

California Resilience Challenge

2020 Grant Program Mid-Program Report February 2022



CALIFORNIA RESILIENCE CHALLENGE

CALIFORNIA RESILIENCE CHALLENGE - 2021 LEADERSHIP

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Executive Summary

Climate change is forcing communities across California to become more resilient to drought, flood, wildfire, extreme heat, and rising seas. Taking steps today to adapt to climate change will yield significant future benefits for public health, safety, infrastructure, the economy, and the environment. California's extraordinary geographic, economic, environmental and cultural diversity calls for an equally diverse array of climate adaptation projects that can serve as a model for countries around the world.

In December 2019, the California Resilience Challenge released a Request for Proposals inviting local and regional public entities to propose innovative planning projects to strengthen wildfire, drought, flood, and/or heat resilience in diverse communities across California. The Challenge received 82 proposals worth a combined ask of over \$15 million. These proposals provide a rare glimpse into the demand for climate adaptation planning assistance across California. In consultation with an expert Advisory Committee and the Governor's Office of Planning and Research, the California Resilience Challenge awarded over \$2 million in climate adaptation planning grants to 12 communities across California, with at least one project in each of California's 10 census regions. Grantees included a mix of cities (2), counties (1), California Native American Tribes (1), resource conservation districts (1), flood protection agencies (1), water districts (2), Councils of Governments (2), and Joint Powers Authorities (2). Winning projects were required to demonstrate an innovative approach to strengthening local resilience to droughts (1), wildfires (2), extreme heat (2), and floods (3), or a combination of multiple climate-stressors (4). This report provides a summary of the progress made, and challenges encountered, by each of the winners of the 2020 Challenge.

Midway through the grant period, all projects are currently on pace to completion prior to the December 31, 2022 deadline. Two projects, the City of Watsonville's Green Infrastructure Implementation Plan and the City of Santa Ana's Regional Transportation Center Microgrid Feasibility Study, have finished ahead of schedule. The Gateway Cities Council of Governments has completed and published two of the four Urban Tree Canopy Prioritizations it will conduct for this grant, and the Big Valley Band of Pomo Indians is already generating and sharing to members of its community improved Clear Lake water quality data made possible by the California Resilience Challenge.

Grantees also faced numerous challenges. Grant work on nearly all projects was initially delayed due to the COVID-19 pandemic, which began in the United States three months prior to the grant award date. Public outreach meetings were shifted to virtual platforms, while other work—especially initial meetings between different public agencies and the release of RFPs for consultants—was delayed. The Western Riverside Council of Governments was compelled to readjust their project deliverables after determining their original project was beyond the reach of their resources. In at least one instance, the climate itself was a barrier: The South Fork Kings Groundwater Sustainability Agency was forced to delay the beginning of their groundwater replenishment and recovery pilot after the onset of severe drought disrupted the water deliveries needed to proceed with the pilot. Lessons learned by Challenge grantees will help improve the design and scope of future California Resilience Challenge grant programs and possibly other climate resilience initiates as well.

Grantee: Aquatic Science Center Focus area: San Francisco Bay Area Project: Shallow groundwater response to sea level rise Climate threat(s): Flood

Summary

As sea levels rise and extreme storms become more frequent, communities are developing climate adaptation plans to protect housing, jobs, ecosystems, and infrastructure from flooding. However, these plans often neglect an important potential flood hazard – rising groundwater. Shallow groundwater in coastal communities will rise as sea levels rise. This slow but chronic threat can flood communities from below, damaging buried infrastructure, flooding below grade structures, mobilizing contaminants, and emerging aboveground as an urban flood hazard, even before coastal floodwaters overtop the shoreline. With a grant from the California Resilience Challenge, the Aquatic Science Center is developing a series of groundwater maps that consider the response of the shallow coastal aquifer to several sea level rise scenarios. These maps will fill a critical data gap in regional climate resilience planning along the San Francisco Bay shoreline.

