SAN DIEGO COASTKEEPER

Happy *Earth* Hour

Equity, Infrastructure, and Climate Change, Oh My!

Last time on Happy Earth Hour....

- San Diego's water supply, managed by the SDCWA, comes from a variety of different sources that are vulnerable to climate change.

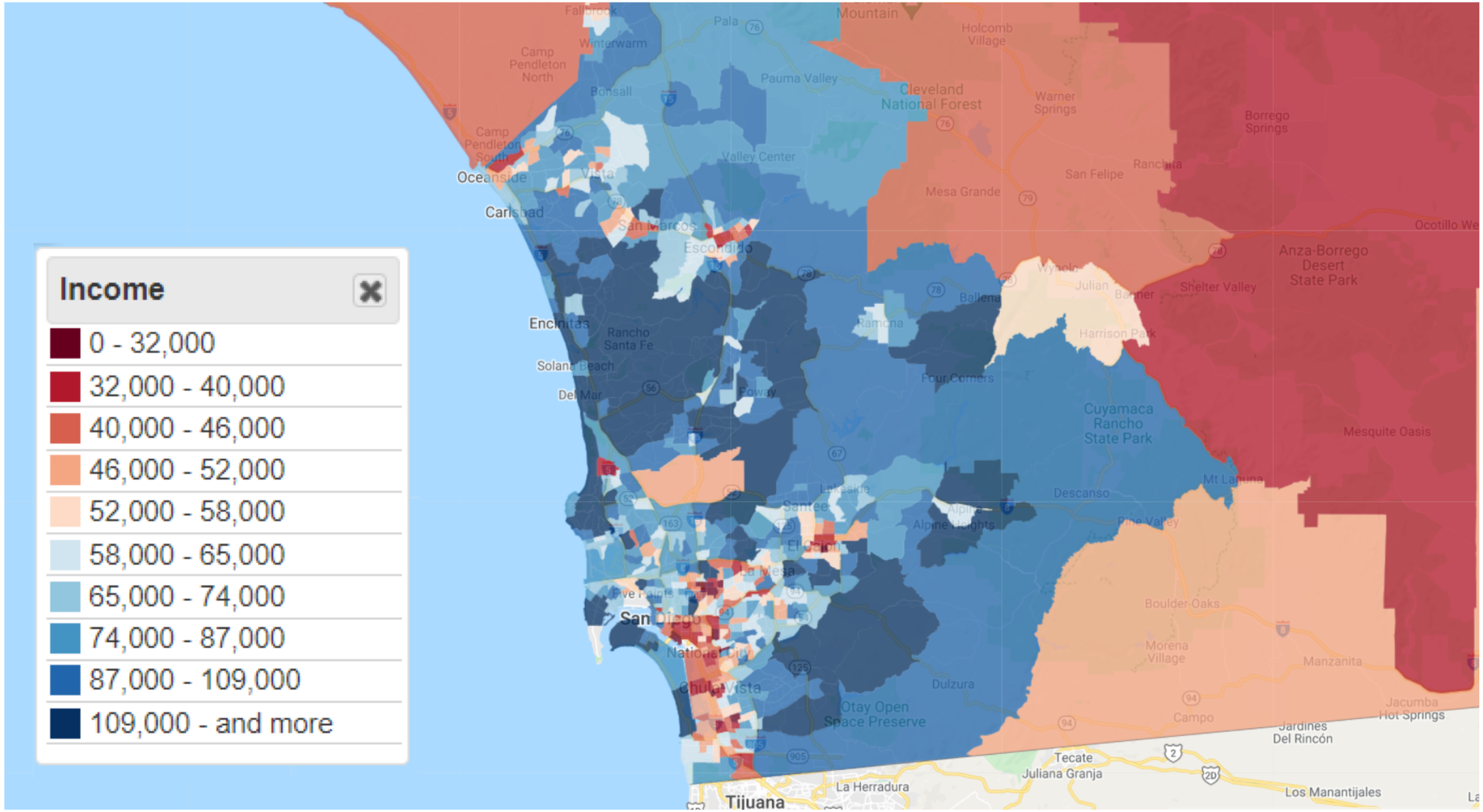
- We are at the end of the water pipeline, so once we use the water it is flushed out to the ocean (sometimes untreated!)

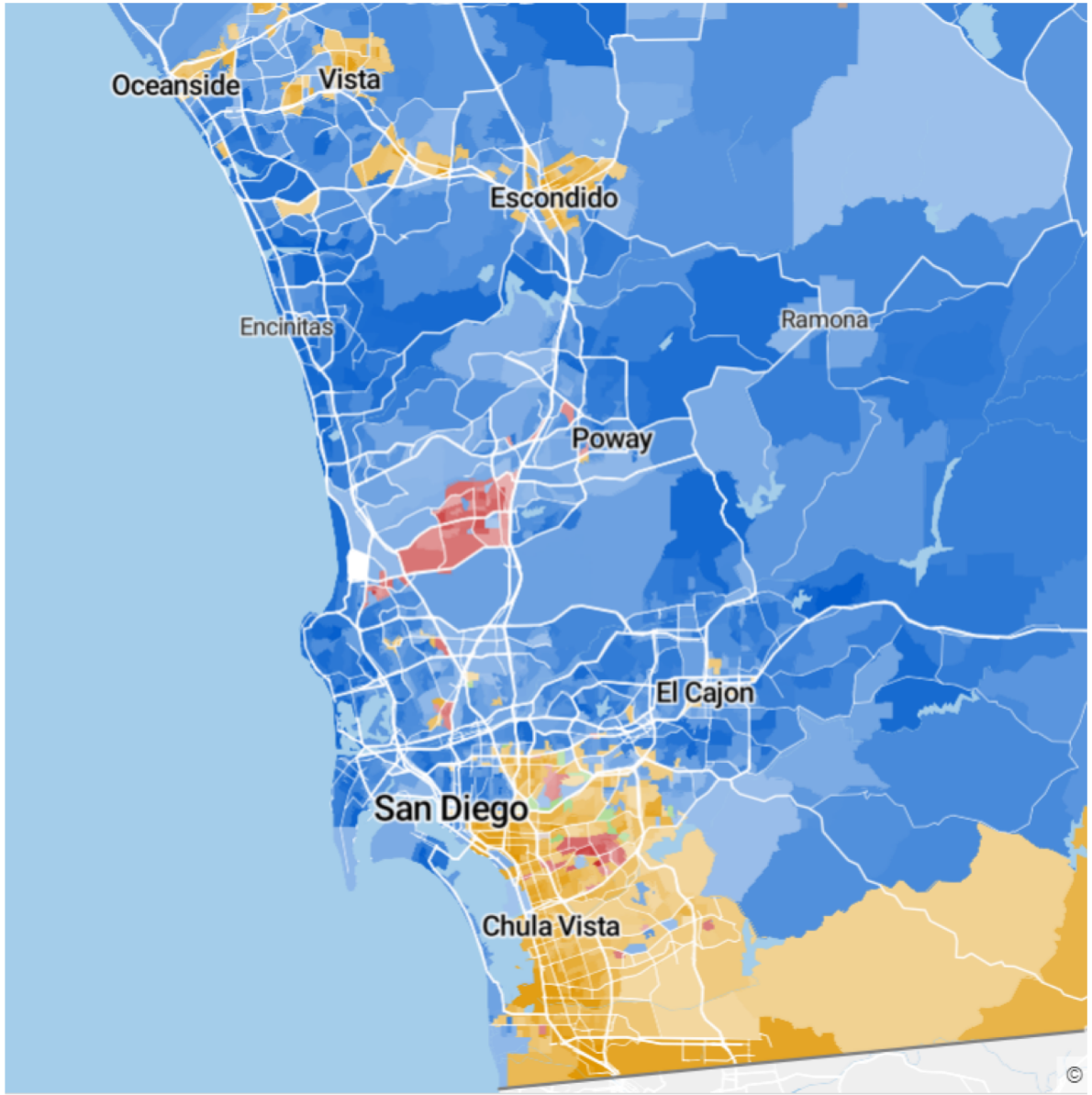
- Poor management of water can leave San Diegans vulnerable to flooding, polluted coastal waters, unsafe drinking water, and more!

