



County of San Diego

# Regional Water Equity Deep Dives



- Financial Risks & Investments due to extreme weather conditions caused by drought conditions
  - *June 28, 2023*

# Today's Agenda

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## Introduction

- 2 Minutes

## Special Topic Presentation

- 10 Minutes

## Breakout Rooms

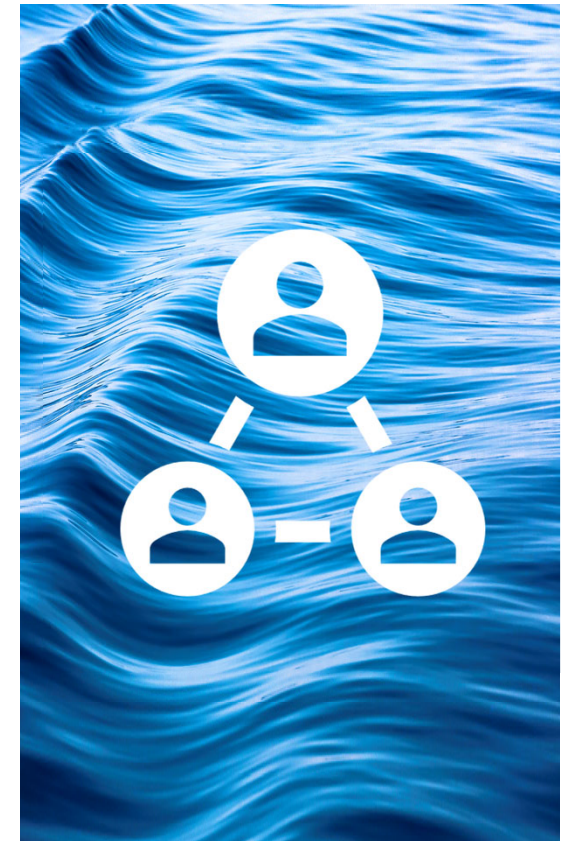
- **40-45 Minutes**

## Closing Thoughts

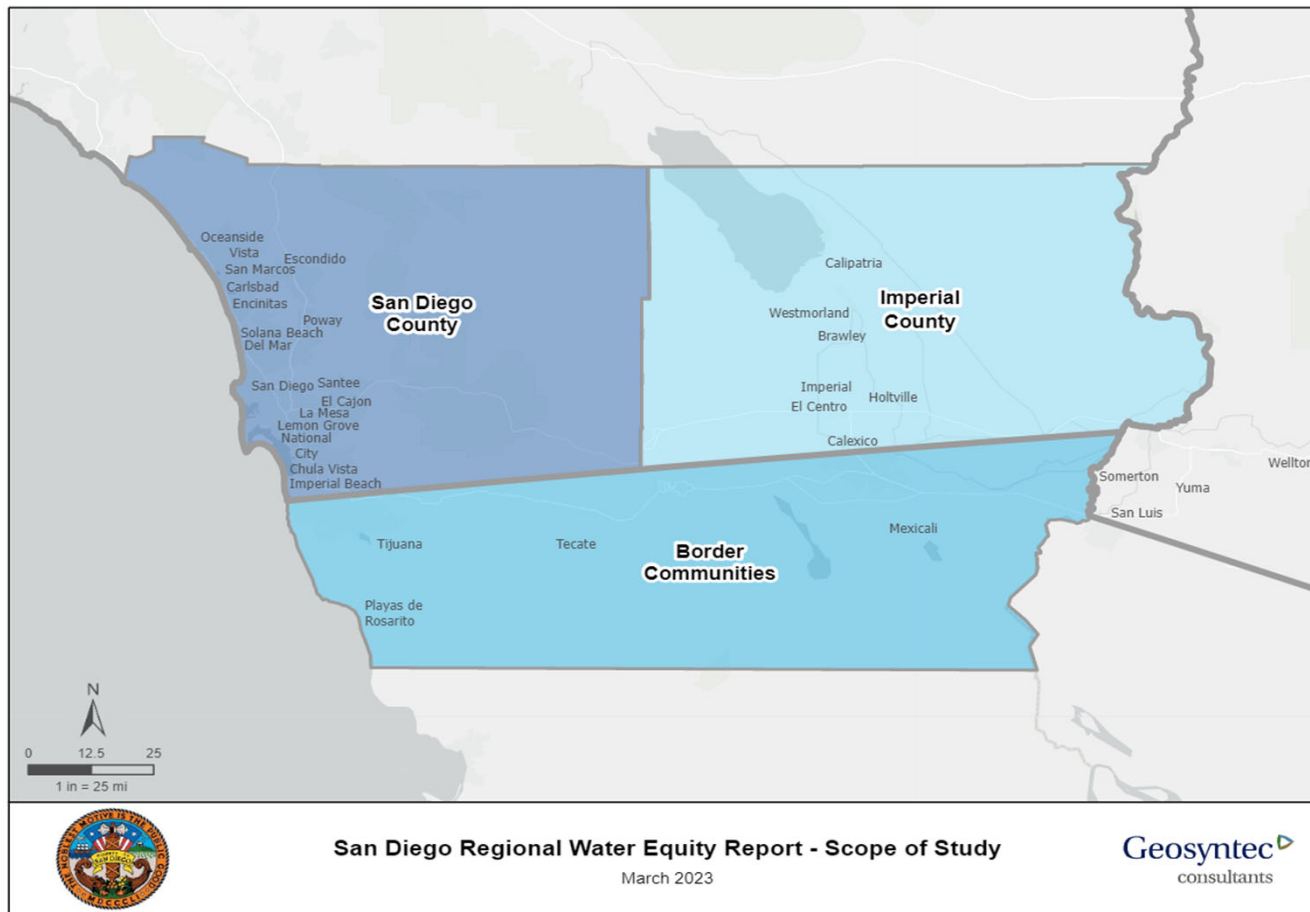
- 3 Minutes

# Regional Water Equity Project

- Regional Collaboration
  - Tribal Communities, Binational Partners, Imperial County
- Adapt to a Hotter, Drier, Future
- Equitably Address Drought Impacts
  - Wildfires, Water Scarcity, Access to Water