Progress

The project began by convening a 20-member advisory committee consisting of scientists and local government representatives to assist the project team in determining existing conditions in the project study areas of Alameda, San Francisco, San Mateo, and Marin counties. The project team has since successfully compiled and quality-checked existing groundwater monitoring well data for San Mateo, San Francisco, Alameda, and Marin Counties from the State Water Board's Geotracker database. Data gaps were then identified, and the focus shifted to finding additional data to ensure good coverage and accuracy of mapping. Additional data points were identified in soil boring logs (provided by local government representatives and a Caltrans database) and well reports from the California Department of Water Resources. This involved digitizing what were often PDFs of handwritten field reports. Following the data compilation, an extensive quality assurance/quality control process was undertaken to ensure the measurements from the various datasets were reporting depth-to-water values consistently and were representing the shallowest aquifer. This dataset is the basis for the mapping conducted in Task 2 (Existing Conditions). The project team believes the methods used to improve groundwater mapping developed by this project may be applicable to regions outside the Bay Area. Local government representatives serving as advisors on this effort anticipate the data will be widely used by the city departments, including planning and public works. The California Resilience Challenge funding has helped demonstrate the integrity of the effort and was leveraged to secure resources to support this additional phase.

Challenges

Many of the cities and counties who promised in-kind services to help gather depth-to-water data for the project store the geotechnical reports from their construction permits on paper in government offices. Access to these physical documents was limited by remote work and stay-at-home orders resulting from the Covid-19 pandemic. This caused a delay in moving on to the interpolation stage of Task 2. Supplemental data from additional state datasets helped the project team move forward to work on Task 2, but these data were also time-consuming to compile. The project is still expected to be completed prior to the grant deadline.

Media

KQED, MIT Technology Review, and San Mateo County's Climate Ready SMC e-newsletter.

Grantee: Big Valley Band of Pomo Indians Focus Area: Clear Lake Project: Mitigating climate impacts threatening community ecosystems and health on Clear Lake Climate threat(s): Extreme heat

Summary

Clear Lake has supported indigenous peoples for centuries. However, Clear Lake is experiencing significant fish die-offs and toxic algal blooms due to increased water temperatures. The California Resilience Challenge is helping the Big Valley Band of Pomo Indians expand water quality monitoring to improve public health and the recreational economy of the Clear Lake region.

Progress

The Big Valley Rancheria has thus far achieved four significant milestones, including (1) the acquisition and installation of two tribal-managed water quality data loggers, (2) the launch of an online, entry-level citizen science monitoring program for harmful algal blooms and fish kills, (3) the creation of a real-time, open-access Clear Lake water quality data monitoring portal, and (4) the solidification of a multi-agency collaborative network to analyze and address aquatic species die-offs impacting tribal beneficial uses. The project also demonstrates significant multiplier effects and has received considerable local media attention.

Project managers partnered with UC Davis Tahoe Environmental Research Center to install two data loggers on for fewer resources than originally anticipated. Costs were avoided by mounting the monitors to existing video-monitored docks rather than mounting to new and less secure systems of anchors and buoys. Project managers also launched a free online course, "Citizen Science: Harmful Algal Blooms & Fish Kills" using the Udemy platform that includes a series of videos, a training manual, online quizzes, and a final exam. The initial student cohort includes local residents, tribal EPA staff, and student interns from a sister organization Restore the Delta addresses HABs in the Sacramento-San Francisco Bay Delta Estuary and the San Joaquin River. Project managers also created a training protocol for reporting fish kills on the iNaturalist, an app created by the California Academy of Sciences and National Geographic to empower citizen-led science initiatives. An intermediate course was developed for tribal EPA staff in the form of online and in-person workshops, and will be funded by a supplementary Bureau of Indian Affairs Climate Trainings and Workshops grant. Data from the loggers and the citizen-science initiative is uploaded onto a an augmented water quality dashboard (beta version) for use by local water agencies, tribal EPA, and the public to monitor water quality in Clear Lake. This data is also being used by the tribal Environmental Protection Agency to inform advisories on fish consumption as well as needed location for a third data logger in the Upper Arm of Clear Lake. The Resilience Challenge Grant was also leveraged to obtain a \$64,719 grant from the Southwest Climate Adaptation Science Center, and a \$110,192 grant from the Bureau of Indian Affairs Climate Trainings and Workshops program to advance water quality monitoring efforts at Clear Lake.