U.S. Water Alliance's Pillars of Water Equity

- Have access to safe, clean, affordable water and wastewater services.
- Share in the economic, social, and environmental benefits of water systems.
- Are resilient in the face of floods, drought, and other climate risks.

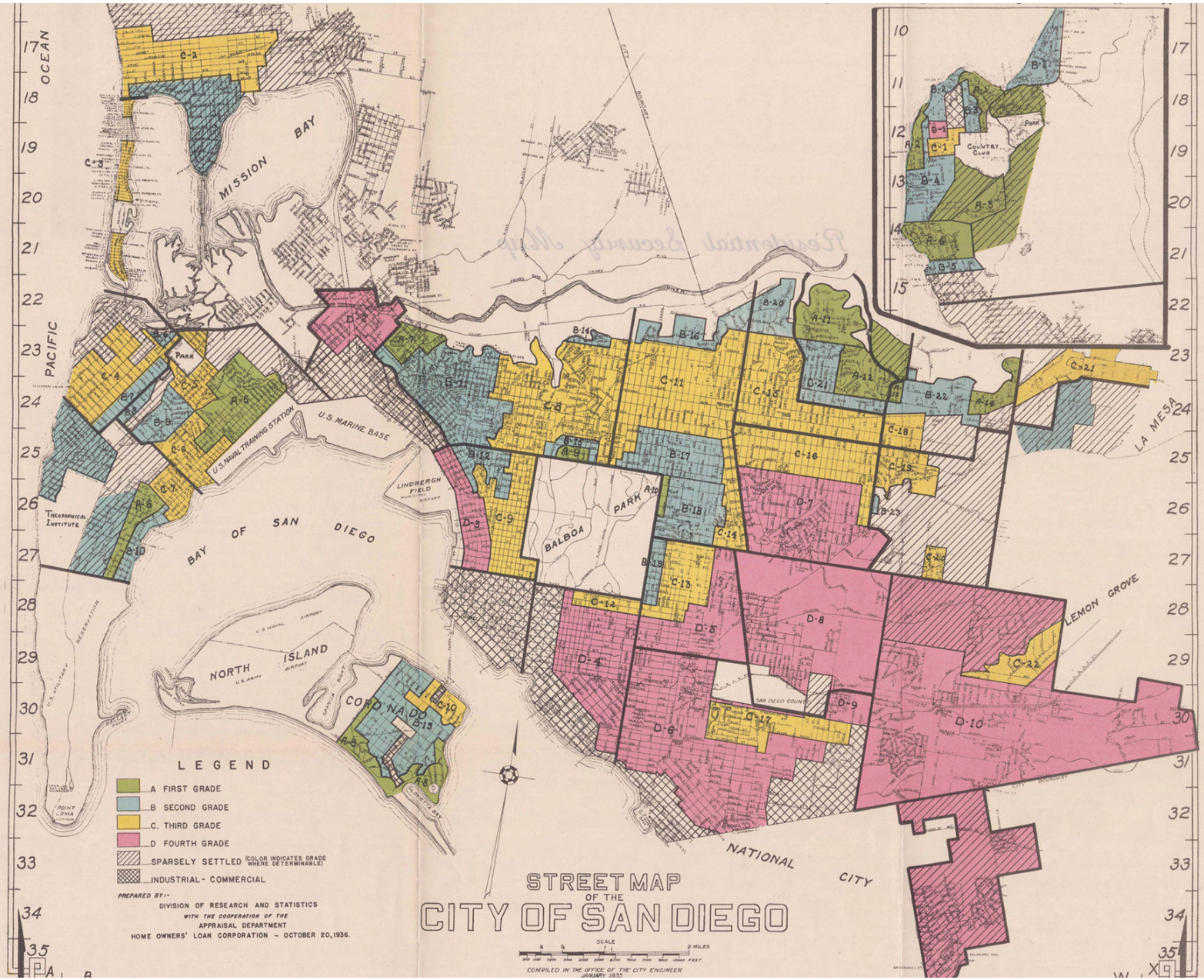
Source: U.S. Water Alliance


Income
0 - 32,000
32,000 - 40,000
40,000 - 46,000
46,000 - 52,000
52,000 - 58,000
58,000 - 65,000
65,000 - 74,000
74,000 - 87,000
87,000 - 109,000
109,000 - and more
Fallbrook
Pala
Mountain
Holcomb Village
Camp Pendleton North
Winterwarm
Pauma Valley
Cleveland National Forest
Warner Springs
Borrego Springs
Bonsall
Camp Pendleton South
Valley Center
Vista
Oceanside
San Felipe
Ranchita
Mesa Grande
Carlsbad
San Marcos
Escondido
Ocotillo We
Anza-Borrego Desert State Park
Wynola
Julian
Shelter Valley
Ballena
Ramona
Encinitas
Rancho Santa Fe
Harrison Park
Solana Beach
Four Corners
Del Mar
Poway
Cuyamaca Rancho State Park
Mesquite Oasis
Lakeside
Descanso
Mt Laguna
Santee
Alpine
Alpine Heights
Pine Valley
El Cajon
La Mesa
Five Points
Boulder Oaks
San Diego
Morena Village
National City
Manzanita
Chula Vista
Dulzura
Otay Open Space Preserve
Campo
Jacumba Hot Springs
Jardines Del Rincón
Tecate
Juliana Granja
La Herradura
Los Manantijales
Tijuana



