# Ad Hoc Sustainable Groundwater Planning Advisory Committee

## Meeting No. 6

GoToMeeting Teleconference

March 11, 2021

Pajaro Valley Water Management Agency

# Introductions

- Welcome
- Review Meeting Guidelines
- Roll Call
- Review Meeting Objectives
- Review Meeting Schedule
- Received Correspondence
- Comments for Items Not on Agenda

# Review Meeting Protocols

1) Permit the Facilitator / Host to lead.
2) Respond to roll call of Committee Members /Public/Identify Phone numbers.
3) Follow the Agenda to ensure meeting objectives are met.
4) Empower facilitator to queue and prioritize speakers.
5) Minimize disruption by allowing speakers to own the mic.
6) Alert the Facilitator through “requesting the mic” via the “chat bubble” are “raising hand” through the messaging function.
7) Try to be brief in communications in order for others to participate.
8) Be patient with technology and each other as we adapt to remote communication.

# GoToMeeting Technical Guidelines

1) Use the phone icon to mute via the computer and sign on with a muted phone
2) Use *6 to mute and unmute on phone
3) When not speaking, mute your computer to eliminate and reduce feedback.
4) Use the “chat bubble” to message and alert Facilitator when you want to speak.
5) If on phone and logged in online, please enter PIN on phone.
6) This meeting is being recorded.

# Roll Call

| AFFILIATION | COMMITTEE MEMBER |
|---|---|
| Santa Cruz County Farm Bureau | Chair Kirk Schmidt |
| PV Water Board | Vice-Chair Bob Culbertson |
| PV Water Board | Javier Zamora<br>Alternate: Tom Broz |
| PV Water Board | Amy Newell<br>Alternate: Mary Bannister |
| Santa Cruz County | Sierra Ryan |
| Monterey County | Unfilled |
| San Benito County | Unfilled |
| Monterey County Farm Bureau | Robert Rodoni |
| City of Watsonville | Beau Kayser |
| Pajaro Sunny Mesa Community Services District | Sandy Coplin |
| Aromas Water District | Robert Johnson |
| California Water Service Company | Gary Vincelet |

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| Rural Residential Well Owner Representative | Marla Anderson,<br>Residential Well Owner<br><br>Alternate: Mayra Hernandez,<br>Community Water Center |
| Environmental Representative | Jonathan Pilch,<br>Watsonville Wetlands Watch |
| Mutual Water Company Representative | Sandra Hoppe,<br>San Andreas Mutual Water Company |
| Disadvantaged Community Group Representative | Christi Suchil,<br>City of Watsonville Resident |
| Agriculture Representative | Tannis Thorlakson,<br>Driscoll's Inc.<br>Alternate: Kyle Monper |

# Review Meeting Objectives

- Discussions and priorities on GSU22 development
  - Management / Governance
  - GSU22 Development
  - Communication & Engagement (C&E)
  - Next Steps/Actions/Information Needed

# Meeting Schedule 2020-21

| Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Oct-Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Admin | General | Seawater Intrusion | Surface Water Depletion | Seawater Intrusion | Seawater Intrusion | Lowering GW Levels | Surface Water Depletion | Management Actions | Monitoring Plans | Monitoring Plans | Board Meeting |
| General | Intro to Sustainability Criteria | Land Subsidence | Groundwater Dependent Ecosystems | | | Groundwater Dependent Ecosystems | General | General | General | Admin | Admin |
| | Lowering GW Levels | | | | | General | Board Meeting | | Board Meeting | | Submit GSU22 to DWR |

**Stakeholders' Input**

# Received Correspondence

# Comment for Items not on Agenda

# Management/Governance

- Consider Corrections of GSU22 February 11th Meeting Summary
- Receive Report on PV Water Board Meeting
- Consider GSU22 Committee Member Appointments

# February 11 Meeting Summary

# PV Water Board Meeting Update

# Consider Committee Appointments

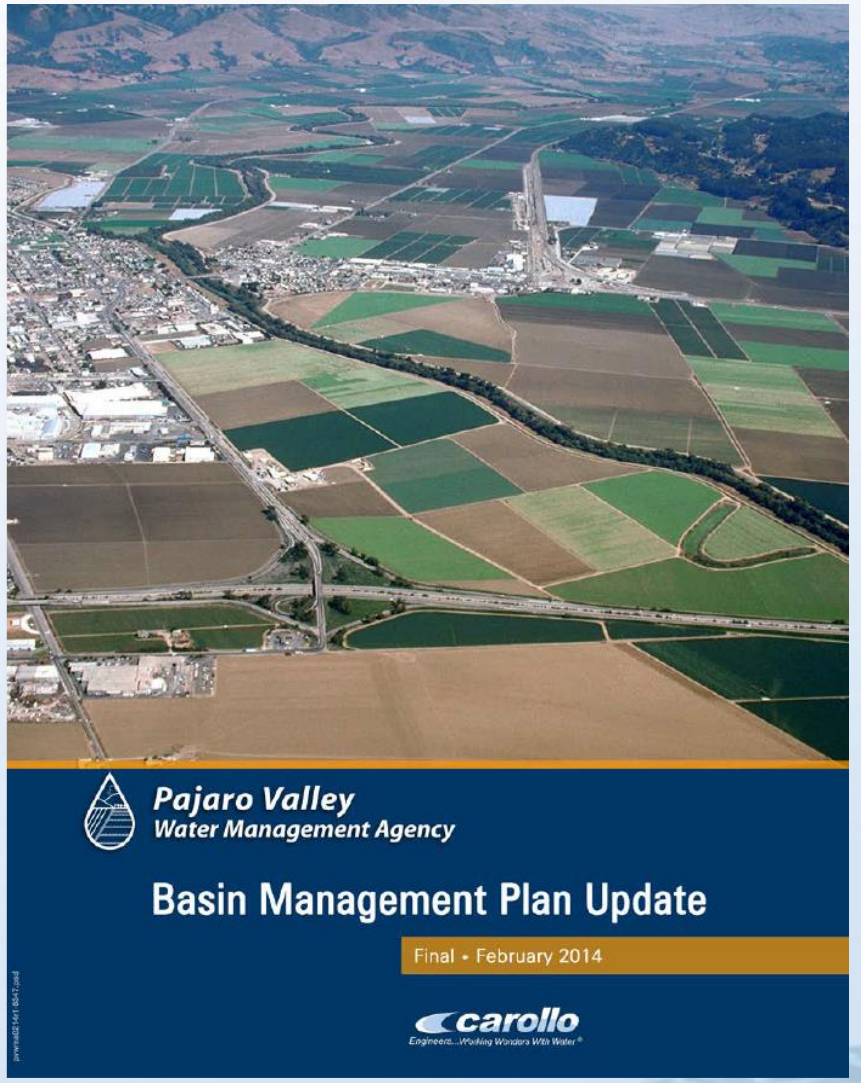
# GSU22 Development

- Receive Comments on Seawater Intrusion (SWI) Options Technical Memo and Updated SWI Maps
- Review and Finalize Proposed Options for SWI Sustainable Management Criteria (SMC)
- Review Groundwater Levels (GWLs) SMC
- Committee/Public Questions & Comments

# Feedback for Seawater Intrusion (SWI) Sustainable Management Criteria (SMC)

- SWI Technical Memos
- Statement of Significant and Unreasonable Conditions
- Undesirable Results of Chloride Concentrations for Seawater Intrusion SMC
- Approach for Developing SWI SMC

# Basin Management Plan (BMP) includes focus on seawater intrusion




Sustainable Groundwater Management Program
Alternative Assessment Summary
Pajaro Valley Subbasin

- DWR designated Basin as critically overdrafted in 1980 citing seawater intrusion
- BMP adopted in response to deteriorating groundwater conditions caused by seawater intrusion before SGMA
- DWR: PV Water's "Agency's decision to focus on restoring groundwater elevations to a condition that eliminates seawater intrusion is reasonable"

# DWR Recommends Developing Seawater Intrusion SMC

Sustainable Groundwater Management Program
Alternative Assessment Summary
Pajaro Valley Subbasin

- PV Water's Alternative GSP describes pre-SGMA *rate* of seawater intrusion as minimum threshold for seawater intrusion
- Recommended Action 6: ... the Agency should define a specific *location* of an isoconcentration contour or some other equivalent method that can be used on an ongoing basis to assess progress toward eliminating undesirable results associated with seawater intrusion to assess the goal of eliminating seawater intrusion through implementation of projects and management actions as described in the Plan.
- Recommended Action 7: ... the Alternative should be updated…to quantify the *extent* to which *additional* seawater intrusion would not be significant and unreasonable