Challenges

COVID-19 forced the tribe to shift the citizen-science initiative from an in-person to online training course using the Udemy platform.

Media

<u>The Center for Collaborative Investigative Journalism, The Press Democrat, California Water</u> <u>Blog, Lake County News</u>,

Grantee: City of Watsonville Focus Area: City of Watsonville Project: Green infrastructure implementation plan Climate threat(s): Extreme heat

Summary

The City of Watsonville is located along the flood-prone Pajaro River in the Pajaro River Watershed. With assistance from the California Resilience Challenge, Watsonville is developing a plan to integrate green infrastructure across the city's existing plans and to identify a pipeline of implementation projects that will improve flood protection along the Pajaro River, increase local water supply resilience, sequester carbon, and improve public health and well-being.

Progress

The City of Watsonville adopted the final <u>Green Infrastructure Improvement Plan</u> in December 2021 and the city is currently exploring ways to implement projects identified in the plan. The project team conducted outreach to build and strengthen partnerships internally between city departments and externally with groups such as Watsonville Wetlands Watch, and others. The plan aligns policies such as tree protection ordinances, residential incentive programs and existing city planning efforts such as the Climate Action and Adaptation Plan and the Urban Forestry Management Plan. The plan evaluated the existing storm drain network in the city, the topographical features of the city, major drainage areas, the location of impervious surfaces, and existing stormwater facilities. Using this information, the plan identifies priority locations for green infrastructure projects for four basic types of projects: green roofs, parking lot permeable pavements, green streets, and detention pond retrofits. Five projects were identified and developed into conceptual plans to allow for grant funding application and incorporation into larger planning efforts:

- Ramsay Park: Use permeable pavement and bioretention in parking lots, green roofs, and channel naturalization to clean water flowing to Struve Slough.
- Downtown Corridor Promote urban greening to enhance pedestrian passageways, improve stormwater quality, and reduce heat island effects in concert with the Watsonville Downtown Specific Plan.
- Downtown Plaza Install permeable pavement and use bioretention features to clean water and slow traffic.
- Rolling Hills Middle School Create a protected bike lane and sidewalk to create a safe route to school using bioretention features that also clean water and improve aesthetics.
- Watsonville High School Use permeable pavement, bioretention, and rainwater harvesting to create high visibility projects than enhance the environment and integrate into educational programming.

Challenges

Community outreach was modified due to the COVID-19 pandemic. An additional unexpected barrier was the commitment to traditional design approaches held by many city staff.

Media

Monterey Bay Economic Partnership, Patch

Grantee: City/County Association of Governments, San Mateo County Focus Area: San Mateo County Project: Resilient San Carlos Schoolyards Climate threat(s): Flood/Heat/Water Supply

Summary

Extreme precipitation and flood events are anticipated to increase across San Mateo County. Widespread implementation of green infrastructure can provide measurable benefits to address the increased storm intensities and runoff volumes. Historically, schools have been left out of municipal stormwater planning due to their separate governance structures and site review processes. By integrating green stormwater infrastructure into three campuses in the San Carlos School District (SCSD), the County can help reduce and capture runoff for beneficial use on the school sites, minimize downstream flooding concerns, and build resiliency for urban heat island impacts through reduction in asphalt surfaces and incorporation of vegetation.

