



# Flood Risk at the Front Line

## Systemic Inequities in Floodplain Management

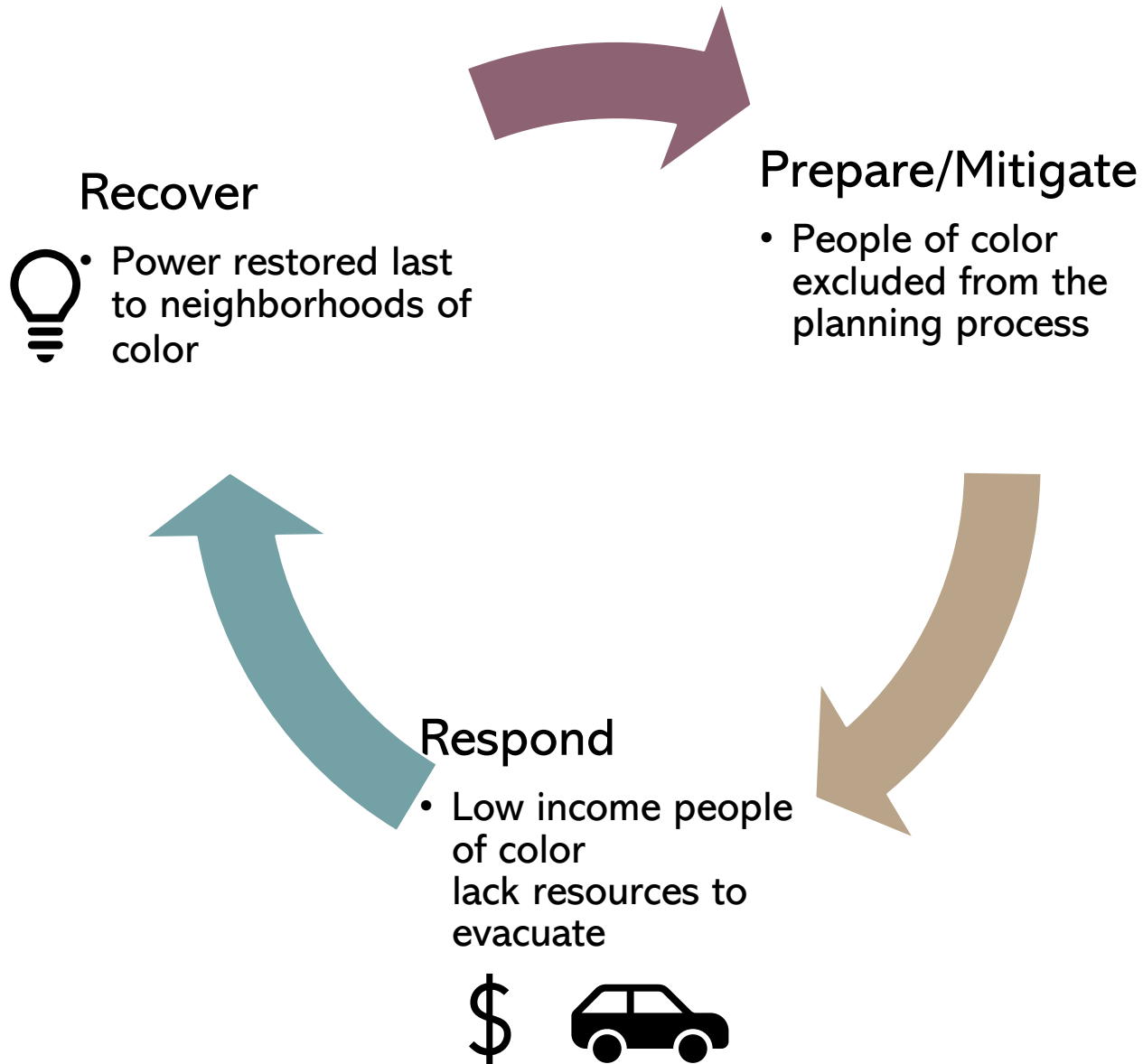
Dámaris Villalobos-Galindo, PE, CFM (She/Her), Valley Water

Cameron Tenner (He, They), Valley Water

with collaboration and contributions from the Association of State Floodplain Managers' Social Justice Task Force

2022 Water 101 Academy  
Water Ambassador Program

April 27th, 2022



**Systemic inequities affect every part of the flood risk management cycle**

# Flooding Disproportionately Harms Black Neighborhoods

The impacts of floods can exacerbate existing racial and social inequality

By Thomas Frank, E&E News on June 2, 2020



Palazzolo Simmons, 49, looks out over his home neighborhood for the first time since Hurricane Katrina in the mostly poor and black Lower Ninth Ward section of New Orleans on October 2, 2005. While New Orleanians in more upscale neighborhoods were being urged to return home, their counterparts from the poorest areas hardest hit by Hurricane Katrina were forced to sneak past police checkpoints to see for the first time the remnants of their life. Credit: Robyn Beck *Getty Images*

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Black,  
Indigenous, and  
other people of  
color carry the  
burden of  
flooding

# How did we get here?

Understanding flood vulnerability



# What does it mean to be vulnerable to floods?

**Flood Vulnerability:** Extent to which a system is susceptible to floods due to exposure in conjunction with its (in)capacity to be resilient, to cope, recover or adapt...

$$\text{Vulnerability} = \text{Exposure} + \text{Susceptibility} - \text{Resilience}$$



