CALIFORNIA REGIONAL CLIMATE ADAPTATION INITIATIVE

Understanding Climate Change in San Diego; What Your Organization Can Do About It

By taking action today, the San Diego region 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 Diego be impacted by climate change?

SAN DIEGO IS WARMING. By mid-century (2041-2060) San Diego County will likely warm by 3°F to 5°F above historic climatic temperatures. Inland areas will face more temperature extremes. The months of August and September, traditionally peak fire season, are projected to warm the most. By the end of the century, the region may warm an increase of 5°F to 10°F, depending on future global emissions.\(^1\)

OUR HEALTH IS IN THE BALANCE. Longer and more frequent high-heat days will likely increase the number of heat-related illnesses, such as heat stroke, heat cramps, heat exhaustion and dehydration.

AIR QUALITY WILL LIKELY WORSEN. Climate change could increase concentrations of air contaminants. Hotter temperatures also increase surface ozone concentrations.

AT TIMES THERE WILL BE MORE RAIN BUT LESS SNOW. The general volume of precipitation is not expected to change significantly but will likely be delivered in more intense storms, making it more difficult to capture runoff. Imported water from the Sierra Nevada, Cascade and Rocky Mountain regions will become less reliant due to declining snowpacks and earlier seasonal runoff.

AT TIMES THERE WILL BE DROUGHT. Droughts will become more severe due to rising temperatures, increasing evaporation and drier soils.

WE ANTICIPATE MORE DESTRUCTIVE WILDFIRES. Projections indicate that wildfires may increase throughout San Diego County. The overall burned area is projected to increase over 64% for Santa Ana-based fires and over 77% for non-Santa Ana fires.

FLOODING WILL BECOME 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.

THE PACIFIC OCEAN WILL RISE. Sea levels are projected to continue rising in the future. Roughly 1-2 feet of sea level rise is projected by mid-century, and the most extreme projections predict 8-10 feet of sea level rise by end-of-century. If nothing is done, 31-67% of Southern California beaches may completely erode by 2100.

WATER WILL BECOME MORE ACIDIC. Waters off the coast of California are acidifying twice as fast as the rest of the oceans around the world. Roughly 27% of all carbon dioxide emitted since 1959 has gone into the Pacific Ocean off the California coast. The steady rise of carbon dioxide will lower the pH of freshwater streams, lakes, and rivers, which will affect marine species and local ecosystems.

MEETING ELECTRICITY DEMAND WILL BE CHALLENGING. Residential electricity demand is likely to grow due to more frequent heat waves, while higher temperatures are likely to affect electricity supply from gas-fired plants.

COASTAL INFRASTRUCTURE WILL BE AT RISK. The San Diego International Airport, electrical infrastructure and waste systems will be vulnerable to sea-level rise, storm surge and erosion.

WAIT — THERE’S GOOD NEWS. Within the San Diego region, local governments have made progress in reducing greenhouse gas emissions and adapting to climate change. Several plans highlighted are the County of San Diego Climate Action Plan (2019), City of San Diego Climate Action Plan (2015, currently being updated), City of Chula Vista’s CAP (2017), City of Carlsbad’s Climate Action Plan (2015), City of Encinitas’ Climate Action Plan and Shoreline Management Program (2018), City of San Marcos’ Climate Action Plan (2013), City of Escondido Climate Action Plan (2013) and City of El Cajon’s Energy Roadmap (2013). Additionally, municipalities within the region are updating their General Plans to include actions on climate mitigation and adaptation.
ACTION(S) TAKEN

Although San Diego 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 more livable cities 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:

- **City of San Diego’s Climate Action Plan (CAP)**, from 2015 and now being updated, is one of the most ambitious in the state. In 2019, San Diego established the nation’s first-of-its-kind Climate Equity Index (CEI), and also became the largest city in the country to officially pursue a Community Choice Energy (CCE) program. The CAP also includes adaptation measures, including managing stormwater runoff to help prevent flooding, increasing urban tree canopy, and conserving water for drought emergencies.
- **City of Chula Vista’s CAP** achieves numerous community co-benefits such as utility savings, improved air quality, reduced traffic congestion, local economic development, and improved quality of life. Chula Vista is partnering with San Diego on its CCE plan.
- **City of Encinitas** is focusing on lowering emissions by co-creating the regional CCE, protecting its coastline by enhancing coastal and bluff resiliency against storm damage and SLR, and prioritizing its natural climate adaptations by restoring coastal dunes once paved over.
- **The San Diego Association of Governments (SANDAG)** is updating its Regional Plan, dubbed “San Diego Forward”, with a heavy focus on decarbonizing transportation, which is the largest source of GHG emissions in the county.
- **The La Jolla Band of Luiseño Indians** has cleared brush around local homes, created fuel breaks, and removed invasive species to blunt the impact of climate-fueled wildfires. The tribe was also the first in California to receive Congressional approval for its Drought Plan (2009), and is eligible to receive FEMA-funding in case of natural disaster.
- **City of Carlsbad** has planned to reduce local emissions through green building codes, rooftop solar incentives, and installing electric vehicle charging stations throughout the city.
• **UC San Diego’s Scripps Institution of Oceanography** opened the Center for Climate Change Impacts and Adaptation (CCCIA) in 2016. The Center provides groundbreaking climate research, evaluates adaptation strategies, and conducts community outreach and education to build climate action capacity.