Progress

Increased precipitation and associated impacts of runoff related to climate change are anticipated to be serious concerns for communities across San Mateo County. Widespread implementation of green infrastructure can provide measurable benefits to address the increased storm intensities and runoff volumes. Historically, schools have been left out of municipal stormwater planning due to their separate governance structures and site review processes. Recognizing this gap in the overall strategy of managing stormwater, the City/County Association of Governments of San Mateo County (C/CAG) is developing concept plans to integrate green stormwater infrastructure into three campuses in the San Carlos School District (SCSD). These plans will help the schools in San Carlos integrate stormwater, shading, and outdoor learning environments into their master planning processes to help reduce and capture runoff for beneficial use on the school sites, minimize downstream flooding concerns, and build resiliency for urban heat island impacts through reduction in asphalt surfaces and incorporation of vegetation. In January 2021, C/CAG issued a request for technical services and assembled a robust project team with representatives from the school district and city representatives in the relevant jurisdictions. Following the team's development, C/CAG hosted two kick-off meetings followed by a vision and guiding principles brainstorm, interviews, and preliminary site evaluation. The project will select up to three detailed schoolyard greening concept plans, featuring multi-benefit green stormwater infrastructure elements such as rain gardens, shade trees, impervious surfaces, rainwater harvesting systems and integrated outdoor learning/play environments. Once the project sites have been identified, C/ CAG will develop a school stakeholder engagement strategy and process for effectively building school stakeholder partnerships and involvement in creating concept plans.

Challenges

The procurement process was slightly delayed from the initial grant application, due to the overlap with holiday schedules and leadership turnover the San Carlos School District. Neither of these delays is expected to disrupt the project's completion by the end of 2022.

Media

Green Schools National Network, California Association of Councils of Governments.

Grantee: City of Santa Ana Project: Santa Ana Regional Transportation Center Microgrid Feasibility Study Focus Area: City of Santa Ana Climate threat(s): Heat/Flood

Summary

The Santa Ana Regional Transportation Center (SARTC) is a major transportation hub for Orange County, but the facility is currently at risk of service disruption and damage during climate events, including flooding and power outages due to extreme heat events. With support from the California Resilience Challenge, SARTC is conducting a microgrid feasibility study that could enable this critical facility to continue serving the community even during the most extreme climate events. Santa Ana Emergency Operations Plan relies on SARTC as a key piece of critical transportation infrastructure for the city's emergency preparedness and response. A feasibility study focused on a permanently installed, islandable microgrid will help the city achieve critical emergency preparedness goals and maintain important operations and resources in the event of an emergency. Through this study, the city of Santa Ana and SARTC will assess the feasibility of not only developing a microgrid but also incorporating additional electric vehicle (EV) charging infrastructure into SARTC. The study will also assess the feasibility of adding solar photovoltaics on SARTC parking structures and incorporating battery storage to develop SARTC into a replicable and resilient transportation hub.

Progress

The City of Santa Ana has partnered with TRC Companies, a private engineering and consulting firm, to lead the microgrid feasibility analysis. Utilizing new data collected during in person site visits, which included analyses of the buildings' electrical and structural infrastructure, TRC developed conceptual designs to help inform solar and storage options at the SARTC. TRC's assessments show that there is ample space throughout the site to install canopy solar panels and EV charging stations. Given the technical feasibility of a microgrid at the SARTC, TRC is now shifting its focus to an economic analysis of the project. This analysis will determine the \$/kWh or "resilience values" under multiple financing scenarios including cash, grants, leases, bonds, incentive programs and power purchase agreements.

Challenges

Obtaining approval from the state regulatory agencies took longer than expected; limited availability of the contractor; access to the proposed injection well was delayed due to the landowner irrigation schedule; the condition of the pump column casing pipe required additional maintenance; water deliveries for the project were delayed due to drought restrictions.

Media

Grantee: Humboldt County Regional Conservation District Focus Area: Humboldt County Project: California Forest LiDAR Collaborative Climate threat(s): Wildfire

Summary

California's forests and woodlands store carbon and provide habitat to an extraordinary diversity of plants and wildlife. These landscapes have coevolved with fire, but historical fire suppression and the ongoing climate emergency have placed California's forests and rural communities at risk. With a grant from the California Resilience Challenge, the Humboldt County Resource Conservation District is using advanced LiDAR geospatial technology to create forest carbon inventories to promote forest health and increase wildfire resilience throughout the North Coast. These forest inventories are designed to increase the development of climate and fire resilient structures while accelerating carbon sequestration.

