2018

Campus-Community

RESILIENCE CHARRETTE

California State University, Long Beach

March 2, 2018

LONG BEACH
STATE UNIVERSITY

CSULB SUSTAINABILITY

Center for Community Engagement
California State University, Long Beach

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EXECUTIVE SUMMARY

OVERVIEW

On March 2nd, 2018, the Campus-Community Resilience Charrette was co-organized and co-hosted by The Office of Sustainability and Center for Community Engagement (CCE) at California State University, Long Beach (CSULB). In this context, resilience specifically refers to "increasing the ability to survive disruption and to anticipate, adapt, and flourish in the face of change" (Second Nature 2016). A charrette is a meeting in which all stakeholders in a project attempt to resolve conflicts and map solutions. The Resilience Charrette aimed to go beyond a traditional stakeholder workshop via a day of structured, engaging activities emphasizing coordination, cooperation, and solutions-oriented thinking. The day-long immersive event brought together identified leaders from diverse departments, centers, and organizations from the university campus and local Long Beach community.

OBJECTIVES

The Resilience Charrette participants engaged in a facilitated, interactive process structured around achieving three primary objectives:

OBJECTIVE 1

Characterize climate hazards

OBJECTIVE 2

Identify vulnerabilities and strengths on CSULB's campus and in the local community

OBJECTIVE 3

Prioritize and align campus-community actions to enhance resilience to climate hazards

CLIMATE ACTION PLANNING

The charrette represents the culminating event of the second-year activities of the Second Nature Resilience Commitment, signed by CSULB President Jane Conoley in April 2016. As charter signatories of the Second Nature Resilience Commitment, the university pledges to increase focus on climate adaptation and prioritize building community capacity to proactively plan for and adapt to the changing climate and resulting extremes, which could endanger the university's ability to serve its core mission.

The results of the Resilience Charrette will have broad impacts for CSULB's climate action planning. Through the charrette, we collaboratively identify and prioritize actions that draw on the strengths and assets of the university campus and the surrounding community, and align with regional climate action planning of the City of Long Beach and L.A. County. The event represents a crucial campus-community building opportunity around climate change adaptation and resilience. Coordinated future action in the four key, shared priority areas will enable enhanced integration of the campus into the surrounding community as a climate leader, brain trust, and partner as we seek to anticipate, prepare for, and thrive in the face of future climate-related challenges.

STAKEHOLDER PARTICIPATION

Participation in the Charrette included 50 diverse attendees who came from across our campus and broader Long Beach community:

Community Members	University Faculty & Staff Members	Students
21	**14**	**15**

We had representation from various community stakeholder agencies and local organizations including:

- Aquarium of the Pacific
- Port of Long Beach
- City of Long Beach Sustainable City Commission
- East Yard Communities for Environmental Justice
- City of Long Beach Office of Sustainability
- Building Healthy Communities

- Citizen's Climate Lobby
- Los Cerritos Wetlands Land Trust
- Long Beach Environmental Alliance
- Local neighborhood residents
- Local property owners

SUMMARY OF KEY SHARED PRIORITIES

Four central priority areas emerged as focal areas for moving forward via integrated planning:

PRIORITY 1

Increase community activism and organization through enhanced cooperation, collaboration, and coalition-building to support vulnerable populations and frontline communities with focus on equity concerns and strengthening community organizations.

PRIORITY 2

Upgrade and retrofit the electrical grid with technological innovations, such as microgrid capabilities, increased local renewable energy production, decommission vulnerable infrastructure in low-lying coastal areas, and retrofit existing infrastructure to increase energy efficiency.

PRIORITY 3

Increase tree cover and green space on campus and across the city, focusing on programs for planting and maintaining trees and green spaces, expand the urban forest, improve education about caring for trees during droughts, integrate edible fruit trees into tree-planting plans, increase green infrastructure, improve equity in distribution of green space especially in frontline communities.

PRIORITY 4

Active and electrified transportation, including increasing transit-oriented and mixed used development that is affordable and helps people to live closer to efficient public transportation options and closer to where they work to remove commute times and number of single passenger vehicle trips. Also, increase student housing near and on campus, and develop more distance learning and telecommuting options.