# Regional Water Equity Project







# Atmospheric Rivers & Flood Warning Systems: Mitigating Climate Change Risks in San Diego County

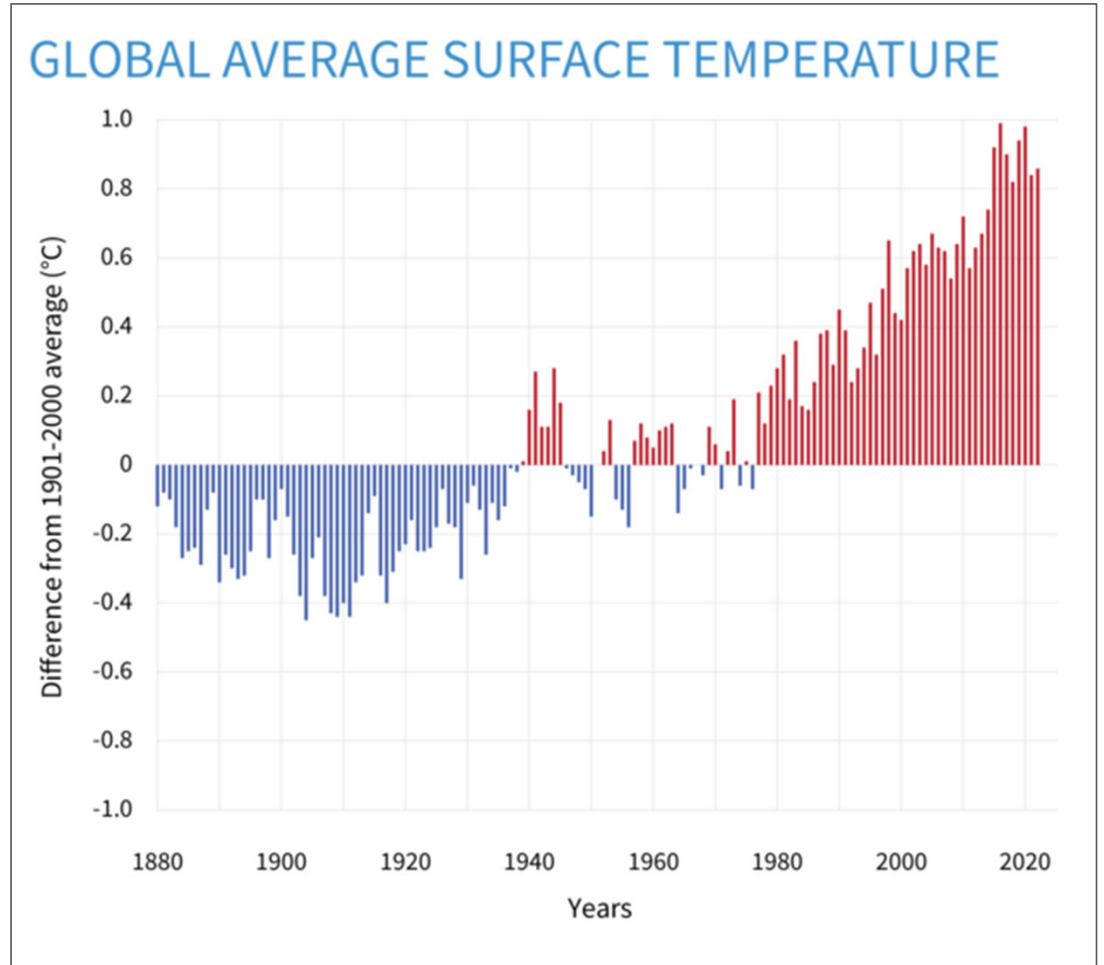
**Presented By:**

**Tyler Rodenbaugh (Senior Meteorologist)**

Department of Public Works: Flood Control

# Overview

- Climate change