Predisposition of a system to be disrupted due to its location

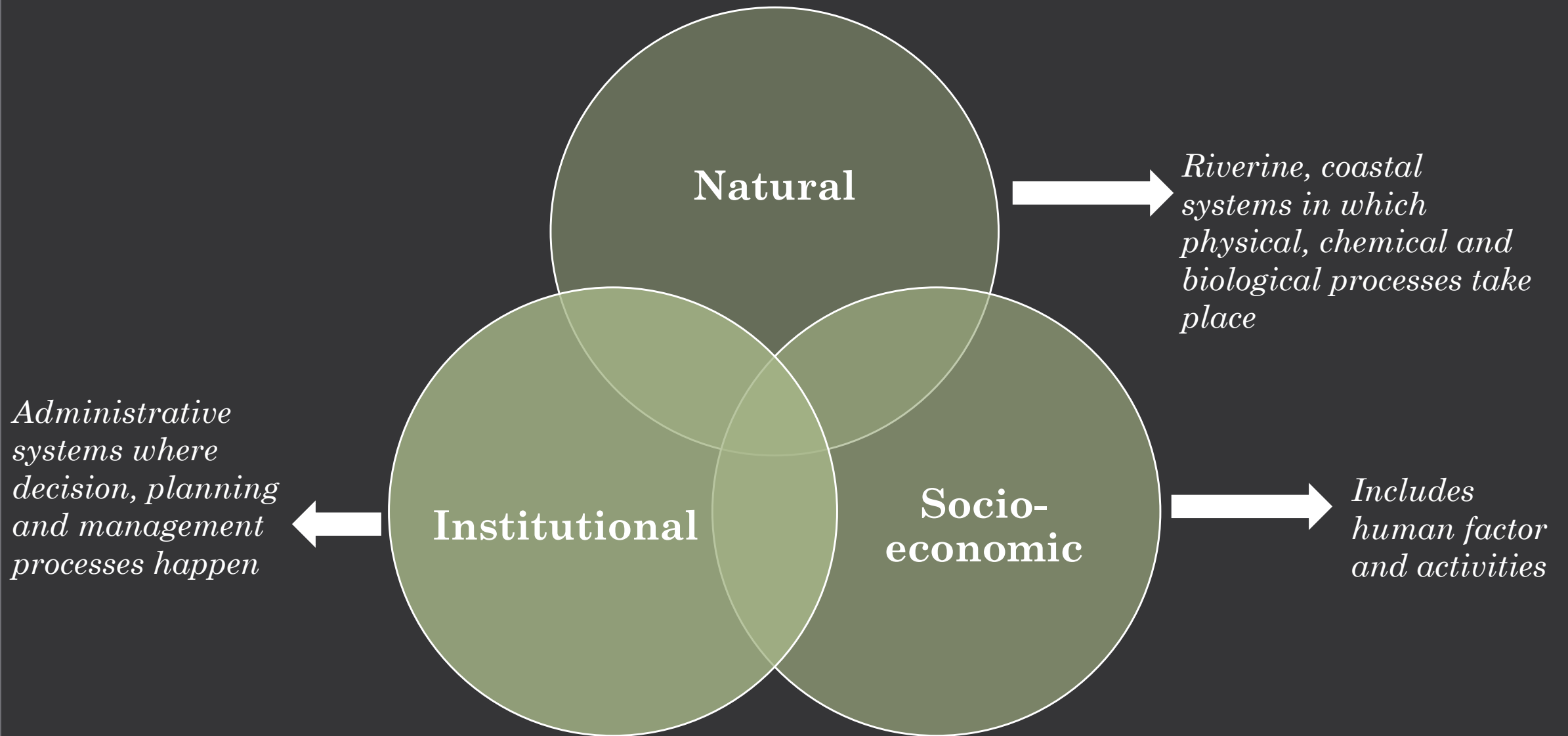


Conditions based on a social context that make someone/something more prone to harm



Coping and recovering capacity

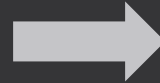
# What is meant by “system”?



# Flood Vulnerability Factors: Exposure

## Which variables increase Exposure?

- Closeness to inundation area
- Populations close to coastline
- Population density
- Land use
- Ground surface elevation

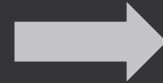


Where do you live? What is our history of housing policy? Has everybody had equal opportunities at choosing where to live?

# Flood Vulnerability Factors: Susceptibility

## Which variables increase Susceptibility?

- Education (Literacy)
- Elderly
- Mobility
- Communication penetration rate (what language is the information transmitted in?)
- Human health
- Income

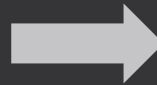


Who lives where? What is your income level, education level, are you informed about your risks and how likely is it that institutions are investing equally in all neighborhoods?

# Flood Vulnerability Factors: Resilience

## Which variables increase Resilience?

- Warning System
- Community Emergency Action Plan/local Hazard Mitigation Plan
- Investment in Flood Risk Mitigation Measures (structural and non-structural)



Does the community participate in the National Flood Insurance? Are there investments in flood risk mitigation measures within the community? Is everybody in the community able to access a flood notification system?



# What does it mean to be vulnerable to floods?

$$\text{Vulnerability} = \text{Exposure} + \text{Susceptibility} - \text{Resilience}$$



Predisposition of a system to be disrupted due to its location



Conditions based on a social context that make someone/something more prone to harm

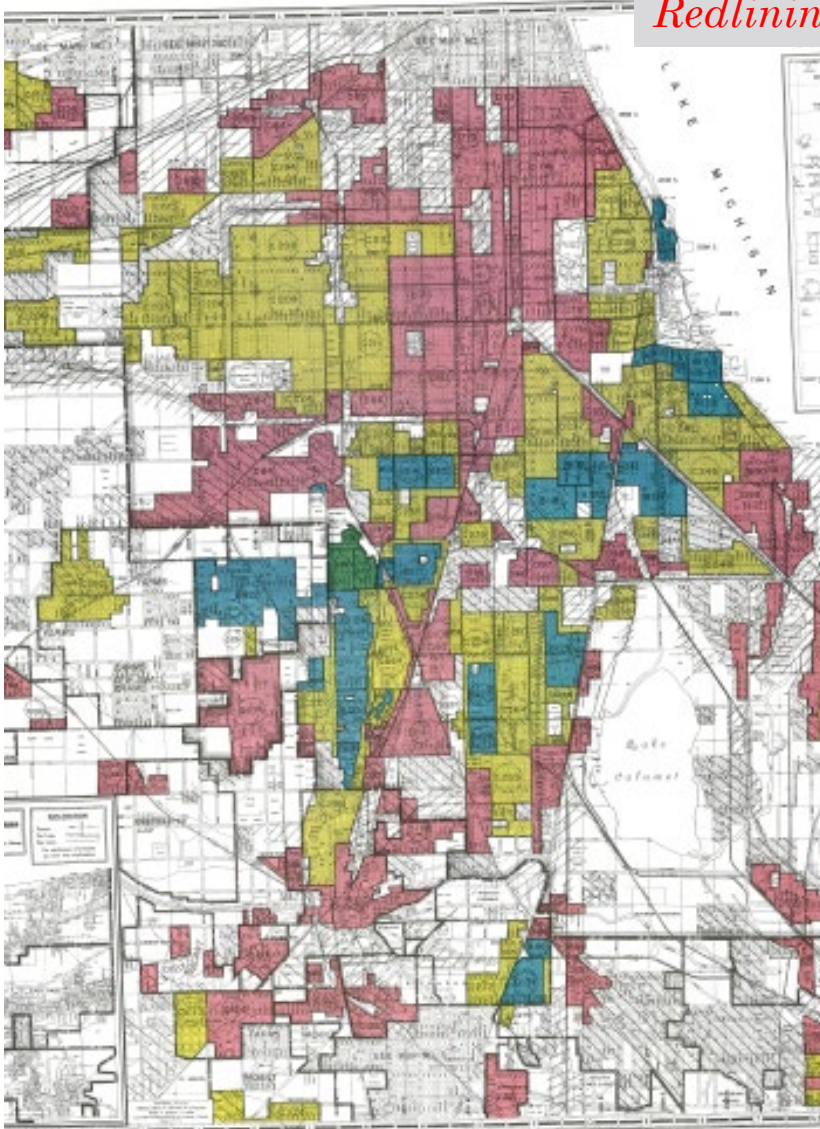


Coping and recovering capacity

# How did we get here?

Historical Policy and Practice

## Redlining



Source: Mapping Inequality Project, Ref 5

Historical government policies reduced access to housing, employment, fair wages, education and healthcare for people of color

1830 Indian Removal Act

1882 Chinese Exclusion Act

1885 Juneteenth, end of Civil War

1865-1866 Black codes

1896 Plessy v. Ferguson

1924 Racial Integrity Act

1934 Housing Act

1935 Labor relations Act

1937 Breedlove v. Suttles



Effects of these external factors are present today, and increased exposure and susceptibility to flooding.

