



# Electric Vehicles in the North Coast

Redwood Coast Energy Authority



## Project Overview

- The Redwood Coast Energy Authority (RCEA) is executing the Plug-in Electric Vehicle (PEV) Readiness Plan Implementation grant, funded by the California Energy Commission (CEC)
- The purpose is to encourage the uptake of PEVs and implement the North Coast PEV Readiness Plan in Humboldt, Del Norte, and Trinity counties
- One of the grant requirements is to put on at least five electric vehicle (EV) Ride and Drive events, as well as conduct public outreach and education campaigns
- RCEA completed the EV Ride and Drive event requirement and engaged the public while providing alternative fuel transportation resources
- **Challenges:** low dealership participation and rural area with smaller population, leading to transition from Electric Vehicle Ride and Drives (*Figure 2*) to Electric Vehicle Expos (*Figure 1*)



Figure 1- EV Car Show 2016



Figure 2- EV Ride & Drive 2014

## Electric Vehicle Ride and Drives

- **EV Ride and Drives:** the opportunity for the general public to test-drive and compare PEVs from several dealerships in one location. EV Expos only involve displaying EVs, not test driving vehicles
- **Components:** EVs, venue, dealerships, sponsors, vendors, EV owners, and volunteers
- **Benefits:** dealer representatives, EV owners, and RCEA staff can: provide information on EVs, answer questions, and generally promote the adoption of commercially available EVs by conveying the benefits to potential buyers, the media, and local governments

## Key Findings

- From 2014-2016, RCEA:
  - Hosted 5 EV Ride and Drives and 5 EV Expos
  - Distributed alternative transportation information material for public outreach at 24 community events
  - Partnered with over 6 venues and 4 dealerships
  - Marketed events through PSAs, PEV Newsletter series, local radio stations, and online news magazines and websites
  - Gained media coverage from more than 7 news sources



Amanda Le

North Coast Region

Amanda enjoyed working on alternative fuel transportation projects at the Redwood Coast Energy Authority and is interested in pursuing transportation policy.



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# Identifying Sites for EV Charging

Finding the best locations for electric vehicle charging stations within larger “macro-sites “



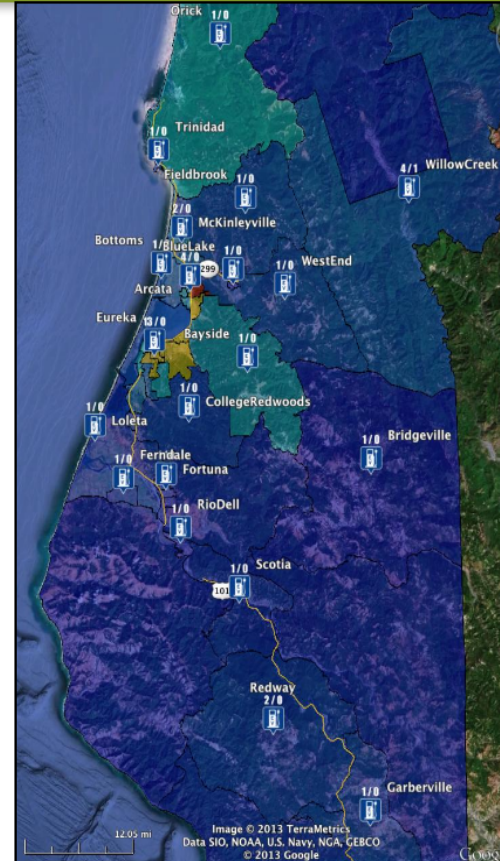
## Macro-siting    Micro-siting    Agent-Based Model

To project future demand for public charging infrastructure, the Schatz Energy Research Center (SERC) at Humboldt State University collaborated with the Redwood Coast Energy Authority (RCEA) to develop an Agent-Based PEV Infrastructure Model (included to the right).

This modeling effort identified the need for 41 charging stations in 37 travel-zone sub-areas across Humboldt County to support an electric vehicle penetration of 2%.

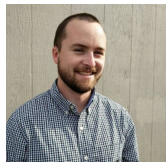
The next step in the process was site selection. I worked with researchers at SERC to identify locations within those larger geographic areas.

After recruiting willing site hosts, I worked with SERC to conduct site assessments at the parking space level and ranked those sites to a decision matrix (a portion of which is shown below).