- Atmospheric Rivers (AR) and their impacts
- Mitigation Efforts of ALERT Flood Warning System



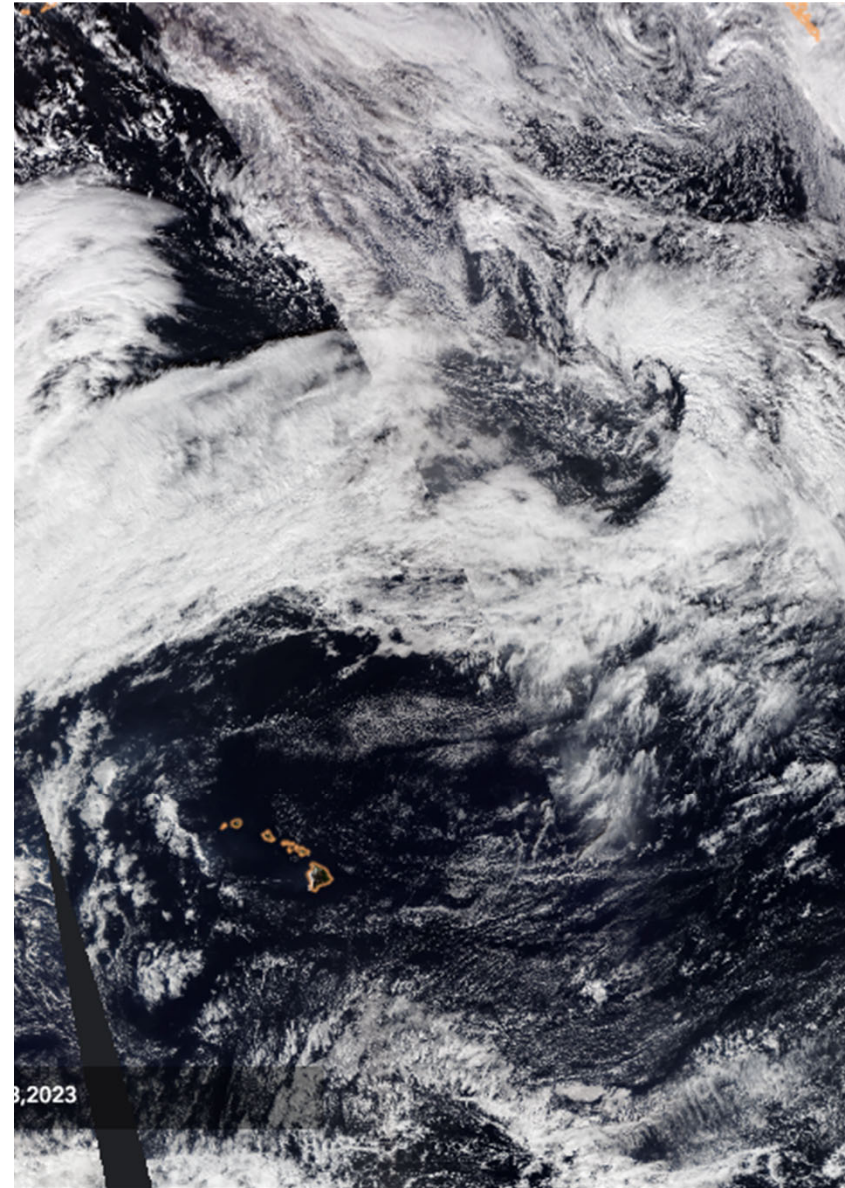
# Understanding Climate Change

- Definition: "Climate change: long-term shifts in weather patterns."
- Local Impact: Increased rainfall variability in San Diego County, exacerbating drought and flood risks

