



CALIFORNIA REGIONAL CLIMATE ADAPTATION INITIATIVE

Understanding Climate Change in
the San Joaquin Valley; What Your
Organization Can Do About It

***By taking action today,
California's San Joaquin
Valley can move towards
a healthier, more
prosperous and
sustainable future.***

Why address climate change? What's the threat?

Changes in global and local temperatures depend on the accumulation of carbon dioxide and other heat-trapping gases emitted from human activities into the atmosphere. The accumulation of greenhouse gases (GHGs) could be high (harming human health) or low (reducing health risks). The direction on climate impacts depends on the success of both international and local efforts to reduce GHG emissions.

How will San Joaquin Valley be impacted by climate change?

THE SAN JOAQUIN VALLEY IS WARMING. By end-of-century the San Joaquin Valley will likely warm by 3°F to 6°F, and there may also be 40+ days of extreme heat each year.

OUR HEALTH IS IN THE BALANCE. Longer and more frequent high heat days will increase the number of heat-related illnesses such as heat stroke, heat cramps, heat exhaustion and dehydration, which can lead to premature death. Outdoor workers are especially at-risk, especially farmworkers, which in turn threatens food security.

MORE FREQUENT AND SEVERE DROUGHTS WILL AFFECT AGRICULTURAL PRODUCTION. Constraints on water supplies, frequent and longer droughts, warmer temperatures, variable rain, new pests, and reduced chill hours will affect agriculture decisions and implementation.

AIR QUALITY WILL WORSEN. Hotter temperatures convert tailpipe emissions (nitrogen oxides) into ozone, which is linked with reduced lung function and exacerbating incidence of bronchitis, emphysema, and asthma.

AT TIMES THERE WILL BE MORE RAIN – BUT ALSO LESS SNOW. Climate change will reinforce variable precipitation trends, leading to longer periods of drought and more extreme periods of heavy rain.

WE ANTICIPATE MORE DESTRUCTIVE WILDFIRES. Projections indicate that wildfires may become more frequent and more destructive in the foothills above the San Joaquin Valley. Overall burned area is projected to increase over 178% above traditional fires of the past.



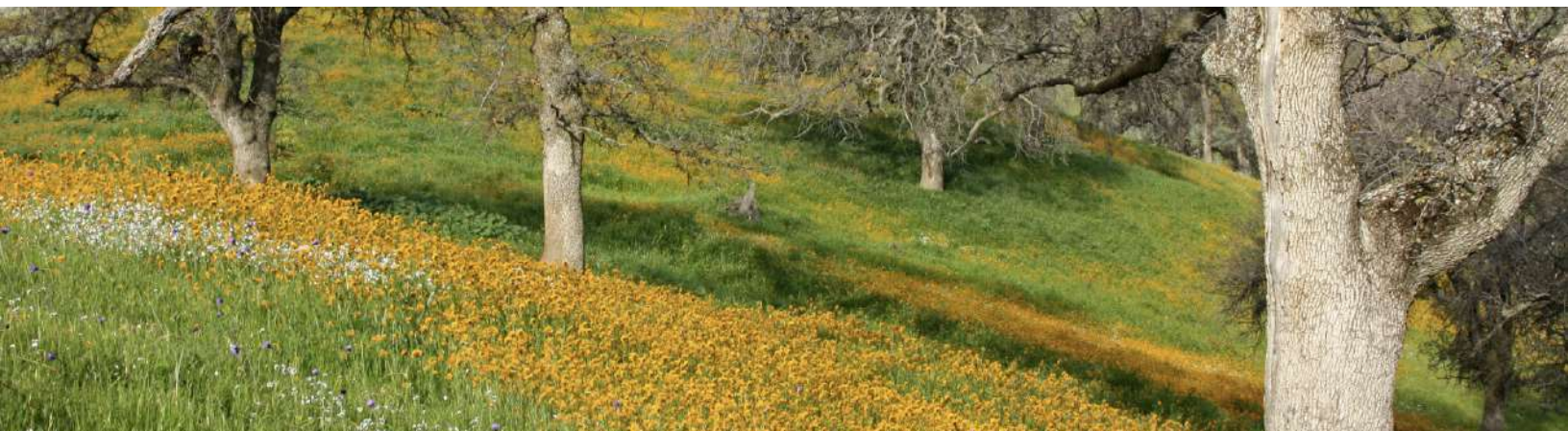
FLOODING WILL BE A BIGGER PROBLEM. The projected increase in precipitation extremes, alone and in combination with the projected increase in wildfires, creates increased potential for floods, mudslides, and debris flows.