Progress

The California Forest LiDAR Collaborative, in partnership with the Watershed Research and Training Center (WRTC), developed platforms for 18 local organizations to access and analyze LiDAR geospatial data to assist forestry management projects. The program has assisted numerous proposals in the project development and implementation phases of Forest Health, Fire Prevention, Joint Chiefs proposals for solicitations that took place in the spring and summer of 2021. The project currently has another \$3 million dollars in grants that are under review to the Joint Fire Science Program and the Sierra Nevada Conservancy. In addition, the Collaborative has provided key technical support for state remote sensing policy. The Collaborative was one of the primary organizers of the \$7 million USGS grant to California forests degraded by recent wildfires. Humboldt County is acting as fiscal agent for a 17,000 square-mile LiDAR acquisition that will complete LiDAR coverage for the rest of Humboldt, Trinity, Del Norte, Siskiyou, Modoc, Tehama, Shasta and parts of Lassen Counties. Case studies collected by the Collaborative are currently being used to develop long-term program planning for the California Natural Resources Agency. The Collaborative is also a partner on a recently awarded CalFire research grant to use airborne LiDAR forest inventory plots to calibrate NASA's Global Ecosystem Dynamics Investigation program for post-fire stand assessments.

Challenges

The California Forest LiDAR Collaborative (CAFLC) was originally envisioned to support the California Climate Investments (CCI) Forest Health program, but due to unforeseen COVID-related funding deficits, the state did not fund the CCI program in 2020. Despite funding uncertainties, the project continued onward and has achieved many technical milestones by using donated computing resources and staff time.

Media

Grantee: Gateway Cities Council of Governments Focus Area: Southeast Los Angeles Project: Urban tree canopy community prioritization Climate threat(s): Heat

Summary

Southeast Los Angeles is expected to experience increased incidences of severe extreme heat days due to climate change. In a densely populated region with many disadvantaged, low-income, and transit-dependent residents, urban heat can be mitigated with relatively inexpensive nature-based solutions. With a grant from the California Resilience Challenge and in partnership with TreePeople and Loyola Marymount University Center for Urban Resilience, the Gateway Cities Council of Governments (COG) is developing local Tree Canopy Assessments and Community Prioritization Reports for four under-resourced municipalities in Southeast Los Angeles: Paramount, Lynwood, Vernon, and Montebello..

Progress

Final Tree Canopy Prioritizations have been completed for the cities of Lynwood (March, 2021) and Paramount (October, 2021). For the City of Lynwood, the analysis found that there is 16% of existing tree canopy and 41% of possible tree canopy. Forty three percent of land cover was not found to be suitable for tree canopy. After discussions with city staff and elected officials, the project team held two virtual Tree Summits in December 2020, to inform residents of research findings and survey them on priority locations and benefits of urban greening. The project team saw participation from 120 elected officials, city staff, residents, nonprofit organization members, and high school students (compared to 35 participants in a similar project conducted the previous year). For the City of Paramount, the analysis found that there is 15% existing tree canopy and 45% of possible tree canopy. The remaining 32% of land cover was not found to be suitable for tree canopy. Surveyed Paramount residents identified "Improve Air Quality and Reduce Noise," "Beautify Neighborhoods," and "Increase Equity for Residents" as their top priority categories for tree planting, and prioritized densifying the canopies in the city's western and northern borders along the Long Beach and Century freeways. One barrier is that a large percentage of the possible tree canopy in Paramount (32%) is currently covered in an impervious surface (such as asphalt parking lots) which require redesigning for vegetation and is therefore more expensive than densifying existing vegetation plots.