[CHAPTER 688.]

AN ACT

June 22, 1936.  
[H. R. 8455.]

[Public, No. 738.]

Authorizing the construction of certain public works on rivers and harbors for flood control, and for other purposes.

Flood Control Act of 1936.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

DECLARATION OF POLICY

Declaration of policy.

SECTION 1. It is hereby recognized that destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the States, constitute a menace to national welfare; that it is the sense of Congress that flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities thereof; that investigations and improvements of rivers and other waterways, including watersheds thereof, for flood-control purposes are in the interest of the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.



Benefits of federal flood control projects must outweigh the costs.

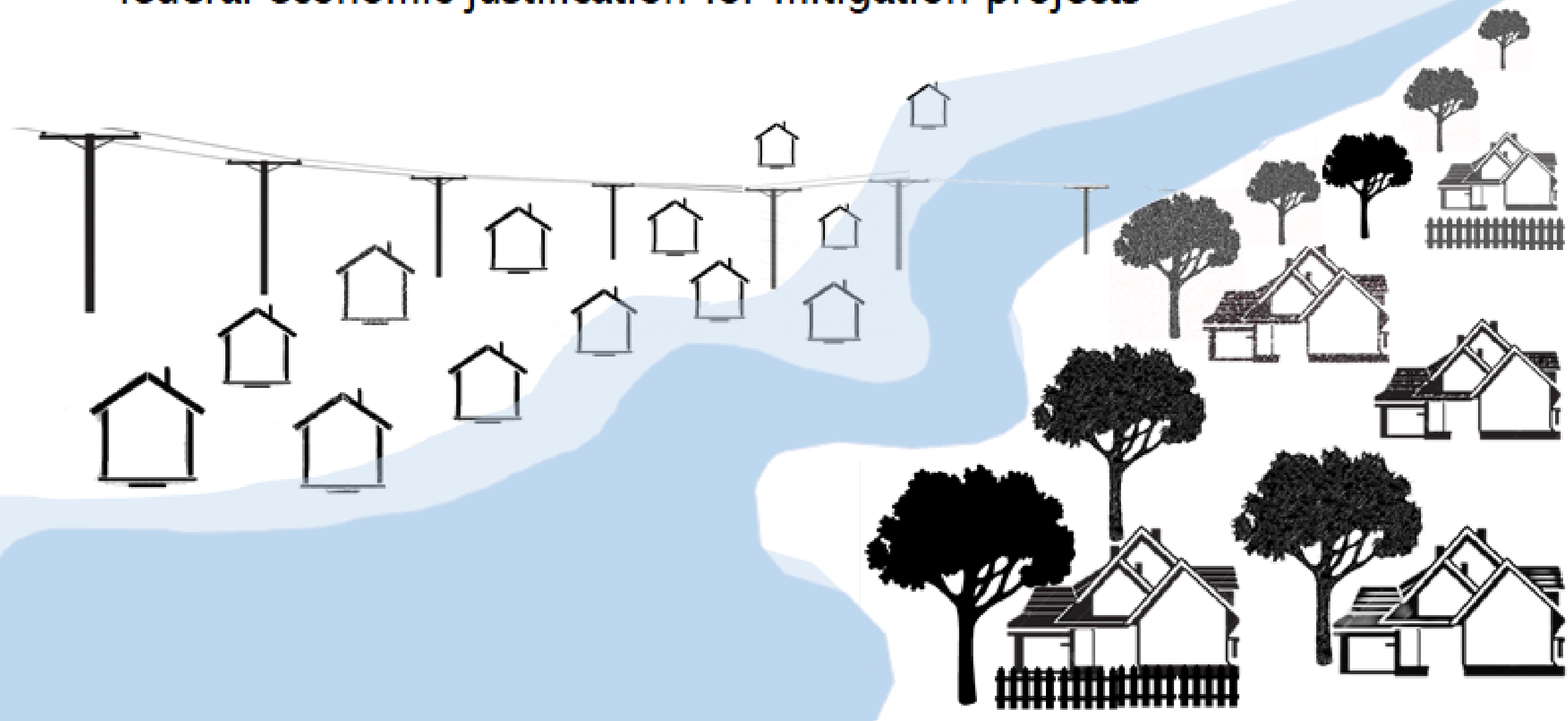
The Flood Control Act of 1936 includes a provision that continues to disadvantage low-income and communities of color today.



This external factor increases exposure and reduces resilience.



Neighborhoods with low-cost housing face more difficulty meeting federal economic justification for mitigation projects