WATER ACCESS WILL BE SEVERELY IMPACTED. The increased variability of water will mean less available water during seasonal drought when water irrigation requirements are at the highest.

LOCAL ECOSYSTEMS WILL COME UNDER STRESS DURING PROLONGED DROUGHTS. Natural ecosystems in the San Joaquin Valley are particularly vulnerable to climate change. Already existing human-created stressors will amplify the impacts of variable precipitation patterns to threaten their continued existence.

INFRASTRUCTURE WILL FACE SEVERE CHALLENGES FROM INCREASED TEMPERATURE AND EXTREME PRECIPITATION EVENTS. Extreme heat, droughts, floods, and increasing urbanization will negatively affect community health throughout the region. These extreme stressors will create a whiplash effect that will seriously challenge local infrastructure.

WAIT — THERE'S GOOD NEWS. Within the San Joaquin Valley region, county and local governments have made great progress to reduce greenhouse gas emissions and make plans to adapt to climate change. Several plans and actions highlighted are: City of Madera Climate Action Plan (2015), Sustainable Energy Roadmap for the San Joaquin Valley (2015-2016), and County of Tulare Climate Action Plan (2018). Additionally, municipalities within the region are updating their General Plans to include actions on climate mitigation and adaptation.



ACTION(S) TAKEN

Although the San Joaquin Valley will be impacted in many ways by a changing climate, the region already has specific plans in place to address those impacts with innovative solutions that will create a more livable city for everyone. There are two pieces of legislation and one executive order that drive climate action in California.

- **Senate Bill 32 (2016)** requires California Air Resources Board (CARB) to reduce greenhouse gas emissions to 40% below 1990 levels by 2030.
- **Senate Bill 100 (2018)** commits California to achieving 100% renewable energy by 2045.
- **Executive Order B-55-18** commits California to achieving carbon neutrality in every sector by 2045.

On the regional level, cities and counties have identified actions and set targets to reduce GHG emissions and address climate change impacts. Highlighted actions include:

- **Tulare County updated its Climate Action Plan in 2018**, with goals to reduce CO₂ emissions from transportation, energy, water transport and treatment, and agricultural activities. Emissions from these sources will be reduced by actions that increase the use of renewable and zero emission electricity from the grid from sources such as wind, solar, and hydroelectric.
- **Fresno County** released a report in 2010 which includes a suite of climate mitigation and adaptation strategies developed by local leaders and experts. Some strategies include conserving water and promoting efficiency technology, preserving open space and avoiding conversion to sprawl, and increasing resilience of forests to climate change impacts.
- **The City of Tulare** has been a leader in reducing carbon emissions from its agricultural activities. Within its General Plan the City has highlighted the deployment of manure digesters at dairies to capture and convert biogas for on- and off-site electricity needs.

