PROGRAMA DE MITIGACIÓN DE AGUA POTABLE

PRESENTACIÓN PARA PAJARO VALLEY WATER, COMITÉ PARA LA ACTUALIZACIÓN DEL PLAN DE MANEJO SOSTENIBLE DE AGUA SUBTERRÁNEA (GSU22)

PRESENTATION FOR PAJARO VALLEY WATER, GROUNDWATER SUSTAINABILITY UPDATE 2022 COMMITTEE (GSU22)

DRINKING WATER MITIGATION PROGRAM

Agenda

1. Definición
2. Propósito
3. Impactos al Agua Potable causados por GSPs
4. Requisitos legales
5. Costos de la Mitigación
6. Diseño y operación de un Programa de Mitigación de Pozos de Agua Potable

1. Definition
2. Purpose
3. Drinking Water Impacts From GSPs
4. Legal Requirements
5. Costs of Mitigation
6. Design and Operation of a Drinking Water Well Impact Mitigation Program

Que es un Programa de Mitigación de Agua Potable?

Un programa de mitigación de agua potable es un plan de manejo adaptativo para asegurar que el agua potable permanezca protegida en condiciones cambiantes. También ayuda a aumentar la resiliencia del agua y disminuir los riesgos de impactos de corto y largo plazo.

What is a Drinking Water Mitigation Program?

A Drinking Water Mitigation Program is an adaptive management plan to ensure that drinking water remains protected in changing conditions. It also helps to increase water resiliency and decrease the risks of both short-term and long-term impacts.

North Monterey County

East Porterville

Fresno County

Monson

Tulare County

Photos credit: Self-Help Enterprises

Propósito de un Programa de Mitigación de Agua Potable

Proteger la calidad y cantidad de agua potable para comunidades y casas vulnerables contra impactos causados por el uso y manejo de las aguas subterráneas *(bombeo excesivo, movimiento de contaminación, y más)*

Seville

Purpose of a Drinking Water Mitigation Program

Protect the quality and quantity of drinking water for vulnerable communities and households against impacts caused by the use and management of groundwater *(overpumping, movement of contaminants, etc.)*

Cómo puede el uso/manejo de las aguas subterráneas impactar al agua potable?

- Pozos secos (tienen que ser reemplazados o profundizados)
- Perdida de presion de agua

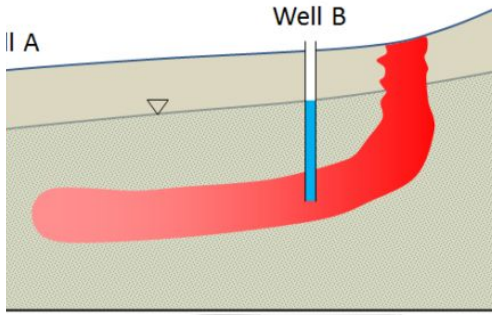
- Aumento del costo de bombeo
- Contaminación por proyectos de recarga

- Contaminación por el movimiento de columnas de contaminantes
- Contaminación por sobrebombeo de agua

How does groundwater use and management impact drinking water?

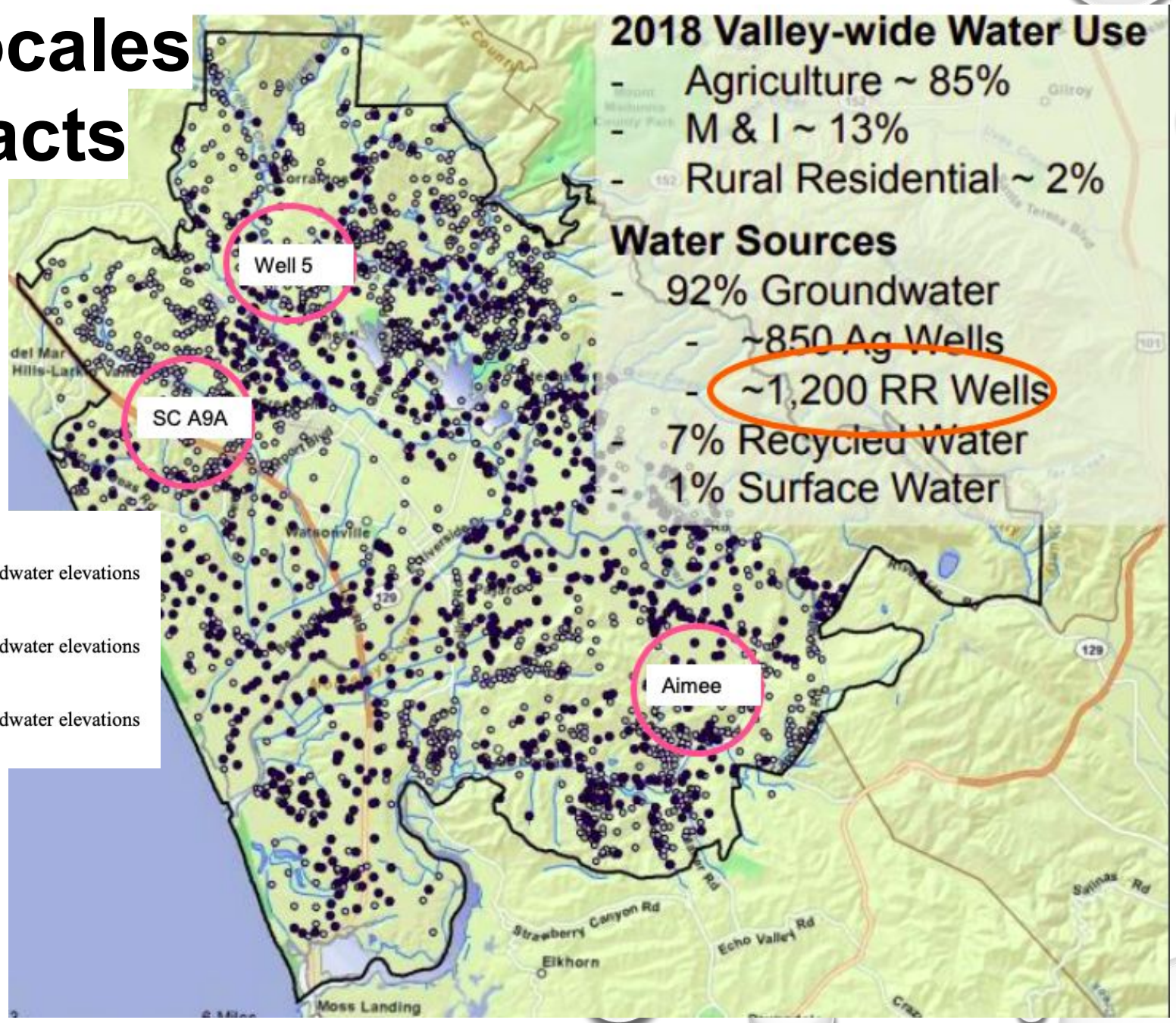
- Dry wells, requiring deepening wells or digging new wells
- Loss of water pressure

