

<b>DOCKETED</b>	
<b>Docket Number:</b>	17-AAER-10
<b>Project Title:</b>	Irrigation Controllers
<b>TN #:</b>	231067
<b>Document Title:</b>	Presentation - Landscape Irrigation Controller
<b>Description:</b>	On December 17, 2019, California Energy Commission staff will present a webinar on proposals for California's water efficiency regulations for landscape irrigation controllers. Discussion items will include definitions, test methods, and performance requirements. Interested stakeholders are invited to join a CEC workgroup to develop water efficiency proposals.
<b>Filer:</b>	Sean Steffensen
<b>Organization:</b>	California Energy Commission
<b>Submitter Role:</b>	Commission Staff
<b>Submission Date:</b>	12/10/2019 2:24:40 PM
<b>Docketed Date:</b>	12/10/2019



# Landscape Irrigation Controllers

Sean Steffensen, P.E.

Efficiency Division

California Energy Commission

December 17, 2019





# Agenda

What's the problem?

How you can help?

What do you think?



Who are we?

What staff proposes?

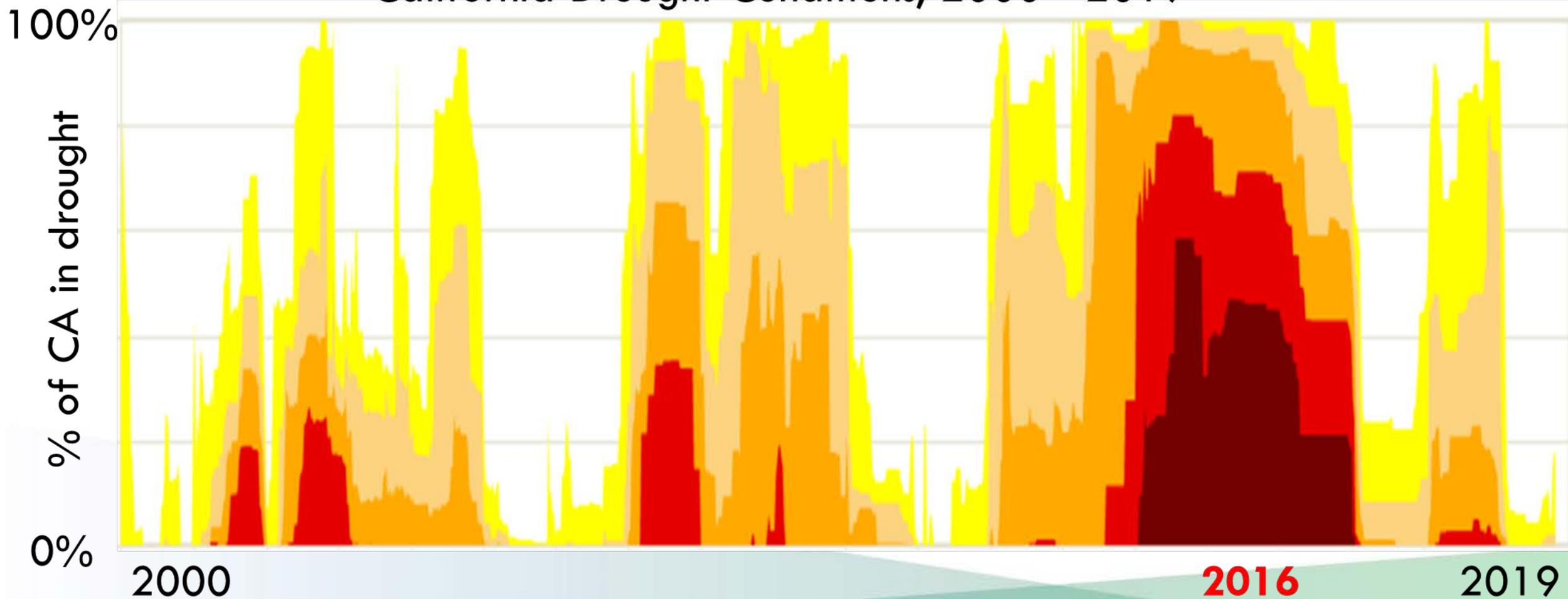


# What's the Problem?

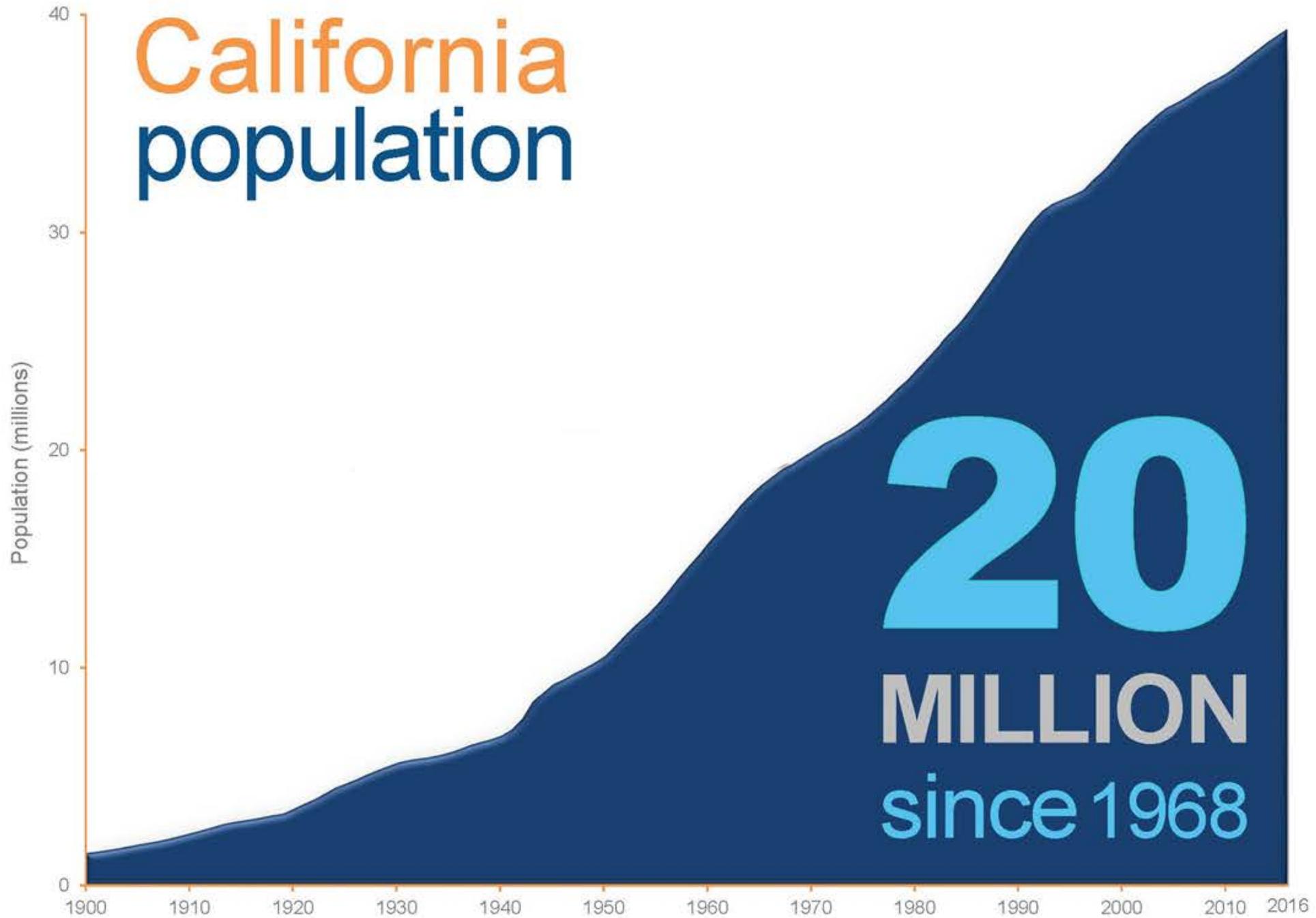


# California's Worst Drought in 1,200 Years

California Drought Conditions, 2000 - 2019



# California population



# Protecting Our Water Supply

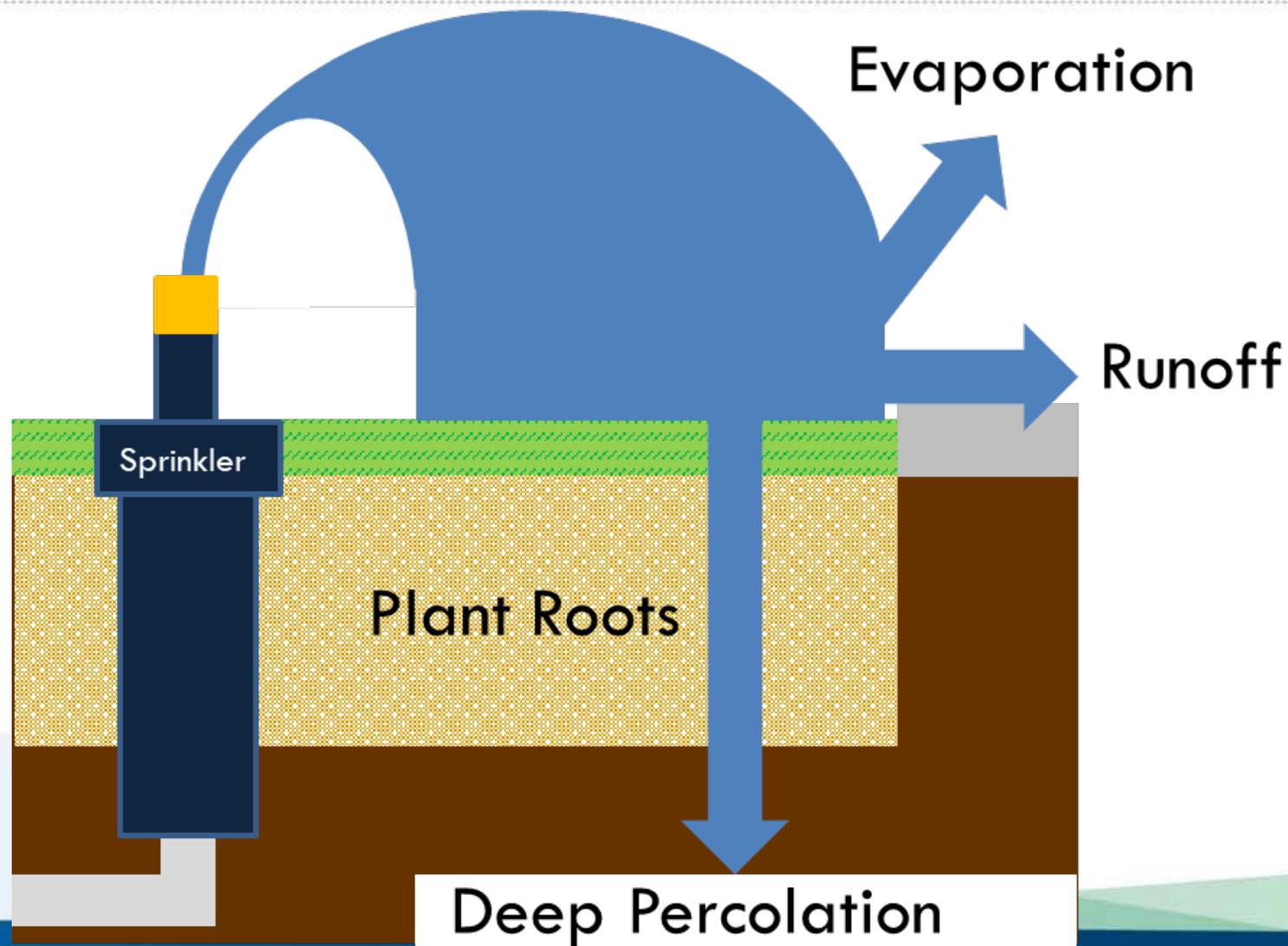