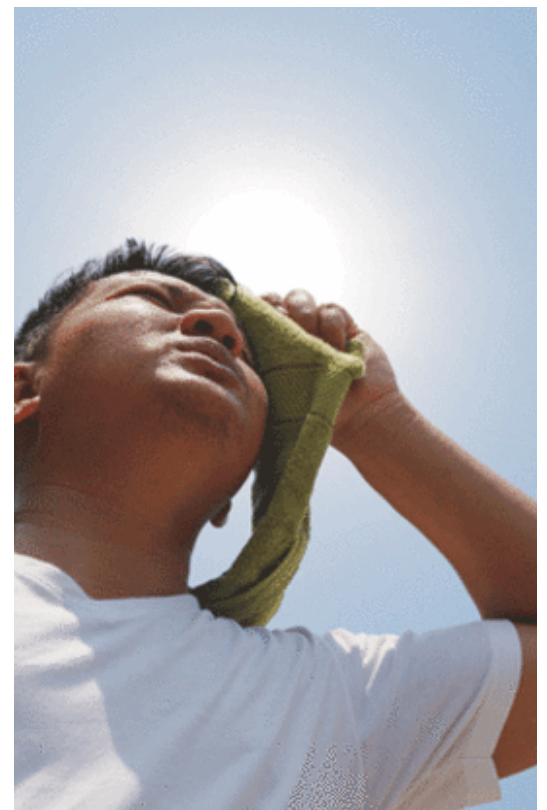


- **The City of Stockton established a Climate Action Plan Advisory Committee** in 2014 with representatives from environmental, nonprofit, labor, business, and developer interest to inform climate mitigation and adaptation strategies.
- **The Sustainable Energy Roadmap for the San Joaquin Valley (SER)** brought together 14 San Joaquin Valley jurisdictions with regional planning agencies, industry sources, and technical experts. They exchanged ideas on energy and water efficiency, renewable energy and storage, sustainable transportation and land use, and social equity. Each community prepared an action plan for each topic addressing policies, permitting, planning and zoning, financing, market development, and workforce development.
- **The 25x25 Initiative and the San Joaquin Valley Clean Energy Organization (SJVCEO)** have joined efforts to encourage renewable energy use and development in the San Joaquin Valley. The SJVCEO was established by the Energy Work Group of the California Partnership for the San Joaquin Valley to lead a regional effort to develop, plan and implement energy efficiencies and clean energy.
- **Since 2005, Tune In & Tune Up** has helped repair older, out-of-tune vehicles that are a major impact on air quality throughout the San Joaquin Valley. At Tune In & Tune Up events, Valley drivers who have had their car for at least six months receive a free vehicle emissions test. If the vehicle doesn't pass the test, the driver receives a voucher for up to \$850 in emission-related testing and repairs at a participating STAR-certified smog check station. Vehicles 1999 or older may also be eligible for up to \$9,500 for a down payment on a newer, cleaner car.

DEFEND CLIMATE PROGRESS. These climate action policies often come under attack from fossil fuel and other corporate interests. Above all else, the State's existing climate policies need to be defended.

NEXT STEPS. Here are some actions that you can take right now to prepare for the impact of climate change in the Bay Area.

- **THE MAIN PROBLEM . . . WELL, IT'S CARS.** The leading source of greenhouse gas emissions derives from the transportation sector. How to reduce those emissions? Look to programs like Green Raiteros, which uses EVs to connect agricultural workers, who often don't have access to quality transportation to the City of Fresno. This service ensures that rural families can take care of essential tasks like doctor's visits, all while keeping their carbon footprint to a minimum.



- **COOL DOWN NOW.** Deploy “cool roofs” and shade structures at homes, businesses, and work sites. Cool roofs cool your buildings, protect the people working or living inside, reduce energy consumption and even reduce smog. Cool walls, cool streets and shade structures also help. Shade from the sun and frequent water breaks are essential to keeping fieldworkers healthy during high heat days.
- **STAY COOLER LONGER.** Plant large trees on your property — trees provide shade, cool the area, clean the air you breathe, and when planted at home can reduce utility bills. Some trees are provided free-of-charge by municipalities and utilities. For those working on farms throughout the Valley, ensure that cooling amenities such as chilled water and shade protection are offered consistently.



- **WATER IS LIFE.** Take advantage of free water conservation initiatives provided by water utilities — these products can not only lower water bills, they also save greenhouse gas emissions and build resilient communities. And make sure to consult with water conservation experts when making decisions about heavy water usage.
- **THIS AIN'T MARYLAND.** Convert grass lawns with a turf replacement program and replace with California friendly landscaping to conserve water, save money on utility bills, and create a wildlife friendly environment. Turf conversion programs are often provided by local water utilities.