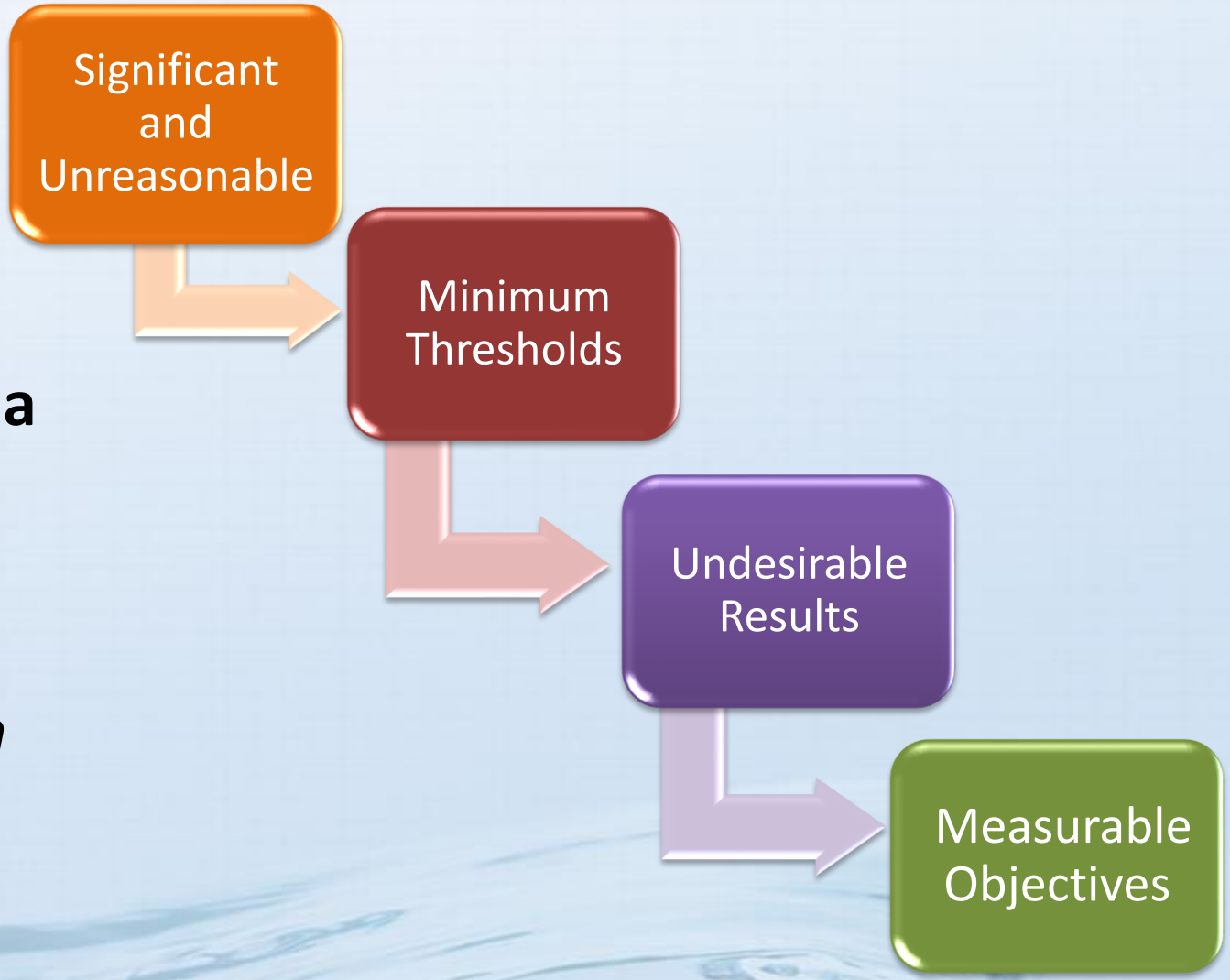
# We want your input on proposed SMC today

***The proposed SMC are based on feedback received on the following questions:***

- ***How far inland is seawater intrusion acceptable and why?***
- ***How should we define whether seawater intrusion is occurring in the Basin?***

| SMC | Proposal | Reasons |
|---|---|---|
| **Significant and Unreasonable Conditions** | It would be significant and unreasonable for seawater to intrude into the Aromas aquifer beyond the inland extent of intrusion as will be observed in 2025 | BMP goal for Phase 1 Projects is to Reduce Seawater Intrusion 90% by 2025 |
| **Minimum Threshold (MT) Chloride Isocontour Location** | 1,000 feet inland of Estimated Isocontour based on observations including shallow intrusion along Elkhorn Slough | Accommodates multi-year movement before 2025 |
| **MT Chloride Concentration** | 250 mg/L | Drinking water standard and studies indicate sensitive crops tolerates concentrations up to 250 mg/L |
| **Undesirable Results** | MT Exceedances (SWI Inland of MT Chloride Isocontour) in 3 of 5 Years | Confirms SWI inland of MT isocontour represents long-term trend |
| **Measurable Objective (MO) Chloride Isocontour Location** | Same as MT Chloride Isocontour | Accommodates multi-year movement before 2025 |
| **MO Chloride Concentration** | 100 mg/L | Goal of high groundwater quality |

# Describing Significant and Unreasonable Conditions is 1st SMC Step



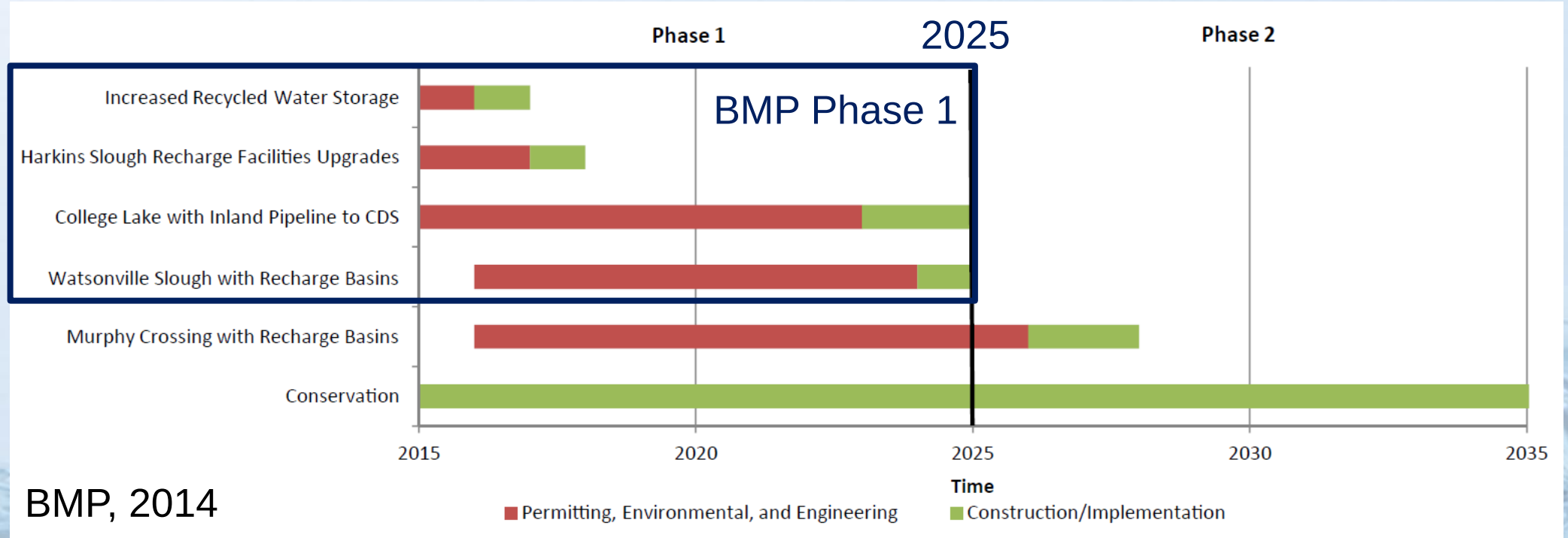

**Significant and Unreasonable Conditions for seawater intrusion is a <u>qualitative</u> description that answers question:**