Majority Race Key

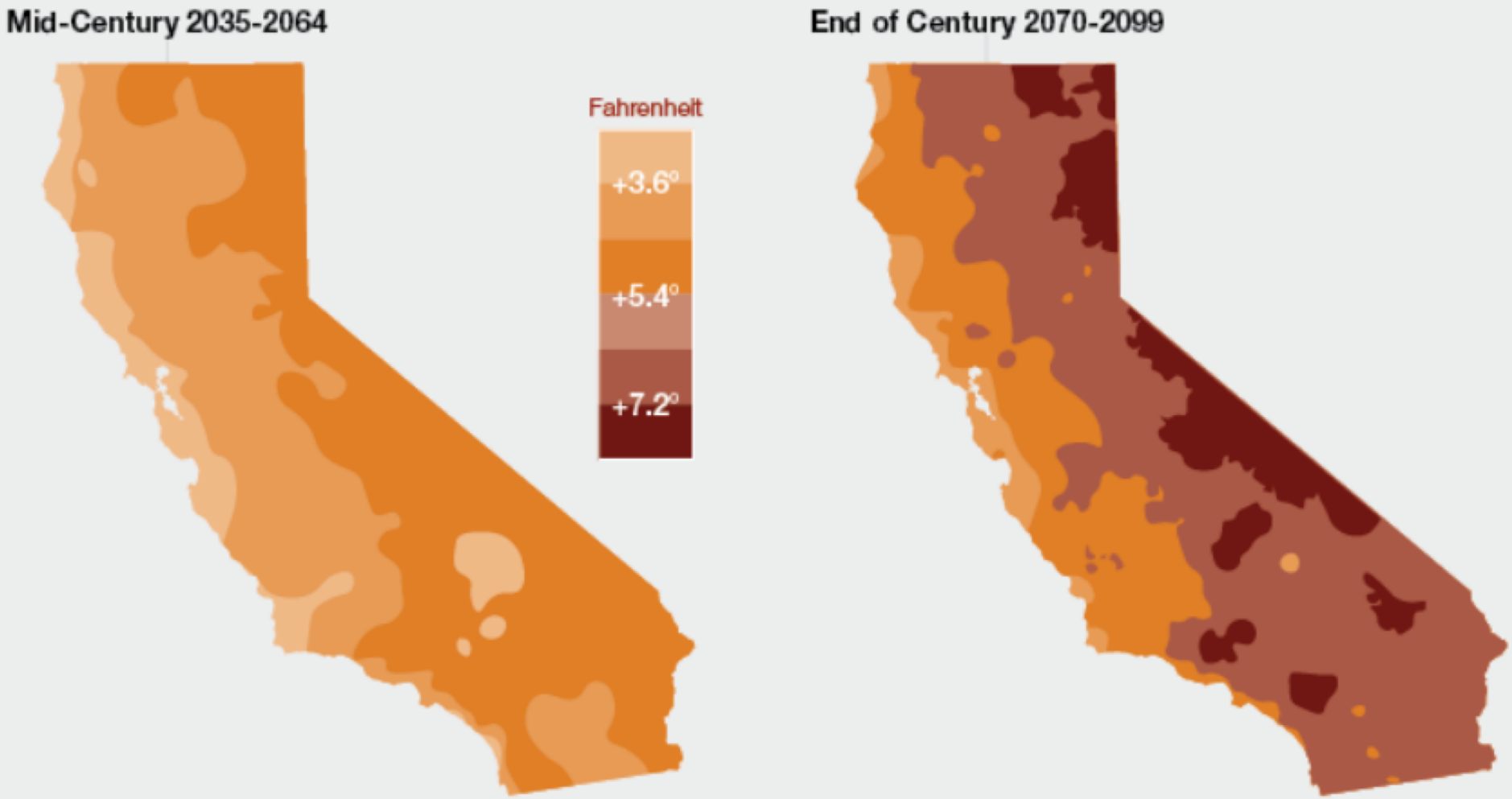
White	Hispanic	Black	Asian	Multiple/Other


OCEAN
PACIFIC
MISSION BAY
PARK
U.S. NAVAL TRAINING STATION
U.S. MARINE BASE
LINDBERGH FIELD
BAY OF SAN DIEGO
BALBOA PARK
THEOSOPHICAL INSTITUTE
U.S. NAVAL AIRPORT
NORTH ISLAND
U.S. ARMY
U.S. MILITARY RESERVATION
POINT LOMA
CORONADO
LA MESA
LEMON GROVE
NATIONAL CITY
SAN DIEGO COUNTY
COUNTRY CLUB
LEGEND
A FIRST GRADE
B SECOND GRADE
C. THIRD GRADE
D FOURTH GRADE
SPARSELY SETTLED (COLOR INDICATES GRADE WHERE DETERMINABLE)
INDUSTRIAL - COMMERCIAL
PREPARED BY:-
DIVISION OF RESEARCH AND STATISTICS
WITH THE COOPERATION OF THE
APPRAISAL DEPARTMENT
HOME OWNERS' LOAN CORPORATION - OCTOBER 20, 1936.
STREET MAP
OF THE
CITY OF SAN DIEGO
SCALE
2 MILES
COMPILED IN THE OFFICE OF THE CITY ENGINEER
JANUARY 1935


THE
Has Been E
RESIDENCE PURPOSES ONLY
NO BUSINESS, FLATS, APARTMENTS OR FACTORIES
NO FENCES OR HEDGES OVER 30 IN. HIGH
San Diego's
Most Sel
Resi
Inspect the Tract ar
RESTRICTED TO
CAUCASIAN
RACE
STREET MAP
OF THE
CITY OF SAN DIEGO

How will climate change affect San Diego's water?