Site Selection Decision Matrix

Candidate Site Descriptions (be as specific as possible. Provide address, parcel number, a map, Google Earth placemark, photograph(s) or site plan sketch if possible. Code maps, photos, sketches, etc to site reference code)	Close proximity to apparently suitable electrical point of connection	Minimal trenching required through paved areas	Within 1/2 mile of Basic Services as per LEED 2009
	Elect.	Trench	Basic Svcs
City Parking Lot, 8th and F streets, Arcata Dual head upgrade on current station.	5	5	5
D St. Neighborhood Center 1301 D St. Arcata, CA 95521 Space in SW corner of the lot.	5	5	4



Pierce Schwalb worked with the Redwood Coast Energy on the North Coast. He focused on electric vehicle infrastructure projects, including planning, site selection, signage coordination and ADA compliance. After graduating from the University of Florida with a degree in Sustainability Studies, he has promoted sustainability in government, non-profit, and private sector roles.





# Energy Independence: A Resilience Resource

Energy Assurance Planning—Redwood Coast Energy Authority (RCEA)



## Project Overview

### Energy Assurance Planning is...

“an effort to achieve a robust, secure, and reliable energy infrastructure that is also resilient — able to restore services rapidly in the event of a disaster”(NASEO).



On behalf of the County of Humboldt, the Redwood Coast Energy Authority collaborated with the West Coast Watershed and the North Coast Resource Partnership to address regional energy independence, resilient communities, and public safety. The Energy Assurance Planning effort was funded using a grant provided by the California Strategic Growth Council.



REDWOOD COAST  
**Energy Authority**



CALIFORNIA STRATEGIC  
GROWTH COUNCIL

WEST COAST  
WATERSHED

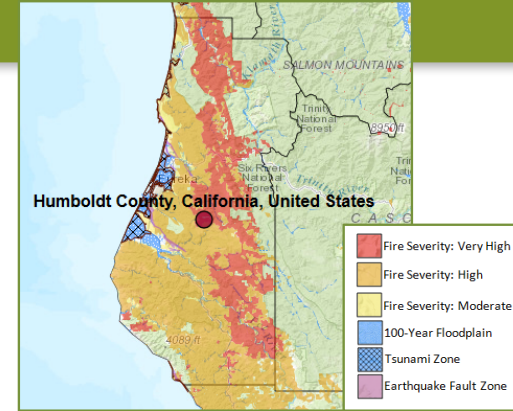


Figure 1: Screenshot of MyHazards, showing combined hazards affecting Humboldt County.

## Project Goals

- Develop a framework to evaluate and prioritize key assets and services
- Identify and characterize severe natural hazards affecting Humboldt County; see Figure 1
- Use a site-specific, bottom-up approach to prioritize and define energy independence for critical facilities
- Demonstrate how energy independence improves emergency response and mitigates climate change impacts through distributed and sustainable energy generation and storage systems

## Regional Impacts

Reliable electric power

Resilient emergency response

Community independence

Energy efficiency

Cost-effective efficiency investments

Improved public communication and safety

Reduced greenhouse emissions

Renewable resources

Reduced electric demand



**Jamie Zouras** received a B.S. in Natural Resources and Environmental Sciences and minored in Urban Planning and Leadership Studies at the University of Illinois before serving with CivicSpark. She is excited to start her career in Sustainability Planning by spreading the West Coast’s climate leadership to other regions of the United States. Jamie also plans to attend graduate school abroad in her near future.



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# Regional Resilience in Sacramento

Alliance of Regional Collaboratives for Climate Adaptation (ARCCA), Sacramento, CA

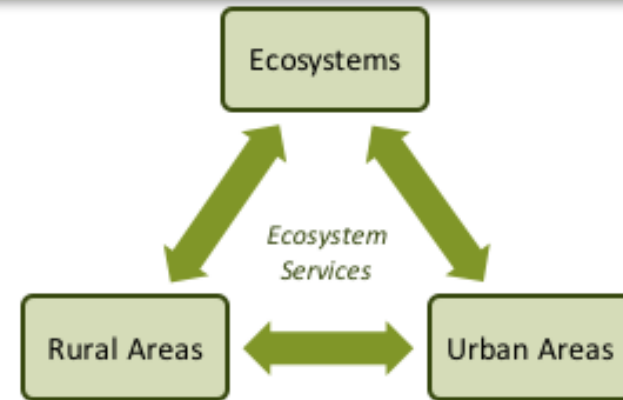


## Project Overview: The Urban-Rural Connection

**Who:** ARCCA is a coalition bringing together leading networks from across California that strive to build regional resilience to climate impacts. Members enhance resilience through sharing best practices and resources, identifying strategies to overcome barriers, and supporting the efforts of regional collaboratives covering 80% of California's population.

**What:** Adapting to climate change requires the collective effort of all California communities because they are connected through ecosystems and natural resources. Working together along this connection, communities can coordinate efforts that maximizes the use of resources and produces multiple co-benefits from their efforts.