RESILIENCE REPORT

KEY ACTION AREAS

During the charrette, five key action areas emerged for building resilience to climate-related vulnerabilities:

ENERGY INFRASTRUCTURE & ELECTRICITY

Common vulnerabilities that arose across facilitated working groups focused on the electrical grid, energy infrastructure and inefficient buildings.

Electrical Grid Improvements: Design to mitigate and protect against impacts to the electrical grid, such as brown outs during extreme heat events, and full outages during emergencies. Improvements to the electrical grid and energy infrastructure that emerged from the working groups focused on the possibility of creating a backup system to mitigate power outages and increase resilience in the case of an emergency. Solar panels were a popular idea for a renewable and generally reliable source of power during an outage or emergency. Anticipatory planning for technology malfunctions was also proposed to increase resilience, by having plans in place to cope with power outages.

Microgrid Capability: Design the system so that if one area is affected by an event, other areas could still be up and running smoothly. Microgrid capability with enhanced local-scale control, such as at the neighborhood scale, was proposed as a way to enhance resilience. Participants raised interest in future scenarios with more distributed control over energy production, storage, and consumption. Improving incentives for energy conservation were also mentioned.

Renewable Energy: More rapid adoption of renewable energy sources to increase energy infrastructure stability and accessibility, while reducing air pollution in local communities. Strong emphasis for clean, renewable energy was a shared priority that arose many times.

ACTIVE TRANSPORTATION & TRANSIT-ORIENTED DEVELOPMENT

Transportation was a very popular area of discussion across the six break out groups.

Efficient, reliable, accessible and well-connected public transportation: The goal is to increase public transportation ridership and reduce single rider vehicle commutes. Increase public transportation access by increasing the number of routes and stops along the routes. Add more buses to popular routes to decrease wait times. Transition to a fully electric bus fleet. Improve technology, such as mobile apps to help riders commute efficiently and better plan trips on public transportation, thus making public transportation a more attractive option.

Active transportation: Increase the connectivity, accessibility, and safety of walking and biking pathways. If walking and biking options are safer, more people will feel comfortable using active modes of transportation, rather than relying on driving vehicles. Bike sharing stations are seen as a strength, but are not sufficient and not accessible enough to all members of the Long Beach community.

COMMUNITY ADVOCACY, INEQUALITY & HOUSING CHALLENGES

High priorities focus on local vulnerable, disadvantaged, and marginalized populations. Across break out groups, participants raised the issue of inequality and stressed that climate impacts may further exacerbate the housing crisis and homelessness.

Major challenges include the lack of affordable housing, the need for increased capacity and availability in shelters, and insufficient policies to mitigate gentrification and displacement. Popular solutions advocated for increased coordination between communities, government agencies, and advocacy groups to more efficiently and creatively utilize resources and create a solid foundation for outreach programs and civic involvement.

While participants recognized the Mayor's efforts to increase the quantity and quality of low-income housing in Long Beach as a strength, they also urged for integrated planning to address insurance costs and coverage for climate-related risks.

Environmental justice was a key theme with attention to vulnerable populations that experience high levels of exposure to poor environmental quality. Actions proposed to enhance resilience in these communities included: targeted increases to financing programs and community grants; reducing pollution at the source from industry and transportation; and creating green jobs in local communities. Participants recommended outreach programs and active education be concentrated in specific areas most in need of these programs. Targeted, appropriate outreach in local disadvantaged and marginalized communities may increase participation and ownership from citizens and help to identify where gaps exist in public agency and local organization capacity.

Recommendations

1. Advocate for civic involvement and increase local capacity through coalition building

2. Enhance inter-agency and cross-organization cooperation for community outreach

3. Train neighborhood groups for emergency preparedness and planning

4. Increased and ongoing assessment of social issues, such as homelessness, is needed, while care needs to be taken not to normalize social issues

PUBLIC AWARENESS, POLITICAL ACCESS & COMMUNITY ACTIVISM

Educational and political priorities raised by participants focused on public awareness, access to politicians, and community activism for environmental justice and social change. Participants emphasized the importance of neighborhoods and local communities receiving education and awareness building about the connection between public health and climate change.