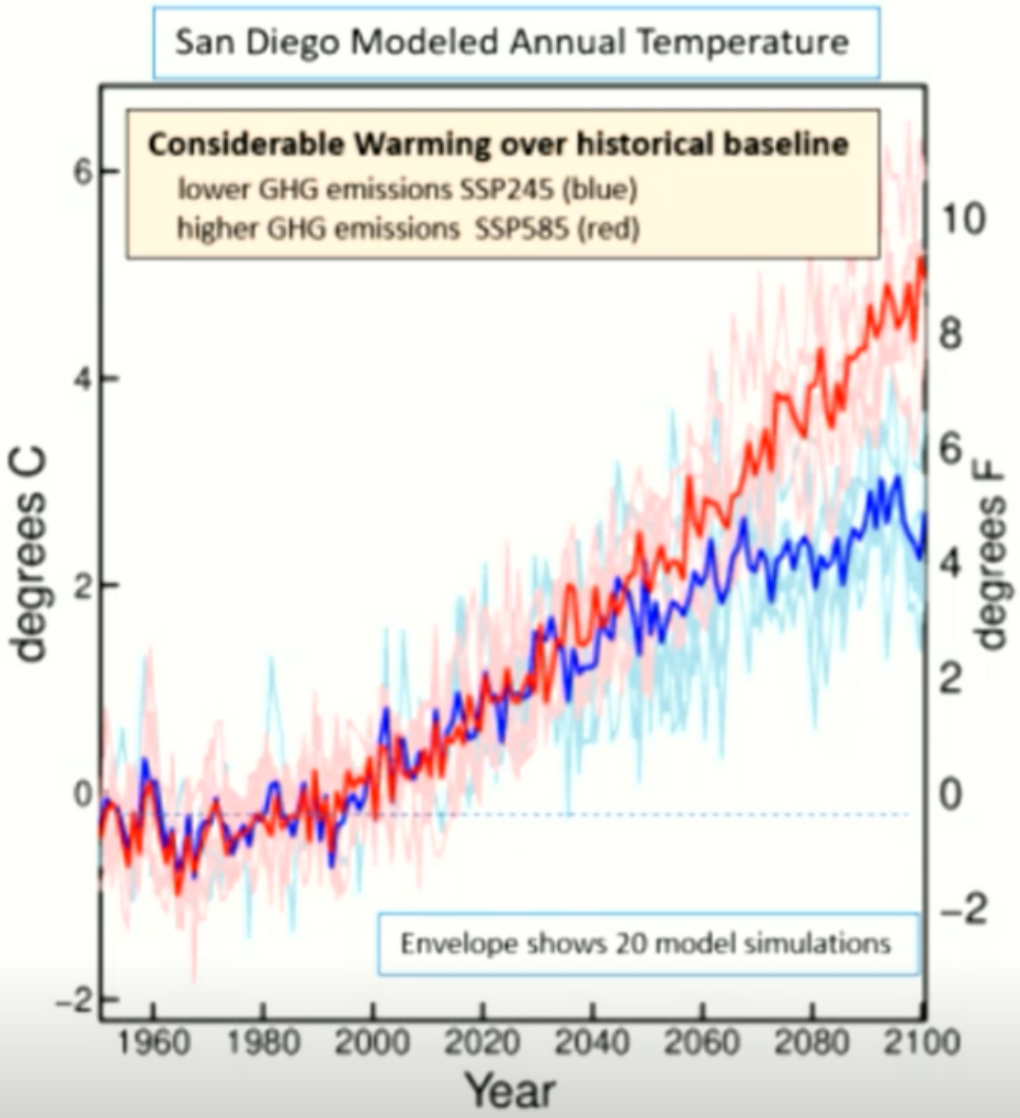
Projected Increases in Statewide Average Maximum Temperatures



Reflects changes from historical baseline 30-year average maximum temperatures (1961-1990). These estimates assume the moderate climate change scenario of "RCP 4.5," in which international practices result in the rate of worldwide greenhouse gas emissions slowly declining in the coming decades.

Data from www.Cal-Adapt.org

LAO

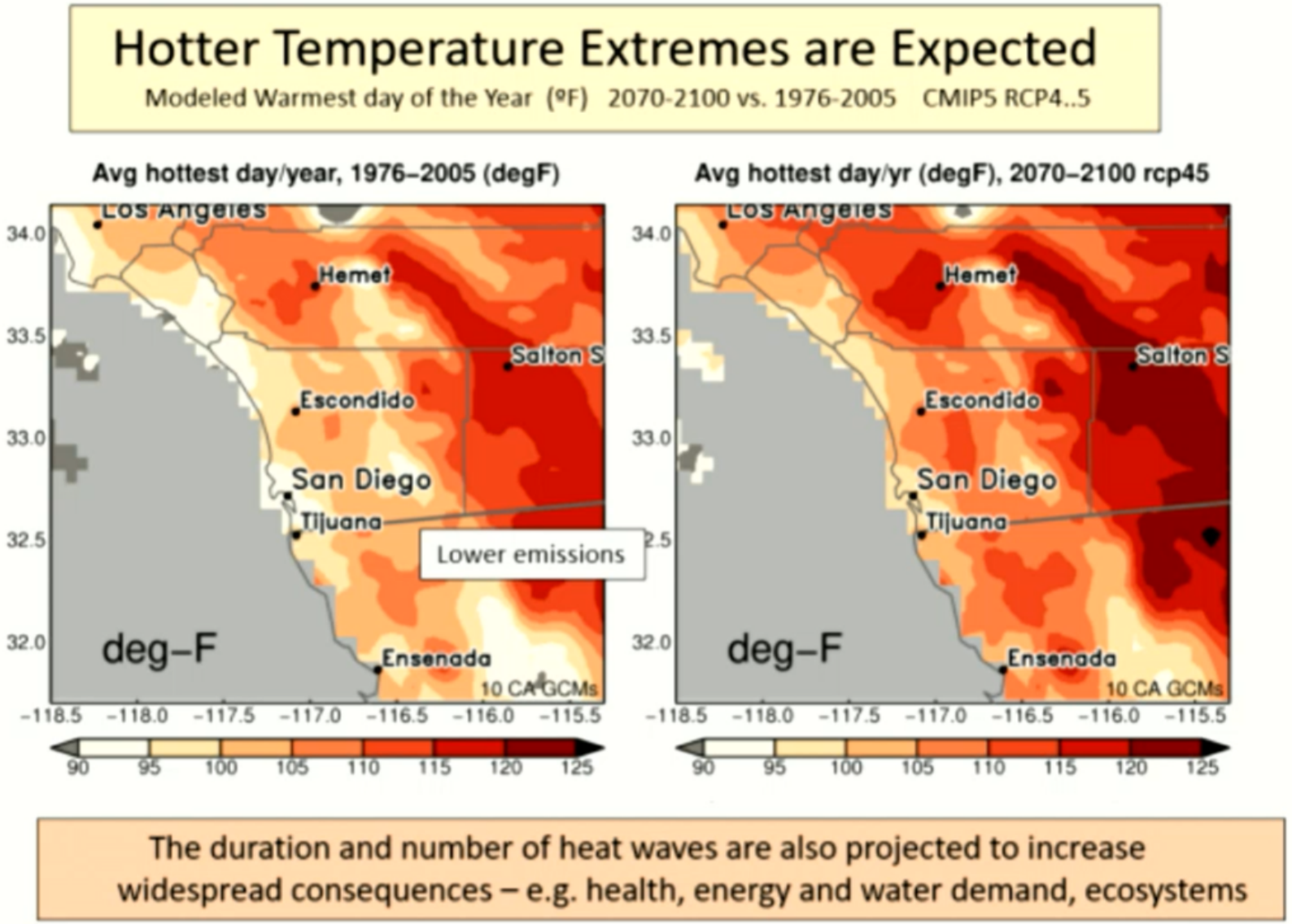


Projected Warming CMIP6 models

- *Because of greenhouse gas build-up, Earth is warming and committed to further warming and climate change*
- *We are observing early phase of warming*
- *Amount of future warming depends on greenhouse gas emissions*
- *Along coastal margin, warming will likely be less than inland because ocean buffers temperature rise*
- *First look: New CMIP6 global climate models produce similar but somewhat greater warming than those from CMIP5 (2015) era*

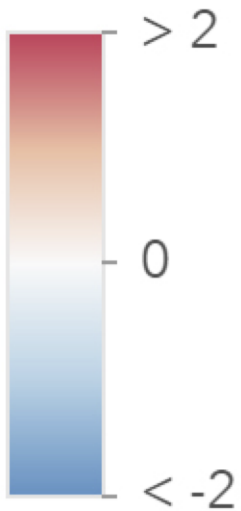
Source: Scripps Institution of Oceanography