*Our drought was a wake up call to the impacts of climate change, and the immediate need to rethink the way we use water. ...we've got to get a lot smarter about how we store and utilize this resource to ensure that our economy, communities and natural places can all thrive.*

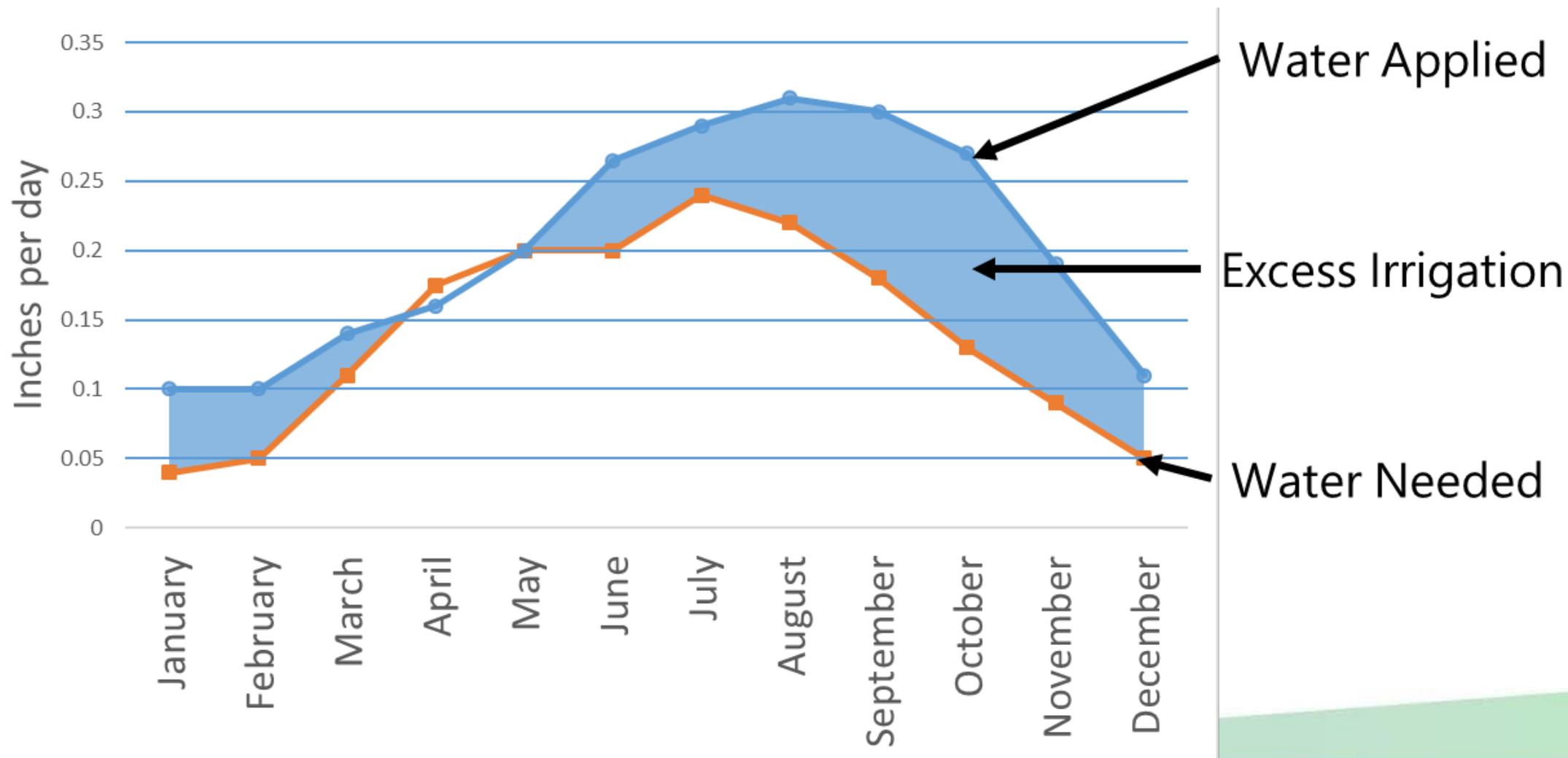
**Governor Gavin Newsom**



# Waste Occurs with Poor Irrigation Practice



# When to Water is as Important as How Much



# 2 Who Are We?



# CEC is California's Primary Energy Agency





# California Energy Commission

Commissioners appointed by Governor and confirmed by CA Senate to 5-year staggered terms



Chair Hochschild



Vice Chair Scott



Commissioner Douglas



Commissioner  
McAllister, Ph.D.