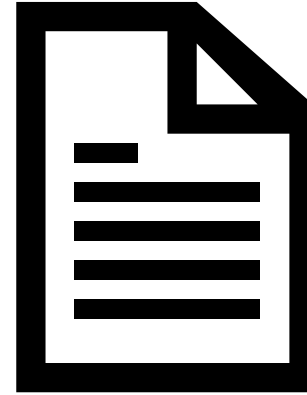




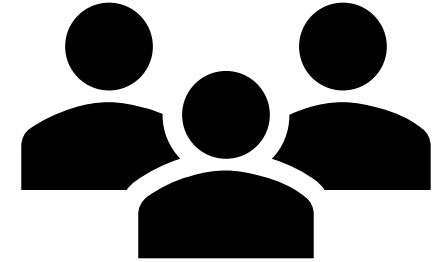
Local cost-share



Minimum damage thresholds



Homeownership documentation



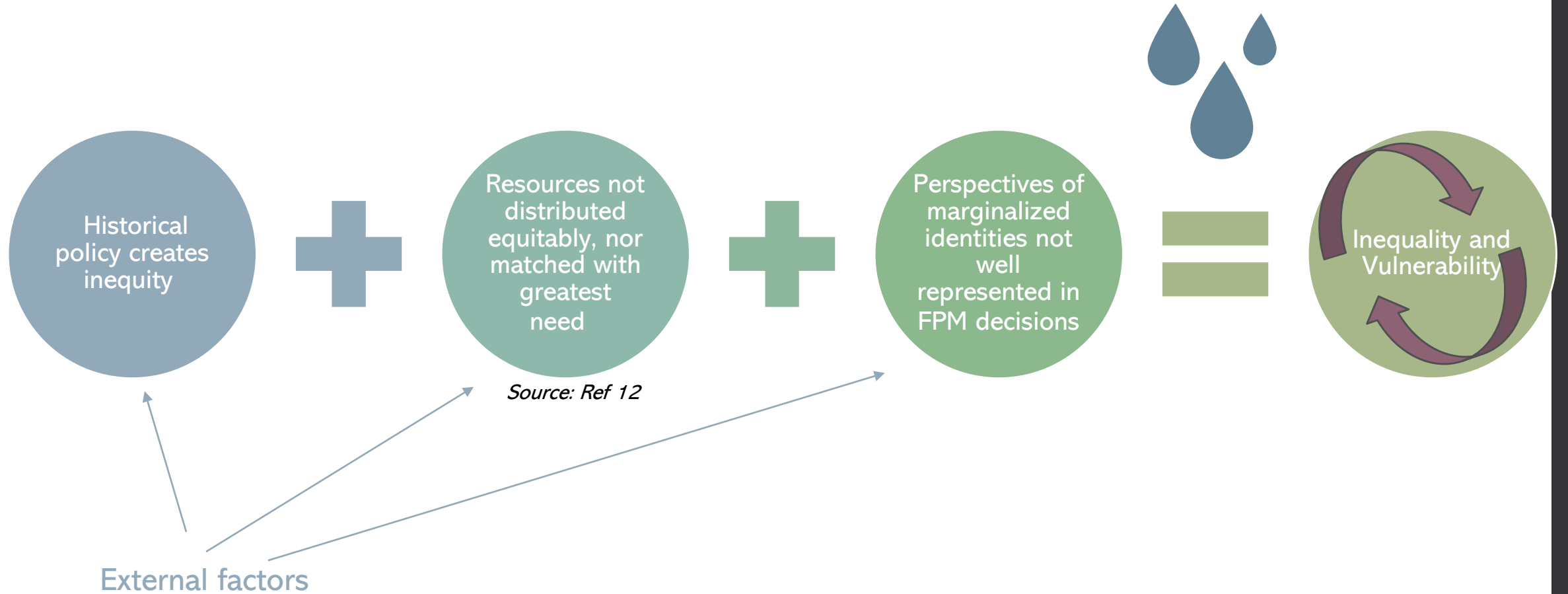
Ability to meet with FEMA

Present-day barriers to participation in federal programs



These external factors increase susceptibility and decrease resilience.

# Putting this together



# A vision for justice

Lots to be done to level the playing field. Where to start?

# How to advance social justice in floodplain management?



# References

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## Acknowledgements

There are many people and movements who have laid the groundwork on these challenges before us. We are standing on their shoulders to help build understanding among and move the floodplain management community toward justice.

## Contact

Dámaris Villalobos-Galindo

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# References cont'd

8. Balica SF, Popescu I, Beevers L, Wright NG (2013) *Parametric and physically based modeling techniques for flood risk and vulnerability assessment: A comparison*. *Environ Modell Softw* 41: 84-92
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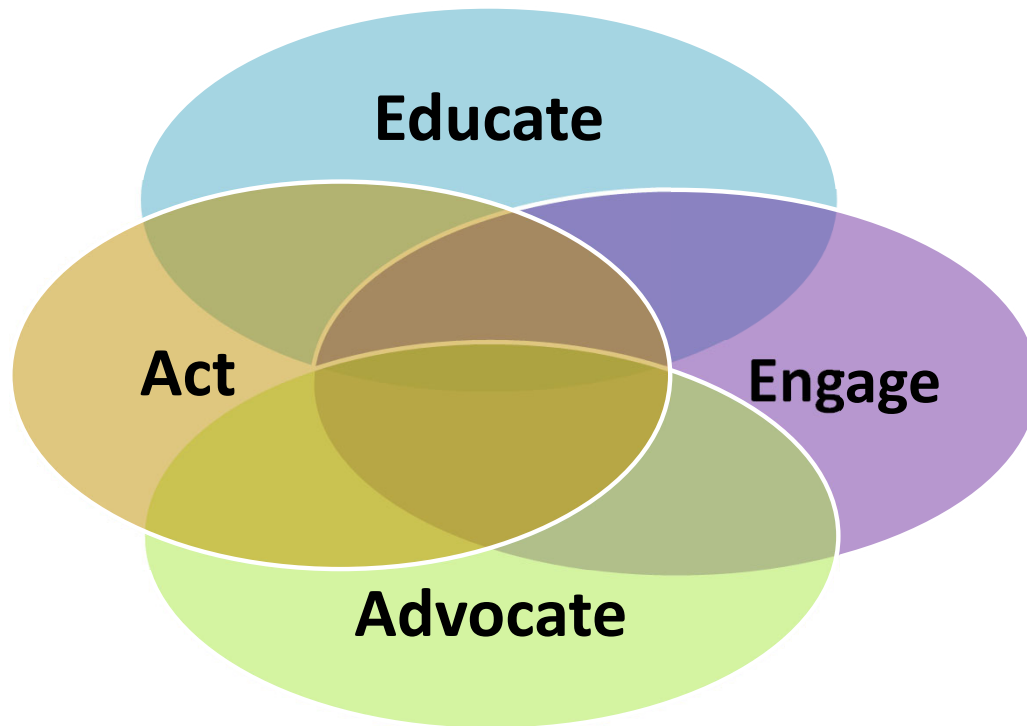
# **Valley Water-Office of Government Relations (OGR)**

**Presented by: Don Rocha, Deputy Administrative Officer**

# Government Relations Goals

- Recognize and respond to emerging issues.
- Shape public and regulatory policy
- Secure and protect funding
- Defend Valley Water against punitive legislation and regulatory initiatives.
- Manage reputation and external efforts with advocacy, strategic partnerships, and stakeholder engagement.

# Government Relations Activities



# Legislative Advocacy and Engagement



AB 3005

Robert Rivas

LEREOY ANDERSON DAM AND RESERVOIR: PERMITTING, AND PUBLIC CONTRACTING.

California State Assembly

File # 87

ity or work of construction to retrofit, repair, replace, or improve the safety of the Leroy Anderson Dam and

A poster titled "2021 Legislative Guiding Principles" for Valley Water. The top half features a photograph of the California State Capitol building. The bottom half contains text and a list of guiding principles. The Valley Water logo is in the top right corner.

## 2021 Legislative Guiding Principles

Serving 2 million people living and working in Silicon Valley, Valley Water is the primary water resources agency for Santa Clara County, California.

Valley Water acts not only as the county's water wholesaler, but also as its flood protection agency and the steward for its watersheds, streams and creeks, underground aquifers and Valley Water-built reservoirs. As the county's water wholesaler, Valley Water makes sure there is enough clean, safe water for the county's residents. As the agency responsible for local flood protection, Valley Water works diligently to protect Santa Clara Valley homes, schools, roadways, and businesses from the devastating effects of flooding. Our watershed and stream stewardship responsibilities include protection and restoration of habitats, and protection of endangered species in connection with carrying out the purposes of the District Act.

