

The San Diego Foundation's Climate Initiative



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The San Diego Foundation's *Climate Initiative*

2050
FOCUS

Work with government, business, and the community at large to advance regional efforts to curb greenhouse gas emissions and reduce our vulnerability to some of the most harmful effects of climate change



Our Partners

Bank of America



Zell Family Foundation

TSX Group, Inc

Platt/Whitelaw Architects, Inc.



Orca, Hervey Family, Beyster Family, Hattie Ettinger Conservation Funds



ENERGY POLICY INITIATIVES CENTER
UNIVERSITY OF SAN DIEGO SCHOOL OF LAW

Climate Change is the challenge of our lifetime



California is on the leading edge of efforts to address climate change

1. Global Warming Solutions Act and related legislation
2. Implications for local governments

With climate change, there are two fundamental issues for cities to address...

1. Greenhouse gas emissions

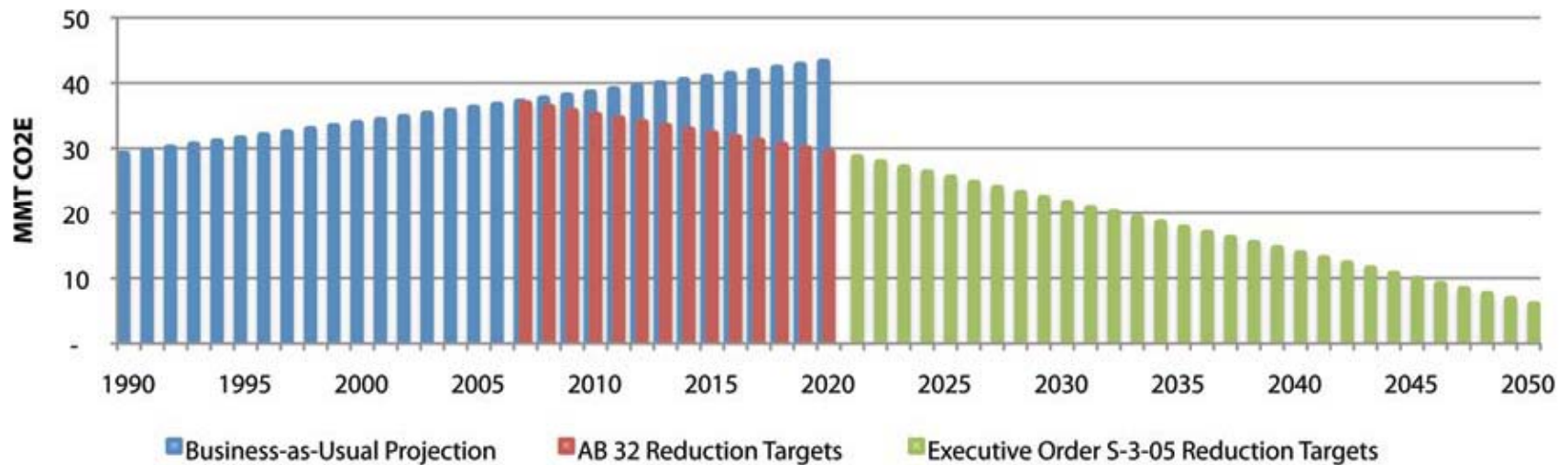
 mitigation strategies

2. Climate change impacts

 adaptation strategies

Our region's "Carbon Footprint" and reduction mandates

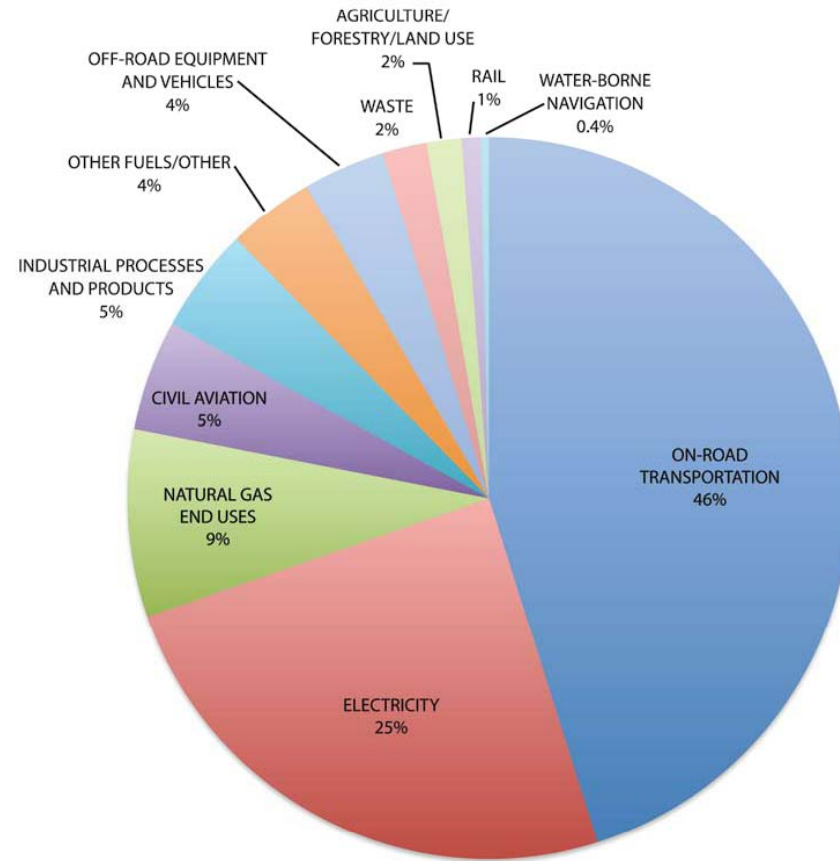
Figure 13. Theoretical GHG Reduction Targets for San Diego County



Source: www.sandiego.edu/epic/ghginventory

Mitigation Strategies

Figure 6. San Diego County GHG Emissions by Category (2006)



Source: www.sandiego.edu/epic/ghginventory

San Diego: Uniquely at risk

- Enviably mild climate
- 70 miles of coastline
- Exceptional combination of beaches, canyons, mountains, & deserts