- Extreme hot days will be even hotter
- Duration and number of heat waves will increase
- Drier spring & summer -> lengthens fire season.
- Rainfall: fewer, but larger and flashier, monsoon-type storms -> flooding
- Increased volatility of rainfall from year to year
- Region to become more arid, moisture deficit, impacts landscapes & demand



Source: Scripps Institution of Oceanography

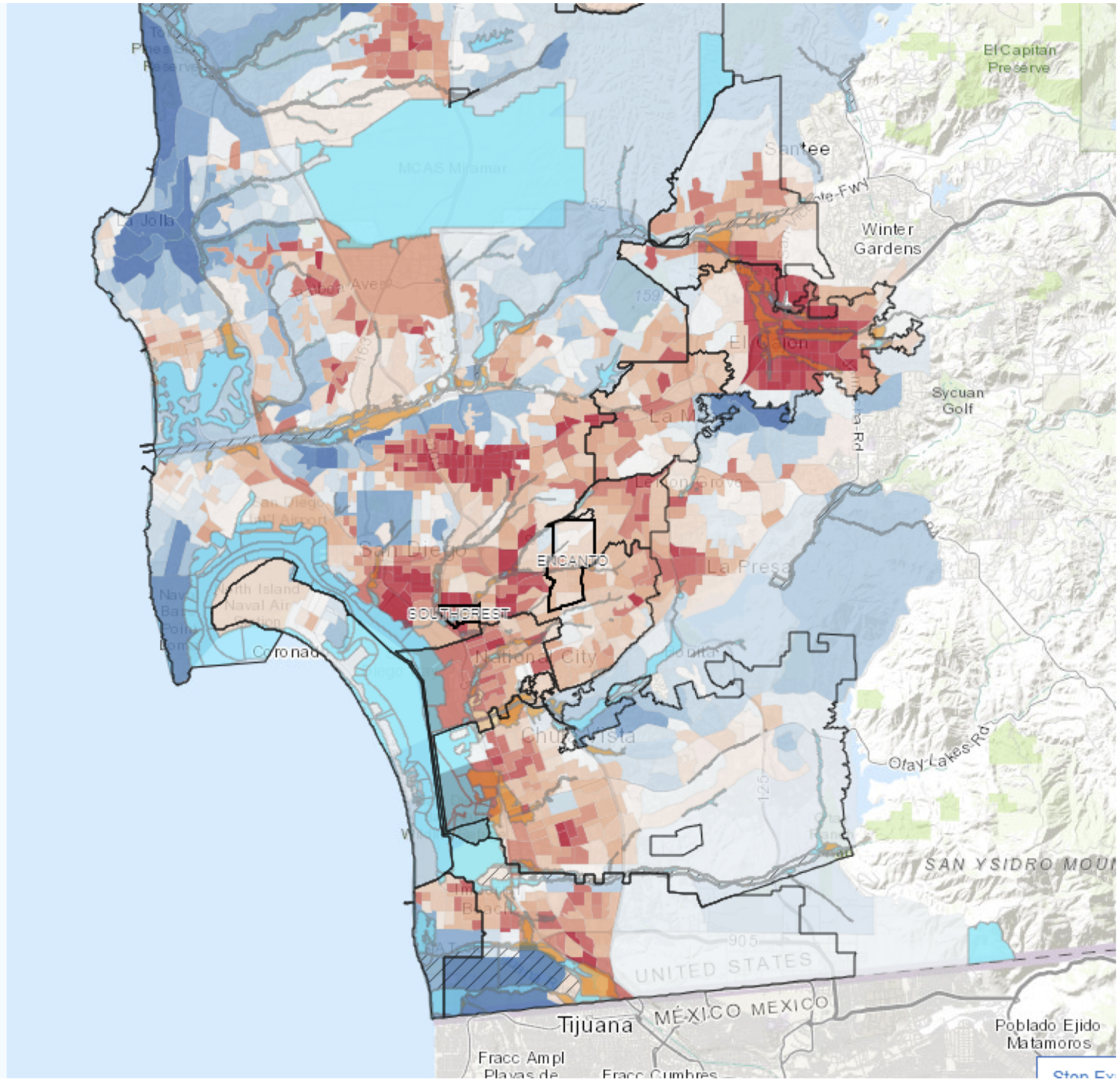
Heat Vulnerability Index

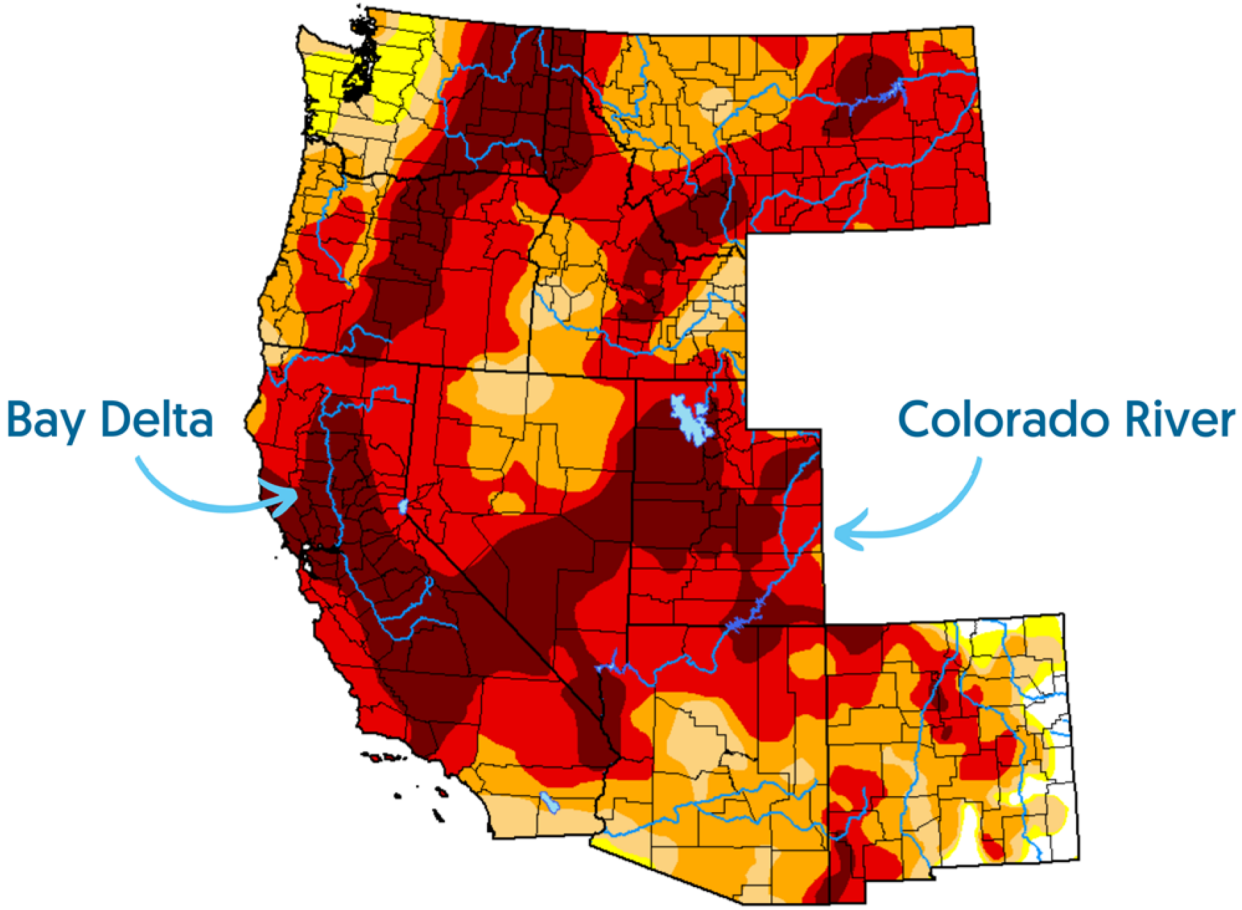


HVI scores are on a scale from -4 to 4. A hypothetical score of 4 would mean the area in question had the most vulnerable score in all four of the categories from which the index is constructed.

Flood Hazard Zones (FEMA 2020)

- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- 1.0 PCT ANNUAL CHANCE FLOOD HAZARD
- AREA WITH REDUCED FLOOD RISK DUE TO LEVEE
- FLOODWAY





Current Drought

San Diego imports **70 percent** of our water supply from the Colorado River and the Sierra Nevada.

These regions, including ours, have entered a period of historic drought.

California uses 19% of its electricity for water transport and use.

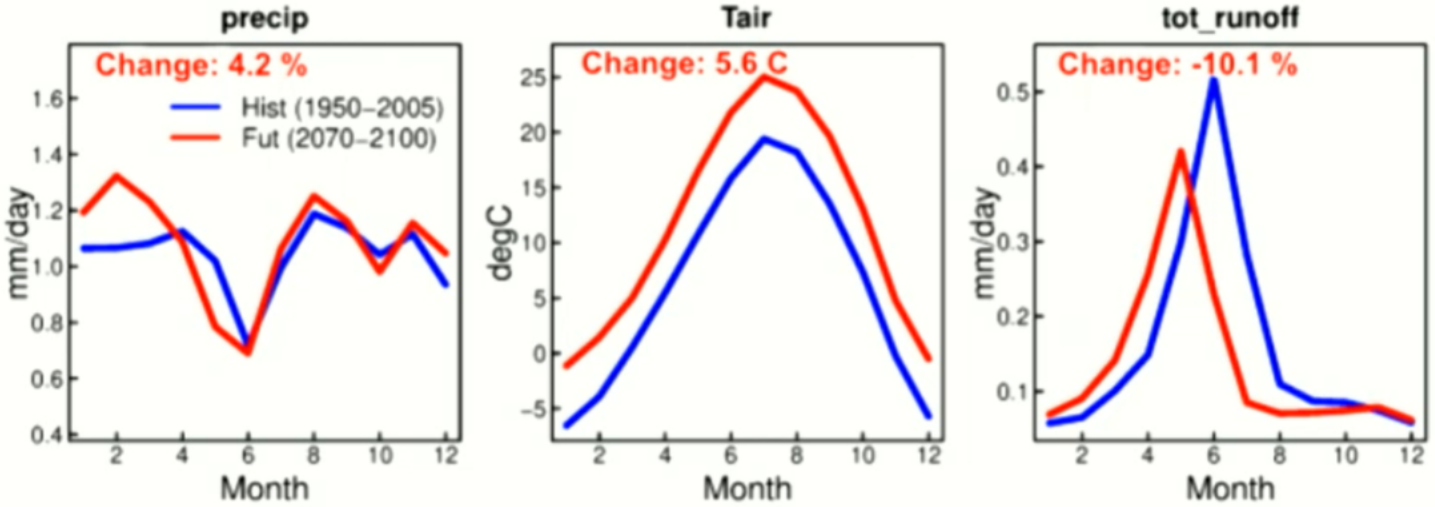
- Negative Feedback loop!

Water Supply and Climate Change

- BY 2070-2100:
- 10-20% reduction in Colorado River Supplies
  - 40 Million people