To support our efforts in managing critical water issues, Valley Water advocates for legislation that advances our key guiding principles:

- I. Ensure a reliable supply of healthy, clean drinking water.
- II. Reduce the potential for flood damages.
- III. Enhance the quality of life through the protection and enhancement of watersheds, streams, and natural resources.
- IV. Protect revenues, enhance revenues, and contain costs.
- V. Encourage opportunities for job creation, and the protection and stability of Valley Water's workforce.

valleywater.org

Clean Water • Healthy Environment • Flood Protection





# Sponsorship and Community Events



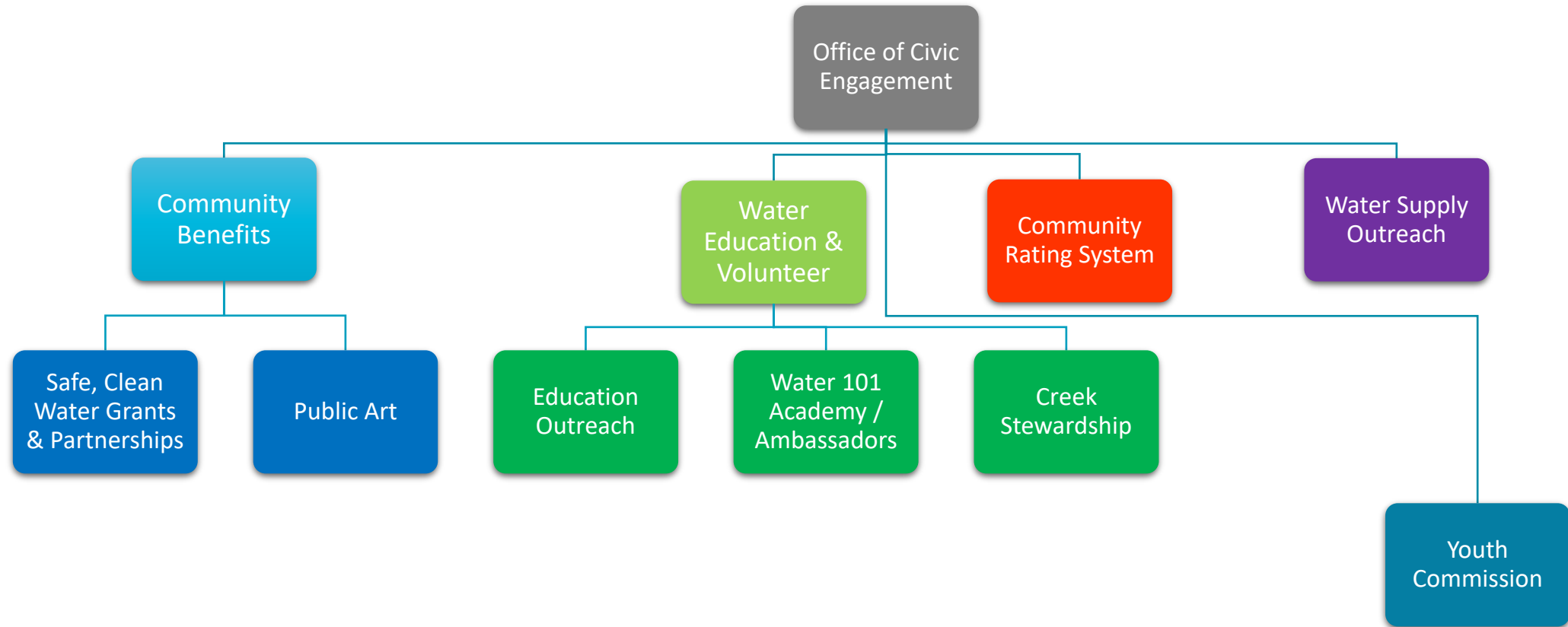
# QUESTIONS



# Office of Civic Engagement

Sherilyn Tran, Civic Engagement Manager

13 FTE  
10 PT Temps & Interns





# Community Benefits Program

*Safe, Clean Water Grants & Partnerships  
Public Art Program*

3



## YOUR TAX DOLLARS AT WORK



**Safe,  
Clean  
Water**  
and Natural Flood Protection

Annual Grant Cycles: FY22 \$1.4 million  
Annual Mini-Grant Funding: \$100,000  
Annual Bottle Filling Station Funding: \$100,000  
Annual Partnership Funding: Varies  
Public Art Program: \$1.5 million over 15 years



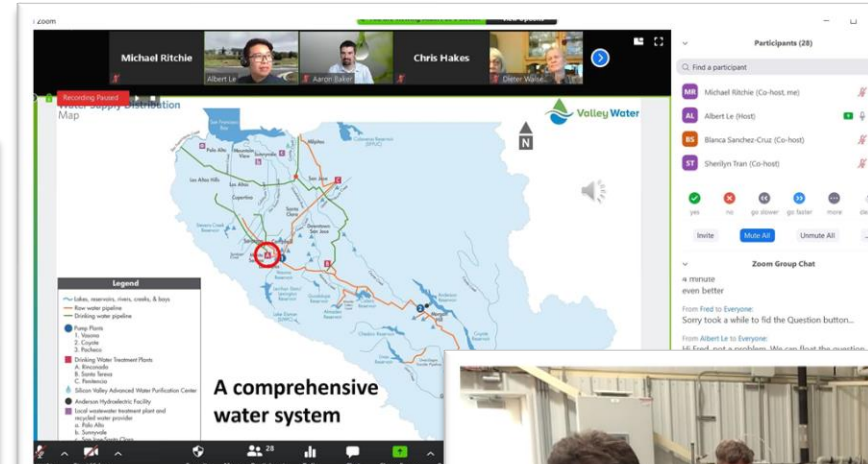
[grants@valleywater.org](mailto:grants@valleywater.org)

# Water Supply Outreach

*Purified Water Outreach*

*Water Infrastructure Tour Program*

4



[watersupplyoutreach@valleywater.org](mailto:watersupplyoutreach@valleywater.org)

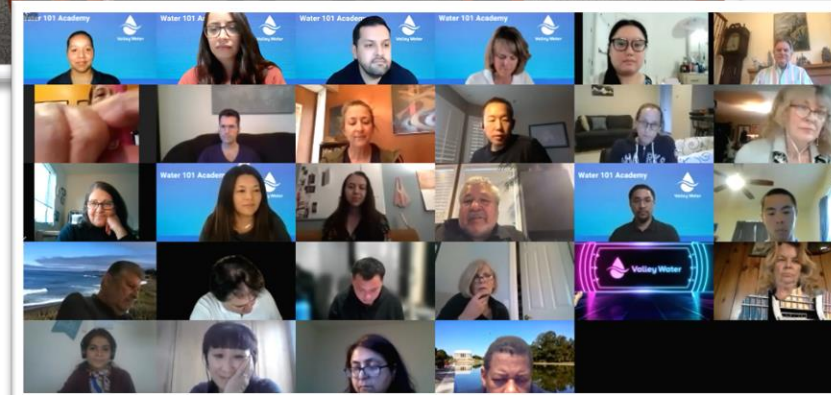


# Water Education & Volunteer Program

*Education Outreach*

*Creek Stewardship*

*Water 101 Academy / Ambassador Program*



[education@valleywater.org](mailto:education@valleywater.org)