- Unique hot-spot for biodiversity, with many already threatened species
- Severe existing wildfire conditions
- International border with Tijuana
- Reliance on imports for up to 95% of our water needs



Focus 2050 Study

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Primary Question:

What will our region look like in 2050 due to climate change, if current trends continue?

(King County model)

- To understand the unknown costs and risks associated with a changing climate
- To build sense of urgency around agreed upon set of facts



The San Diego Foundation.

Climate Initiative

Approach

Disaggregate California Data & Trends to County Level

Topics Addressed

Climate change

Sea level rise

transportation

Water

Public health

Electricity

Land use &

Wildfires

Biodiversity & habitat

Contributing Organizations Include

*UCSD, SDSU, USD, UCSB, UCR
Conservation Biology Institute
County of San Diego departments
San Diego County Water Authority
SD Natural History Museum
CA Center for Sustainable Energy*

*Scripps Institute for Oceanography
SANDAG
U.S. Geological Survey
CA Center for Sustainable Energy
SAIC
Zoological Society of San Diego*

Key Findings

If current trends continue, by 2050....

San Diego's climate will be hotter and drier.

The sea level will be up to 18 inches higher.

We will face a severe water shortage.

Wildfires will be more frequent and intense.

We will not be able to meet our energy needs.

Native plant & animal species will be lost.

Public health will be at risk, especially among the elderly & children.