***How far inland is seawater intrusion acceptable and why?***

# Proposed Significant and Unreasonable Conditions

- BMP goal for Phase 1 Projects is to Reduce Seawater Intrusion 90% by 2025

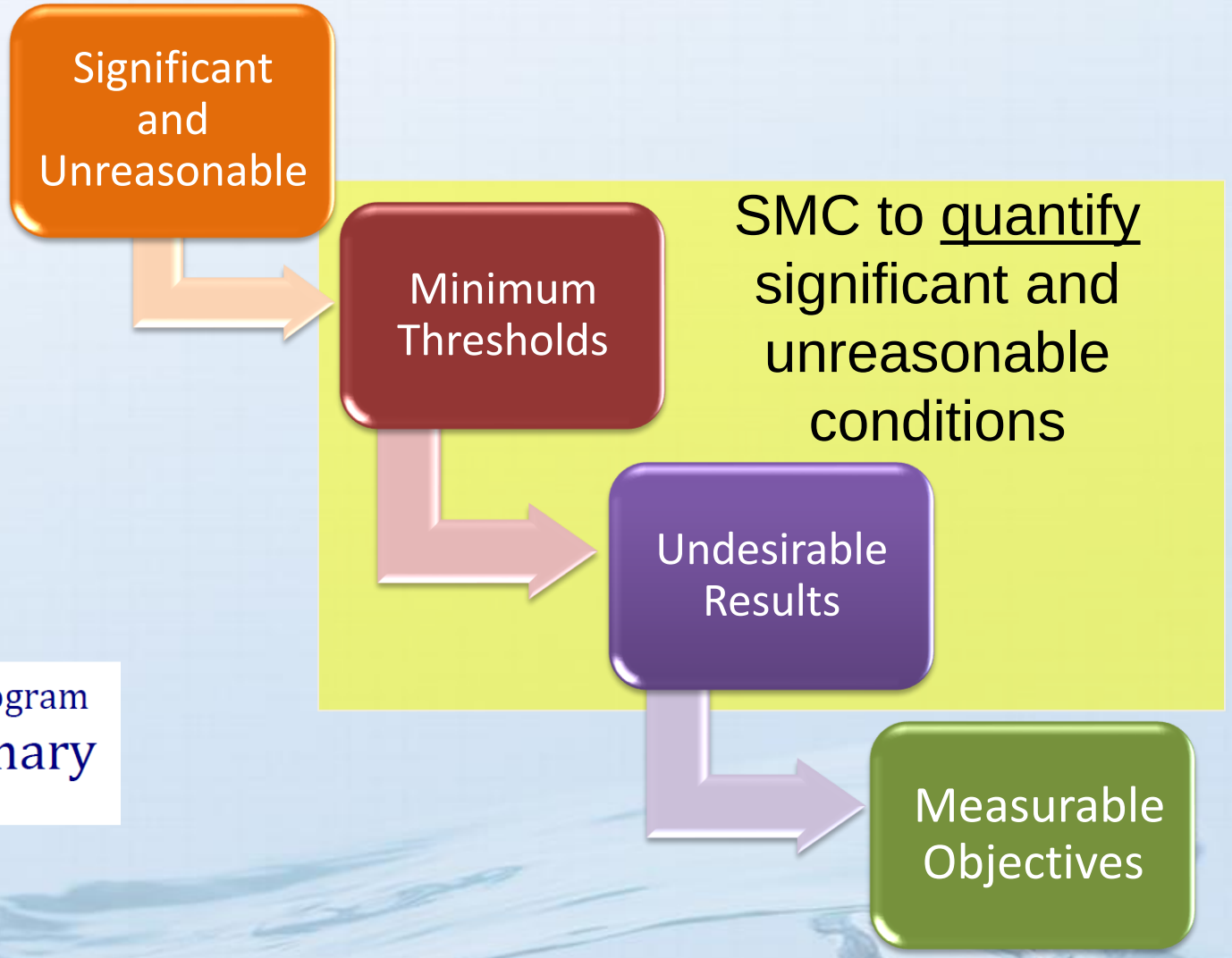
***Therefore, it would be significant and unreasonable for seawater to intrude into the Aromas aquifer beyond the inland extent of intrusion as will be observed in 2025.***




BMP, 2014

# SMC Must Quantify Significant and Unreasonable Conditions

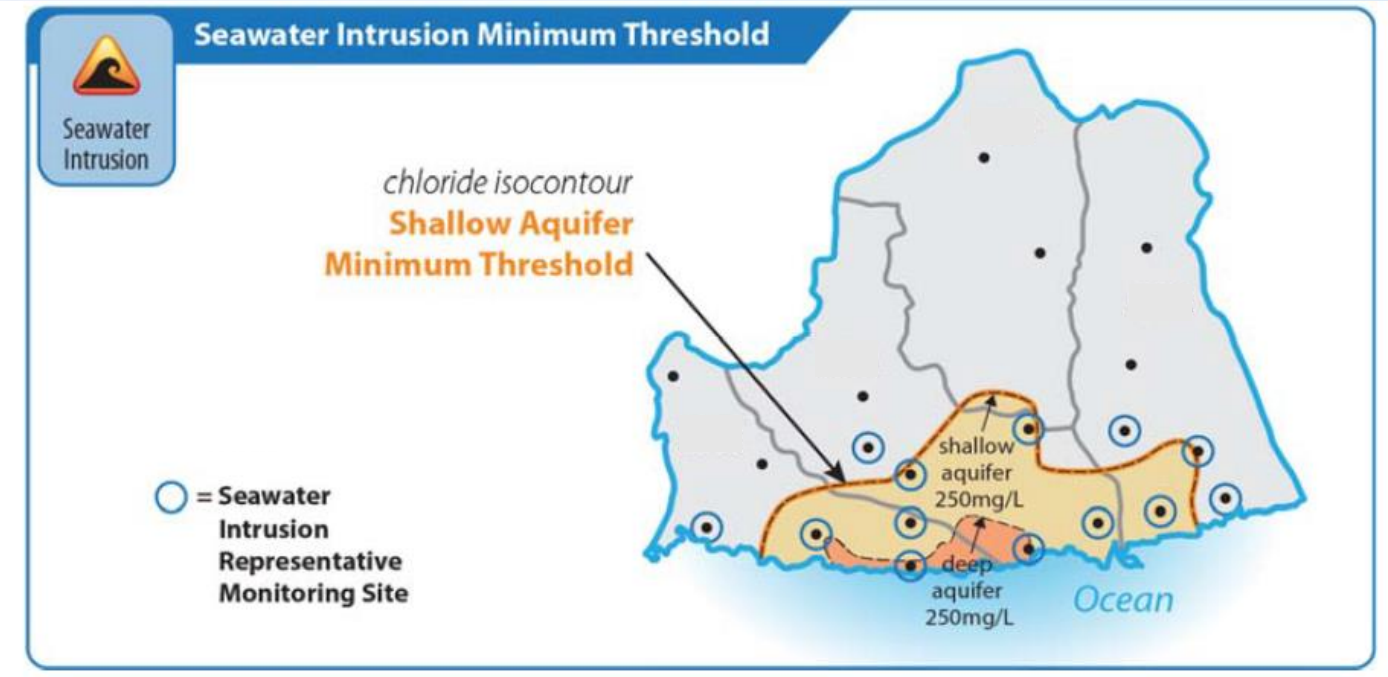
<u>DWR Recommended Action 7:</u>
... the Alternative should be updated...to <u>quantify</u> the *extent* to which *additional* seawater intrusion would not be significant and unreasonable




Sustainable Groundwater Management Program
Alternative Assessment Summary
Pajaro Valley Subbasin

# Use chloride isocontour for minimum threshold (MT)

DWR Recommended Action 6: ... the Agency should define a specific *location* of an isoconcentration contour or some other equivalent method that can be used on an ongoing basis to assess progress toward eliminating undesirable results associated with seawater intrusion…