Challenges

The project team was unable to conduct in-person community engagement events as originally planned due to the statewide COVID-19 orders. However, they were successful in hosting two interactive virtual events to inform community members on the project and gather important feedback that is guiding our final deliverables. The team was able to meet its 2020 outcomes, despite this challenge. The project team hopes to be able to conduct in-person community engagement events for the next cities, when safe to do so, and following all state and CDC guidelines

Media

Grantee: County of San Diego Office of Emergency Services Focus Area: San Diego County Project: Wildfire Mitigation Certificate Pilot Project Climate threat(s): Wildfire

Summary

Wildfires have been a natural threat to the State of California for centuries, but longer wildfire seasons and more destructive fires have pushed much of California into a heightened state of alert. As a result, insurance companies across the state are cancelling policies in high-risk fire zones, which raises rates for homeowners who then consider dropping out of the California property insurance market. The San Diego County Office of Emergency Services (SDOES) in partnership with United Policyholders (UP) is developing a pilot mitigation certificate program to provide cost-incentives for homeowners to implement fire-reduction strategies on their properties. The project also includes working with the California Department of Insurance and insurers to create an incentive system to reward homeowners whose homes are certified as successfully mitigating wildfire risk.

Progress

The subcontractor for this project, UP, was invited in the fall by the California Department of Insurance as a key witness for two virtual investigatory hearings regarding insurance affordability and availability, positioning the efforts of this pilot project as a vital component to improving the insurance safety net. In addition, UP recently connected with CAL FIRE to align the pilot mitigation certificate project with the CAL FIRE/CAL OES AB-38 established Joint Powers Authority, the Wildfire Mitigation Financial Assistance Program. AB-38 will initiate an array of requirements regarding implementation of mitigation standards in high-risk fire zones including the establishment of low-cost mitigation measures, disclosures during the sale of property, and grants to property owners to achieve compliance. This will form the foundation to develop a statewide program for FEMA mitigation dollars for retrofitting and mitigation efforts, including what standards for mitigation will be held. Based on their meeting with CAL FIRE, UP hopes to wrap the pilot project into this statewide effort and with CDI's home hardening standards for insurance.

Challenges

Challenges encountered included delays in finalizing the Operational Agreement with the Subcontractor (anticipated in September, completed December 7, 2020 due to the fall COVID-19 resurgence. Also impacted by COVID shelter in place restrictions, outreach with identified potential partner agencies in San Diego County have been difficult, with people not in offices/in the area and non-responsive to emails. A new identified challenge is reconciling the different hazards for high density versus low density homes to create a common set of standards to meet both needs.

Media

Grantee: South Fork Kings Groundwater Sustainability Agency Focus Area: Southern San Joaquin Valley Project: Aquifer Storage and Recovery Pilot Project Climate threat(s): Drought

Summary

For decades, Californians have been unsustainably pumping more water from aquifers than is replenished by nature. This pressure on groundwater demand is further exacerbated by longterm climate change impacts on water supply, namely increased variability with longer drought periods and short periods of intense precipitation. The South Fork Kings Groundwater Sustainability Agency (SFKGSA) is conducting a feasibility study on an Aquifer Storage and Recovery (ASR) project to improve water-supply resilience in the face of climate change. Using community feedback from landowners in the area, SFKGSA will implement a pilot test of ASR in Lemoore, California. The pilot test will include extensive monitoring and modeling that will be submitted to the state for consideration and approval to proceed with a programmatic Environmental Impact Analysis under the California Environmental Quality Act.