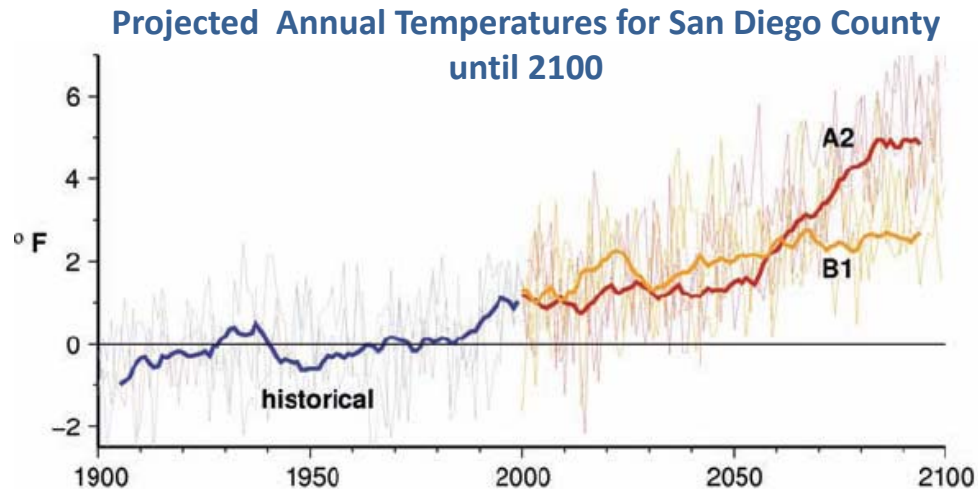




Regional Climate Change

**Average annual temperatures will be between
1.5 & 4.5°F higher by 2050**

- Early November will “feel” like September currently does.
- Our region will become even more vulnerable to drought.



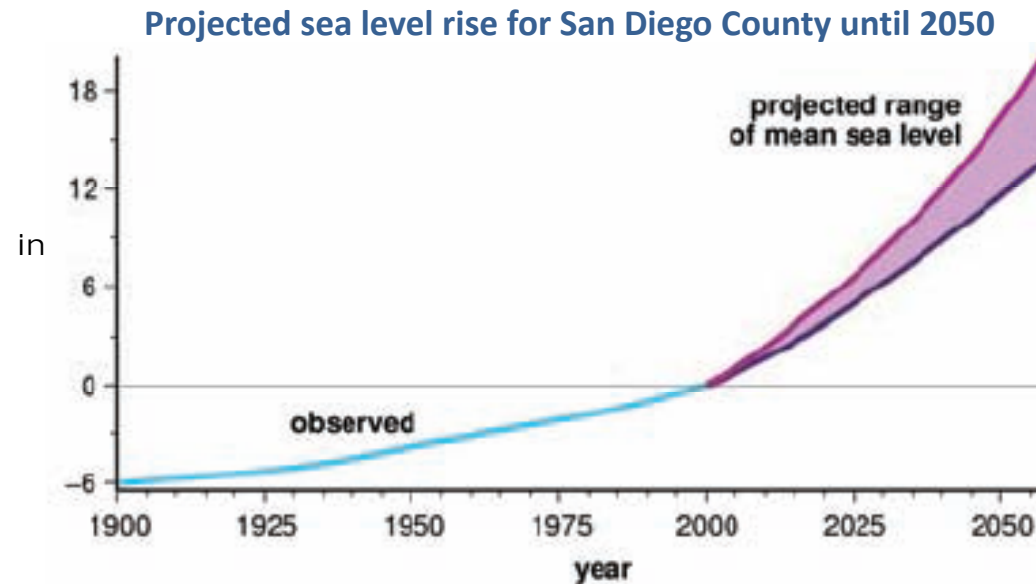
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Sea Level Rise