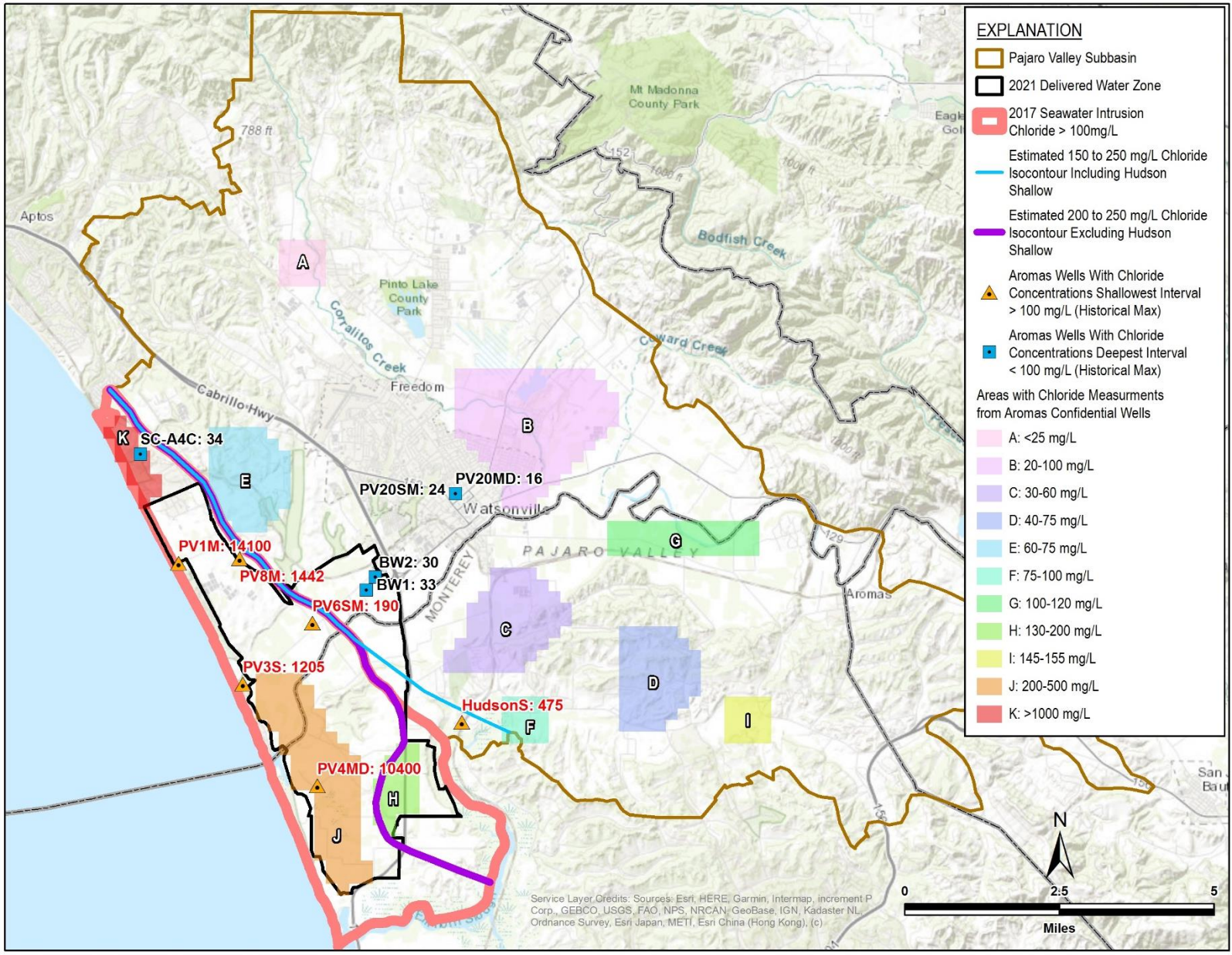



Modified from DWR, 2017

- SGMA requires use of chloride concentration isocontour for MT
  - Isocontour is geographic line where chloride in groundwater can be divided into areas higher and lower than a specified concentration.
  - Concentrations *inland* of isocontour higher than the MT isocontour concentration is a MT exceedance if caused by seawater intrusion
  - Any concentrations higher than MT concentration on *coastside* of isocontour is not a MT exceedance

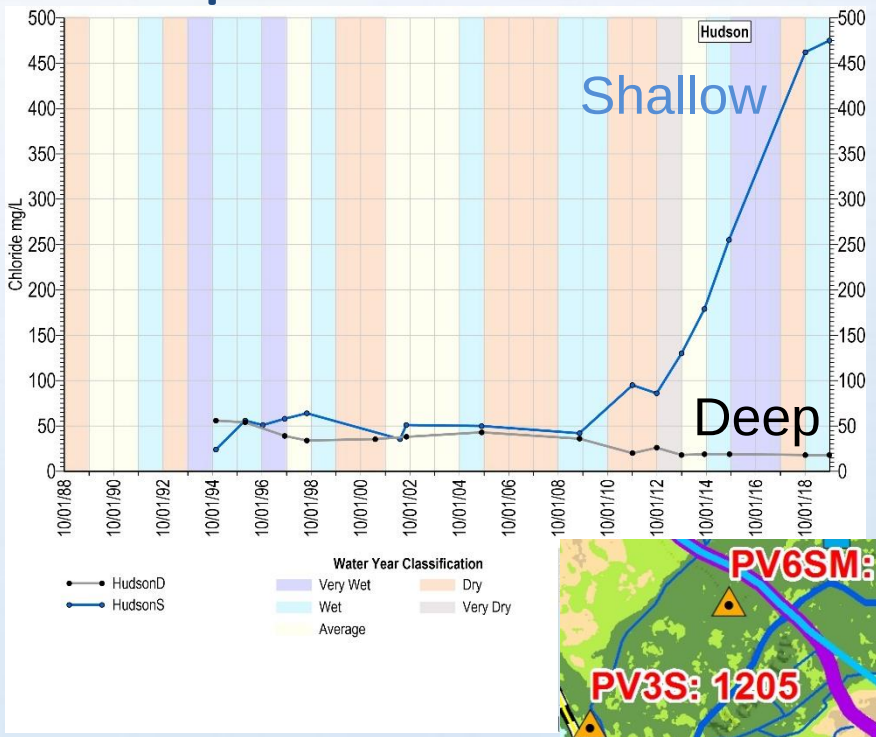
# To estimate 2025 isocontour, evaluate historical concentrations

- Mostly can't distinguish isocontours up to 250 mg/L from 100 mg/L isocontour observed through 2017
- Southern area has concentrations between 100-250 mg/L
- Inland salinity addressed in Salt and Nutrient Management Plan (SNMP)



# Recommended that isocontour represent recent shallow intrusion from Elkhorn Slough

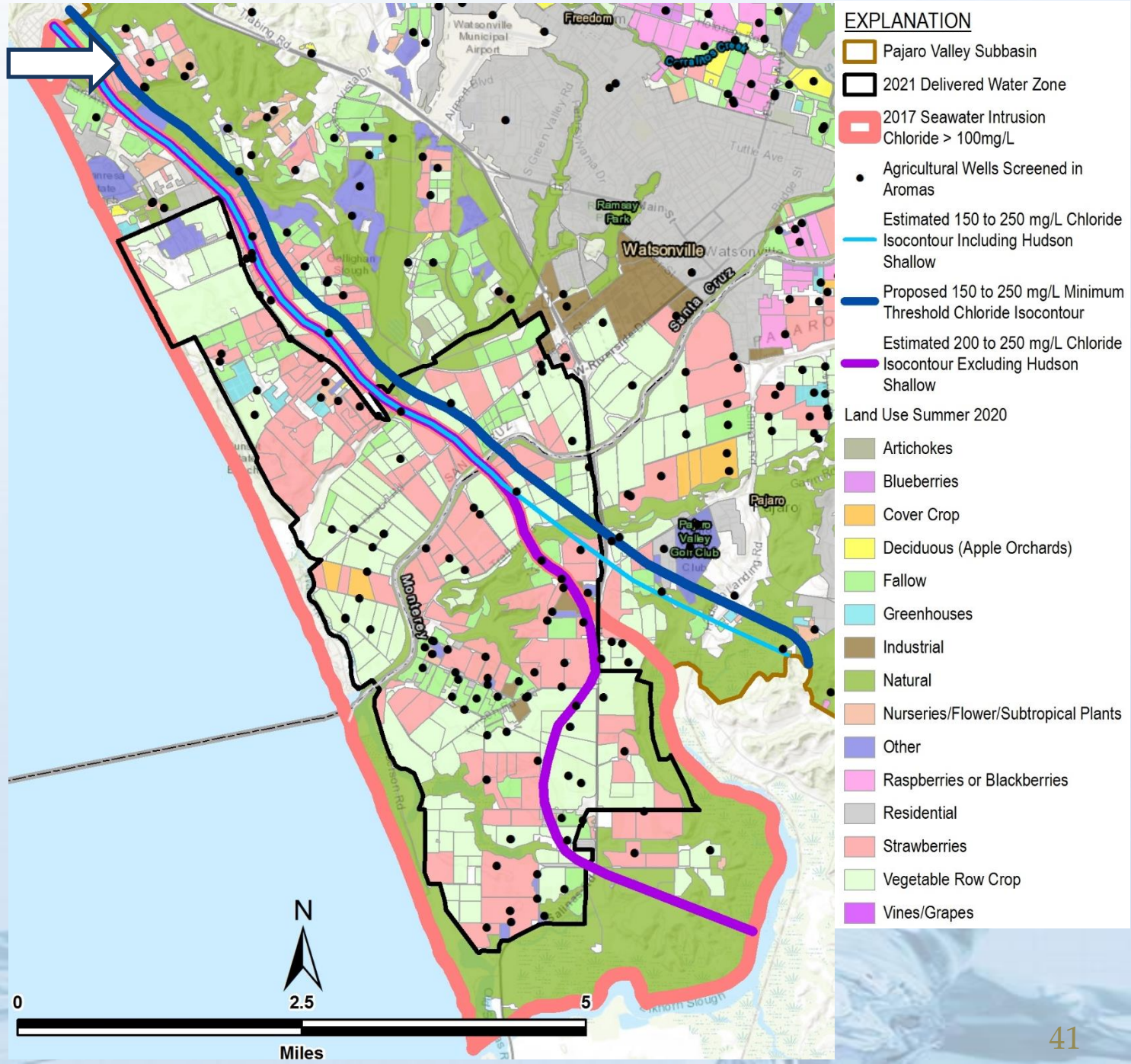
- Hudson well data not available when 2017 isocontour was developed
  - Deep well in Aromas/Purisima has low concentrations (<20 mg/L)
  - Shallow well in Aromas indicates intrusion (475 mg/L) from Elkhorn Slough
- Results in isocontour farther inland but does not indicate new intrusion since 2017