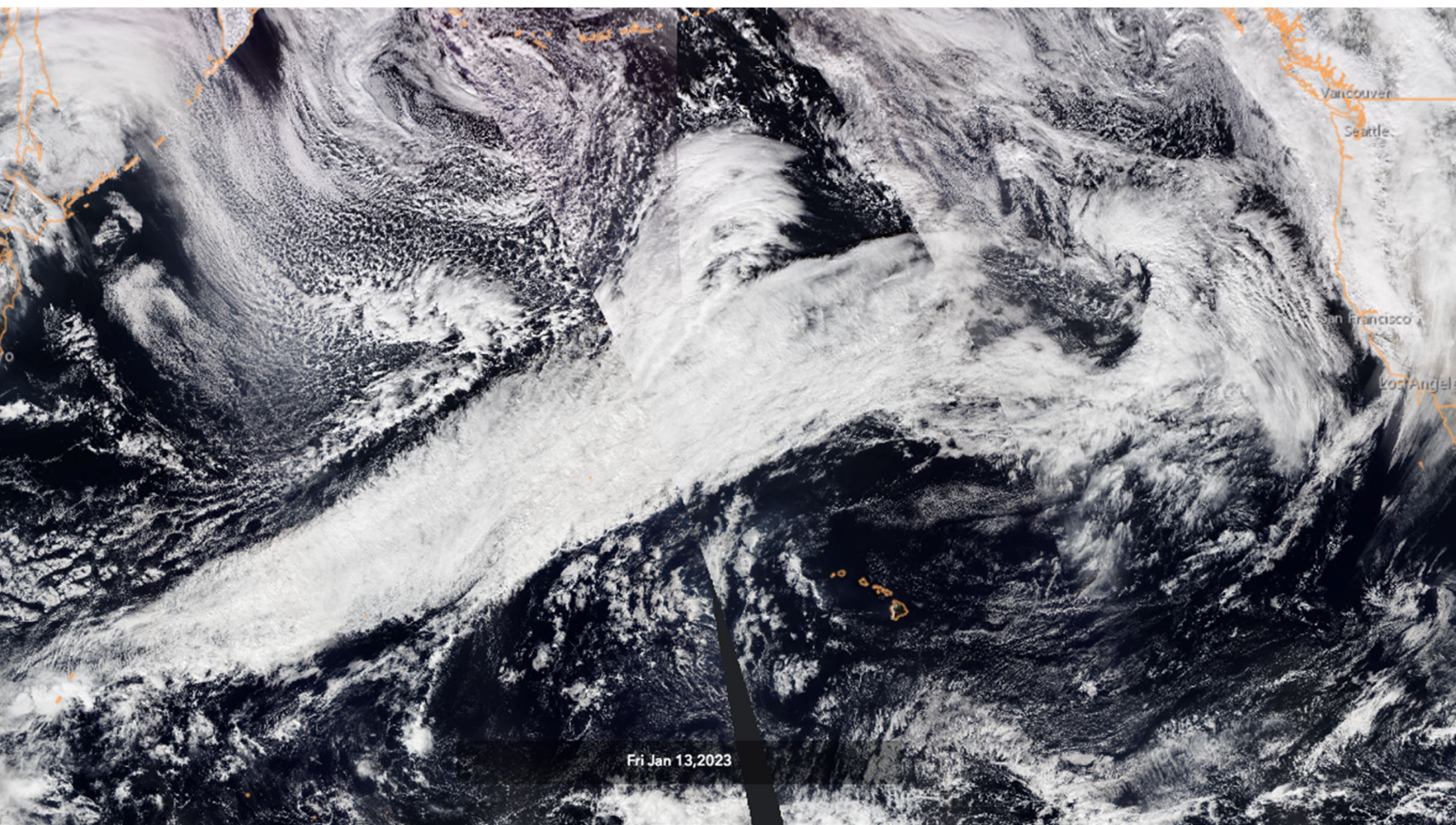


# Introduction to Atmospheric Rivers

- Definition: "Atmospheric rivers: 'rivers in the sky' transporting moisture."
- Role: Significant role in global water vapor (moisture) distribution







# Atmospheric Rivers in San Diego County

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Local Impact: Beneficial  
rain and potential for  
intense precipitation

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Trends: Increasing  
intensity of atmospheric  
river events





# Atmospheric Rivers and Flooding

- Connection: Atmospheric rivers can lead to significant flooding
- Examples: Major San Diego floods associated with atmospheric rivers