Commissioner Monahan

# Appliance Efficiency Regulations

- Achieve water and energy efficiency in appliances and buildings
- CEC recently adopted standards for spray sprinkler bodies to save 1.52 billion gallons per year
- Considering new energy or water efficiency standards for landscape irrigation controllers



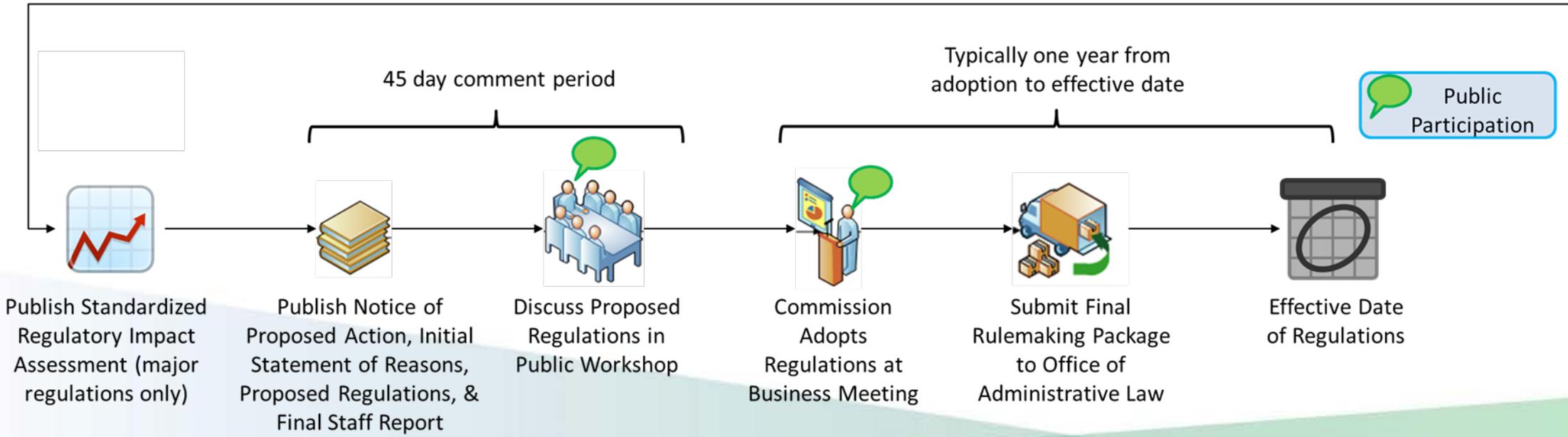
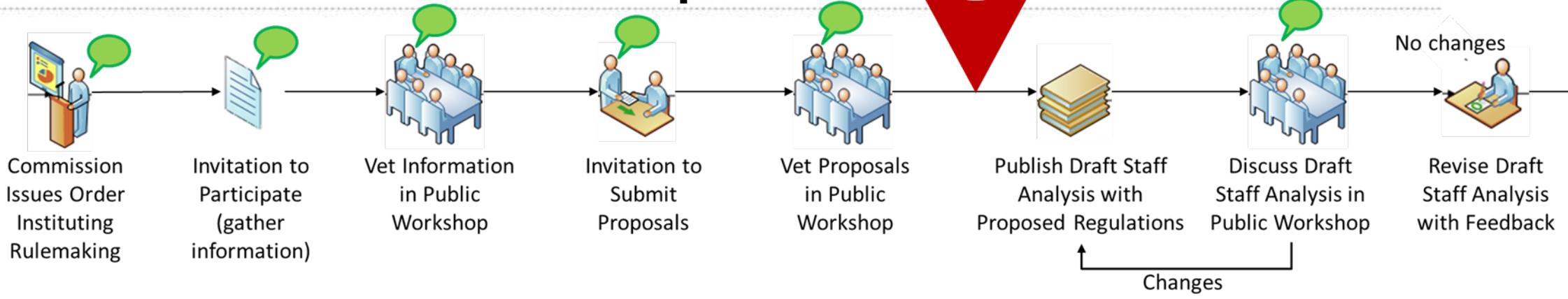
# 3 How You Can Help?