Progress

Work began with the South Fork Kings Groundwater Sustainability Agency retaining Geosyntec Consultants as the engineering and hydrogeologic consultant. Geosyntec then prepared the engineering design and specifications to conduct the ASR Pilot Test, which were submitted to for approval to the relevant state and federal permitting agencies. Geosyntec Consultants then secured approval from the Lemoore Canal Company for them to supply 80 acre-feet of water to conduct the pilot test and allow the discharge of water into their canal system; retained a licensed surveyor to provide an elevation survey of the wells to be utilized as part of the pilot test; and retained a contractor to construct the modification to the wells as required for the pilot test. The pilot officially began on June 22, 2021. A survey of local landowners revealed severe concerns about the impact of climate change on the availability and quality of water resources. Out of 112 respondents, more than 60% reported experiencing a reduction in the local groundwater table over the past five years. It is anticipated the tasks to be completed in 2022 include a printed educational piece, newsletter, workshops/webinar, and ASR animation. The goals for these outreach efforts will be to present survey results, summarize lessons learned from the pilot project, and provide additional education on the ASR concept.

Challenges

Obtaining approval from the State regulatory agencies took longer than expected; limited availability of the contractor; access to the proposed injection well was delayed due to the landowner irrigation schedule; the condition of the pump column casing pipe required additional maintenance; water deliveries for the project were delayed due to drought conditions.

Media

Geosyntec website and educational video

Grantee: Western Riverside Council of Governments Focus Area: Western Riverside County Project: Western Riverside County Energy Resilience Plan Climate threat(s): Wildfire/Extreme Heat/Drought

Summary

Every year, millions of Californians experience power outages resulting from increasingly damaging storms and wildfires, and from public safety power shutoff (PSPS) events due to high winds and dry conditions. While PSPS events are standard practice, they have become more frequent and impactful, effecting large areas of the state. WRCOG's Climate Action Plan has found that some of its member agencies' facilities do not have backup power despite being tasked with providing critical services to the community. The Western Riverside Council of Governments (WRCOG), in collaboration with its 19 member agencies and two water districts, as well as the U.C. Riverside Center for Environmental Research and Technology (UCR CE-CERT), is developing a comprehensive sub-regional Energy Resiliency Plan aimed at improving Western Riverside County's resilience to power outages, power shortages, and emergencies.

Progress

WRCOG has taken action to solicit and award a contract to a qualified consultant, AECOM, to assist with the development of the Energy Resilience Plan. Additionally, staff have implemented outreach and engagement activities to raise interest with WRCOG member agencies to establish project goals and objectives, and to form an advisory group consisting of representatives from select member jurisdictions. WRCOG staff have also been involved in a variety of online webinars and events that have presented funding opportunities to enhance, promote, and implement energy resilience and clean-energy generation projects at the local government level. In the last few months, WRCOG staff and AECOM have developed a method for WRCOG member agencies to prioritize their critical facilities for implementation of resilience measures based on facility data, local population characteristics and environmental hazards that affect the area. In close coordination with the advisory group and utilizing this method to prioritize facilities, the project team has identified three sites (a fire station, senior center, and a wastewater treatment facility) across the subregion that will undergo a feasibility study that will identify potential resilience measures to maintain power during an outage, including solar and battery storage for microgrids. This information will also be extrapolated and generalized so that other agencies with similar facilities can use the Western Riverside County Energy Resilience Plan as a case study on prioritizing critical facilities and identifying potential energy resilience measures.

Challenges

Staff originally anticipated delivering a vulnerability assessment and completing a feasibility analysis at a critical facility/site in each WRCOG member jurisdiction. However, during the RFP process it became clear that the original scope was beyond WRCOG's resources to deliver. Instead of completing an in-depth feasibility analysis at a critical facility in each member jurisdiction, three facilities across the subregion will be analyzed from which the results will be generalized and extrapolated to similar critical facilities in other WRCOG member jurisdictions.

Media

Grantee: Yuba Water Agency Focus Area: Yuba River Watershed Project: Climate Resiliency with Forest Health Collaborations Mines and Meadows in the Yuba River Watershed Climate threat(s): Wildfire

Summary

Local communities in the Yuba River watershed are grappling with the toxic legacy of the California Gold Rush, including degraded forests and meadows which increase the likelihood of wildfires, which in turn negatively effect the region's water quality. The Yuba Water Agency is quantifying the economic benefits of hydraulic mine remediation and forest management on local community resilience to catastrophic wildfires. Understanding the complexity of previous anthropogenic influences on the watershed will help the agency develop mechanisms that fund a combination of remediation of degraded mine sites and restoration of the forests and meadows.