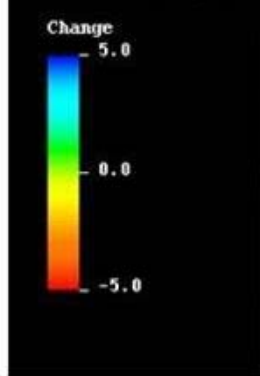
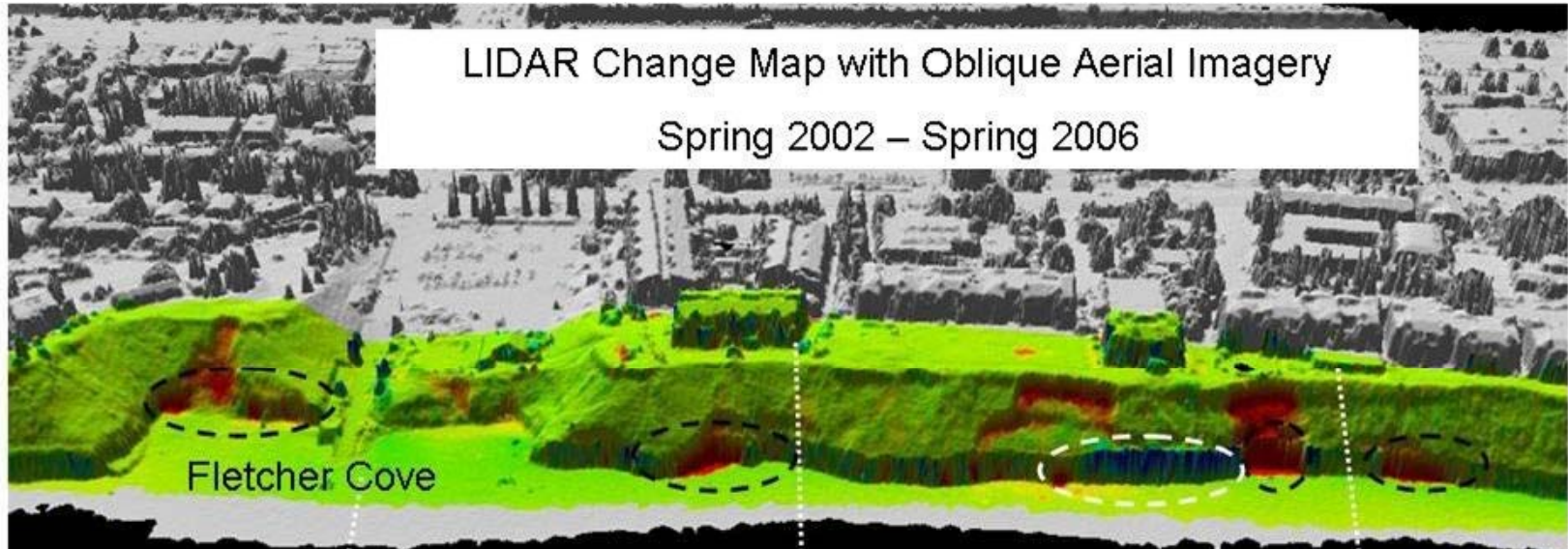
Sea level is projected to rise by as much as 18 inches