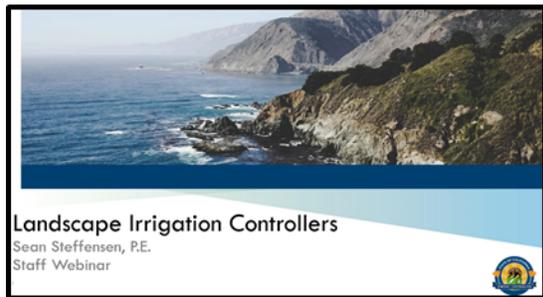
# Participate



# How Can You Participate?



# What Happens Next?



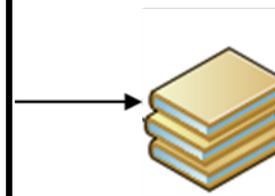
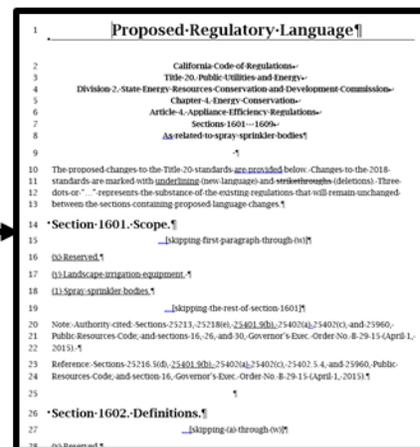
Today's Webinar



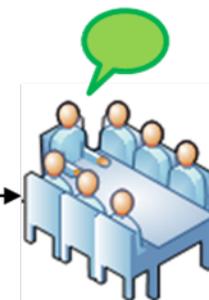
Test Procedure Development



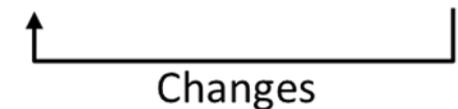
CEC Workgroup Commenting



Publish Draft Staff Analysis with Proposed Regulations



Discuss Draft Staff Analysis in Public Workshop



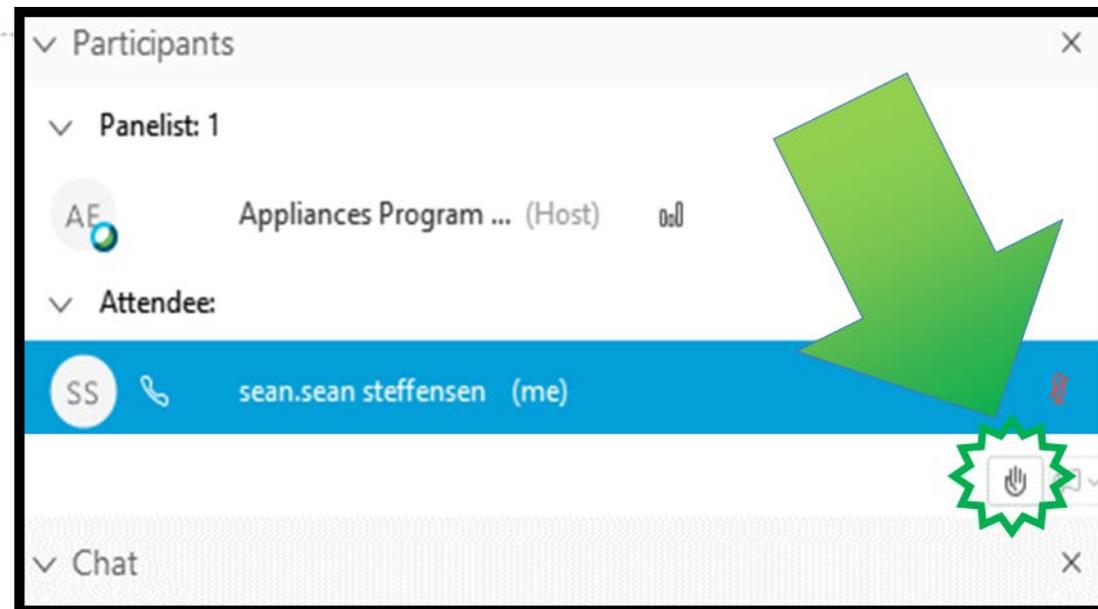
# How to Comment Today?

## Public comments from WebEx:

- Use raise-hand feature
- Staff will call upon you
- Please state name and affiliation
- Type a comment into chat-box, and it will be read aloud

