metric of measurement	Remove
1			
2			X

ADD

Summary of Health & Wellness (optional)

Health and Wellness includes the ability of different groups to fulfill their basic needs. This includes accessibility of healthcare, food, water, housing, and sanitation. Campuses should consider availability and affordability of healthcare, food and potable water, and secure housing. Campuses should also consider capacity for emergency medical care.

Example Indicators

	Indicator	Please describe the current status and metric of measurement
1	Rate of asthma	Quantitative. An estimated 25% of the population suffers from asthma.
2	Food security	Qualitative. There is little local agriculture and food production, but most residents have access to diversified and affordable food.
3	Health Insurance	Quantitative. An estimated 40% of the population has no health insurance.
4	Access to healthcare	Qualitative. There are several hospitals and health clinics both on campus and in the community.
5	Affordable housing	Qualitative. There are several affordable housing developments in the community.
6	Potable water/ emergency planning	Qualitative. There are plans to supply clean water to all residents in an emergency event for 5 days.
7	Mental health	Qualitative. The campus offers sufficient mental health programs for students and staff.
8	Access to exercise facilities	Quantitative. An estimated 60% of the community population has a gym membership or access to fitness facilities.
9	Emergency healthcare	Quantitative. Local hospitals have 500 beds.
10	Homeless population	Quantitative. An estimated 5% of the campus and community population is homeless.

Ecosystem Services

3) Ecosystem Services

Please share at least 1 indicator. * Up to 10 indicators may be added*

	Indicator	Please describe the current status and metric of measurement	Remove
1			
2			X

ADD

Summary of Ecosystem Services (optional)

Ecosystem Services includes the environmental systems and services present in the campus-community. Campuses should consider natural assets such as tree canopy, undeveloped floodplains, air quality, and biodiversity. Campuses should also consider systems in place to govern or protect these assets, such as conservation easements, recreation parks, and rainwater management systems.

Example Indicators

	Indicator	Please describe the current status and metric of measurement
1	Urban green space	Quantitative. 15% of land in the community is devoted to green space. 30% of land on the campus is green space.
2	Tree canopy	Quantitative. An estimated 30% of the campus has tree cover. An estimated 10% of the community has tree cover.
3	Rainwater management	Qualitative. There are many mechanisms such as rain gardens and culverts throughout the community to manage rainfall and limit runoff.
4	Access to outdoor recreation	Quantitative. There are 5 outdoor recreational parks in the community.
5	Air quality	Quantitative. There are typically 15 days a year when air quality is considered unsafe.
6	Protected floodplain	Qualitative. There are policies in place to protect floodplains from development.
7	Climate-suited vegetation	Qualitative. The campus is currently a Bee Campus USA and prioritizes drought-resistant plant species
8	Conservation	Quantitative. 25% of community land is under a conservation easement.
9	Coastal buffer	Qualitative. There are active programs to restore wetlands.
10	Protected watershed	Qualitative. A large portion of the local watershed that provides drinking water is forested and protected

Infrastructure

4) Infrastructure

Please share at least 1 indicator. * Up to 10 indicators may be added*

	Indicator	Please describe the current status and metric of measurement	Remove
1			
2			X

ADD

Summary of Infrastructure (optional)

Infrastructure references the physical structures built, owned, managed, and/or used by the campus-community. Many resilience assessments and plans tend to focus on infrastructure. Campuses should consider transportation systems, buildings, communication technology, and key features such as bridges and dams.

Example Indicators

	Indicator	Please describe the current status and metric of measurement
1	Public transportation availability	Quantitative. 75% of the campus and community are accessible with public transportation
2	Communication / emergency planning	Quantitative. 85% of campus residents can be contacted in the case of an emergency.
3	Energy efficiency	Qualitative. The campus has policies to build to LEED standard and power management controls on all buildings.
4	Flood resistant buildings	Qualitative. Buildings have no flood sewers and critical equipment is stored in basements.
5	Backup energy	Quantitative. Campus has backup generators to provide power for 3 days after a grid outage.
6	Dam safety/Flooding	Qualitative. The community is located close to a dam with potential to fail under extreme rain events.
7	Resilient energy	Qualitative. The campus and part of the community are connected to a microgrid that can operate independent of the grid.
8	Access to multi-modal transportation	Qualitative. There are bike lanes, bike storage, car share programs, and subsidized train passes available in the community.
9	Air conditioning/Cooling	Quantitative. 70% of residential units have air conditioning.
10	Heating	Quantitative. 80% of residential units have heating.

Economic

5) Economic

Please share at least 1 indicator. * Up to 10 indicators may be added*

	Indicator	Please describe the current status and metric of measurement	Remove
1			
2			X

ADD

Summary of Economic (optional)

Economic includes the financial ability of the campus-community to proactively adapt to changing climate conditions and to respond positively to climate change events. Campuses should consider the diversity of the campus-community's local economy, availability of tax or other financial incentives to increase resilience, and levels of financial planning for emergencies.

Example Indicators

	Indicator	Please describe the current status and metric of measurement
1	Emergency funds	Quantitative. The campus has a $400K fund for emergency response.
2	Flood insurance	Quantitative. 60% of campus and community commercial buildings have flood insurance. 50% of residents have home flood insurance
3	Green revolving fund	Quantitative. Campus has a $500K GRF to fund infrastructure and energy efficiency improvements
4	Diverse economy	Qualitative. The local economy is diversified, with multiple small businesses and a variety of employers
5	Adaptation funds	Qualitative. There are many local, federal, and private grants available to fund climate resilience and adaptation projects.
6	Tax incentives	Qualitative. There are tax incentives for homeowners to improve energy efficiency and insulation.
7	Employment	Quantitative. There is a 5% unemployment rate in the community
8	Access to credit	Quantitative. 60% of the population have high credit scores and access to loans for home improvements
9	Financial / emergency planning	Qualitative. Residents are aware of ways to plan for emergencies and most have an emergency fund
10	Investment strategy	Quantitative. 60% of the campus endowment/portfolio is invested in funds with sustainability metrics/green bonds/etc

SECTION 4: INITIAL OPPORTUNITIES

Section 4: Initial Opportunities

1. As a result of the strengths and the initial vulnerability assessments, what has the campus-community structure identified as some initial opportunities to increase shared resilience? (up to 300 Words)*

[SAVE DRAFT] [SAVE & PUBLISH]

In this section briefly describe some initial actions that have been identified as ways to improve resilience.

Examples:

- Complete a targeted flood-risk assessment for each building and a campus-wide wind hazard assessment (from Resilience Assessment for American University)

- Increase ability to provide power independent of utility companies (from Resilience Assessment for Arizona State University)

- Increase collaborations with the health department and healthcare systems (from Resilience Assessment for Central Community College)

- Expand on-campus solar photovoltaic technology (from Resilience Assessment for Eastern Kentucky University)

- Focus on the economic vitality of the region, with an emphasis on job creation (from Resilience Assessment for Lamar Community College)

- Add courses and improve curriculum to include sustainability and resilience field work, as well as student-community opportunities for interaction (from Resilience Assessment for Northeast Lakeview College)

- Develop food security and in the local city of New Haven, CT, as an opportunity for shared resilience (from Resilience Assessment for Southern Connecticut State University)

- Develop a Wildfire Prevention Plan and burn ban communication strategy (from Resilience Assessment for University of Arkansas Main Campus)

- Establish a formal framework between the campus and the community to consider possible joint resilience efforts (from Resilience Assessment for University of Illinois at Urbana-Champaign)

- Establish a Green Revolving Fund (from Resilience Assessment for Western Technical College)