THE UNIVERSITY OF UTAH®

Climate Resilience Assessment

Prepared by the Climate Commitment Task Force
Subcommittee on Climate Resilience

June 2021

2020-21 Climate Commitment Task Force Members

CO-CHAIRS

Brenda Bowen | Director, Global Change & Sustainability Center
Kerry Case | Chief sustainability officer

TASK FORCE MEMBERS

Morgan Aguilar | Communications specialist, University Marketing & Communications
Cathy Anderson | Chief financial officer
Sam Jensen Augustine | Building science & sustainability manager, Planning, Design & Construction
Jonathon Bates | Executive director, Department of Real Estate Administration
Chris Benson* | Sustainability and energy director, Facilities Management
Robin Burr* | Chief facilities officer
Ginger Cannon | Active transportation manager, Sustainability Office
Danielle Endres | Professor, Communication
Alex Farley* | Director of Sustainability Board, ASUU
Rebecca Hardenbrook | Associate director of Sustainability Board, ASUU
Andrew King | Associate director, Planning, Design & Construction
Ephraim Kum | 2020-2021 student body president, ASUU
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Lori McDonald | Vice president for Student Affairs
Steve Panish | Assistant vice president for Capital Programs & Space, Health Sciences
Masood Parvania | Associate professor, Electrical & Computer Engineering
Court Strong | Associate professor, Atmospheric Sciences
Smitha Warrier | Assistant professor (clinical), Anesthesiology
Gordon Wilson* | Associate vice president for Administrative Services

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Dan Reed | Senior vice president for Academic Affairs

STAFF

Julie Johnsson | Administrative assistant, Global Change & Sustainability Center

* *Steering committee member*

Subcommittee on Climate Resilience

Sam Jensen Augustine | Building science & sustainability manager, Planning, Design & Construction
Kaila Balch | Sustainability Board member, ASUU
Tabitha Benney | Associate professor, Political Science
Brenda Bowen | Director, Global Change & Sustainability Center
Dan Cairo | Special Assistant to vice president of Equity, Diversity, and Inclusion
Ginger Cannon | Active transportation manager, Sustainability Office
Devon Cantwell | Graduate student, Political Science
Kerry Case | Chief sustainability officer
Amy Flowers | Graduate student, Professional Master of Science & Technology
Julia Kingsdale | Graduate student, Education, Culture, and Society
Alexis Lee | Programs manager, Wellness and Integrative Health
Rosie Ojeda | Graduate student, Education, Culture, and Society
Masood Parvania | Associate professor, Electrical & Computer Engineering
Jenn Watt | Associate professor, Environmental & Sustainability Studies

CLIMATE RESILIENCE RESEARCH FELLOWS

Manuela Herrera, Kyle McAnally, Cameron Quackenbush,
Luis Rodriguez-Garcia, Antonio Santosaguilera

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In 2020, the University of Utah launched its first Climate Resilience Assessment as part of its Presidents' Climate Leadership Commitment. This assessment is an essential first step in preparing and planning for future climate impacts. As global temperatures increase, the university is well positioned to address the needs of our students, employees, patients, and the surrounding community. Both globally and locally, **climate change is a threat multiplier**, worsening existing problems for people and the environment, including inequities that exist in our society and systems.

As Utah's flagship university, the University of Utah plays an important role in local and state climate resilience, which Second Nature defines as "the ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate." The impacts of a warming climate are already evident in the Salt Lake City Metropolitan area—where the U's primary campus is located—with increasingly hot summers, more frequent and severe storms, and prolonged periods of drought and wildfire.

This Climate Resilience Assessment examines the institution's ability to respond to climate threats in the following categories: Social Equity & Governance, Health & Wellness, Ecosystem Services, Infrastructure, and Economics. This assessment was drafted by the Climate Resilience Subcommittee, with support from the Sustainability Office and multiple classes, and approved by the university's Climate Commitment Task Force (CCTF). The assessment will inform a new Climate Action Plan for the university.

Throughout the process, it was clear that the U must center equity in our climate resilience work. Vulnerabilities related to equity were identified in workshop breakout sessions for all five resilience categories. Indicators and metrics were aligned to support the university's equity, diversity, and inclusion efforts.

Key outcomes from the process include:

- Identification of climate related vulnerabilities and strengths
- Development of indicators of resilience
- Compilation of baseline data for indicators
- Discovery of overlaps and gaps with surrounding community

Complete information about resilience indicators, metrics, and baseline data collected is included in the University of Utah Climate Resilience Assessment Matrix.