# Introduction to San Diego County's ALERT System

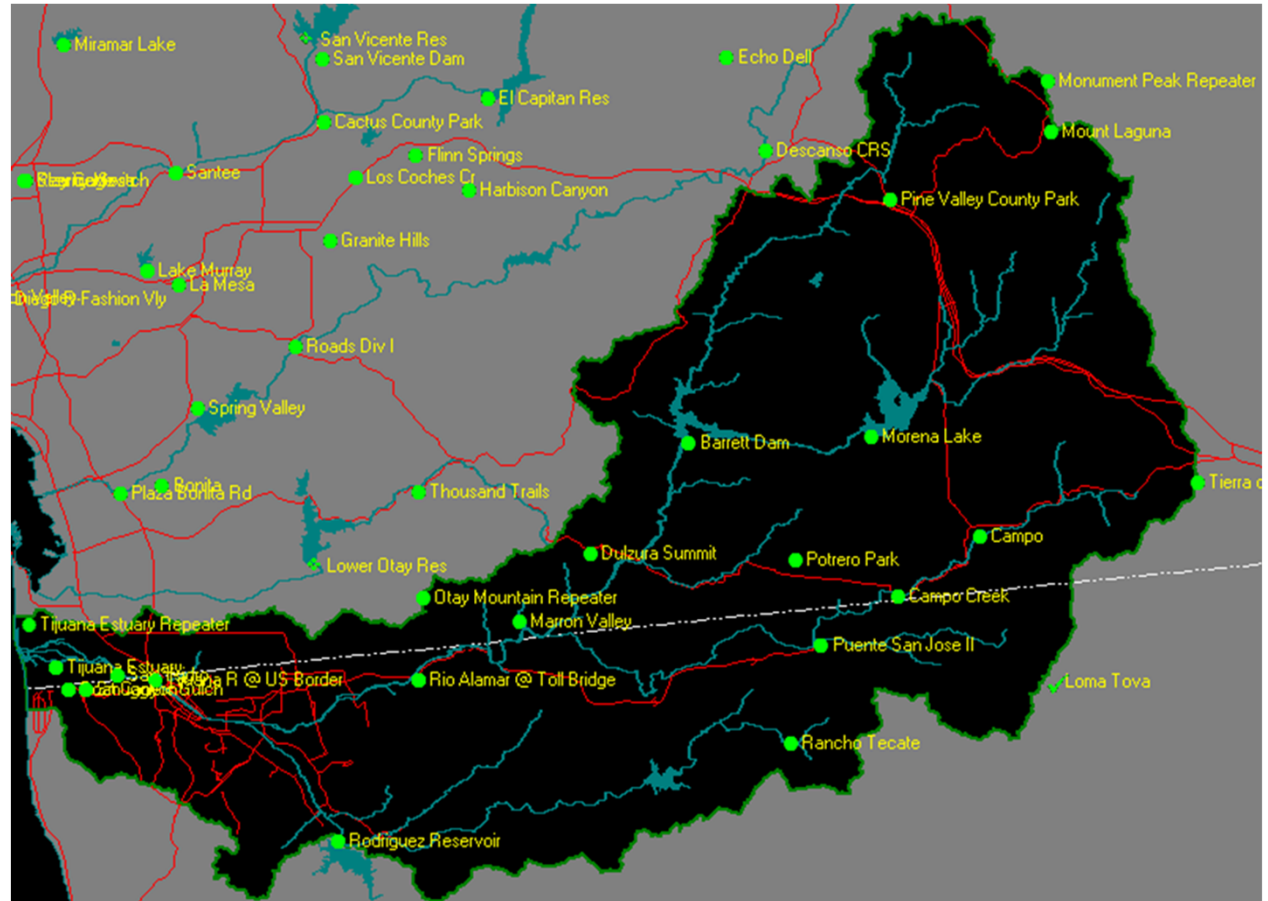
- Automatic Local Evaluation in ReaL-Time
- ALERT systems provide real-time monitoring of potential flood hazards
- 1982: San Diego County was first in nation to implement county-wide system
- Network consists of >100 stations