- Sierra snowpack to decline 50%, “optimistically”, and could be considerably more.
- With warming: greater wintertime flows, loess springs and summer runoff.

Projected change in Upper Colorado Basin annual cycle

RCP 8.5 2070-2100 (w.r.t 1950-2005)



- Wetter in winter, drier in spring
- Strong year-round warming, somewhat more in summer (5.6 C = 10 F)
- Runoff shifts ~1 month earlier, reduces about 10% (big increases in April, declines in July)

Source: Scripps Institution of Oceanography

The California Aqueduct. (Photo: CA State Water Project)

State Water Project Announces 0% Allocation of Requested Water To Districts

We're looking at alternatives seriously now; may see some big advances in water reclamation, desalinization, and even newer agricultural methods

By Evan Symon, December 2, 2021 12:31 pm

The Department of Water Resources (DWR) announced on Wednesday that the initial 2022 State Water Project (SWP) will be at 0% for the first time in state history due to the ongoing drought.

Minerals highlight the high water mark of the Lake Mead reservoir which has fallen to record lows.

John Locher/AP

Regional Conveyance System (RCS)

- SDCWA uses the Colorado River Aqueduct (CRA) to transport water to San Diego.
  - Owned by the Met and costs money to use.
- SDCWA proposed to spend **$5-6 billion** to add another redundant straw in the glass.