PROCESS

The Climate Resilience Assessment was completed over a 12-month period (see Figure 1). In June 2020, the CCTF Steering Committee selected a modified version of the Climate Resilience in Urban Campuses and Communities (CRUX) Capacity Matrix to map indicators of resilience and associated metrics—how we can measure each indicator—for the five resilience categories. The Climate Resilience Subcommittee responsible for completion of the matrix included 13 students, faculty, and staff from multiple departments. The subcommittee was supported by a team of six climate resilience research fellows (both undergraduate and graduate students). Their work was informed by:

- Multi-departmental resilience workshops
- Students in eight classes
- Salt Lake County Climate Adaptation Plan for Public Health

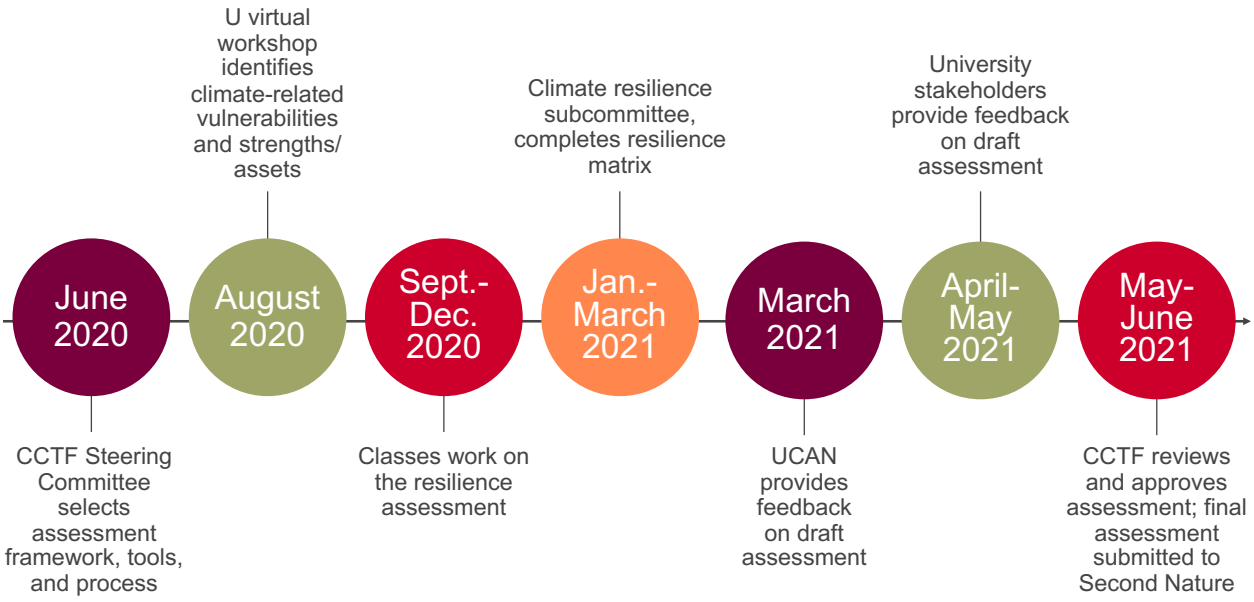
UNIVERSITY AND COMMUNITY INPUT

The assessment process included input from both university and external partners. Salt Lake County completed a climate adaptation assessment in 2017. This assessment supports the county plan, while focusing on the university's population and operations. In total, hundreds of students, faculty, and staff from 38 university departments and offices participated in some aspect of the process. The Utah Climate Action Network's (UCAN) adaptation subcommittee, as well as city and county advisors to the CCTF, helped identify overlaps and gaps between the university and surrounding community.

Classes involved in Climate Resilience Assessment

- ANTH 2400/GEOG 2400: Climate Change and Lost Cities
- BIOL 3460: Global Environmental Issues
- ENVST 5555: Conservation and Land Management Emphasis
- GNDR 5120/6120: Gender and Nature
- POLS 5322/6322: Environmental/ Sustainability Policy
- SOC 3480: Environmental Sociology
- SUST 6800: Global Change and Sustainability Seminar
- SUST 6000: Global Changes and Society

FIGURE 1: Assessment Timeline



Resilience Category Indicators & Metrics

Detailed information about each of the following is available in the climate resilience assessment matrix, including how each indicator is measured and its current status. Indicators were chosen based on vulnerabilities identified and the availability of data.

SOCIAL EQUITY & GOVERNANCE

This category addresses the systems of governance, levels of engagement, and ability of different groups to adapt and respond to climate change. Results from the University of Utah's Climate Resilience Workshop articulated ways climate change disproportionately harms people in marginalized communities at the university and in the surrounding areas.