Public awareness should build from and expand on existing collaborations of diverse cultural communities, and include overcoming language barriers to discuss climate solutions. It was proposed that partnerships between the university and community organizations could serve to increase the diversity and cultural appropriateness of climate education. A further recommendation was to add a university general education requirement for sustainability to increase climate literacy. Transparency and accountability of public officials was also raised as an important issue.

Political access and community activism was considered a strength by participants due to the large number of activists and community-based organizations in Long Beach. However, there was concern that the mindset that "someone else will take care of it" may serve to dissipate activism.

URBAN GREENSPACE, THE URBAN FOREST & THE BUILT ENVIRONMENT

Important challenges around the topic of greenspace that arose included lack of green space and trees, with attention to the role of greenspace, green infrastructure, and the urban forest for providing shade, mitigating extreme heat, filtering air pollution, providing food (i.e. fruit trees), managing stormwater, and improving physical and mental health. Key vulnerabilities that emerged focused on the potential for the mismanagement of greenspaces, especially trees, during droughts.

Greenspace Inequity: The quality and quantity of greenspace and the urban canopy is not distributed equitably across the City of Long Beach. Lower income communities are more likely to have fewer parks, higher density of built materials, and be located closer to freeways. Priorities that participants raised included planting more trees to improve air quality and provide shade to help cool parts of the city that experience more extreme heat events. Hosting events that celebrate green space and educate residents on the multiple benefits that greenspace and the urban canopy provide could help to convince residents of the importance of these areas in urban design and mitigating climate change impacts. Participants emphasized that the community should have a voice in the process of deciding what trees to plant, while also focusing on native species that are ecologically and climatically appropriate to the area. Fruit trees could help to increase food security.

