

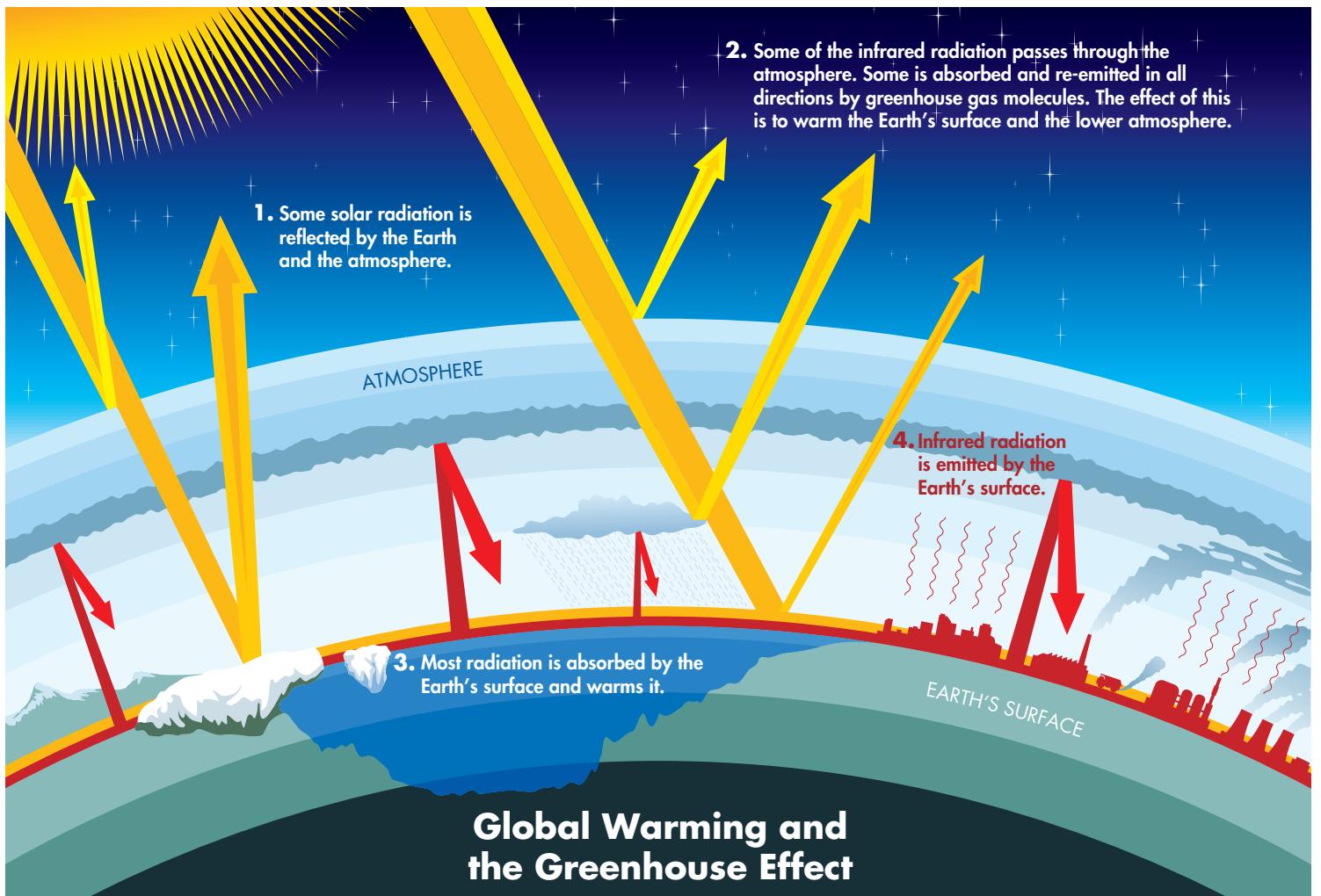
Santa Clara Valley
Water District



Climate Change Overview

Santa Clara Valley Water District's
Response to Climate Change





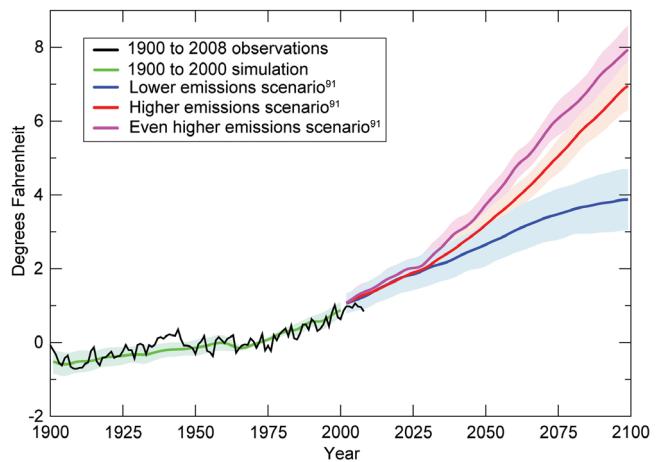
Global Warming overview

Global warming is caused by a phenomenon known as the greenhouse effect, which slowly warms the planet. The greenhouse effect is caused by an increase in the quantity of certain atmospheric gases, most notably carbon dioxide (CO₂), which reduce the ability of heat to escape from the atmosphere. These are commonly referred to as greenhouse gases. The earth's average temperature has risen by 1.4° F over the past century, and is projected to rise another 2° F to 11.5° F over the next hundred years. These are average changes over the earth. Local and extreme temperature could be much greater. But even small changes in the average temperature of the planet can translate to large shifts in climate and weather. This is what is referred to as climate change.

What's happening now with climate change

Evidence of climate change is already being observed in California. In the last century, the California coast has seen a sea level rise of almost 8 inches; the average April 1 snow-pack in the Sierra Nevada

region has decreased and was absent for the first time in 2015; and droughts, heat extremes and wildfires are becoming more frequent, longer, and more widespread. There are not clear indications of precipitation trends, but it is likely that precipitation from atmospheric rivers becomes stronger as the oceans and atmosphere warm, allowing clouds to hold more moisture.



Smith et al.⁷²; CMIP3-A⁹³

Observed and projected changes in the global average temperature under three IPCC no-policy emissions scenarios. The shaded areas show the likely ranges while the lines show the central projections from a set of climate models. A wider range of model types shows outcomes from 2 to 11.5°F.⁶⁸ Changes are relative to the 1960-1979 average.

Source: U.S. Global Change Research Program (USGCRP)

Why the water district is concerned

The district's water supply vulnerabilities to climate change include a decrease in imported water supplies as a result of a potential reduction in snow pack and a shift in the timing of runoff, a decrease or change in local surface water supplies as result of reduced precipitation, more frequent and severe droughts, changes in surface water quality associated with changes in flows and temperature, and changes in imported water quality due to warmer conditions and salinity intrusion in the Delta from rising sea levels.

The district's flood protection challenges include the effects of rising sea levels and changes in hydrology, which can occur even as the region heats up or becomes drier. Historic hydrologic patterns are expected to change and extreme weather events, such as storms, are projected to increase in intensity. Extreme weather events and storms present their own challenges for flood protection efforts; but when the potential for increased storm surges or storm severity are combined with the effects of rising sea levels, our flood protection challenges increase.