# ALERT Station Map

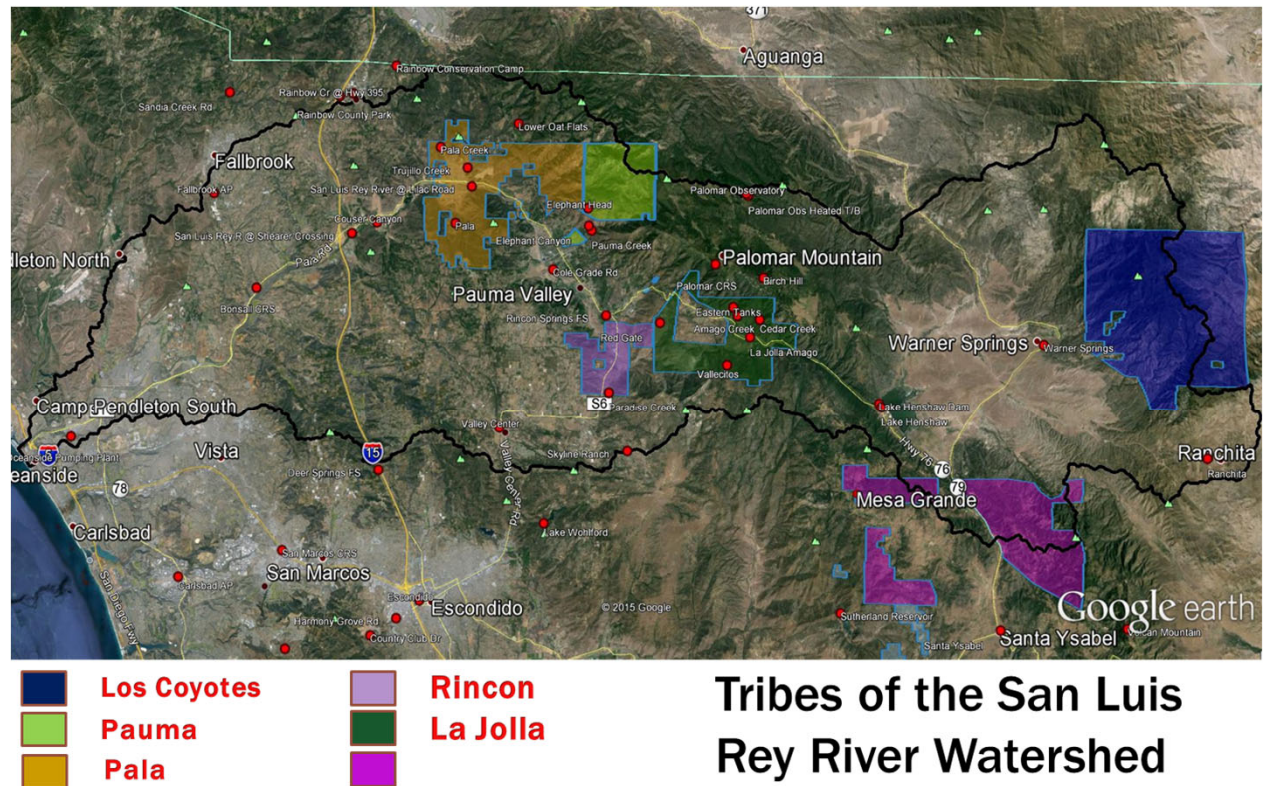
# Flood Warning Sub-Systems

# Upper Tijuana River Watershed Flood Warning System



# Flood Warning Sub-Systems

Poomacha Flood Warning  
System

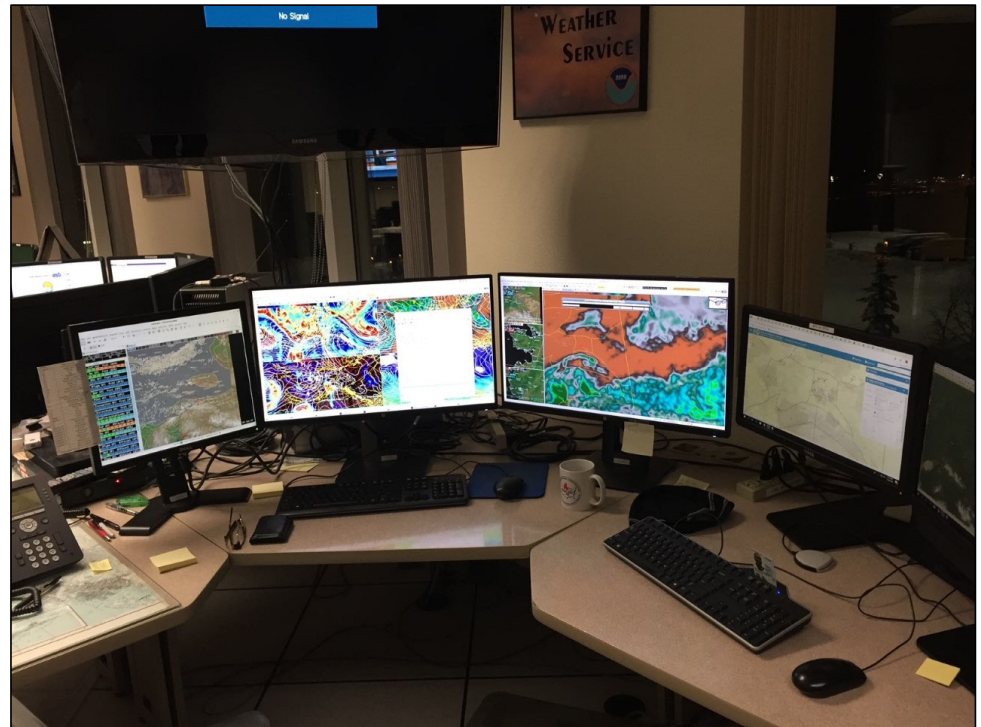


**Tribes of the San Luis  
Rey River Watershed**