## Phone only participants:

- All lines will be un-muted



# 4 What Staff Proposes

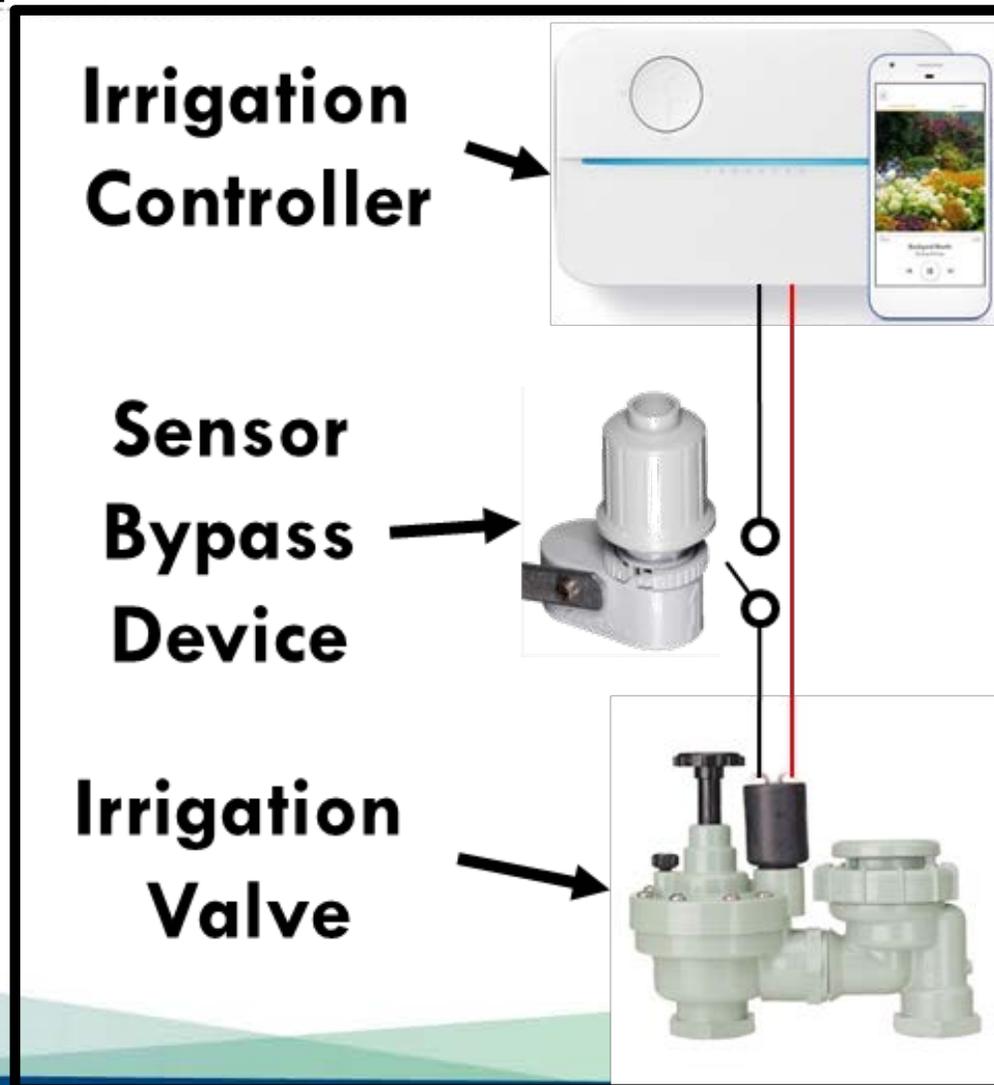


# Irrigation Controller Description

Controllers schedule irrigation by:

- Time clock
- Weather data
- Soil moisture

Controllers make valves open and close



# Sensor Bypass Device Description

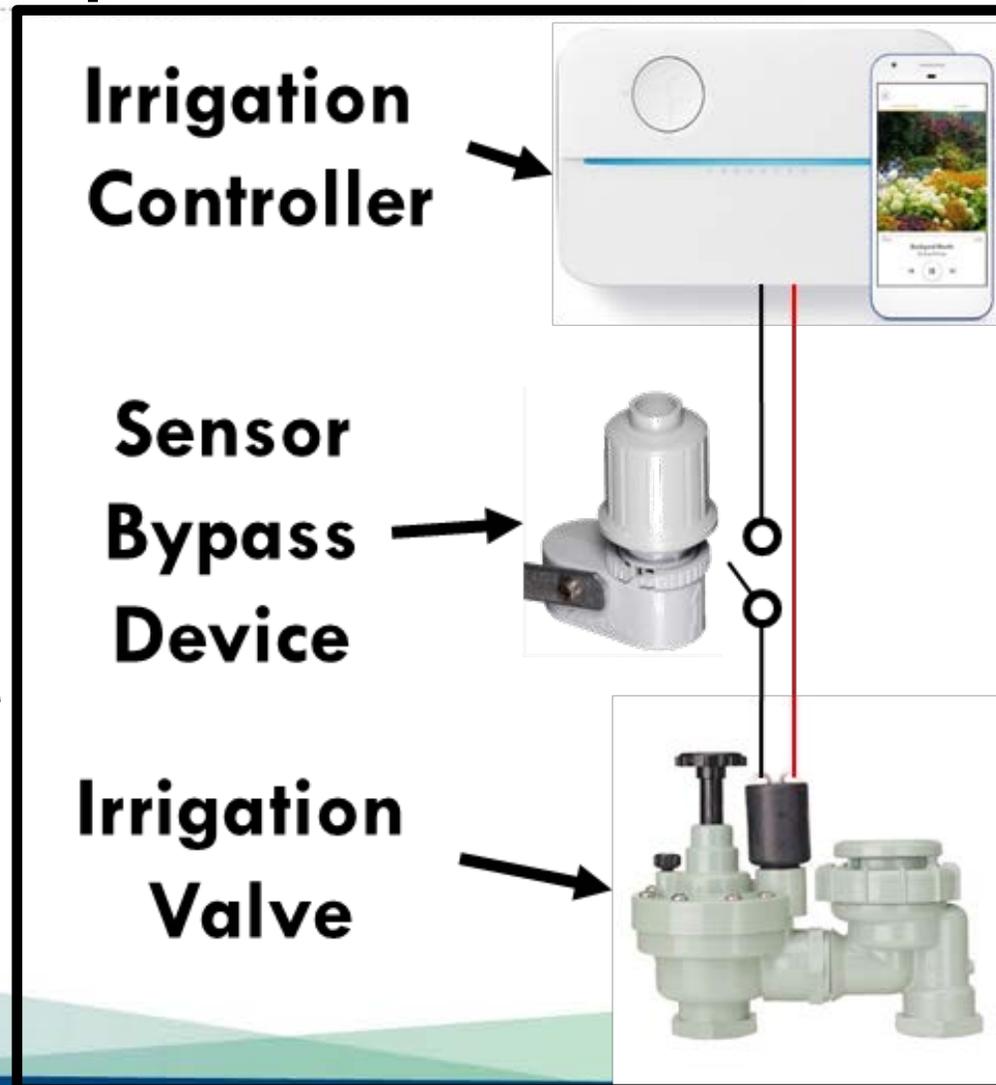
## Sensor Bypass Device

- 🔵 Rain sensor
- 🔵 Soil moisture sensor

## Optional device

- 🔵 Senses conditions
- 🔵 Opens a switch to bypass the valve command

Also known as a suspended cycle irrigation



# Key Facts

Purchase Price	\$20-\$400
Product Lifetime	10 years
California Controller Shipments	750 thousand/year
California Controller Stock	7.5 million units
Water Use Per Controller	88,000 gallons/year



# Staff Proposal Overview

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- Provide scope and definitions for Landscape Irrigation Controllers
- Review test methods including the EPA WaterSense Specification for Weather-Based Irrigation Controllers, V1.0 and others under development
- Establish certification and marking requirements
- Set a mandatory performance or prescriptive standards

# Scope is Intended to be Broad

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- Proposal would be mandatory unlike the voluntary U.S. EPA WaterSense
- Any controller meeting the definition must comply to be sold in California
- “Landscape Irrigation Controller” means an automatic device that sends a signal for automatic valves to open or close to provide the flow of water to a landscape irrigation system

Staff seeks comments on scope to identify devices and whether they should be in or out of scope and reasons why

# Evaluate Test Methods

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Evaluate test methods including:

- U.S. EPA WaterSense Specification for Weather-Based Irrigation Controllers, (V1.0)
- ASABE X627 Weather-based Landscape Irrigation Control Systems test method development

Staff seeks data to evaluate the test method and controller performance

**Staff seeks comments on test methods and data availability**

# Proposed Standard

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- Meet the irrigation adequacy and irrigation excess requirements per WaterSense Specification or the forthcoming ASABE Specification
- Meet the WaterSense supplemental capability requirements

Staff seeks comments on these requirements and suggestions for others

# Certification and Marking Requirements

Manufacturers would be required to certify each model of landscape irrigation controller to the CEC's appliance efficiency database

Manufacturers would be required to mark each controller with:

- Manufacturer name
- Brand name or trademark
- Model number
- Date of manufacture



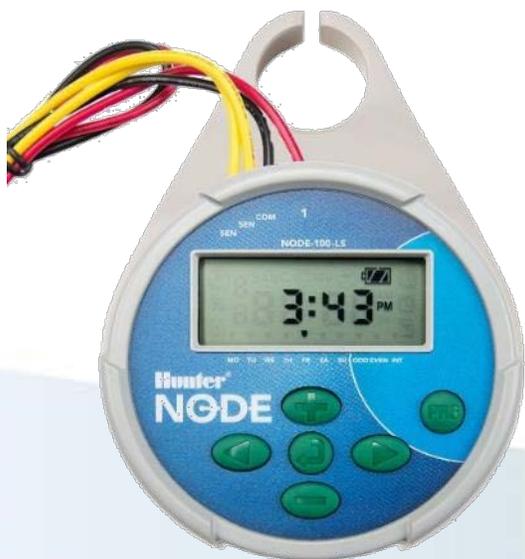
Staff seeks comments on these requirements and suggestions for others

# 5 What do You Think?



# Battery and Hose End Controllers Within Scope

- Should hose end controllers or battery-operated controllers be within the scope and meet the performance standard
- Should staff consider other types of controllers for inclusion or exclusion from the scope



Clock Timer Controller



Weather-Based Controller

# Sensor Bypass Devices are Out of Scope

- Device blocks the valve commands from the landscape irrigation controller
- Not a landscape irrigation controller per this proposal



Module



Probe

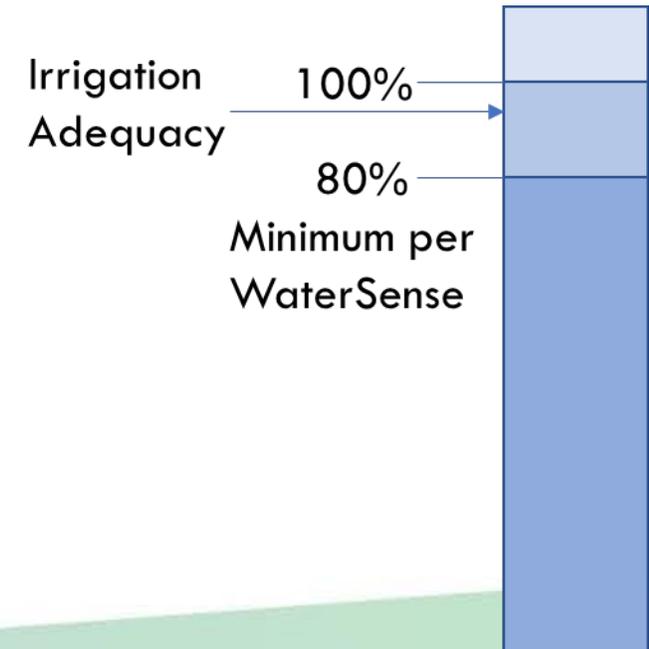
# We Need Help to Identify SMS Controllers