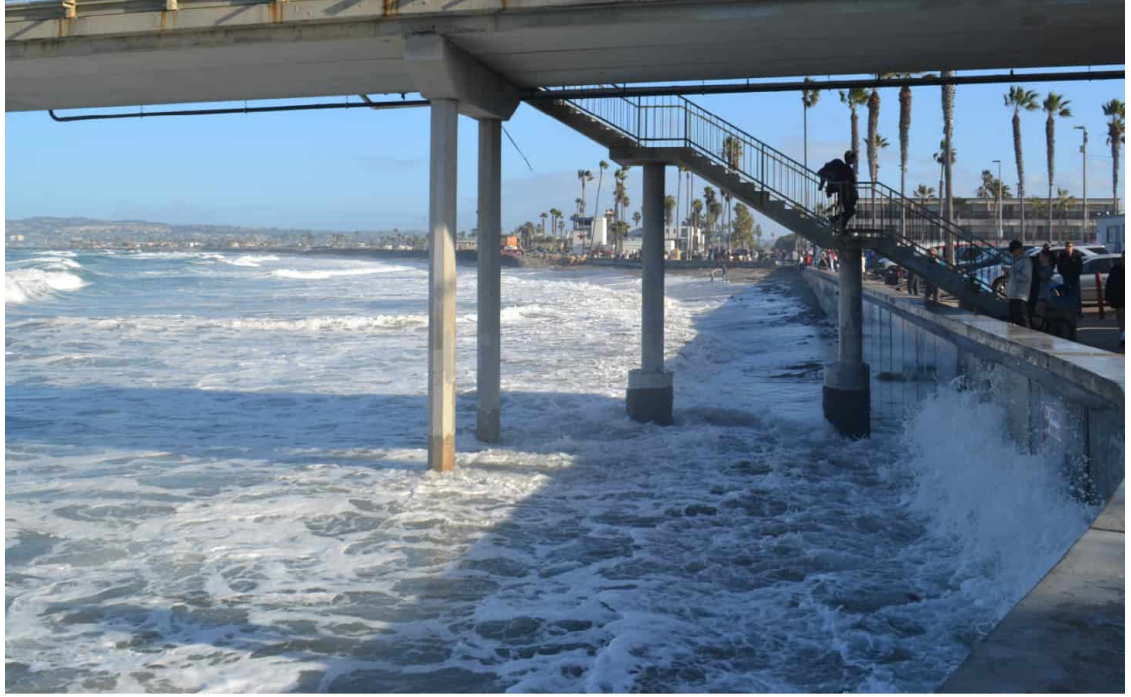
Heavy Rain

Expect heavier and more erratic rainy seasons that will continue to overwhelm our 100-year-old+ infrastructure.

- Increased flooding
- Property damage
- Unsafe drinking water (boil advisories)
- Other infrastructure failures (sinkholes, pipe failures, etc.)

Flooding

High tide flooding days will begin to increase significantly by 2033.



Sea Level Rise

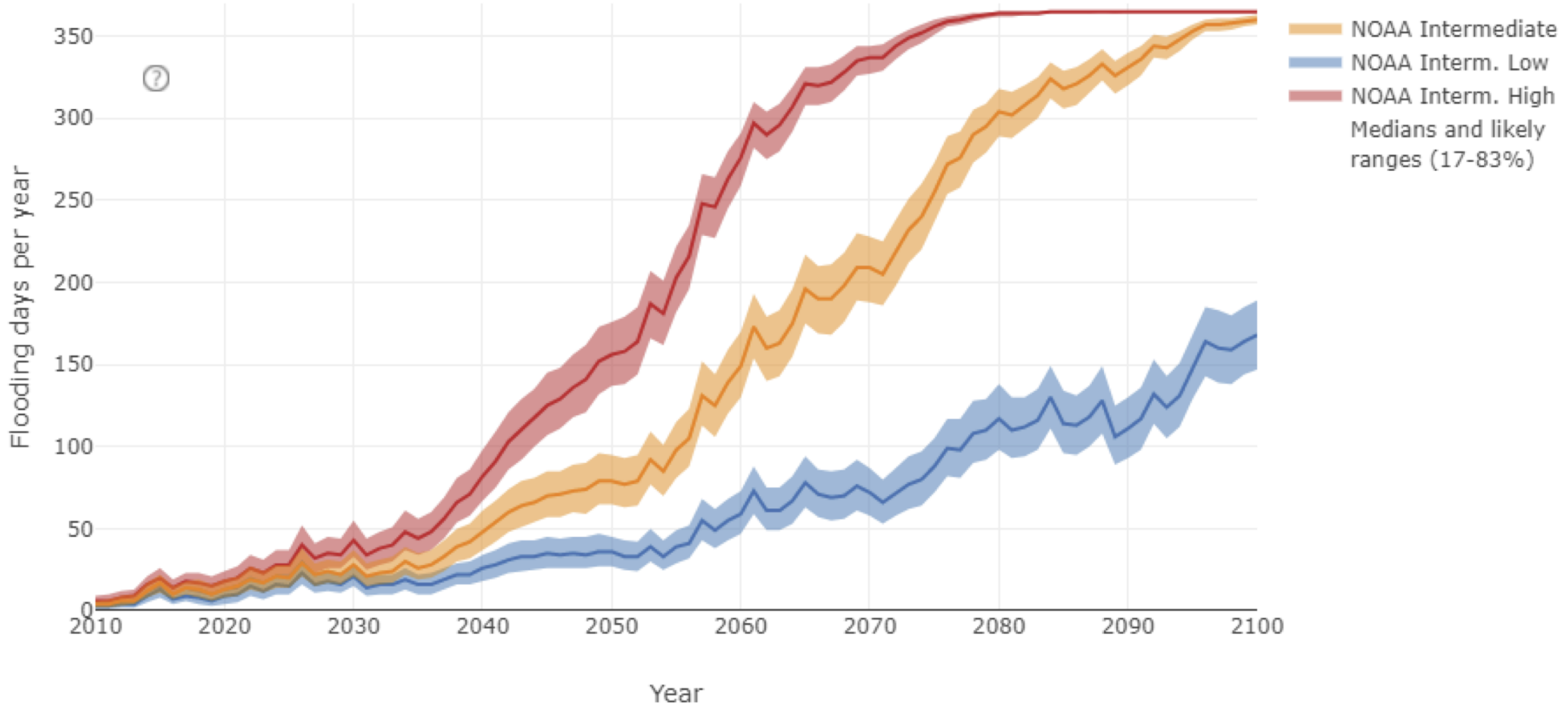
A projected additional 1.3-3.6 feet of sea level rise by 2100.

Flooding days during the 21st century

The graph below shows the number of days per year that sea level in **San Diego, CA** is projected to exceed **57 cm** above MHHW.

▶ **Read more**

Choose the local mean sea level projection(s) to use: NOAA Sea Level Rise Scenarios