• **The San Diego Regional Energy Partnership (SDREP)** conducts education and outreach about energy efficiency to local government staff, home performance contractors, and the real estate industry.

• The county has four sub-regional energy action collaboratives that aim to increase energy efficiency and decrease emissions: South Bay Energy Action Collaborative (SoBEAC), North Coast Energy Action Collaborative (NCEAC), Inland Cities Energy Collaborative, and East County Energy Action Collaborative.

**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 San Diego.

• **THE MAIN PROBLEM . . . WELL, IT’S CARS.** The leading source of greenhouse gas emissions in San Diego is from the transportation sector. How do we reduce those emissions? First, by building affordable housing near public transit, and by creating neighborhoods that promote biking, scootering and walking. Another essential climate strategy is to encourage transition to electric and hydrogen-fueled vehicles.

• **COMMUNITY CHOICE ENERGY.** CCEs are local community and municipal programs that allow households to choose how much of their energy consumption comes from renewable energy resources, thereby lowering greenhouse gas emissions and ensuring electricity grid resilience. The regional CCE, San Diego Community Power (SDCP), was formed in 2019 by the cities of San Diego, Chula Vista, Encinitas, La Mesa and Imperial Beach, and will begin delivering power with a renewables-heavy portfolio in 2021.
• **COOL DOWN NOW.** Deploy “cool roofs” — cool roofs cool your buildings, protect the people working or living inside, reduce energy consumption and even reduce smog.

• **WATER IS LIFE.** Take advantage of free water conservation initiatives provided by Metropolitan Water and other water utilities — these products not only lower water bills, they save greenhouse gas emissions and help communities become more resilient.

• **THIS AIN’T MARYLAND.** Convert grass lawns with a turf replacement program and replace them 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 Metropolitan Water and other local water utilities.

• **PRIORITIZE COASTAL WETLANDS.** Ensuring the protection and restoration of these ecosystems is vital. They are extremely effective carbon sinks and can absorb SLR and floods, thereby mitigating some of their effects to nearby areas.

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.

• **SOLAR PANEL PRICES ARE DROPPING.** The price of photovoltaic panels has dropped significantly. The return on investment could be just a few short years.

• **APPLY SMARTS TO APPLIANCES.** Large appliances can be the biggest energy users in a household. Homeowners can make a big difference by making 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.

• **APPLIANCE RECYCLING AND EXCHANGE PROGRAMS.** SDG&E and the Imperial Irrigation District may help you recycle old appliances, and in some cases, replace them with new, energy efficient ones.

• **EFFICIENCY PAYS DIVIDENDS.** Energy efficient light bulbs and appliances may be eligible for rebates through online marketplace websites from utility companies. They lower utility bills and a household's carbon footprint.
• **MORE TREES PLEASE.** Plant more trees in and around your home — trees provide shade, cool the city, and clean the air you breathe. Plus, when planted at home, they can reduce utility bills. Some trees are provided free-of-charge by municipalities and utilities.

• **NATIVE PLANTS AND GARDENS.** The SoCal Water Smart and Save Our Water programs provide rebates and instructions on converting your lawn into a native plant garden, which can help you save on your bill, conserve water, and create sustainable green space in your community.

• **CAPTURE AND STORE RAINWATER.** Local and state utilities have 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 (San Diego averages 12 inches) could collect 10,800 gallons of water in a year.

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• **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.
• **COOLING AND RESILIENCE CENTERS.** Expand the use of cooling centers — make them into resilience centers — spaces such as libraries, senior centers, rec centers, and pools serve as designated areas to assist the public in times of need.

• **RECLAIM GREEN SPACES.** Green spaces in urban areas are a key component to climate resilience. The presence of parks provides environmental and health benefits, including improved water and air quality, and they also serve as natural cooling centers. Plus, as we are experiencing during the current pandemic, natural urban spaces are one of the few places where people can commune safely.

• **PROTECT NATURE.** Finally, San Diego is famous for its natural beauty. Our public lands are accessible to families who need a breath of fresh air at the beach or any one of the many local parks. Protecting this 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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