# ALERT System for Emergency Operations

- ☐ Monitor  
Weather/Hydrological  
Conditions





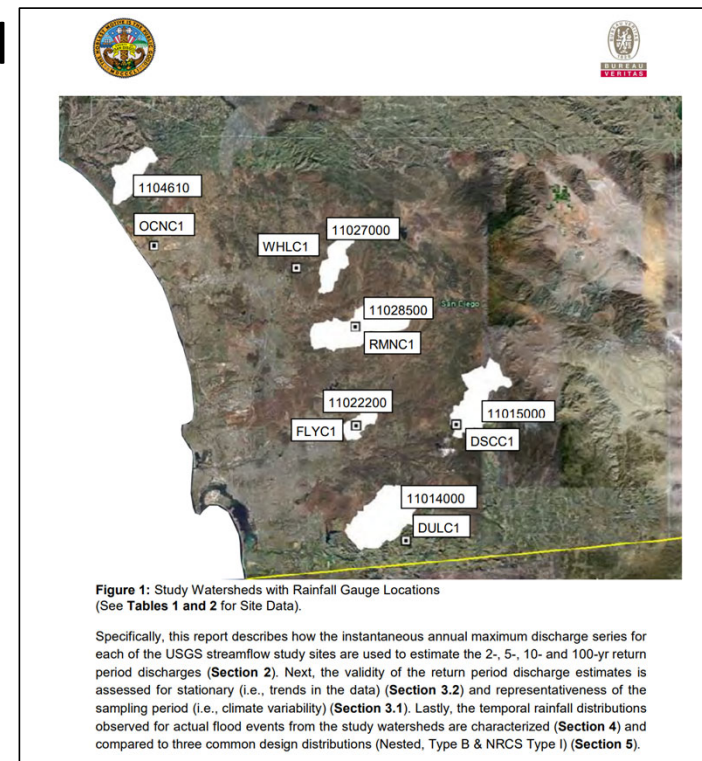
# ALERT System for Emergency Operations

- ☐ Monitor  
Weather/Hydrological  
Conditions
- ☐ Alert emergency  
responders



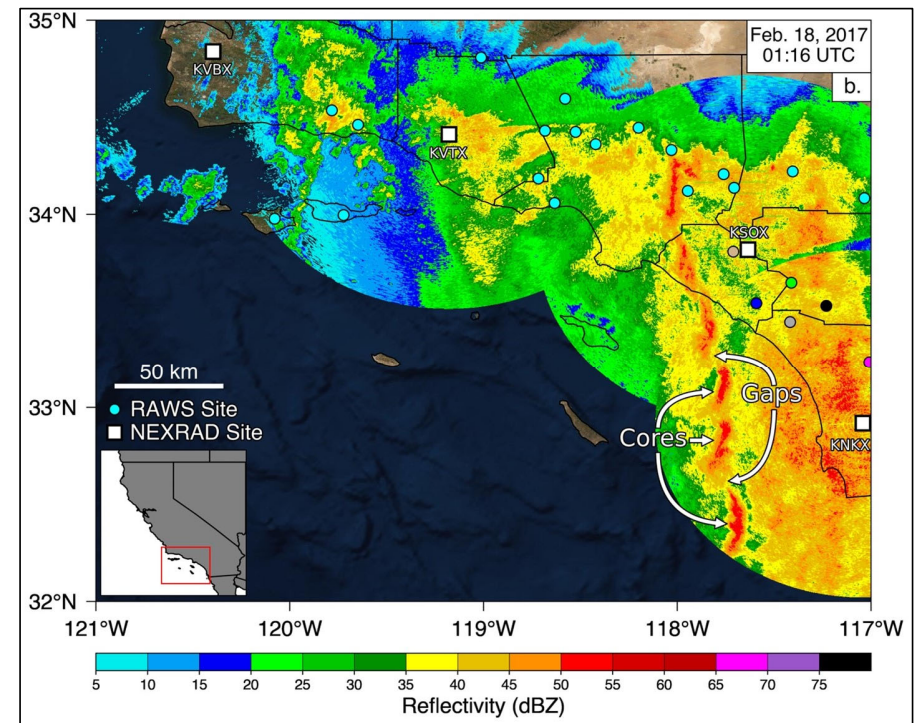
# Data Used for Flood Mitigation Projects/Research