Air Quality Monitoring: Increasing local air quality monitoring and holding polluting industries accountable for air quality violations were additional priority actions that emerged. Participants focused on the importance of monitoring air quality in school locations and advocating for better air quality for K-12 students across the city. There was a shared desire to increase collaboration across city agencies, community organizations, and the university to improve air quality for all residents in Long Beach.
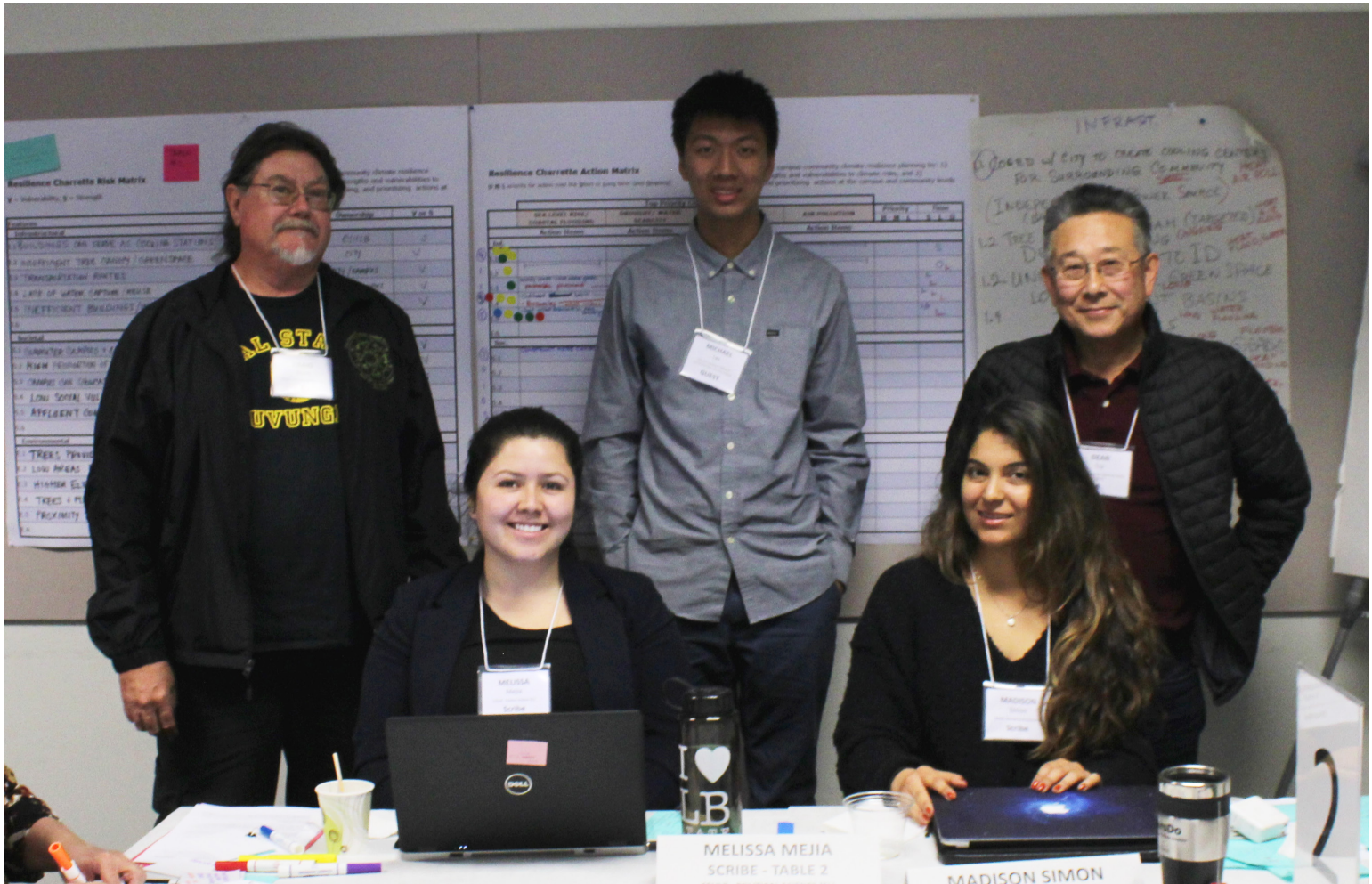
Stormwater Management: A shared concern is the lack of capacity for stormwater capture in Long Beach. Participants urged increased attention to stormwaters' potential as an additional source of water, especially for irrigation of gardens, greenspace and the urban forest. The individual building-level emerged as the recommended scale for capturing and reusing stormwater.

Green Infrastructure emerged as a key priority for climate change mitigation and adaptation, including cool roofs and cool pavement, permeable pavement, green roofs and rooftop gardens, and street level rain gardens to enhance stormwater management, mitigate extreme heat, and reduce air pollution. Integrating green infrastructure standards into the building code was a recommendation. Wetland conservation and enhancement presents additional benefits for managing urban flooding and sea level rise impacts.

Drought Management solutions include increasing water efficiency by replacing old pipes to prevent them from leaking, increasing the reach of the purple pipes/recycled water, and publishing guidelines for helping the public choose appropriate native and drought tolerant plant species for landscaping. Some participants recommended enforcing stricter rules and policies for residential water use during periods of water scarcity and drought. Many agreed that new urban greenspace projects should be designed with a focus on drought management to ensure that long-term sustainability and appropriateness to a changing climate.

PRIORITIZED ACTIONS TO
IMPROVE CLIMATE RESILIENCE

The facilitated breakout group activities during the Resilience Charrette provided a multi-stage process for participants to identify and prioritize specific actions to reduce vulnerabilities to climate hazards and reinforce existing strengths to enhance local climate resilience. In the first stage of this process, facilitators guided participants to generate a list of actions across three spheres of impact: infrastructure, society, and environment. In the second stage of the process, participants assigned a level of priority (high, medium, low) to each action based on perceptions of urgency.