- Are there on-demand soil moisture sensing (SMS) controllers that initiate signals to open valves
- Staff has found one SMS controller but it is also certified to WaterSense Weather Based Controller
- What test methods are available to measure performance



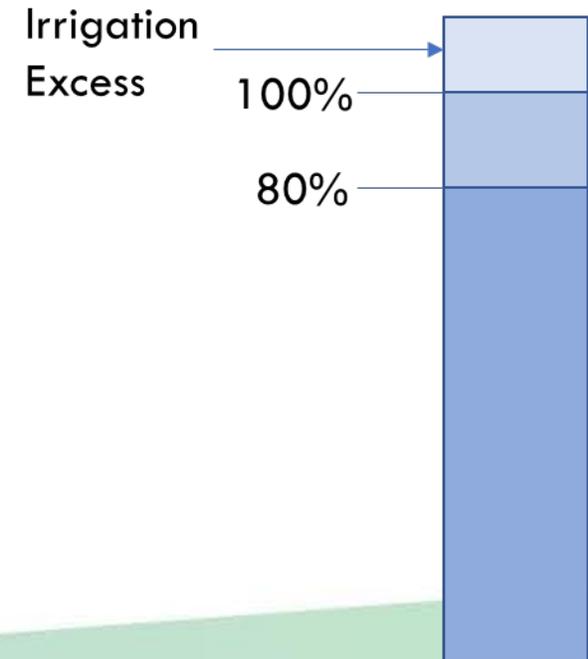
# Thoughts on Irrigation Adequacy

- Irrigation adequacy definition from U.S. EPA WaterSense Specification
- “Irrigation adequacy” means the ratio of crop evapotranspiration (ET<sub>c</sub>) less deficit, over crop ET<sub>c</sub>, as a percentage



# Thoughts on Irrigation Excess

- Irrigation excess definition from an early version of the SWAT irrigation controller test method
- “Irrigation excess” represents how much irrigation water was applied beyond the needs of the plant material
- Reflects the percentage of water applied in excess of 100% of required water according to data from CIMIS station



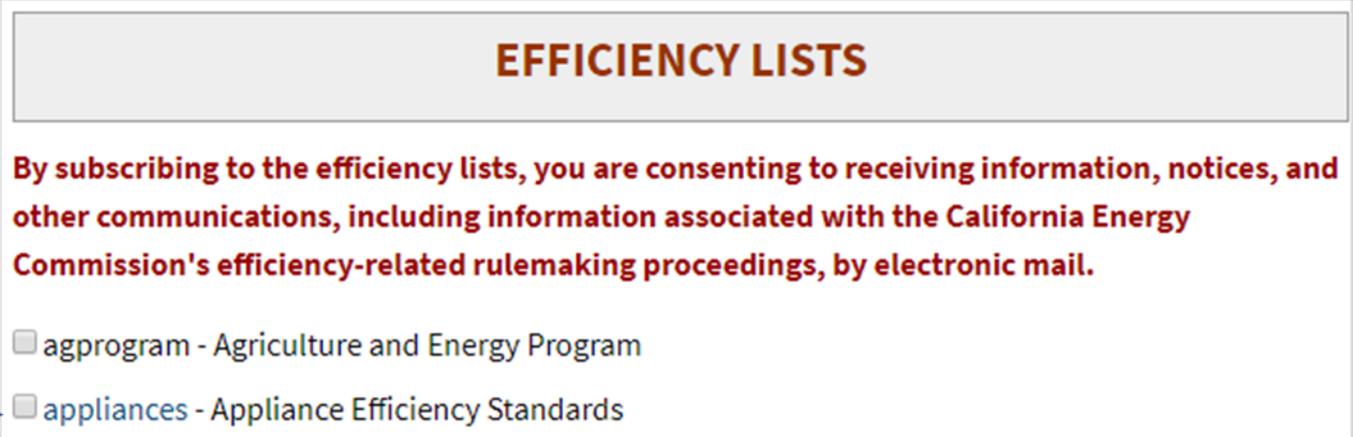
# What Other Items Should We Consider?

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- What performance metrics measure the water efficiency and utility of landscape irrigation controllers
- What other features should the CEC consider

# We Need Your Participation

- Contact me for invitation to the irrigation controller workgroup
- Call or email me to discuss
- Sign-up for the [appliances list serv](#) to receive official notices

A screenshot of a web form titled "EFFICIENCY LISTS". The form contains a consent statement and two checkboxes. A large blue arrow points from the "appliances list serv" link in the text above to the "appliances" checkbox in the form.

## EFFICIENCY LISTS

**By subscribing to the efficiency lists, you are consenting to receiving information, notices, and other communications, including information associated with the California Energy Commission's efficiency-related rulemaking proceedings, by electronic mail.**

- agprogram - Agriculture and Energy Program
- appliances - Appliance Efficiency Standards

# Join us to make water conservation a California way of life



Sean Steffensen | [Sean.Steffensen@energy.ca.gov](mailto:Sean.Steffensen@energy.ca.gov) | 916-651-2908  
Efficiency Division | CEC