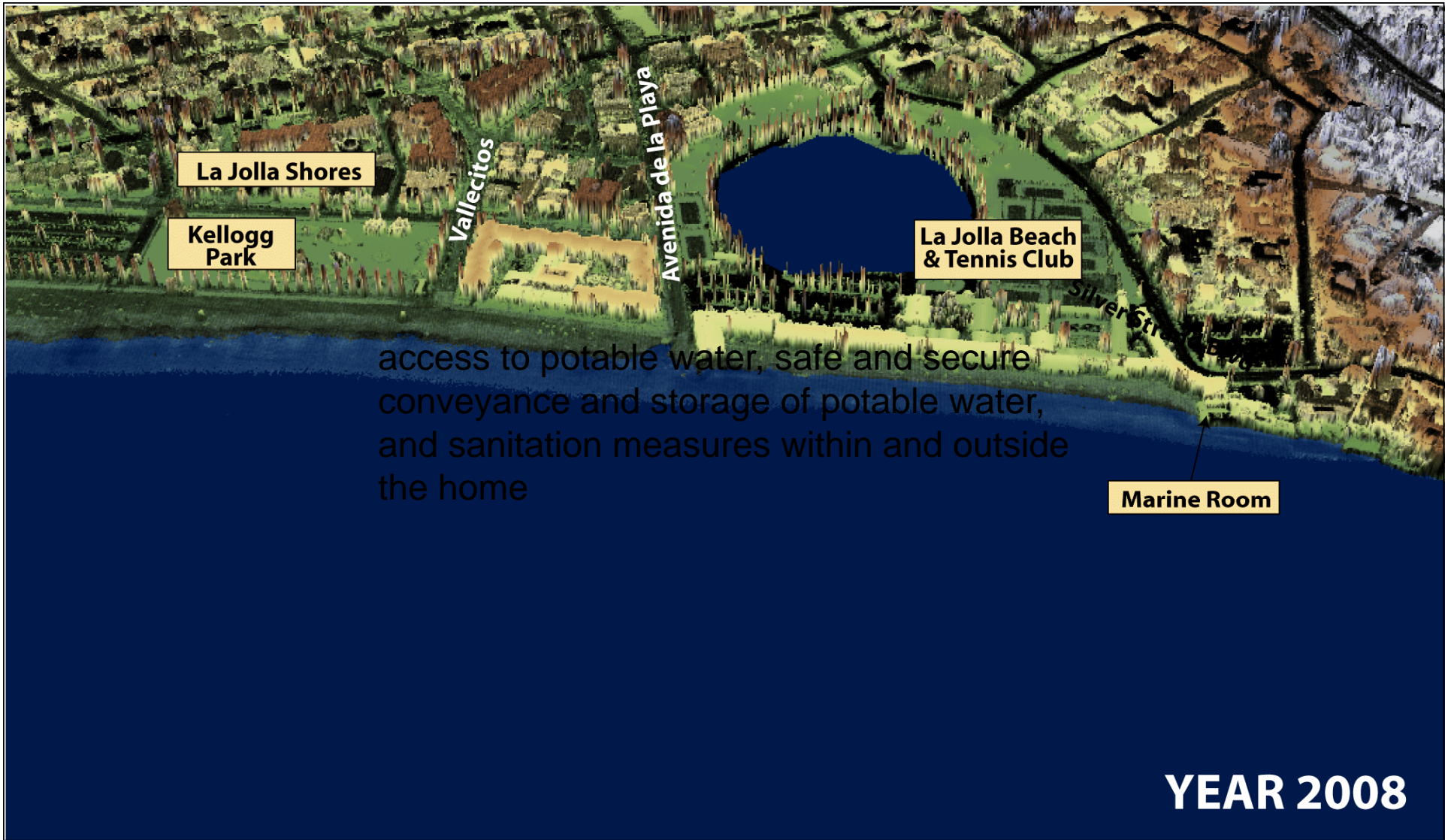
This, combined with tidal and storm surges, will cause harm or loss of our sandy beach areas, wetlands, coastal commercial, municipal, & residential properties



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LIDAR Change Map with Oblique Aerial Imagery
Spring 2002 – Spring 2006





access to potable water, safe and secure conveyance and storage of potable water, and sanitation measures within and outside the home

YEAR 2008

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Water

Despite plans for water conservation, desalinization, and recycling, demand for fresh water will outstrip supply by 2050.

There will be growing potential for conflicts among multiple users.



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Ecosystems

Plant and animal habitats in San Diego will be increasingly threatened due to

- climate change too rapid for some species to adapt
- increased wildfires & more intense droughts
- habitat fragmentation and urban sprawl



The southern Sagebrush Lizard is found only at elevations above 5,000 ft. With already reduced populations, they may disappear from local mountains that "top out" at 6,000 feet if temperatures continue to rise.