This activity generated a large amount of data. Following the Charrette, Dr. Lily House-Peters (CSULB Resilience Commitment Coordinator) and Holli Fajack (CSULB Sustainability Coordinator) worked closely with service learning students enrolled in the course Climate Action & Sustainability at CSULB to organize the captured data. The organization process categorized the suggested climate actions by sphere of impact (ie. infrastructure, society, environment), thematic area (ie. energy, transportation, community activism, greenspace, etc.), and assigned priority level (ie. high, medium, low). Below, we present the climate actions assigned "high priority," organized first by sphere of impact, and within each sphere of impact, by thematic area.

HIGHEST PRIORITY ACTIONS

INFRASTRUCTURE

ELECTRICAL GRID & ENERGY EFFICIENCY

- Assess and address vulnerabilities to physical infrastructure

- Enhance resilience of telecommunication systems

- Develop and implement micro grids and clean energy opportunities, including Community Choice Aggregation (CCA) and renewable energy production

- Retrofit buildings to maximize energy efficiency

- Increase awareness and public education about solar power opportunities, including retrofits, rebates, and the other incentives

- Provide incentives for renewable energy and energy efficiency upgrades to homeowners, especially reduce costs for low-income residents

- Reduce vulnerability of power stations to sea level rise

- Building upgrades and incentives to reduce carbon emissions: insulation retrofits, expansion of loan/rebate programs, including financing especially for low income residents, get landlords on board

- Evaluations/assessments of educational infrastructure, use more renewable energy/peak renewed, enhance energy efficiency, increase green roofs, increase green infrastructure, trees

INFRASTRUCTURE

STORMWATER INFRASTRUCTURE

- Assess policy and implementation barriers to stormwater capture and storage

- Debris and pollution prevention strategies

- Integrate stormwater capture and green infrastructure solutions into planning and design (ie. catchment basins, bioswales, native (local) trees & plants at city parks and 22-acre campus site, potential to install cisterns under new buildings)

- Don't install basements in new buildings

TRANSPORTATION INFRASTRUCTURE & TRANSIT-ORIENTED DEVELOPMENT

- Modify roads to raise them above grade, assess potential to integrate permeable pavement, cool streets

- Construct more campus housing, assess potential for increasing distance learning opportunities and e-commute work policies

- Reduce carbon pollution by expanding public transportation, building more affordable mixed-used development that allows people to live close to where they work (ie. transit-oriented development), electrify and expand campus shuttles to serve more off-campus housing areas where student populations are dense

- Expand and electrify public transportation options

- Continue to improve bike and pedestrian infrastructure

SOCIETAL

VULNERABLE POPULATIONS, HOUSING & PUBLIC SERVICES

- Strengthen community organizations that serve vulnerable areas and populations.

- Assess equity concerns in all other climate planning actions/priorities

- Improve education to public agencies on climate impacts. Improve coordination with community organizations, assess funding opportunities

- Assess impacts of displacement and develop plans to address insurance costs and risks.

- Develop inclusionary zoning to counteract gentrification and displacement trends

- Nurture communities – Improve access to food, green space and trees; foster a sense of belonging, human connection, and place. Ask communities what they care about.

- Revamp planning efforts to integrate community needs as they identify and express them.

- Community organization and collaboration – Reach diverse cultural communities, reduce burden of language barriers, bring more inclusive participants to the table, connect economic opportunities to climate solutions

- Increase and expand availability of shelters, community networks & affordable housing

- Develop a green trucks corridor

- Increase public access to water stations and cooling centers

POLITICAL ORGANIZING, COMMUNITY GROUPS, OUTREACH & CAPACITY BUILDING

- Improve coordination between public and advocacy organizations to better utilize economic resources, and advocate for vulnerable populations/communities to public agencies and elected officials. Increase grants, funding, and resources.

- Expand outreach, education, and awareness about how to engage in climate resilience planning and capacity building. Build transparency and accountability into the process. Increase civics-based education in elementary schools.