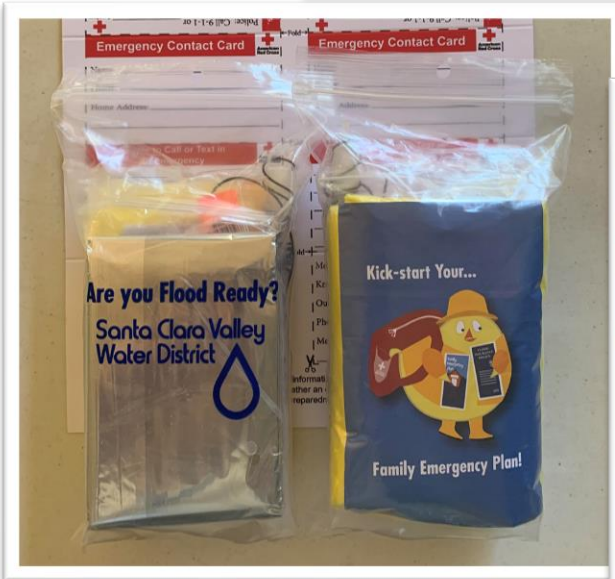
[volunteer@valleywater.org](mailto:volunteer@valleywater.org)

[waterambassadorprogram@valleywater.org](mailto:waterambassadorprogram@valleywater.org)



# Community Rating System

6



Community Name	Savings
CUPERTINO	\$13,268.55
GILROY	\$19,900.60
LOS ALTOS	\$9,064.30
MILPITAS	\$196,512.15
MORGAN HILL	\$67,684.50
MOUNTAIN VIEW	\$60,399.45
PALO ALTO	\$702,966.60
SAN JOSE	\$906,970.65
SANTA CLARA	\$107,794.80
SUNNYVALE	\$139,272.60
<b>TOTAL:</b>	<b>\$2,223,834</b>

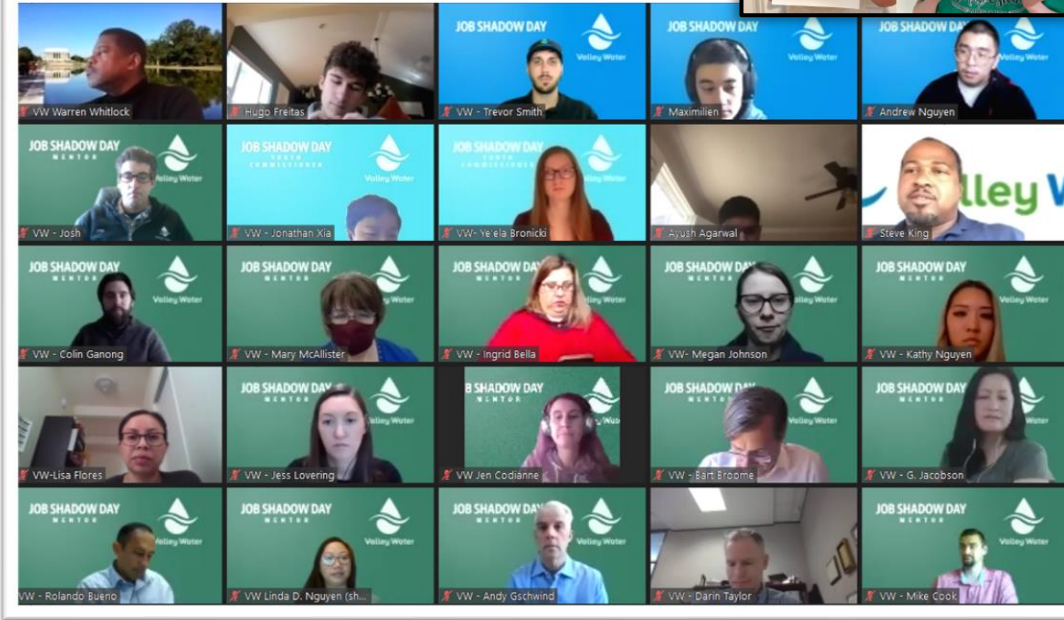
# Youth Commission

The Youth Commission is composed of **21 high school students** throughout Santa Clara County

Each commissioner is appointed by their respective Board Member (with three from each district).

The commission meets **quarterly**.

Each commissioner **serves a 2-year term**.



## GIVING YOUTH A VOICE IN WATER!

Apply to be on the Santa Clara Valley Water District Youth Commission

Do you want to be the **voice of your generation** and speak up on how public policies affect young people? Do you want to learn and be inspired to be a **future public policy leader**? Apply to be on the **Santa Clara Valley Water District Youth Commission** and get involved in issues and activities relating to **water supply, conservation, flood protection, and stream stewardship**.



### Eligibility

- High School Youth (ages 13 - 18)
- Resident of Santa Clara County
- Able to commit 5 hours per month
- Available to attend meetings/learn opportunities during the evening

### Vacancies

There are current vacancies in districts 1, 2, 3, 4, 5, and 6. To find out which district you reside in, please visit [www.valleywater.org](http://www.valleywater.org) and type in your home address in the map provided.

Meetings will be held quarterly on Wednesday evenings at Santa Clara Valley Water District (Valley Water) Headquarters: 5700 Almaden Expressway, San Jose, CA 95118

Application deadline **EXTENDED: Sunday, May 31, 2020 5:00 p.m.**  
Download an application at: <https://delivr.com/2v2v4>  
For questions or more info email: [youthcommission@valleywater.org](mailto:youthcommission@valleywater.org)



[youthcommission@valleywater.org](mailto:youthcommission@valleywater.org)

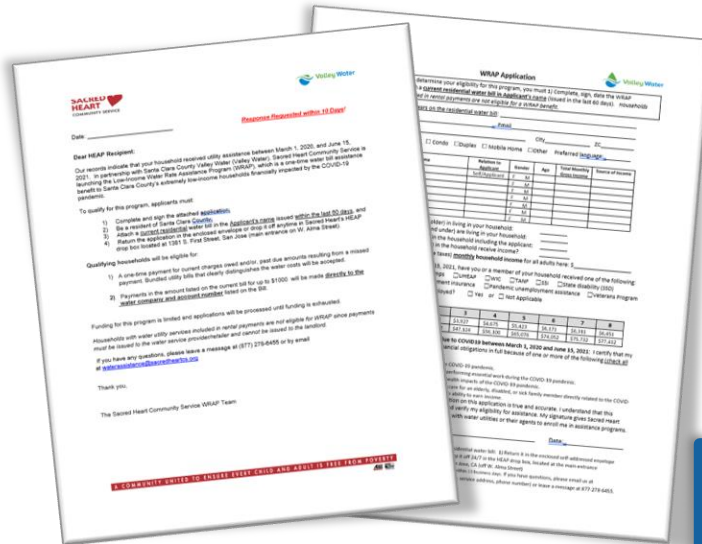


# Current Projects

8



## Low-Income Water Rate Assistance Program



## Drought Awareness Toolkit Campaign



# Stay Engaged; Stay Connected!

[civicengagement@valleywater.org](mailto:civicengagement@valleywater.org)