## San Diego County Hydrology Manual



# Data Used for Flood Mitigation Projects/Research

- ☐ San Diego County Hydrology Manual
- ☐ Research



# Data Used for Flood Mitigation Projects/Research

- ❑ San Diego County Hydrology Manual
- ❑ Research
- ❑ NOAA Atlas-14

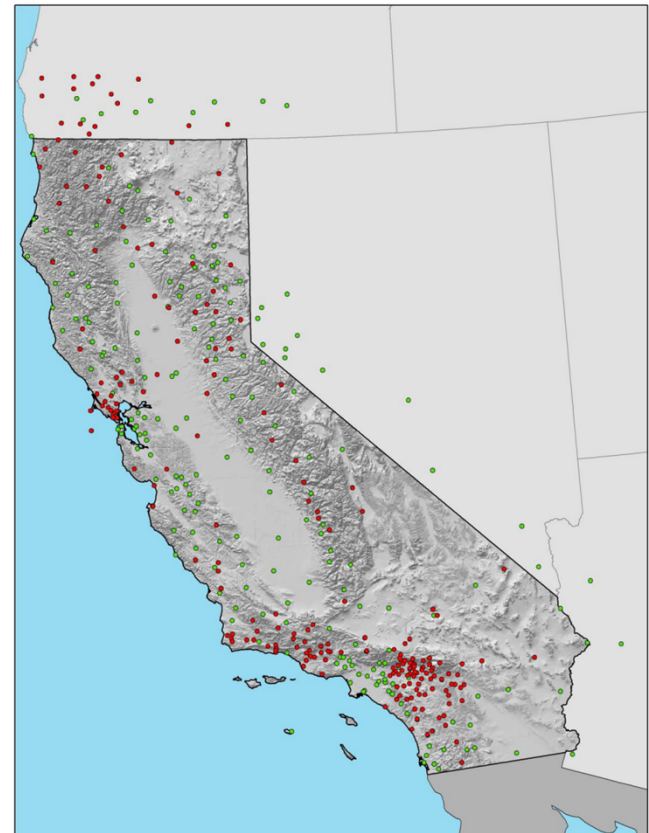


Figure 4.4.3. Map of stations recording at 1-hour (green dots) and sub-hourly or variable intervals (red dots) used in frequency analysis.



# System Maintenance and Operation

☐ Two full-time technicians





# System Maintenance and Operation

- ❑ Two full-time technicians
- ❑ Biannual maintenance schedule





# Investment in ALERT System

- Costs of implementing and maintaining the ALERT system
- Potential savings from reduced flood damage, evacuation, and recovery costs

# ALERT System Financial Investments

- Potential savings from reduced flood damage, evacuation, and recovery costs
- How the ALERT system may evolve given the projected changes in climate
- Potential improvements and investments to enhance its effectiveness



# Thank you!

<https://sandiego.onerain.com/>



## Contact Us



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# Up Next

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## Breakout Rooms

- **40-45 Minutes**

We Want to  
Hear from  
YOU

Q&A with  
OSEJ Staff &  
Presenter

Digital Sticky  
Notes &  
Whiteboard

# Next Steps & Call to Action

## Continued Outreach

Virtual  
Workshops  
June – August

Closing Water  
Assembly  
September

## Upcoming Board Hearing

Public  
Comment  
Comprehensive  
Report October

Board Hearing  
Winter





County of San Diego

**Thank you!**

Please Contact - Elise Ruiz:

[Elise.Ruiz@sdcounty.ca.gov](mailto:Elise.Ruiz@sdcounty.ca.gov)

Regional Water Equity Website:

[www.sandiegocounty.gov/osej/waterequity](http://www.sandiegocounty.gov/osej/waterequity)

Office of Sustainability and Environmental Justice Website:

[hwww.sandiegocounty.gov/osej](http://hwww.sandiegocounty.gov/osej)