There are many cost effective strategies that Californians can adopt around the home that can improve their quality of life and help with climate change.

- **APPLY SMARTS TO APPLIANCES.** Large appliances can be the biggest energy users in a household. Homeowners can make sure their air-conditioners and heaters are working efficiently. Taking care of these appliances can save residents money, energy, and ensure comfort on days with extreme weather. Local utilities may help you recycle old appliances, and in some cases, replace them with new, energy efficient ones

- **ENERGY EFFICIENT HOMES.** Make use of local utility programs that can help assess energy savings opportunities for your home. For example, PG&E offers the Energy Savings Assistance Program which will inform you of essential actions that you can take to make your home more energy efficient. Community choice utilities also offer efficiency incentives.
- **SMART SHOPPING.** The PG&E and Southern California Edison Marketplaces can show you the best and most efficient products for your home. From air purifiers to pool pumps, find appliances that will help lower your carbon footprint and save you money.
- **EFFICIENCY PAYS DIVIDENDS.** Energy efficient light bulbs and appliances may be eligible for rebates. They lower utility bills and a household's carbon footprint.
- **COMMUNITY CHOICE ENERGY.** Cities in the Valley, including Stockton, are looking at establishing community-owned utilities. These would allow households to purchase 100% renewable energy, thereby lowering greenhouse gas emissions.
- **CAPTURE AND STORE RAINWATER.** Local and state water utilities offer programs to subsidize purchases of water storage barrels and cisterns that can store up to 1,000 gallons of water. According to the American Rainwater Catchment Systems Association, a house with a 1,500-square-foot roof in an area that receives 12 inches of rain a year (Fresno averages 11.5 inches) could collect 10,800 gallons of water in a year. As precipitation will become much more variable in subsequent decades, storing this water for dry years is vital for water security.

In the face of pandemics and other threats, climate solutions can also create greater social connection and community resilience at-large.

- **ORGANIZE THE NEIGHBORHOOD.** Climate action starts when community members organize, educate their neighbors, and unite around common principles. Neighbors learn about each other's needs and priorities, about where their resources come from, about how their local economies are run. They learn the power of their collective voice and the importance of knowing their neighborhood and their neighbors.



- **GROW A CIVIC CULTURE.** Engage with people who may at first show uninterest, especially disenfranchised people. Give them the tools to engage with the political process through the lens of climate action and sustainability. And when necessary, advocate for those who may face barriers from making their own needs and experiences known. Empathy and climate action go hand in hand, as do democracy and sustainability.
- **COOLING AND RESILIENCE CENTERS.** Throughout the Valley, places such as libraries, senior centers, rec centers, and pools may serve as designated areas to protect and assist the public in times of need.
- **REVITALIZE GREEN SPACES.** Green spaces in urban areas are a key component to tackling climate change. They serve as cooling centers, habitats for wildlife, and places for community connection. Plus, as we are experiencing during the current pandemic, natural urban spaces are one of the few places where people can commune safely.
- **PROTECT NATURAL RESOURCES.** Finally, the Valley is famous for being the breadbasket of America. Protecting the resources, including water and land, that make this possible is incredibly valuable for its own sake, let alone from a climate resilience or mitigation perspective.



More about CCEDA and Climate Resolve

CCEDA is comprised of organizations actively engaged in revitalizing California's neighborhoods and its members produce results through a full range of community building strategies including real estate development-housing, retail and commercial-business assistance and lending, social services, and job training and creation. Additionally, CCEDA provides its members a clearinghouse for information and action that advances the field of community economic development.

Climate Resolve builds collaborations to champion equitable climate solutions. We connect communities, organizations and policymakers to address a global problem with local action. We inclusively develop practical initiatives that reduce climate pollution and prepare for climate impacts. Our purpose is a just and resilient future.



For more information on climate leadership in your community contact the California Community Economic Development Association:

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