# Valley Water

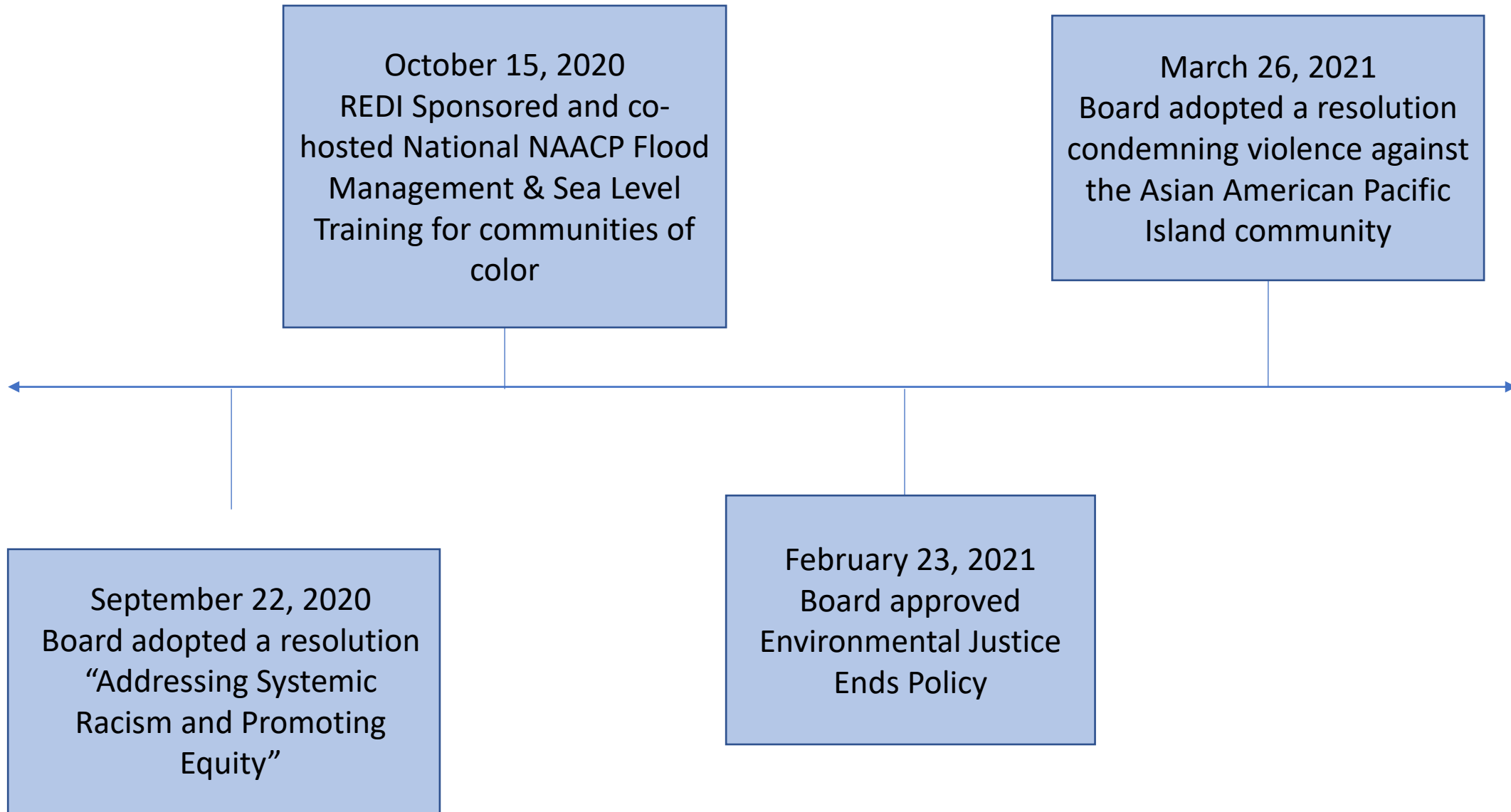
Clean Water • Healthy Environment • Flood Protection

## Water 101 Academy: REDI Office Overview

Presented By Linda Nguyen

Office of Racial Equity, Diversity & Inclusion (REDI)

# Accomplishments for the REDI Office



# Environmental Justice

Valley Water is committed to environmental justice and shall provide for the fair treatment and meaningful engagement of all people regardless of race, color, gender identify, disability status, national origin, tribe, culture, income, immigration status, or English language proficiency, with respect to the planning, projects, policies, services, and operations of Valley Water. Environmental Justice is achieved when all people receive:

- equitable consideration in the planning and execution of flood protection, water supply, safe drinking water, water resources stewardship projects, and protection from environmental and health hazards, and
- equal access to Valley Water's decision-making process.



# Looking forward for the REDI Office

- Developing Strategic Master Plan
- Developing activities and training that expand on equity, diversity and inclusion



# QUESTIONS







# Water 101 Academy – Emergency Services

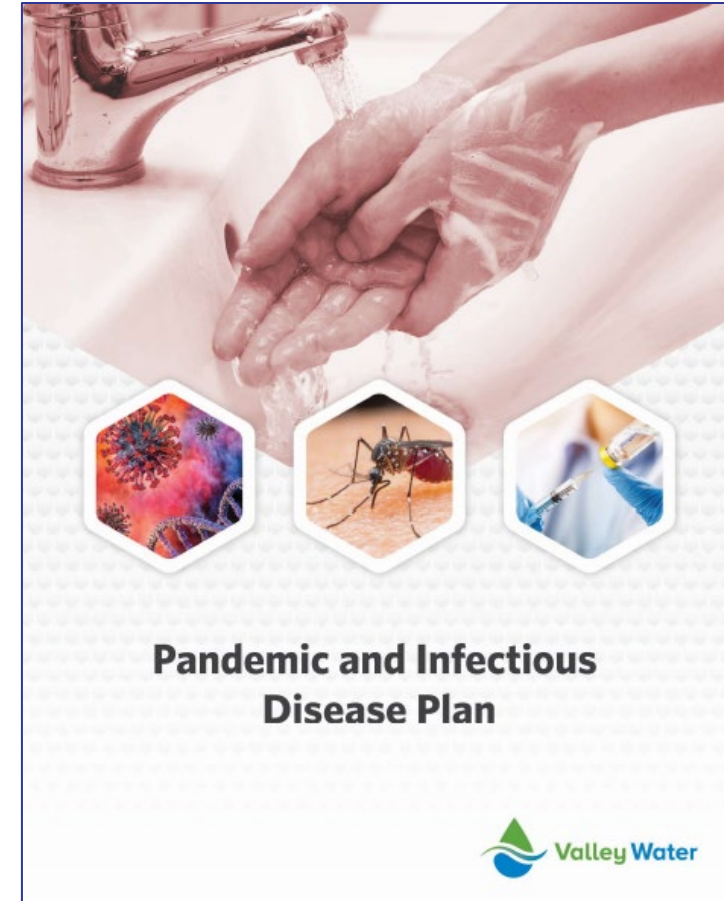
Presented by: Juan Ledesma, Program Administrator for Emergency, Safety and Security

# Agenda

- Emergency Planning
- Emergency Training and Exercise
- COVID-19 Pandemic
- Emergencies During Pandemic