Vulnerabilities	Strengths/assets	Climate resilience indicators
• Economic inequality • Ethnic inequality • Structural racism • Mental health damages*	• High campus engagement in climate and equity issues • Existing programs to support underrepresented groups • Internal and external networks • Top level support	• Inclusive campus climate • Racial equity • Support for marginalized groups • Educational access and affordability • Inclusive and participatory governance

HEALTH & WELLNESS

Indicators in this category address climate change impacts on people's ability to meet basic needs. The University of Utah is one of the main healthcare providers for the region, and as such represents significant community resilience in this area. Indicators in this category address resilience both in terms of U Health's ability to meet community health needs in the face of climate impacts and the health-related resilience of our campus population.

Vulnerabilities	Strengths/assets	Climate resilience indicators
• Disease outbreak* • Extreme heat* • Fire* • Rainfall flooding* • Severe storms* • Poor air quality* • Food insecurity* • Mental health damages*	• Proximity to natural spaces • Young and healthy statewide population • U hospitals and clinics • High rates of active transportation • Well U and Peak classes (employee wellness incentives) • Mental health initiatives • Research on climate and health	• Healthcare system climate preparedness • Local, diversified, and accessible food supply • Health insurance coverage • Access to mental health services

* Also identified by Salt Lake County Climate Adaptation Plan for Public Health

ECOSYSTEM SERVICES

Ecosystem services highlights the relationship between ecosystems and human systems. For example, air quality can significantly impact human health and economic productivity. The University of Utah is uniquely situated to explore ecosystem services due to the urban-wildland interface that the campus occupies along the Wasatch Front.

Vulnerabilities	Strengths/assets	Climate resilience indicators
• Loss of biodiversity • Environmental degradation • Water insecurity* • Drought* • Rainfall flooding* • Poor air quality*	• Existing infrastructure • Multi-disciplinary research opportunities • Community-engaged learning and research opportunities • Air and water quality monitoring	• Plant abundance and diversity • Animal abundance and diversity • Water system stability • Air quality and greenhouse gas emissions • Land and soil health • Management of campus ecosystems

INFRASTRUCTURE

This category addresses resilience of physical structures, including buildings, transportation systems, and emergency response. At the University of Utah, infrastructure improvements for stormwater management systems, HVAC systems, electrical systems, and facilities/grounds management are in place to increase resilience to climate change impacts.

Vulnerabilities	Strengths/assets	Climate resilience indicators
• Rainfall flooding* • Drought* • Fire* • Poor air quality* • Water insecurity* • Inadequate public transit • Inadequate infrastructure • Risk of power outages*	• Water and energy infrastructure improvements • Facilities and grounds expertise • Public transportation partnerships • Food gardens • Emissions reduction programs	• Ventilation to respond to poor air quality • Water system efficiency • Diverse transportation options • Adequate power supply during a blackout • Emergency preparedness • Energy efficient buildings

ECONOMICS

Indicators in the category address the financial ability of the university to respond to climate-related disasters. The economic well-being of students, staff, and faculty are also measures of climate resilience. Additionally, graduating students' abilities to address climate resilience enhances the economic stability of the larger community by filling workforce gaps.

Vulnerabilities	Strengths/assets	Climate resilience indicators
• Economic inequality • Disease outbreak* • Extreme heat* • Fire* • Rainfall flooding* • Severe storms* • Poor air quality*	• Adequate institutional financial resources • Renewable energy investment leadership • Existing centers and institutes • Fossil fuel divestment investigation	• Financial health of institution • Emergency financial support available for students • Energy and water costs • Investment portfolio exposure to climate risk • Financial health of employees • Student sustainability literacy (workforce readiness)

* Also identified by Salt Lake County Climate Adaptation Plan for Public Health

PHOTO BY U SUSTAINABILITY OFFICE

CONCLUSION

Results of the University of Utah's Climate Resilience Assessment provide a baseline for several current resilience activities at the university. The baseline will support U efforts to draft a new climate action plan. Identified vulnerabilities and strengths/assets will inform a new plan that seeks to address social and environmental crises multiplied by climate change. Climate resilience indicators identified in this assessment will be revisited and updated as needed.

In discussion with external and university stakeholders, it is clear that the university is an important partner in improving overall community climate resilience. In particular, community partners identified healthcare delivery and workforce readiness as major ways the U can contribute. These needs will be incorporated as the University of Utah transitions into the climate planning process. This plan will guide the university and surrounding community toward a more equitable and resilient future.