**How:** This project identifies strategies and accompanying barriers to coordinated adaptation efforts, and delivers the findings in a white paper intended to educate local decision makers on this alternative approach.



## Research Findings

**Urban and rural areas are connected by forest and watershed ecosystems and the ecosystem services they provide.**

- Climate adaptation efforts must take place at the regional and landscape level to ensure community efforts work together and not against one another.
- Ecosystem restoration in upper forested watersheds and in wetlands must accompany conservation efforts in urban areas.
- Securing financing for adaptation projects remains challenging due to the difficulty in valuing the benefits of restoration and creating consistent public or private funding sources.

## Next Steps

1. Educate local decision makers to increase understanding of the urban-rural connection and its importance, and introduce them to strategies that may work for their community.
2. Use local planning processes such as updates to Local Hazard Mitigation Plans or Climate Adaptation Plans to start local conversations on the urban-rural connection and increasing resilience
3. Use the urban-rural connection as a framework to identify collaborative opportunities and potential partnerships to complete adaptation projects.



Lora Elliott graduated from Colorado State University after studying Political Science and Economics. Before CivicSpark, Lora interned with the Colorado General Assembly, and the ClimateWise Program in Fort Collins, CO. Next year, Lora will continue her service with the RARE AmeriCorps program where she will work with the City of Pendleton, OR on utility-related planning and energy efficiency outreach.



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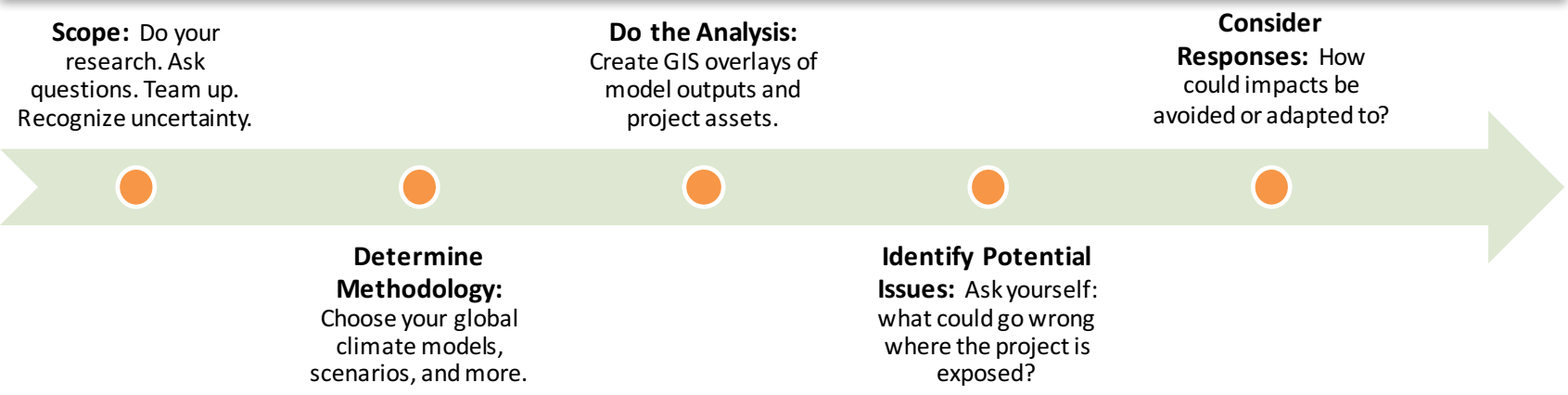


# Resilient Rail

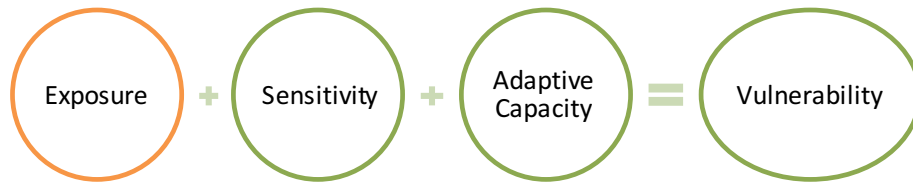
Determining Climate Change Exposure with the California High-Speed Rail Authority



## Project Overview – Conducting an Exposure Analysis



## What is Exposure?



As defined by the Intergovernmental Panel on Climate Change, 2001.

## Analyses Completed

- Temperature
- Wildfire
- Sea Level Rise



Annika Ragsdale received her BS in Environmental Science from Humboldt State University. As a student, she helped implement sustainability projects within the local community. She has since relocated to Sacramento and is now contributing to a much larger sustainability project, California's High-Speed Rail Program.