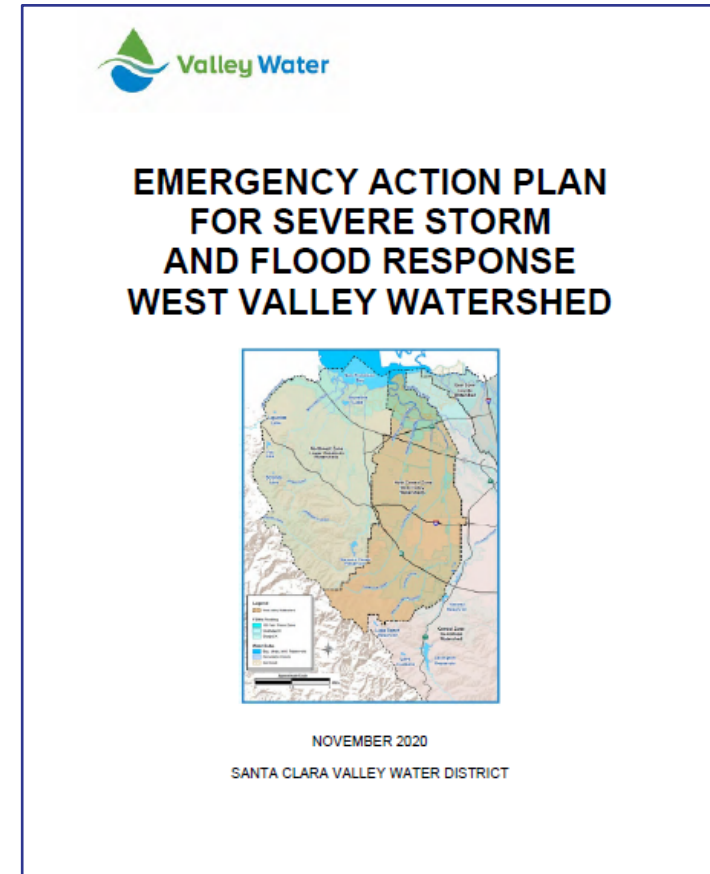
# Emergency Planning

- Emergency Operations Plan
- Local Hazard Mitigation Plan
- Business Continuity Program
- Crisis Management Plan
- Disaster Service Worker Program
- Emergency Operations Center (EOC) Handbook
- Emergency Action Plans (EAPs)
- Pandemic and Infectious Disease Plan



# Emergency Action Plans

- Flood/Stream EAP
  - Developed in collaboration with appropriate cities
  - Joint EAP with San Jose
  - E2/F2 Safe Clean Water
- Dam EAPs
  - Downstream Agencies
  - Floodplain, inundation maps
  - FERC





# Emergency Training and Exercise

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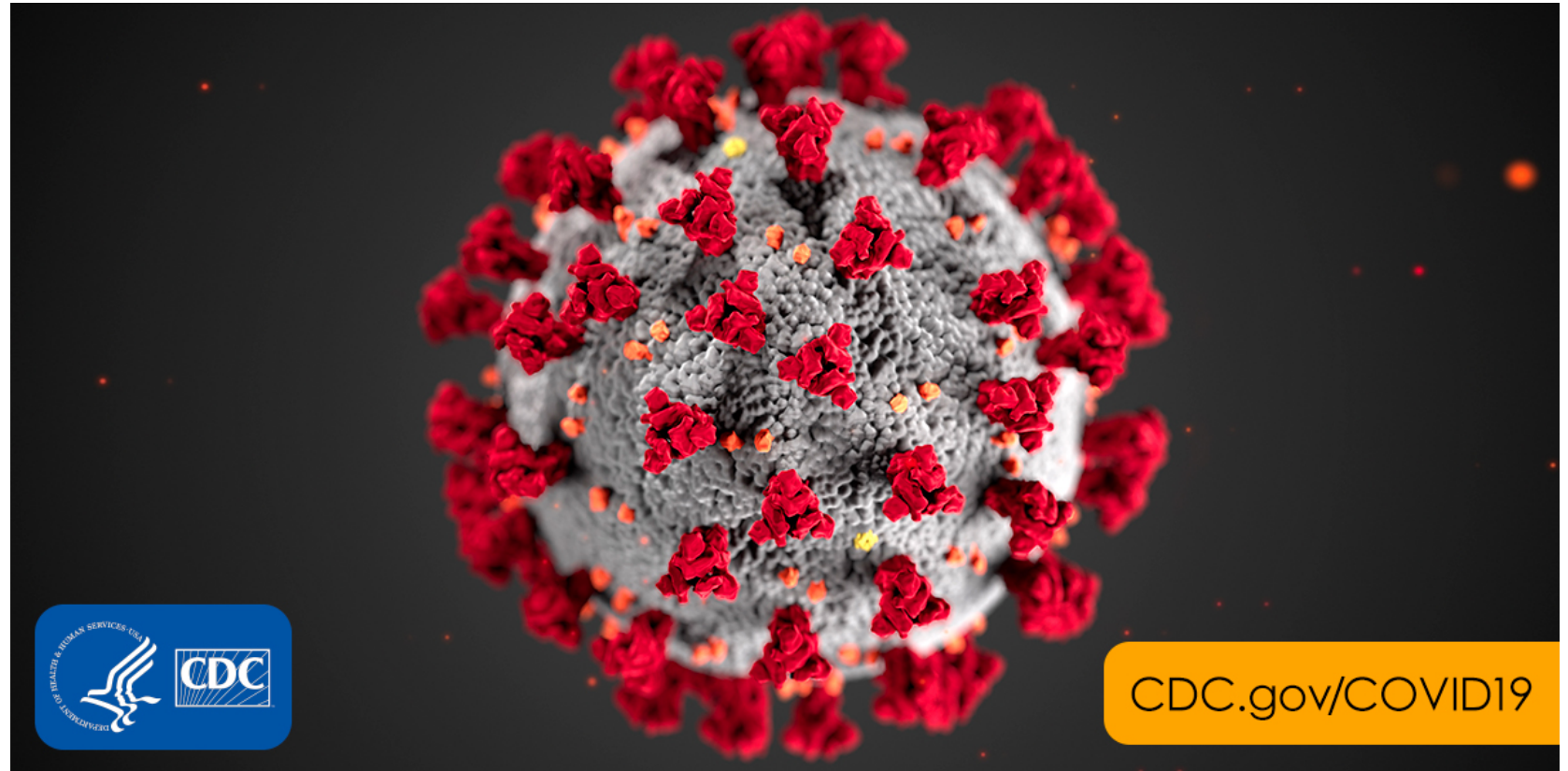
1. ICS/NIMS Training
2. EOC Handbook Training
3. EOC Operations Training
4. EOC Exercises
5. EAP Training and Exercise
6. Water Utility Exercises
7. County and City Training and Exercise



# COVID-19 Pandemic

7

- People Problem
- Primary focus of Business Continuity
- Social Distancing and Safety
- Virtual Environment and Telework



# Emergencies During Pandemic

8

- Wildfires
- Flood
- Public Safety  
Power  
Shutoffs  
(PG&E)
- Earthquakes
- Drought



# QUESTIONS

