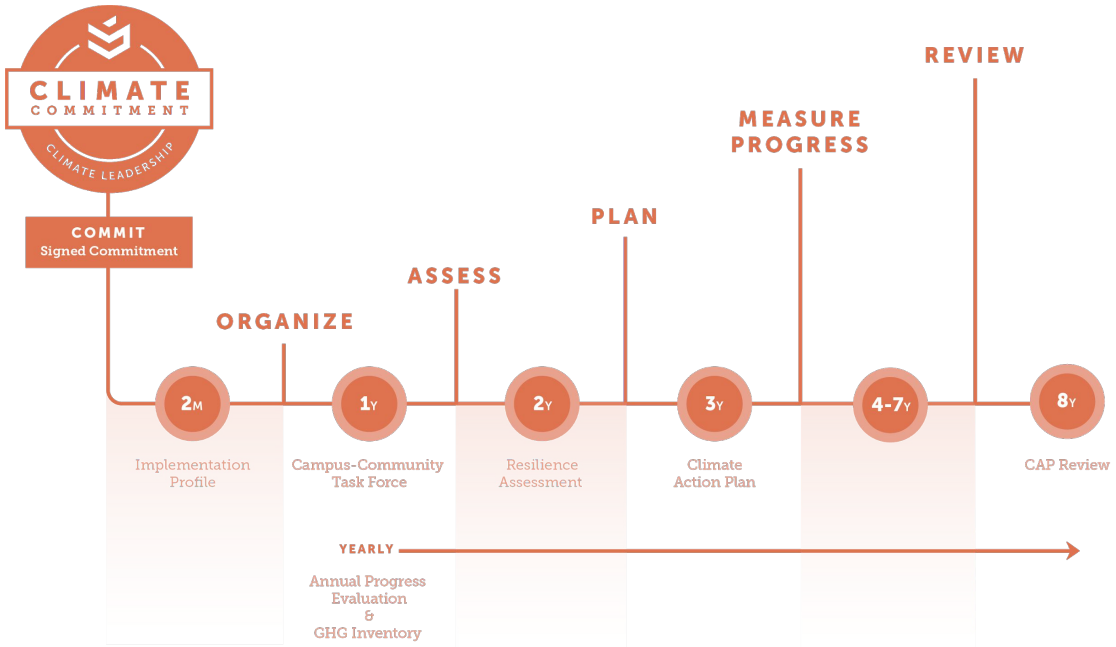
Climate Resilient Urban Campuses and Communities (CRUX)

Project Summary

Portland, Oregon

October 2018



According to Second Nature's Climate Resilience Overview, "resilience is the ability of a system or community to survive disruption and to anticipate, adapt, and flourish in the face of change." Portland State University (PSU) and Mt. Hood Community College (MHCC), both signatories of Second Nature's Climate Commitment, partnered with Second Nature in 2016 to pilot a climate resilience planning process from January 2017 - June 2018 through the Climate Resilient Urban Campuses and Communities (CRUX) Grant, funded by the Kresge Foundation.

Over a two year period, the institutions worked collaboratively with the cities of Portland and Gresham to develop climate resilience capacity assessments and process considerations for strategy development. MHCC and PSU served as hubs for defining climate resilience, determining strengths and vulnerabilities of their respective campuses, and identifying the roles and responsibilities of these institutions to foster climate resilience within their surrounding communities.

Portland's climate action efforts are widespread and have been since the City's initial Climate Action Plan was adopted in 1993. The CRUX assessments serve as campus-specific directives within the umbrella of the Multnomah County Climate Change Preparation Strategy (2015). CRUX grant deliverables include a Climate Resilience Capacity Assessment template, example assessments, the submission of a summary to Second Nature's Reporting Platform, and multiple demonstration projects that exemplify campus-community resilience building opportunities. These deliverables provide the foundation for prioritizing resilience activities at both MHCC and PSU and for the integration of climate resilience into PSU's Climate Action Plan update.

Climate Resilience Capacity Assessment

Portland State University		Climate Impacts	
Sector	Planning Area	Hotter, drier summers and more high-heat days	Warmer winters and more intense rain events
Infrastructure and the Built Environment	Energy	Increased energy usage; Danger of outage; Reliance on vulnerable sources	Sustained damage, black-outs during shocks
Natural Systems	Vegetation	Vegetation, habitat, and wildlife shifts; habitat fragmentation and population decline; increased invasive species	
Social Systems	Human Health	Increase in heat stroke, respiratory illness, dehydration	Sickness and exposure; mental health and productivity, social isolation and reduction in outdoor activity

Second Nature's resilience planning framework recommends beginning with a capacity assessment, taking inventory of existing assets to build upon and identifying unique abilities to create positive and collaborative future strategies. By cataloging our strengths and vulnerabilities, we are better able to understand where we need to focus our efforts moving forward. The assessment is organized into three sectors (Built Infrastructure, Natural Systems, and Human Systems) with multiple planning areas within each sector. Climate impacts as summarized in the Multnomah County Strategy were then applied to each sector of campus functioning.