# Water Resiliency Training

Sierra Business Council (SBC) Placer County Water Agency (PCWA) Yuba County Community Development & Services Agency (YCCDSA)



## Project Overview

The past 11 months, I have had two major projects split in between **Sierra Business Council (SBC)** and the **Local Government Commission (LGC)**. Both projects have centered around the concept of training staff of local government jurisdictions to adopt or improve specific water resiliency practices.

SBC, which has had a 20 year history in the Sierra region, completed a water needs assessment study in January 2015 for 5 water agencies. The study centered around how much potential energy savings these agencies can obtain by saving water. One of the major ways an agency can save water is to implement an in-house leak detection program for their underground water pipeline. **Placer County Water Agency (PCWA)** was one of the five water agencies in this study, and was chosen in this project to be the first water agency to receive leak detection training on behalf of SBC in partnership with **Utility Services Associates (USA)**, a consultant firm that specializes in leak detection. My role in this project was to attend the training, take notes, and work with the Water-Energy Calculator developed by the **California Public Utilities Commission** to experiment with finding the amount of energy saved from all the leaks found during the training, and to estimate how much energy will be saved if PCWA implements an on-going leak detection program.

LGC, which has water training program funded under the Employment Training Panel, had me work with **Yuba County Community Development** to develop two water trainings on specific California policies. The first training was on the **Model Water Efficient Landscape Ordinance (MWELo)**, which is a recent legislation that limits the amount of turf and water-using plants in a landscape. The second training was on **AB 52 (Native American California Environmental Quality Act)**, which puts California Tribal Cultural Resources under the protection of CEQA.

## Leak Detection Training

- A total of 14 leaks were found throughout the training
- Equates to approximately 36 million gallons a year of water loss.
- 7 total staff were trained, and the water agency now has the tools to implement a leak detection program.
- The training has helped their staff in becoming more productive in finding leaks, and they also learned how to use a new suite of leak detection equipment provided by Utility Services Associates.
- This training also sets a precedent for future leak detection training that Sierra Business Council will do with other water agencies that were included in the Needs Assessment Study.



PCWA staff utilizing a ground microphone to listen for leak sounds with supervision from USA Trainer.



### Alyssa Collins, Sierra Nevada Region

After CivicSpark, I am planning to participate in another 11-month AmeriCorps program in San Jose working with Urban Forestry efforts. After the training on the MWELo, I realized how interested I am in pursuing a career that involves the connections between water resiliency and plants.

## MWELo & AB 52

- The MWELo training had 22 participants and the AB 52 training had 11 participants.
- Both trainings helped a number of jurisdictions in addition to Yuba County Community Development enhance their expertise with these California policies.
- I organized the outreach efforts, and I coordinated with expert speakers from the Department of Water Resources, the Irrigation Association, and the City of West Sacramento to speak at the MWELo training.
- For the AB 52 training, speakers came from the Inter-Tribal Council of California, LaPena Law Corporation, ECORP Consulting, and Downey Brand LLP.



Participants at the MWELo Training work in groups to look at landscape plans based on MWELo requirements.



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# CivicSpark Project Work at Sierra Business Council

Sierra CAMP



## Project Overview: Sierra CAMP

**Sierra Climate Adaptation and Mitigation Partnership (Sierra CAMP)** is a collaborative effort designed to support vibrant communities, a resilient environment & improve quality of life in the region. CAMP achieves this by empowering and convening Sierra leaders from government, business, academia, and community groups to share best practices; develop strategies for action; and leverage efforts and resources. Furthermore, CAMP aims to build connections with urban downstream users of Sierra ecosystem services to develop broader support for protection and enhancement of resources that are critical to the rest of the state. Sierra CAMP is housed at Sierra Business Council and governed by the Sierra CAMP Steering Committee.

## Communications and Social Media Support

Responsibilities and Tasks Included:

- Writing social media posts and
- Sharing relevant articles to online
- Creating blogs that support our programmatic efforts and explain complex policy documents,
- Updating the website's layout and content, and
- Writing and designing e-newsletters to keep members up to date on

## Program Goals and Objectives:

The overarching focus of the program is to:

- communicate the value of our environment & resources
- convene government, business, academia & community groups
- empower Sierra leaders to share best practices
- identify critical needs & strategies
- build & strengthen connections within the region & downstream cities
- leverage efforts/resources & funding



Jill Sanford, Sierra Nevada

Jill is a native of Placerville, California, where her early adventures in the high Sierra and surrounding foothills solidified her interests in outdoor recreation and protecting wild and natural places. She graduated from the University of Puget Sound in Washington and has a background in environmental policy and journalism.



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