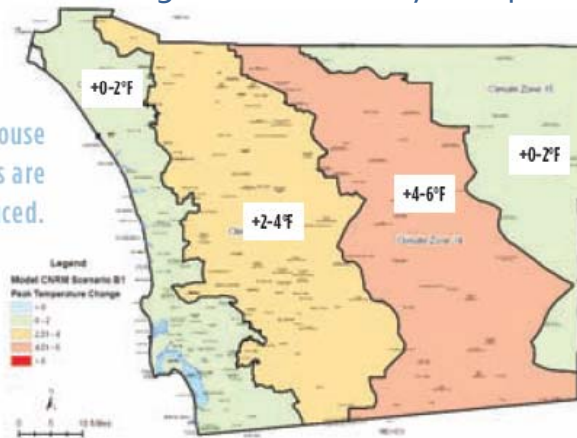
Electricity

Managing regional energy demand will be even more challenging by 2050

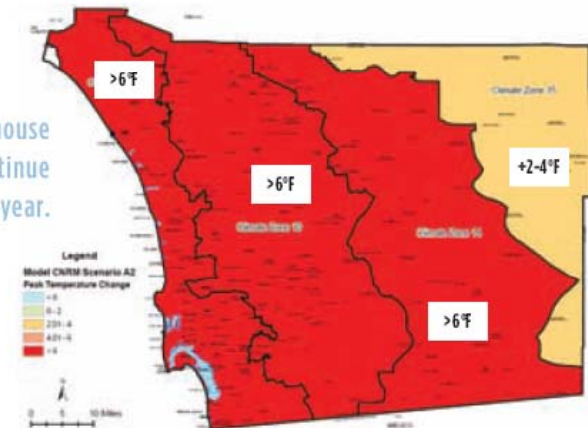
Peak electricity demand will increase by over 70% with warmer temperatures causing about 7%.

Projected change in summer daytime peak temperatures in San Diego County in the year 2050

If global greenhouse gas emissions are sharply reduced.



If global greenhouse gas emissions continue to increase every year.



What Planners Can Do for Adaptation

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Water

- Water districts can modify water rates and use incentives to further encourage water conservation and discourage water waste
- Water managers can invest in expanded water reuse, efficiency, creative water transfers, as well as desalination practices that use less energy and minimize harmful impacts to the environment.

Electricity

- Our electric utility can use more “smart grid” technologies, add renewable energy power plants in the San Diego region, and diversify local and renewable energy sources.
- Local governments can revise building codes and provide incentives for green building and more street tree planting.

Wildfires

- Local governments can use building codes to require the use of fire-resistant building design, materials and landscaping.
- Local governments may also consider prohibiting development in fire-prone areas.
- Conservation professionals can manage vegetation in forests to reduce fire intensity and potential ignition sources while protecting critical habitats for native plants and animals.

What Planners Can Do for Adaptation

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Land Use Planning

- Regional planning and transportation agencies can improve the connectivity of our transit systems so that people are able to rely on public transportation and drive less.
- Cities can grow responsibly by implementing “smart growth” and “active transportation” principles to make communities more walkable, compact and climate friendly.

Coastal Management

- Coastal managers can build natural buffers to protect our coastline and let beaches move inland over time.
- Local governments can incorporate sea level rise into community planning and structural design requirements to protect coastal property and infrastructure in flood hazard areas.

Public Health

- Public health planners can improve early warning systems during heat waves, provide more access to cooling centers and public swimming pools, and plant shade trees in our cities.
- Public health practitioners can expand disease monitoring, educate the public on preventing the spread of disease, and improve emergency response for disease outbreaks.

What The San Diego Foundation Can Do to Advance Local Planning for Climate Action

- Technical Assistance
- Climate Fellows
- Information & Research
- Networking
- Coordinate Disparate Resources



Please visit www.sdfoundation.org for the full text of this report