Indicator	Stormwater infrastructure
Measurement and Verification	Are stormwater capture and treatment systems on campus adequate for anticipated volumes, both over time and during intense rain events?
Role of the University	Sustainably manage rainwater falling on the PSU campus, minimizing runoff and dependence on city systems
Current Capacity	Landscaping practices, Stormwater Planters, Pervious Pavers, Bioswales, Green Roofs. PSU campus was 79% impervious surfaces as of 2005.
Primary Ownership	Facilities and Property Management; Campus Planning Office; Campus Sustainability Office
Relevant Documents	Campus stormwater master plan (Salmon Safe certification); PSU's 2005 Stormwater Plan; City plan update of 2012 plan underway.

Planning areas are then populated with resilience indicators that respond to the anticipated climate impacts. Both PSU and MHCC clusters then worked with university staff, researchers, and community members to crosswalk indicators with campus-community assets and needs. Indicator measures, the role the campus plays in addressing each indicator, and current capacities including existing programs, practices, departments, and plans were documented.

As the state's premier urban research and teaching university, we have a well-defined mission to positively impact Portland and the broader community through educational access, engagement with local partners and the expertise of our top-quality faculty and staff.

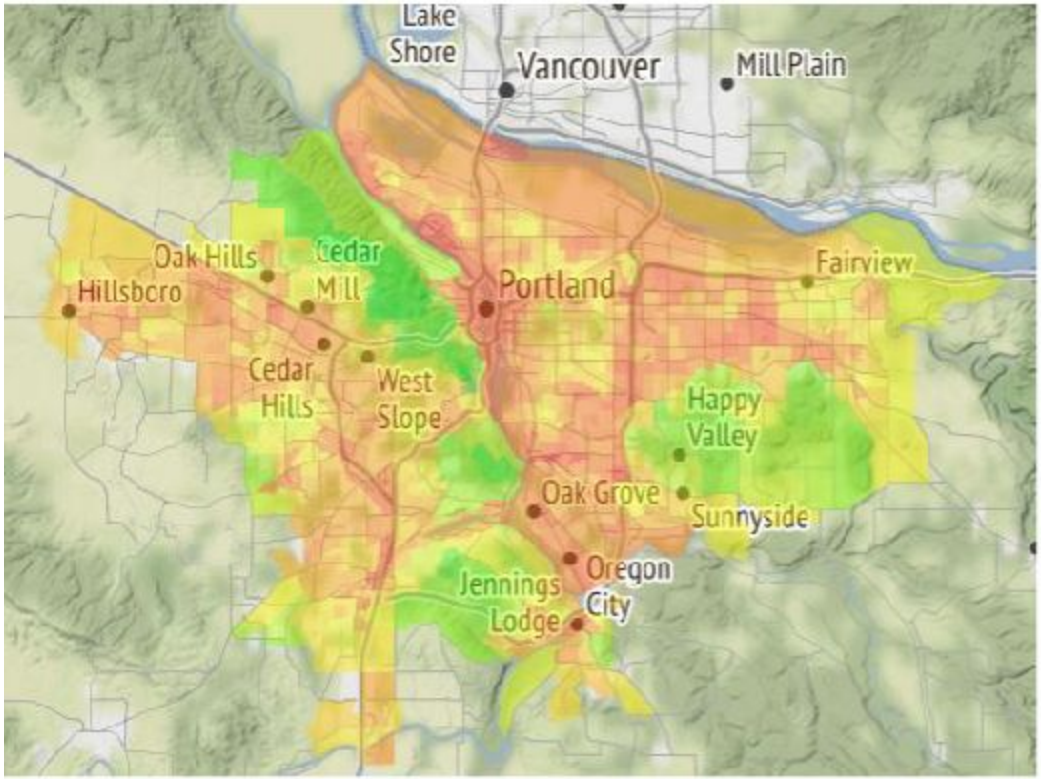
- PSU Strategic Plan

Primary strengths identified:

- Ability to serve the community through research, data sharing, and resource development
- Location in downtown provides centralized community resources in the form of varied service providers, a diverse social network and transportation access
- Pacific Northwest is relatively insulated from severe climate impacts and politically active on issues of climate change mitigation and adaptation
- Reputation for sustainability efforts better positions PSU to receive external resources for resilience planning
- Active, engaged community members feel an imperative to voice their concerns around injustice, climate change, and preparedness and hold the institution accountable
- Existing institutional values, programs, and plans serve as a strong foundation for resilience planning