# Proposed minimum threshold isocontour vs. ag land use

- Move 1,000 feet inland of estimated isocontour based on data to represent 2025 conditions
  - SNMP estimated historical rate of 880 feet/5 years
- Will be reviewed after 2025
- Limited ag wells affected by additional 1,000 feet

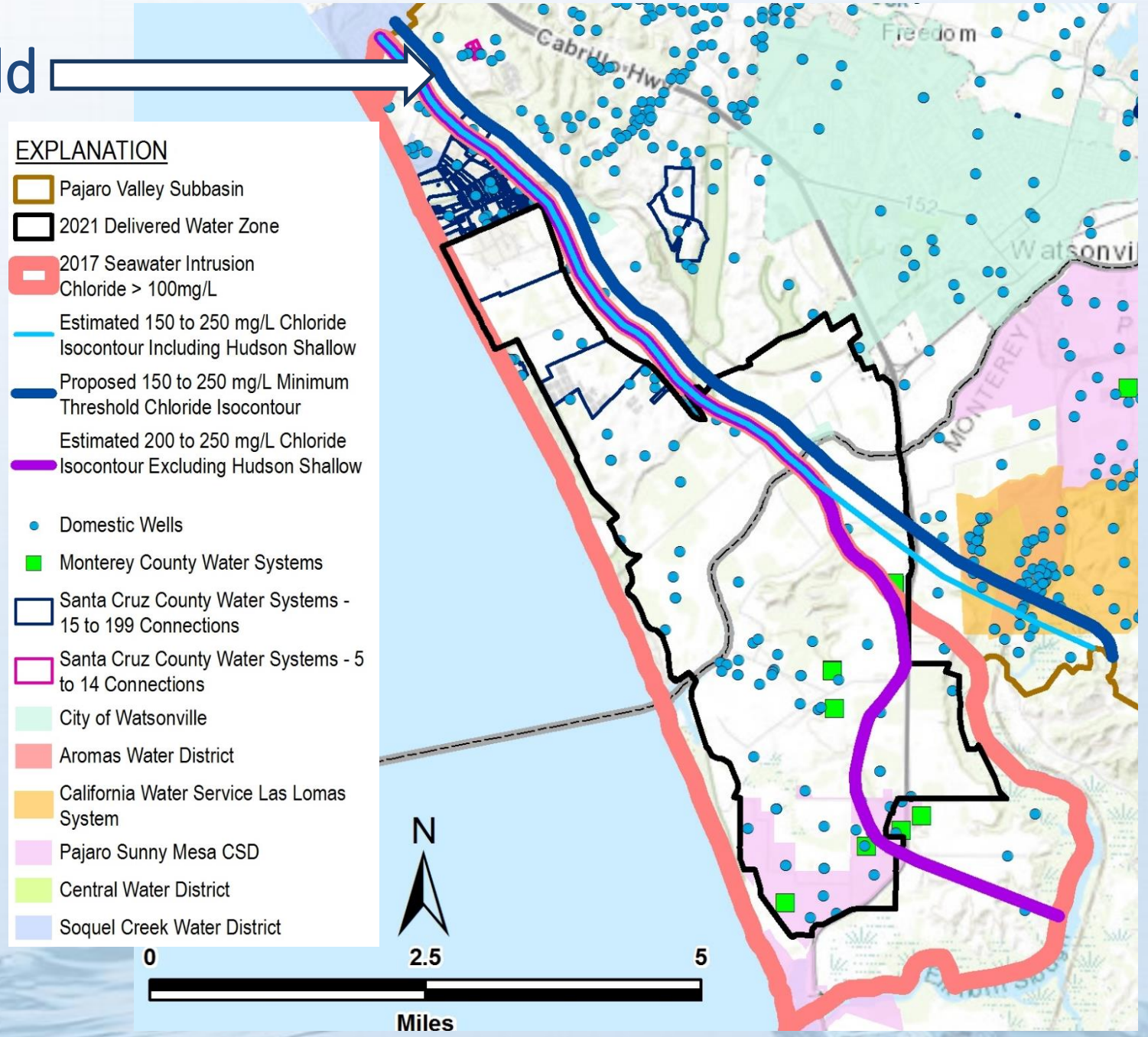
• Agricultural Wells Screened in Aromas



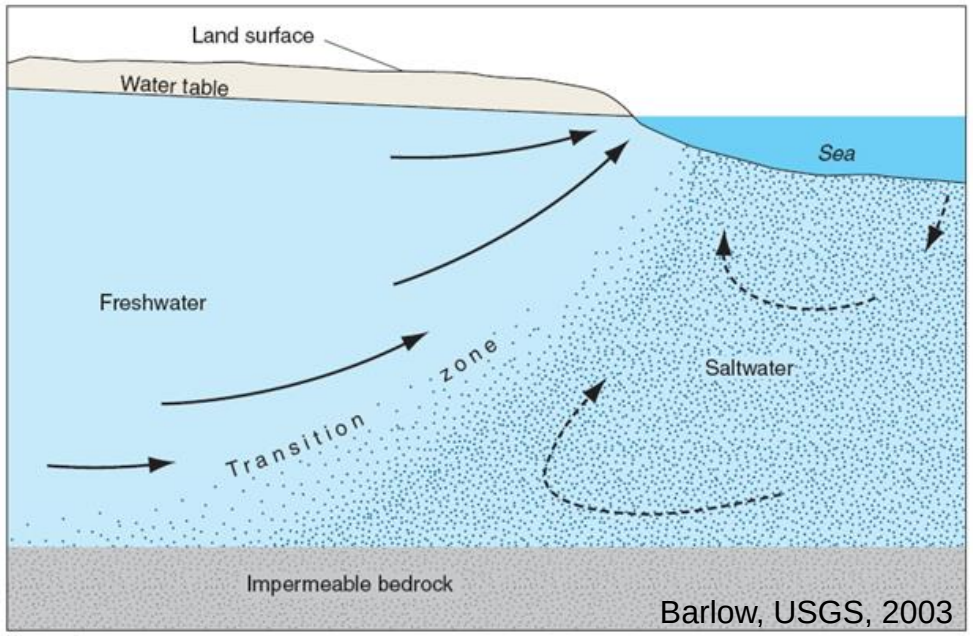
# Proposed minimum threshold isocontour vs. domestic use

- Limited domestic wells affected by additional 1,000 feet
- Consistent with chloride concentration of up to 250 mg/L to meet recommended secondary Maximum Contaminant Limit (MCL)
  - based on taste and odor effects

Domestic Wells



# Need to define chloride concentration for minimum threshold




- Adverse effects can occur under brackish conditions
- 250 mg/L is secondary MCL
- GSU22 Committee: 150-250 mg/L based on crop tolerance

Minimum Threshold Exceedances

Undesirable Results after 2040

State Intervention In Basin Management

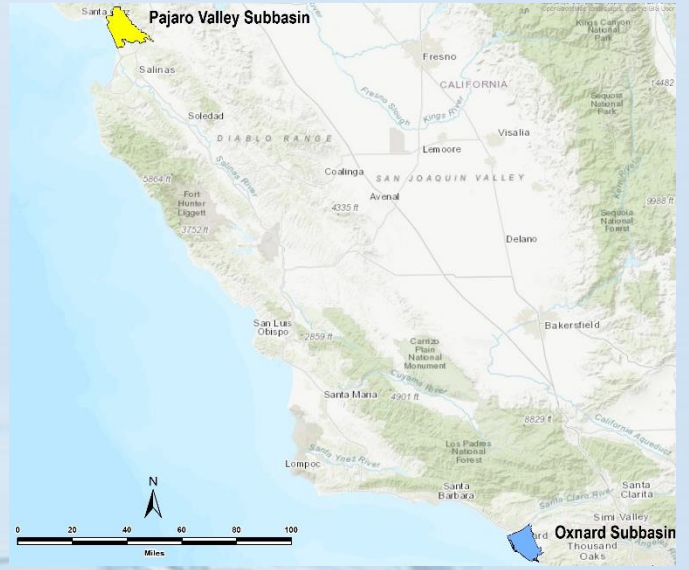
CALIFORNIA WATER BOARDS
State Water Resources Control Board