Climate change also has the potential to affect ecosystems in a variety of ways that could affect the district's progress on water resource management and environmental stewardship. Changes in weather patterns may affect species' natural rhythms, their ability to thrive, and may compromise their ability to compete with invasive species. The local and statewide major die off of trees during the recent drought is an example of what could happen more as the earth warms and climate extremes occur more often.

The water district's board of directors has recognized that climate change not only affects the district's ability to carry out its mission, but that district operations generate, avoid, reduce, and sequester greenhouse gases. In recognizing our part as an energy user and thereby generator of these gases, the water district is working to do its part to reduce them.

What the water district is doing

The district has a wide array of strategies to adapt to and mitigate for climate change. Adaptation is the district's response to the effects of climate change that reduces the vulnerability to our core services. Mitigation is doing our part to lessen the district's contribution to global warming by reducing its greenhouse gas emissions. The water district is monitoring developments in science and regulations and accounts for those when planning projects throughout the district. This will help us adapt and mitigate to help protect our environment and continue to provide safe, clean water to Santa Clara County now and into the future.



Silicon Valley Advanced Water Purification Center



Low-flow aerators, distributed by the water district



Source of imported water — the Delta

Conclusion

Many of the most severe climate challenges are far into the future when compared to our day-to-day operational challenges. However, in meeting the district's mission, "provide Silicon Valley safe, clean water for a healthy life, environment, and economy," the district considers these potential effects in its planning for the future.



Sea level rise increases the potential for flooding and imported water supply impacts.



Shoreline restoration.



Increasing temperatures, more extreme temperatures and more heat waves are a potential result of climate change.



Solar panel canopies at the water district headquarters.



Changing precipitation patterns include potential for more intense storms, or, conversely, less total precipitation.

A photograph of a laptop screen showing the official website of the Santa Clara Valley Water District. The website features a header with the district's name and logo, followed by sections for "PROTECTING YOUR FUTURE.", "Save Water. Save Money.", and "Access Valley Water". The footer contains links to "Board of Directors", "Programs", "News Releases", and "Video Gallery". A person's hands are visible typing on the laptop keyboard.

Contact us

For more information, visit our website at www.valleywater.org and use our **Access Valley Water** customer request and information system. With three easy steps, you can use this service to find out the latest information or to submit questions, complaints or compliments directly to a district staff person.

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