- Increase and build capacity for collaboration

- Develop a 100% renewable commitment and determine a carbon-neutrality date

- Neighborhood Association: Dedicate one resilience person per neighborhood; follow models for integrated grassroots sustainability

- Increase educational opportunities for contractors and landscapers to gain sustainability training, (ie. G.E requirement for sustainability/climate citizens "planet citizenship")

ECOSYSTEM SERVICE MANAGEMENT, OUTREACH & PLANNING

- Plan with ecological goals in mind, emphasize economic benefits of ecological assets

- Communicate the value of ecosystem services to business, industry, and communities

AIR POLLUTION

- Improve monitoring and increase outreach advocacy. Explore funding opportunities

GREENSPACE, TREES & GREEN INFRASTRUCTURE

- Integrate green infrastructure into design and planning

- Continue to expand targeted, urban tree planting program. Utilize university research to identify appropriate locations for trees and green space. Build maintenance capacity.

- More trees and diversity of perspectives about trees (ie. fruit trees as street trees).

- Planning, education and stewardship link with rainwater and stormwater capture.

- Develop educational programs and revisit regulations for greywater reuse

ENVIRONMENTAL

SUMMARY OF FINDINGS

VULNERABILITIES

IDENTIFIED VULNERABILITIES BY PRIORITY

HIGH PRIORITY (H) VULNERABILITIES	
FEATURE	**TYPE**
Electrical grid/infrastructure	Infrastructure
Stormwater management/drainage systems	Infrastructure
Waste management	Infrastructure
Inefficient buildings	Infrastructure
Transportation (highways & roads)	Infrastructure
Insufficient active transportation options (bikeways/pedestrians)	Infrastructure
Access to elected city officials	Societal
Inequality/environmental racism, uneven exposure and resources	Societal
Vulnerable populations	Societal
Lacking public services (health, education, environment)	Societal
Housing/Lack of housing/ homeless populations and disadvantaged	Societal
Housing/Lack of housing/ homeless populations and disadvantaged	Societal
North, west, central LB exposed to multiple vulnerabilities	Societal
Political climate and public pressure	Societal
Air pollution	Environmental
Trees – urban forest managementpedestrians)	Environmental
Food security – local food systems, urban agriculture	Environmental

MEDIUM PRIORITY (M) VULNERABILITIES

FEATURE	TYPE
Water delivery system/water security (lack of water capture/ low impact development)	Infrastructure
Lack of water capture/water security	Infrastructure
Streets and paved transportation	Infrastructure
Transit system	Infrastructure
Buildings	Infrastructure
Long Beach airport	Infrastructure
Aging infrastructure (public & private)	Infrastructure
Emergency response and communication systems	Societal
Public health issues (income, age, location)	Societal
Peninsula, Belmont Shore, Naples very exposed to sea level rise/ Beach-bay-ocean vulnerabilities	Societal/Env./Inf.
Water pollution	Environmental
Impacts of urbanization leading to environmental degradation	Environmental/Soc.
Lack of coordinated management to protect natural resources	Environmental

LOW PRIORITY (L) VULNERABILITIES

FEATURE	TYPE
Single occupancy vehicles	Infrastructure
Large impervious surfaces	Infrastructure/Env.
Old building stock	Infrastructure
Socio-economic inequity	Societal
Lack of urban greenspace	Environmental

NOT PRIORITIZED (NP) VULNERABILITIES

FEATURE	TYPE
Transportation routes	Infrastructure
Lack of water capture/reuse	Infrastructure
Inefficient buildings/ insufficient AC	Infrastructure
Insufficient leadership for climate adaptation (city & campus)	Societal
Low climate literacy (especially citywide)	Societal
Lack of individual action/ownership to create change	Societal
Commuter campus/ car centric	Societal/Infr.
High proportion of vulnerable health populations	Societal
Insufficient tree canopy/greenspace	Environmental
Trees and plants vulnerable to drought/heat	Environmental
Low areas prone to flooding & beachfront/coastal	Environmental
Proximity to coastline and San Gabriel River	Environmental
Loss/degradation of wetlands	Environmental
Water management and sewer system	Environmental

STRENGTHS

IDENTIFIED STRENGTHS BY PRIORITY

HIGH PRIORITY (H) VULNERABILITIES

FEATURE	TYPE
Renewable energy features (solar panels; AES facility)	Infrastructure
Presence of advocacy organizations/ strong and diverse community groups/ community awareness and activism	Societal
Public services (health, education, environment)	Societal
Education opportunities for partnering university with community organizations for awareness and job training	Societal
Trees	Environmental
Green infrastructure	Environmental
Presence of an aquifer (increase water security)	Environmental