# Strawberries have highest sensitivity to chloride

## Updated, local research on strawberry cultivars

(Biscaro and Cahn, 2019)

| Chloride Concentration (mg/L)[1] | Representative Water Quality | Yield Loss Compared to Control | |
|---|---|---|---|
| | | Fronteras (Oxnard) | Monterey (Pajaro) |
| 43 | Control | -- | -- |
| 64 | Oxnard Avg | N/A | N/A |
| 149 | Pajaro Valley Avg | 6% | 3% |
| 273 | Pajaro Valley Avg + 1.25 Standard Deviations | 13%[2] | 0% |
| 415 | Pajaro Valley Avg + 2.7 Standard Deviations | 17%[2] | 5% |

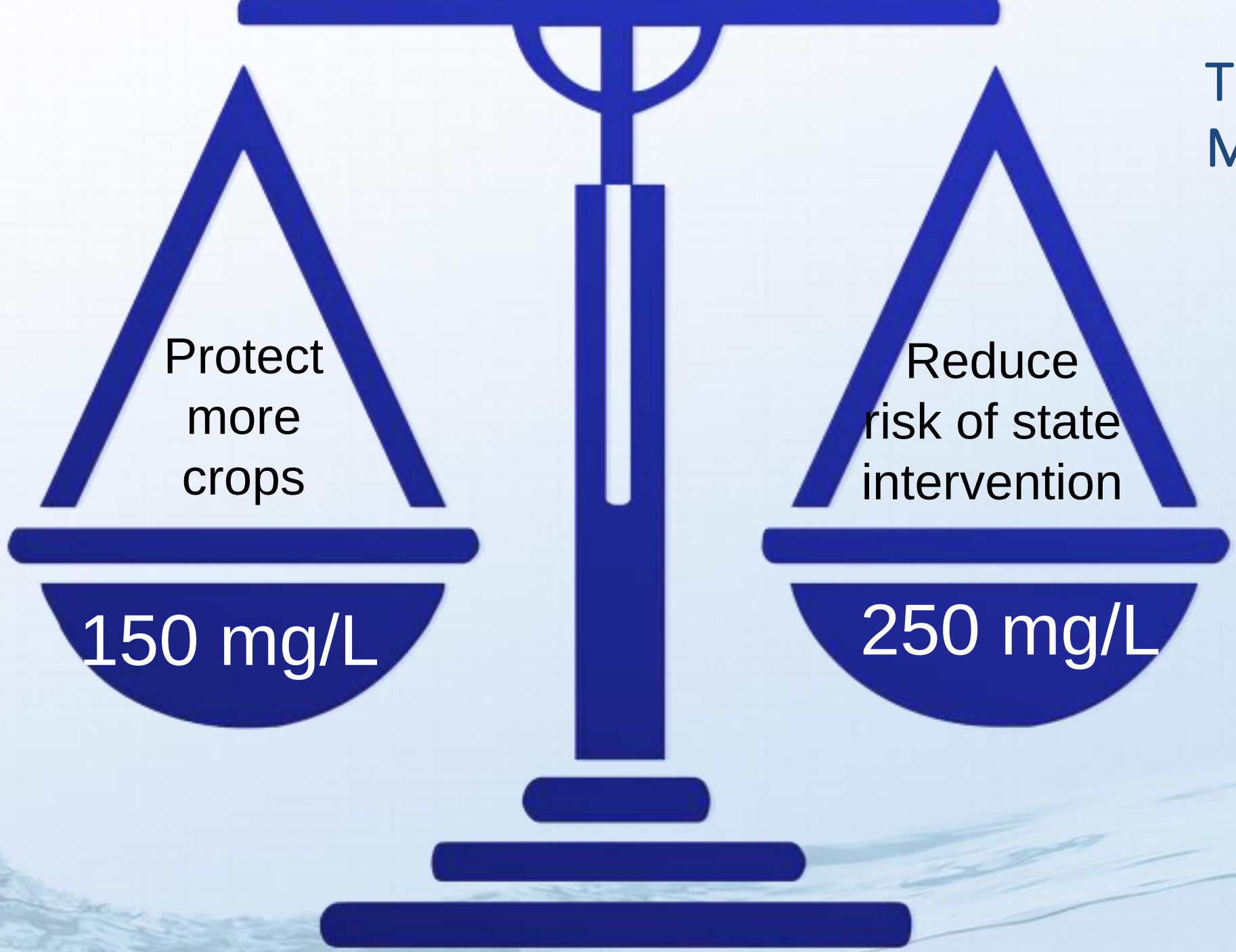



[1] Reported as milliequivalents/liter by Biscaro and Cahn; multiplied by molar weight of 35.5 for chloride

[2] Statistically significant at $p<0.05$

http://progressivecrop.com/2019/10/assessing-the-impact-of-irrigation-water-quality-on-strawberry-cultivars/

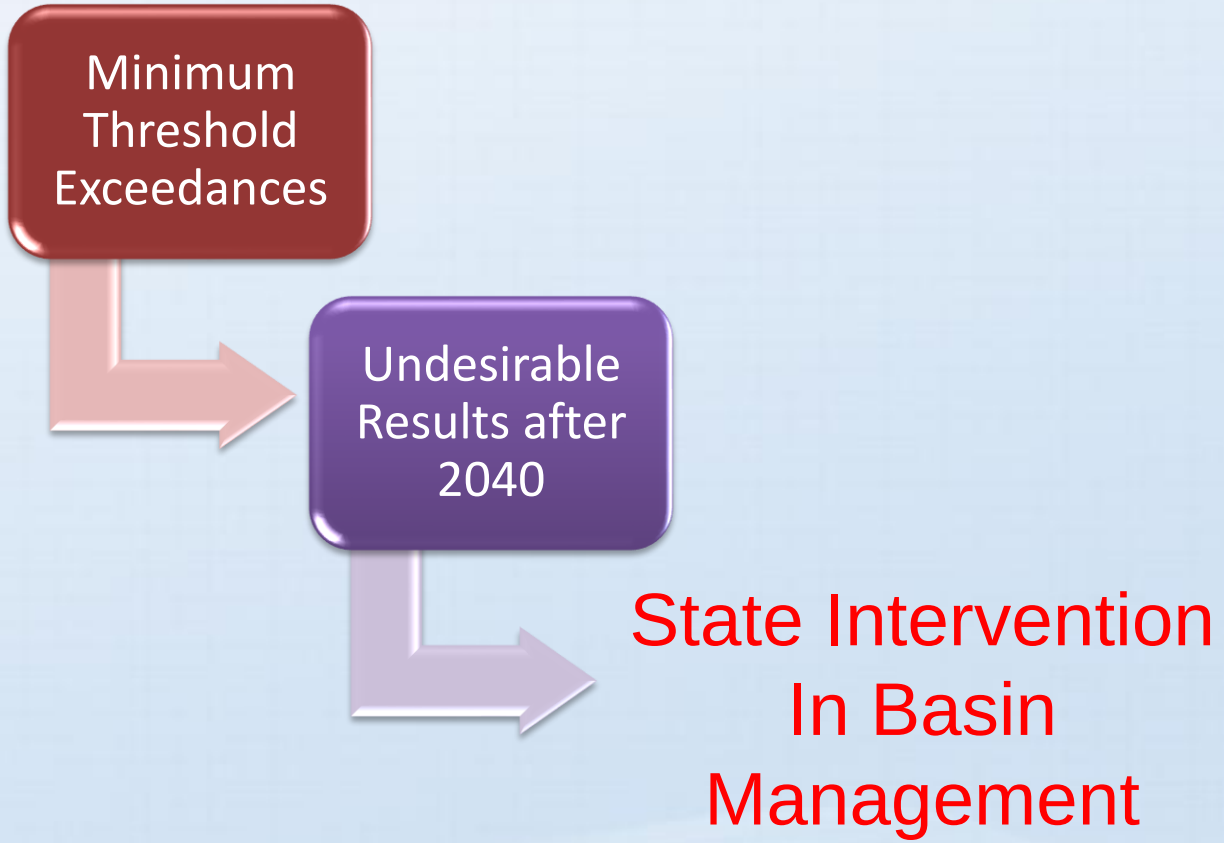
# Tradeoff in Setting Minimum Threshold




- Recommend minimum threshold of 250 mg/L chloride
  - Local research indicates minimal effects on yield of popular varietal
  - Recommended state drinking water standard