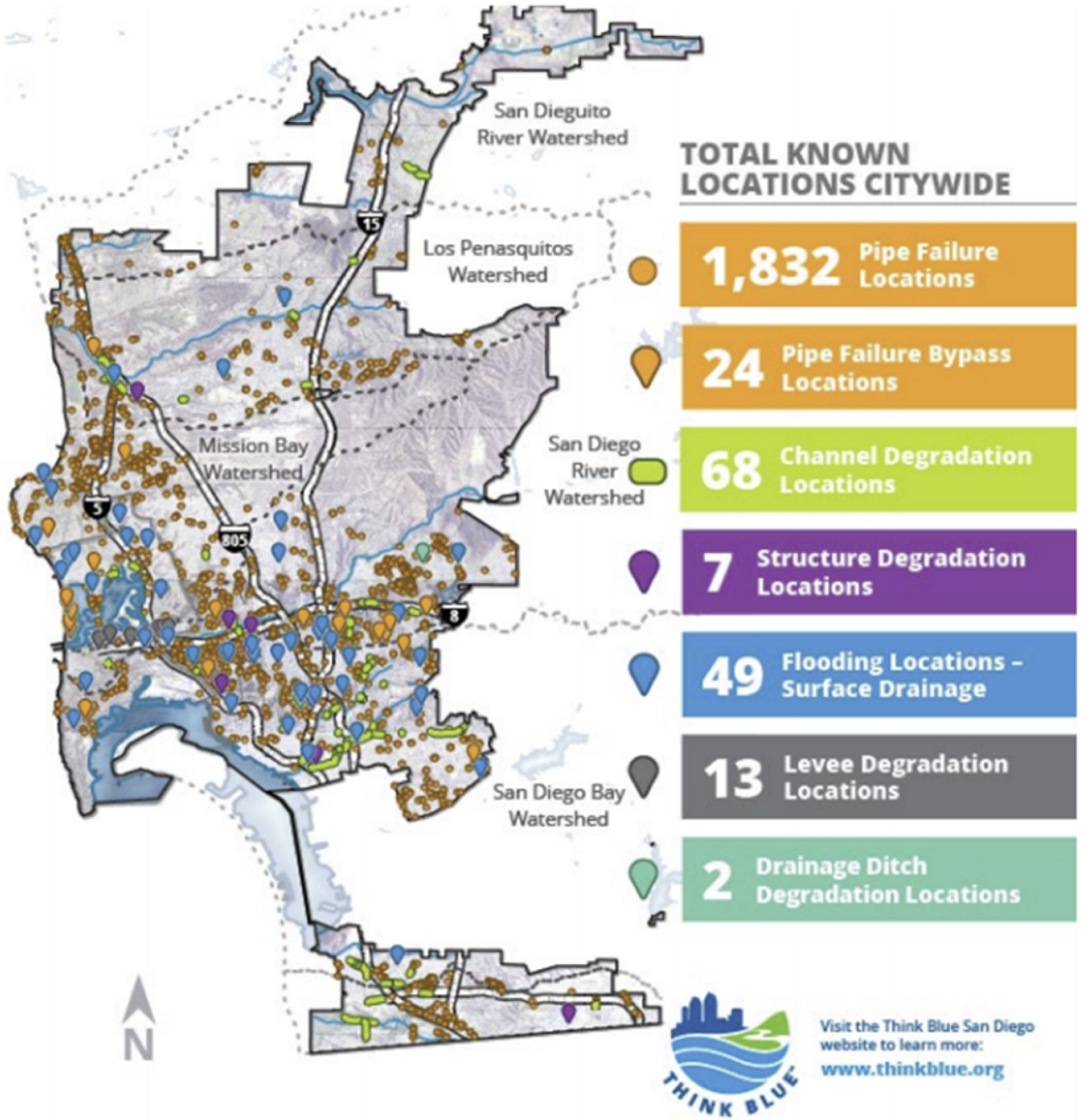


Figure 3-5. FY2021 known stormwater failure or degradation locations identified as part of the annual community flood risk assessment.

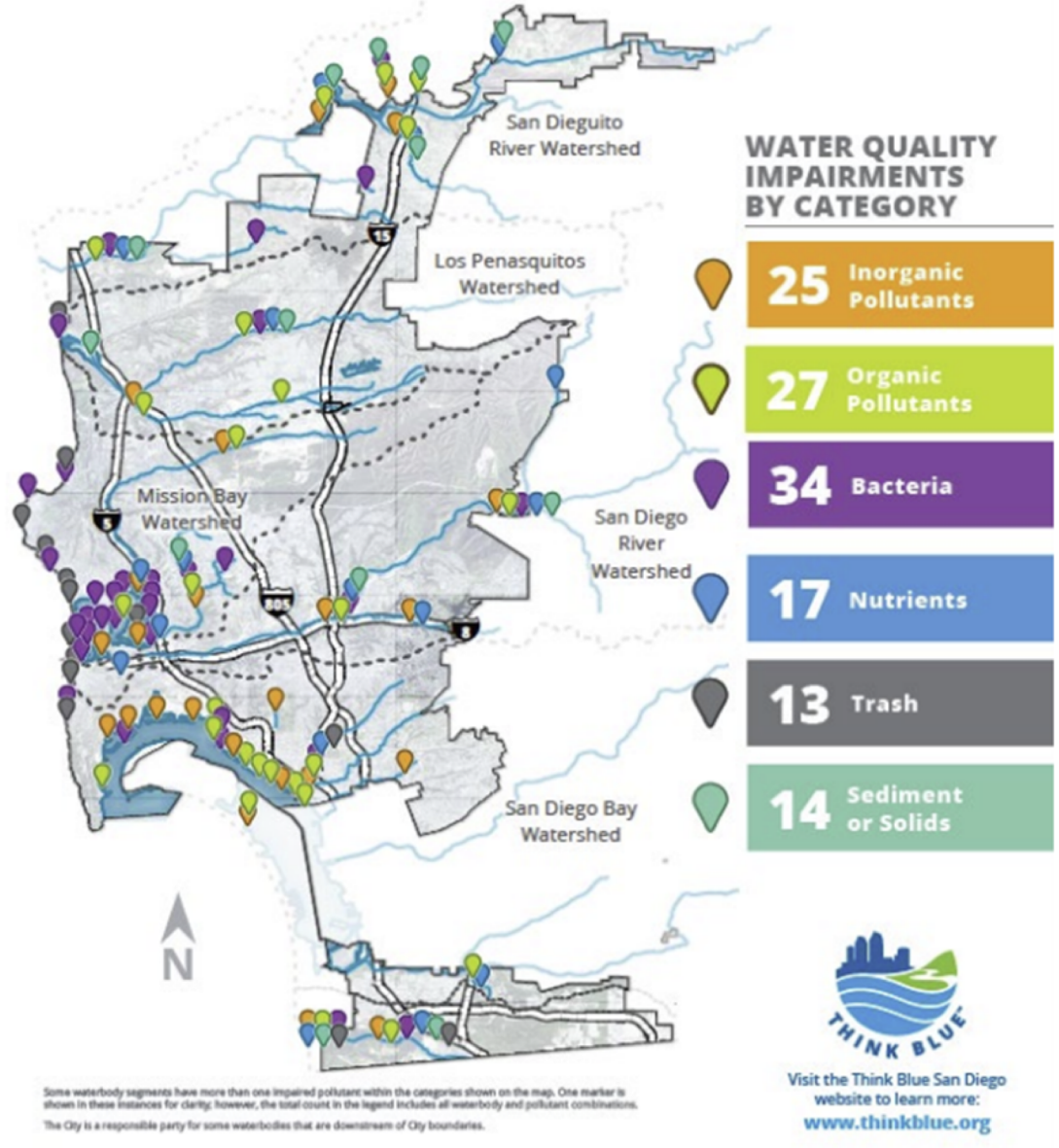


Figure 3-7. Water quality impairments by general pollutant category that the City must address as of FY2021.

How is it looking?

Impacts of Climate Change on Californians

LAO

How do we improve climate resiliency ?

Up Next: The Future of Water in San Diego

- Desalination?
- More pipelines?
- Are there better options?

Take Action

FIND AN ORGANIZATION WORKING ON AN ISSUE YOU CARE ABOUT AND GET INVOLVED

ATTEND OUR NEXT PRESENTATION!

Contact Us

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