MEDIUM PRIORITY (M) STRENGTHS

FEATURE	TYPE
Buildings	Infrastructure
Community organizations & neighborhood groups	Societal
Emergency response & communication systems	Societal
Economic opportunities (green jobs, clean energy sector)	Societal
Green space/parks/habitat	Environmental
Urban agriculture	Environmental
Hydrological and ecological features/ LA River daylighting (restore natural hydrology)	Environmental
Resilience as part of environmental planning	Environmental

LOW PRIORITY (L) STRENGTHS

FEATURE	TYPE
Multi-modal transit networks	Infrastructure
Community gardens	Environmental

| NOT PRIORITIZED (NP) STRENGTHS	
FEATURE	**TYPE**
Buildings serve as cooling stations	Infrastructure
Bike infrastructure	Infrastructure
Abundant planning infrastructure	Infrastructure
Campus can showcase best practices	Societal
Low social vulnerability in area surrounding campus; affluent community has higher capacity to adapt to climate change	Societal
Diversity	Societal
Population is interested/desires making changes and getting access to adaptation tools/information	Societal
CSULB leadership commitment to sustainability	Societal

NEXT STEPS

Following the Resilience Charrette, the next steps in campus-community resilience planning include:

1. Determining a resilience baseline across a number of indicators in each thematic area, against which future progress can be measured

2. Goal-setting for specific high priority resilience actions to establish measurable, impact-driven planning and financing horizons

3. Updating the CSULB Climate Action Plan (CAP) to explicitly address climate resilience in addition to greenhouse gas reduction targets and carbon footprint mitigation

The findings of the Resilience Charrette, presented in this report, will be reflected in the Climate Action Plan update. We also remain committed to aligning campus climate action with City of Long Beach and local community priorities and to serving as a hub for climate action research, innovation, experimentation, and collaboration.
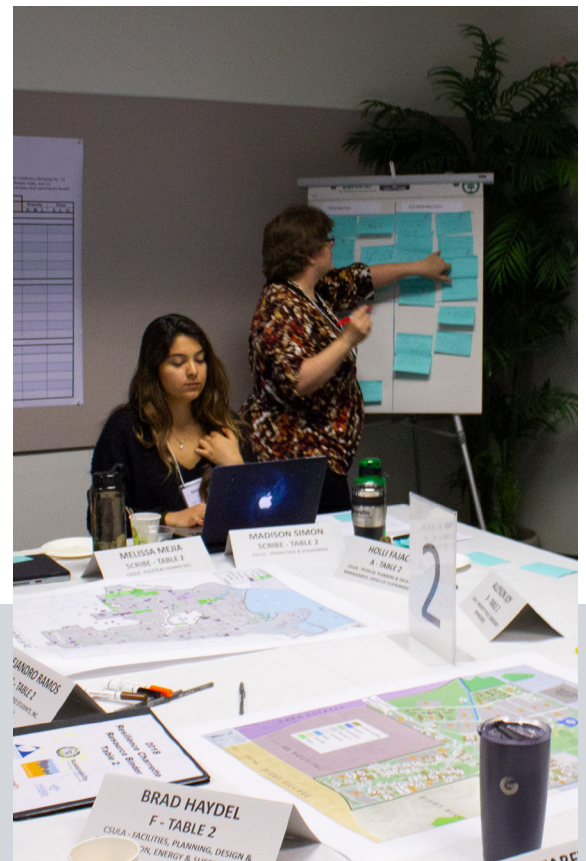
APPENDIX

LIST OF RESILIENCE CHARRETTE PARTICIPANTS AND REPRESENTED ORGANIZATIONS:
(in alphabetical order by last name)

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Building Healthy Communities

Citizen's Climate Lobby
Los Cerritos Wetlands Land Trust
Long Beach Environmental Alliance
Local neighborhood residents
Local property owners

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