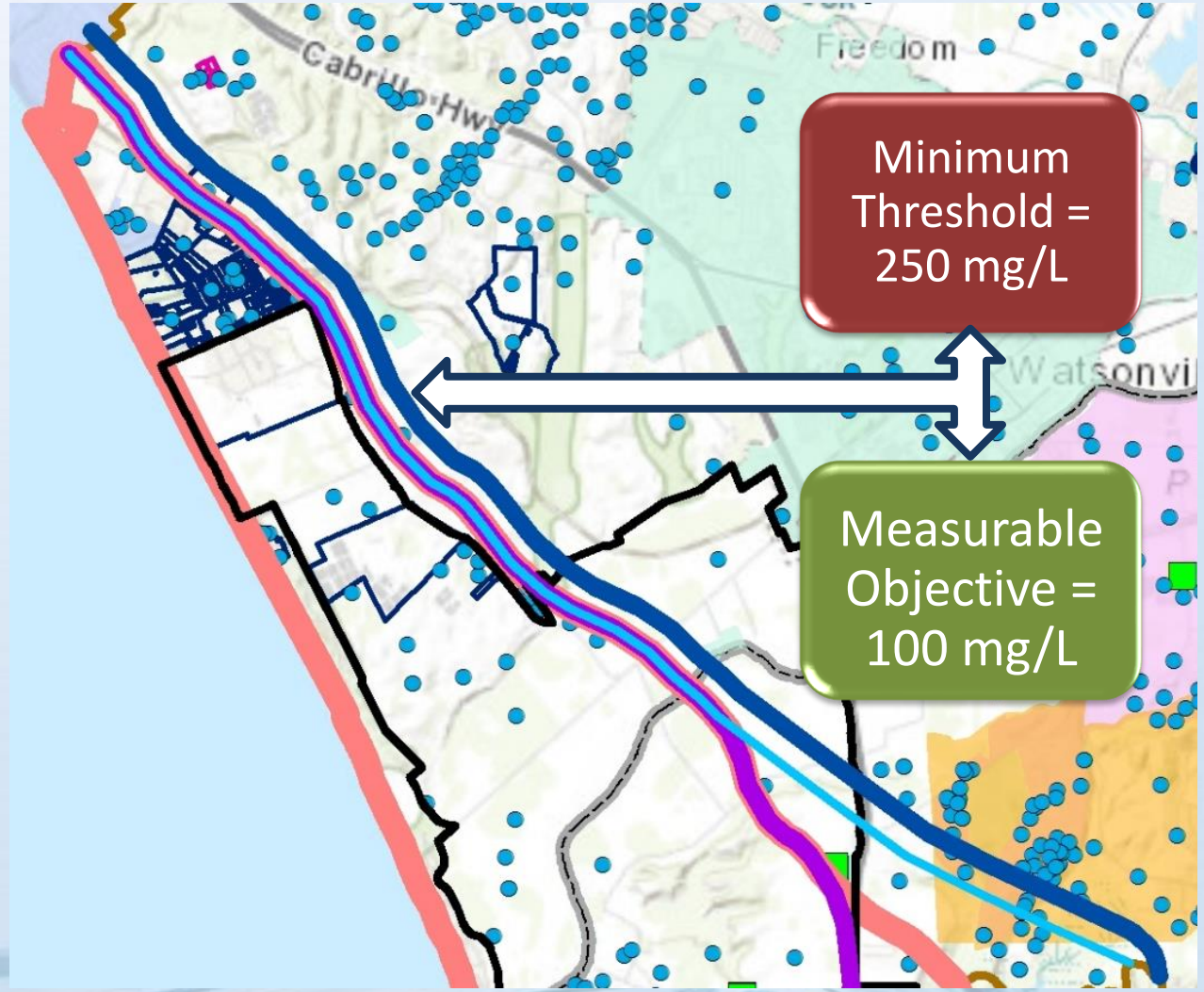
# Evaluating MT Exceedances and Undesirable Results

- Evaluate seawater intrusion annually based on available data for comparison to MT isocontour
  - Confirm with DWR that Representative Monitoring Points can be limited to wells without confidentiality limits
- Undesirable results occur if there are MT exceedances in 3 out of 5 years
  - Confirms long term trend



# PV Water will manage to measurable objective (MO) of 100 mg/L at MT isocontour

- Not enforceable by State
- Aspirational targets for basin management planning
- Provide operational flexibility so minimum thresholds are not exceeded
- Use same metrics as MT
- Recommend 100 mg/L at same isocontour as MT
  - Consistent with historical evaluations
  - Manage for higher groundwater quality than MT=250 mg/L



# Vote on Seawater Intrusion SMC Recommendation

| SMC | Proposal | Reasons |
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# Roll Call Vote on Proposed Seawater Intrusion SMC

| AFFILIATION | COMMITTEE MEMBER |
|---|---|
| Santa Cruz County Farm Bureau | Chair Kirk Schmidt |
| PV Water Board | Vice-Chair Bob Culbertson |
| PV Water Board | Javier Zamora<br>Alternate: Tom Broz |
| PV Water Board | Amy Newell<br>Alternate: Mary Bannister |
| Santa Cruz County | Sierra Ryan |
| Monterey County | Unfilled |
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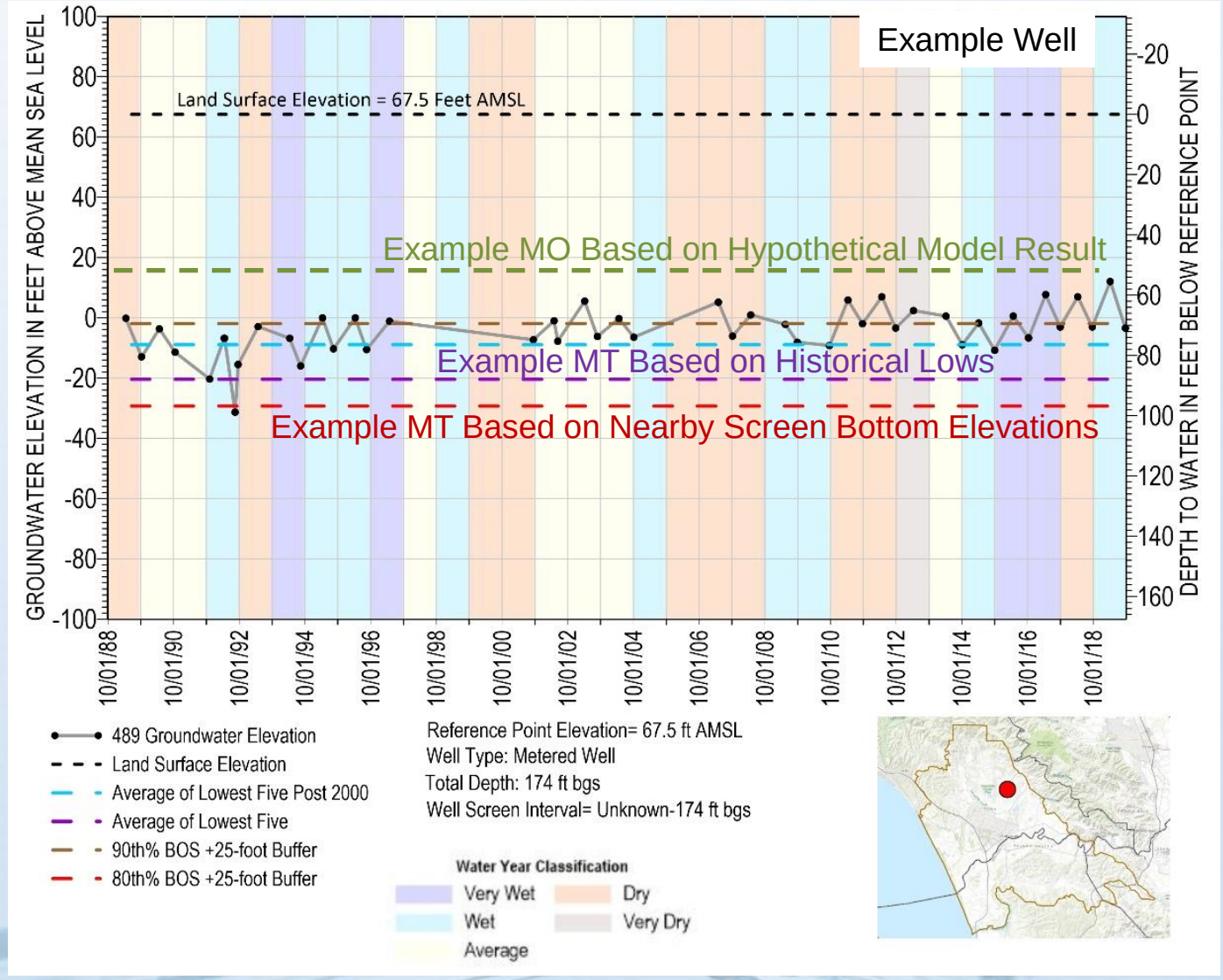
| Agriculture Representative | Tannis Thorlakson,<br>Driscoll's Inc.<br>Alternate: Kyle Monper |