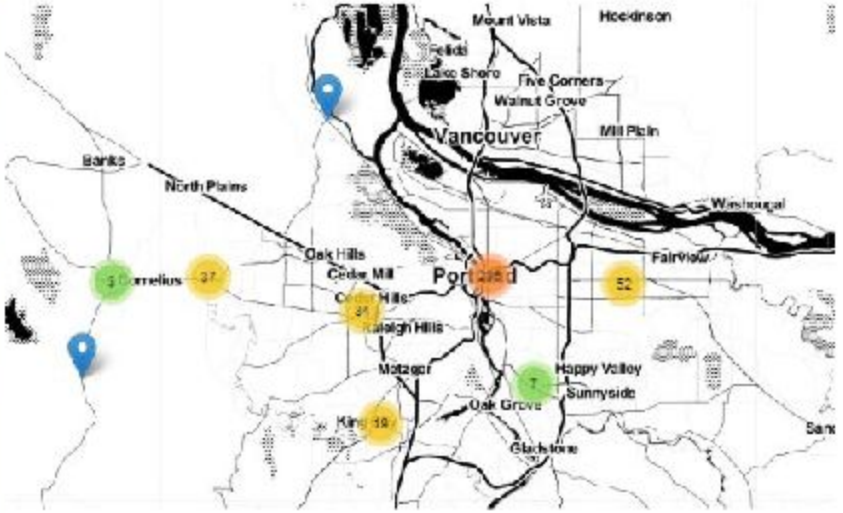
Demonstration Projects

The CRUX grant resulted in a variety of community resilience implementation projects. A brief summary of these are efforts are provided below.



Climate Risks Visualization Tool

The ClimateCope online mapping tool was established through a collaboration between PSU and city partners, and expanded via the CRUX grant to the full Portland Metro area to show detailed distribution of heat, traffic-related air quality, and social vulnerability indicators. The interactive tool shows where climate impacts are hitting our community hardest, and where those being affected have the least capacity to respond to and withstand these effects. Where these interactions occur can now be viewed spatially to better prioritize climate adaptation actions and strategies in Portland.



Community Asset Mapping

Portland State University (PSU) convened local nonprofits Street Roots and the Mapping Action Collective (MAC) to map community assets in a way that would be useful, maintainable, and accessible. This effort resulted in a digitized database of Street Roots' Rose City Resource social services guide hosted on the Northwest Open Data Exchange out of PSU's Institute for Metropolitan Studies, and a workflow of data management to maintain the dataset within. This database increases visibility and continuity of service provision for our highest-exposure community members, as well as for social service providers, community members, and planning departments. MAC and PSU are continuing work with community organizations to develop an interactive application by the end of 2018.

MHCC Stormwater Retrofit Baseline Intern

The Sandy River Basin Watershed Council, a collaborative natural systems stewardship organization housed at Mt. Hood Community College (MHCC), has been working toward a large-scale stormwater retrofit as part of the college's Salmon Safe certification. As ground broke this year, the CRUX grant funded an intern position to establish baseline water, vegetative, and species health and monitor the efficacy of the retrofit long-term.

Climate Resilient Vegetation Planting

As Portland anticipates experiencing hotter, drier summers with more high-heat days and longer, wetter winters with increased storm events, we are looking to vegetation types found farther east that are more suited to drought and intermittent heavy rainfall. For Arbor Day 2018, alongside PSU's Earth Day of Service, CRUX Portland sponsored a Climate Resilient Vegetation Planting on the PSU campus to turn an under-utilized planter space into a resilient vegetation showcase.

Resource and Information Sharing

In addition to the above demonstration projects, the CRUX grant prioritized information and process sharing with other colleges and universities by presenting at six conferences, workshops, and summits; leading two webinars and participating in monthly working group calls; tabling at or attending more than eight college, university, or community information and networking events; and hosting an end-of-grant showcase for pilot participants.

Next Steps

In the course of conducting the capacity assessment, PSU identified data gaps, redundancies with other work, infrastructure vulnerabilities, the need for more effective communication and data sharing platforms, as well as a strategy for harnessing university research capacities for meaningful community gain. The CRUX pilot provided a comprehensive road map for resilience strategy development which will commence in the 2018-19 academic year. PSU secured funding through the CRUX grant for a part time Assistant Planner position that will lead efforts to identify both short- and long-term strategies for PSU to be integrated into the next iteration of PSU's Climate Action Plan.

Acknowledgements

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