Progress

Coordination of forest resilience planning efforts with mine remediation and meadow restoration has occurred in three different venues: the Yuba Forest Network, the Headwater Mercury Source Reduction Technical Advisory Committee Workshops, and in the Sierra Meadows Partnership. Partners at The Sierra Fund (TSF) are working with the Yuba Forest Network's Strategy Subcommittee and Geospatial Analysis Subgroup to develop the scope of the regional strategy to address forest health, including defining what constitutes "forest health" for the region. The Geospatial Analysis subgroup is discussing the use of geospatial tools and datasets as they relate to forest ecology. The Yuba Water Agency and its partners were able to leverage research made possible by the California Resilience Challenge to secure funding from the U.S. Endowment for Forestry and Communities to conduct biochar soil treatment test plots at a hydraulic mine site. By engaging with representatives from the biochar industry and experts from the Rocky Mountain Research Center the project's unique approach to wildfire resilience has opened up an entirely new benefit to hydraulic mine remediation-climate resilience. By thinning fuel loads around the Grizzly Creek hydraulic mine, the Agency will generate raw materials that can be used to create biochar, which can then be used to remediate the denuded soils of the hydraulic mine, thereby sequestering the carbon. This multi-benefit project could be a replicable model for numerous sites across headwater forests where both abandoned hydraulic mines and heavy fuel loading are prevalent and it may even have a carbon credit funding stream to offset remediation costs. Finally, TSF is currently developing a Carbon Market Feasibility Analysis for Meadows and conducting a similar analysis on the potential use of biochar as part of hydraulic mine remediation.

Challenges

TSF hoped to collaborate on a California Department of Fish & Wildlife Proposition 1 planning grant with the North Yuba Forest Partnership but due to the schedule and scope of the application the project sponsors did not feel comfortable including the mine remediation tasks. Unfortunately, this means that TSF will need to develop its own CEQA process and request the CEQA lead (Sierra County) to double their efforts as a separate set of permits will be needed to secure implementation funds for hydraulic mine remediation. Ideally, project descriptions for forest health activities would be inclusive of mines and meadows when they are developed. TSF is working to ensure mine remediation projects are included in future forestry projects in the region.

Media

Grantee: San Joaquin Area Flood Control Agency Focus Area: Stockton, Lathrop, and Manteca Project: Lower San Joaquin River and Delta South Basin Climate Resiliency Project Climate threat(s): Flood

Summary

Climate change projections predict a drastic increase in flood risk for the Lower San Joaquin River and Delta South (LSJRDS) Basin in the coming years due to rising sea levels and an increase in flows coming down the San Joaquin River. With a grant from the California Resilience Challenge, the San Joaquin Area Flood Control Agency (SJAFCA) is engaging with State, regional, and local stakeholders to develop alternatives for a coordinated basin-wide solution that addresses this increase in flood risk while also looking to achieve multiple other benefits, including improving habitat through ecosystem restoration, and enhancing public recreation.

Progress

In September 2020, SJAFCA retained the services of consulting firm PBI to assist with this project. The preliminary assessments of basin-wide strategies for flood risk reduction completed to date include:

- Widening of the Paradise Cut Bypass
- Expanding ecosystem restoration at the Paradise Cut Bypass
- Constructing the Mormon Channel Bypass project to divert 1,500 cfs from the Stockton

Diverting Canal and lower Calaveras River

- Modifying (structural and non-structural) to upstream reservoirs
- Upstream transitory storage opportunities.

The next step of the study will be to further develop the technical analyses of these options and to engage with regional stakeholders to gather input on the proposed solutions. A final report will be developed to outline the proposed flood risk reduction alternatives and identify the necessary actions that will need to be taken in a future study to refine and evaluate the array of alternatives and select a preferred alternative.

Challenges N/A

Media N/A