# Groundwater Levels SMC to be Proposed at April Meeting

- Perform thorough review of historical groundwater elevations, land use, and production well screen depths
- **Minimum Thresholds (MT)** will focus on ensuring that a high percentage of production wells will not dry out
- **Measurable Objectives (MO)** will be based on model simulation of Basin Management Plan (BMP) projects
- Will consider **Groundwater Dependent Ecosystems (GDEs)**
  - *Based on work for DWR Recommendation 3*



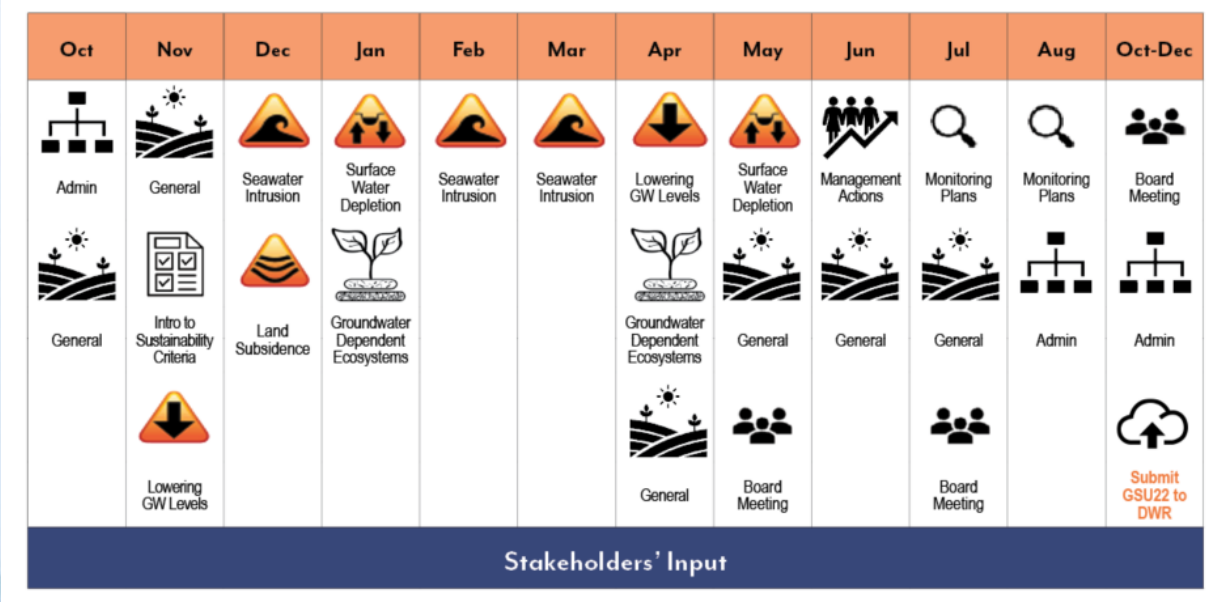
# Questions and Feedback

# Communication & Engagement

- Update on C&E Activities
- Committee/Public Questions & Comments

# Fact Sheet on GSU22 Process

- Spanish translation posted
- English fact sheet and Communications & Engagement Plan to have Updated Schedule




# Lograr una cuenca de aguas subterráneas sostenibles

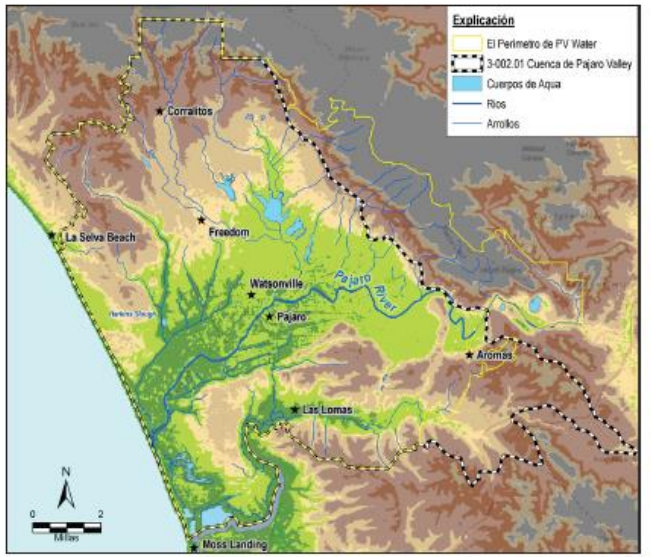
PV Water
HOJA DE HECHOS

*Para los usuarios beneficiados de la Cuenca del Valle del Pájaro a través del Plan de Gestión de Cuenca - Proceso de Actualización de Sostenibilidad de Aguas Subterráneas 2022*

## Garantizar la Sostenibilidad de la Cuenca del Valle de Pajaro: **Una Joya de la Costa Central**

Desde las secuoyas hasta el mar, el Valle del Pájaro es el hogar de aproximadamente 95,000 residentes, una industria agrícola multimillonaria que alimenta nuestras comunidades, un rico ecosistema costero y más.

La cuenca de aguas subterráneas del Valle de Pájaro es una cuenca críticamente sobrebombeada y de alta prioridad, tal como la define el Departamento de Recursos Hídricos de California (DWR por sus siglas en inglés). La cuenca del Pájaro del Valle se encuentra al final de la cuenca hidrográfica del río Pájaro que drena aproximadamente 1,300 millas cuadradas de los condados de Monterey, Santa Cruz, Santa Clara y San Benito. La Cuenca del Valle del Pájaro está bordeada por la Bahía de Monterey al oeste y la Falla de San Andreas al este. Es adyacente a la cuenca del medio condado de Santa Cruz y la Subcuenca de los Altos Purísima al noroeste, y el Acuífero Valle de Salinas 180/400 pies y las Subcuenca de la Zona Langley al sur.



**95,000**
residentes

**120**
millas cuadradas

Industria agrícola de **$1 mil millones**

# Questions and Comments

# GSU22 Next Steps

- Identify Items for Future Meeting Agendas
- Confirm Meeting Schedule
- Recommend Survey
- Identify Actions / Information Needed

# Identify Items for Future Meeting Agendas

# Confirm Meeting Schedule

- Next Meeting: Thursday, April 8th 2-4:30 PM
- 2nd Thursday of Month through August 2021

# Please complete survey

https://www.pvwater.org/sustainable-gw-committee

## Ad Hoc Sustainable Groundwater Committee

Last modified on October 29, 2020.

### Purpose

PV Water has formed an Ad Hoc Sustainable Groundwater Committee (Committee) to evaluate technical information presented by staff and consultants related to the existing and projected conditions of the groundwater basin, consider sustainable management criteria that would avoid significant and unreasonable impacts to the groundwater basin, and make recommendations to the PV Water Board.

The Committee is comprised of 17 voting members, 12 appointed, and 5 selected through an open application process. The composition of the Committee is structured to provide a diverse representative cross-section of community stakeholder interests, as well as incorporate water managers within the Pajaro Valley. Attendance and engagement at Committee meetings by the public and other interested parties is highly encouraged to provide input. Voting seats are dedicated to individuals serving as representatives for the Committee members listed below.

### Meeting Materials

**Meetings will occur at:** https://www.gotomeet.me/PVWater/sustainable-groundwater

**Or by phone: 1 (866) 899 4679 Access Code: 563-967-333#**

After Meeting Survey

Videos Recordings last for a period of one year after the meeting date.

PV Water

### PV Water Meeting Survey

**Please provide feedback to improve our communication and engagement process.**

Name: _____

Contact: _____

Date: _____

**Survey Questions**

| Survey Question | Please Select One |
|---|---|
| 1) Information provided was useful and understandable? | Yes ☐ No ☐ |
| 2) Meeting noticing was timely, informative about location, and meeting topic(s)? | Yes ☐ No ☐ |
| 3) Opportunity to comment was provided? | Yes ☐ No ☐ |
| 4) Can we contact you regarding your survey to follow up? | Yes ☐ No ☐ |

Other SGMA topics and information of interest to you: _____

Other Suggestions on communication and engagement that would be helpful for the SGMA process:

# Identify Actions/Info Needed

# Thank you.

# Comments / Questions?