- Increased pumping costs
- Groundwater contamination from recharge projects
- Groundwater contamination from moving contaminant plumes



- Groundwater contamination from overpumping

Impactos Locales
Local Impacts



An Undesirable Result occurs when:

1. More than **10%** (2 of 18) of RMP wells experience a drop in groundwater elevations below MT during **4 out of 5 consecutive years**, or
2. More than **20%** (4 of 18) of RMP wells experience a drop in groundwater elevations below MT during **3 out of 5 consecutive years**, or
3. More than **30%** (6 of 18) of RMP wells experience a drop in groundwater elevations below MT during **2 out of 5 consecutive years**.

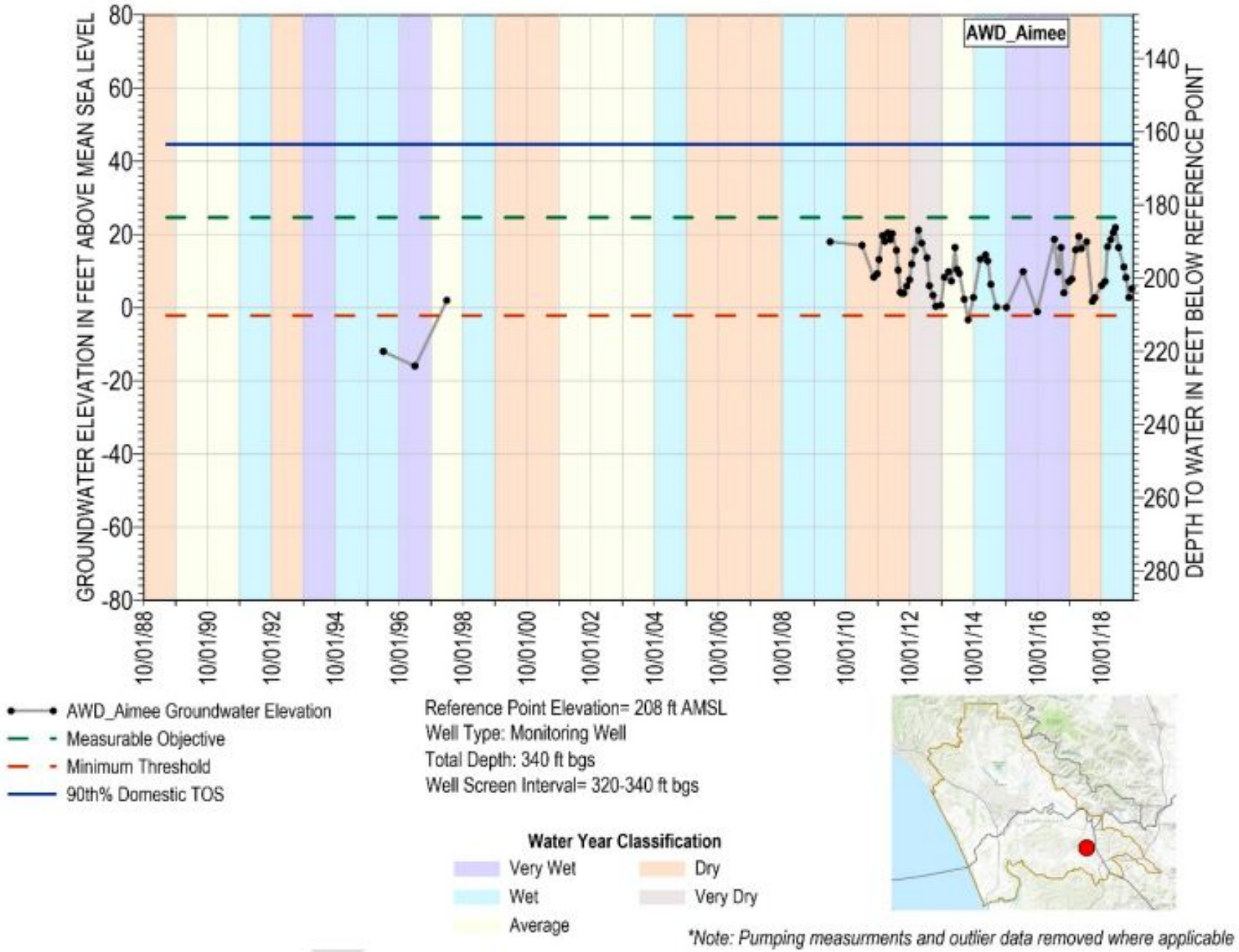
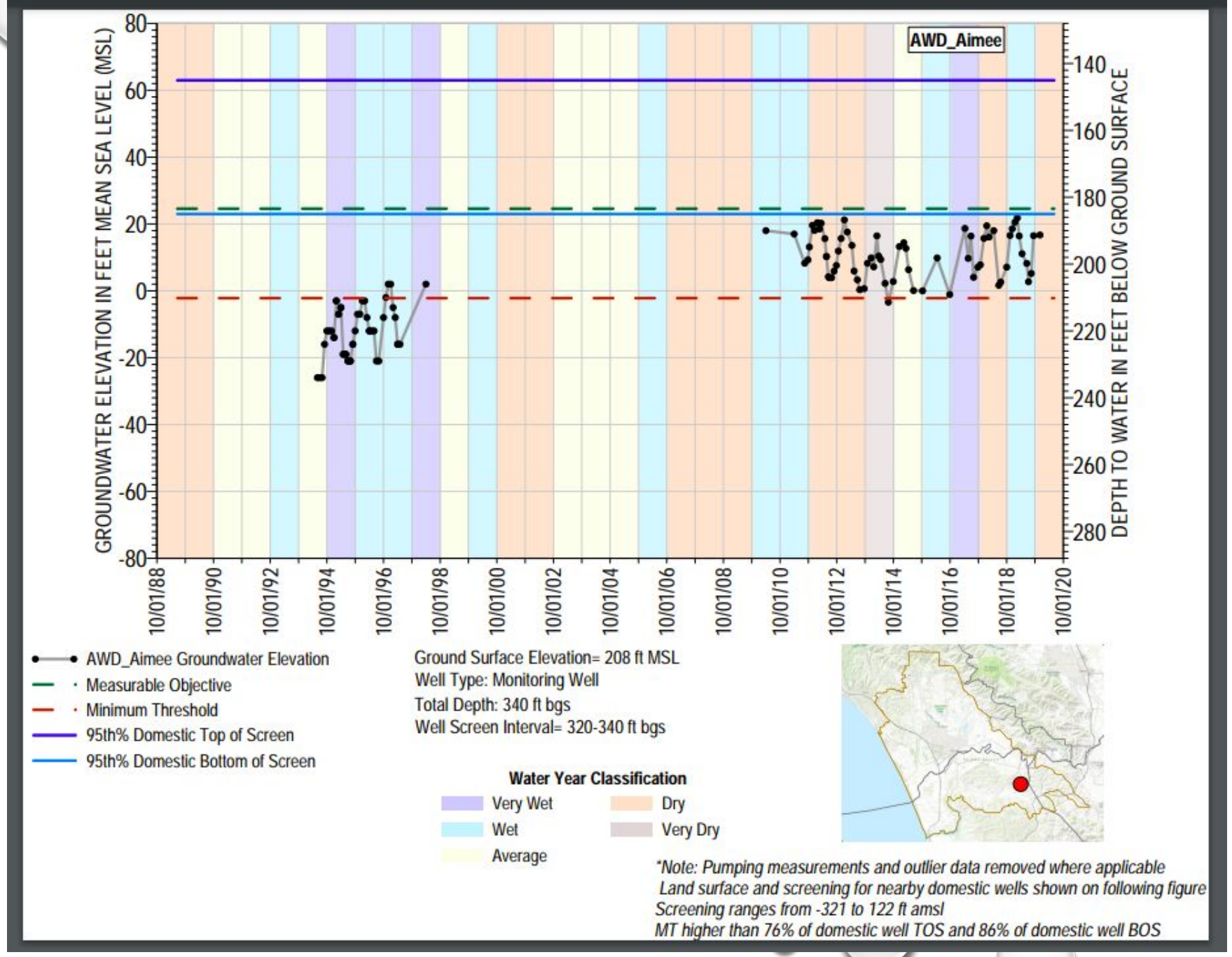
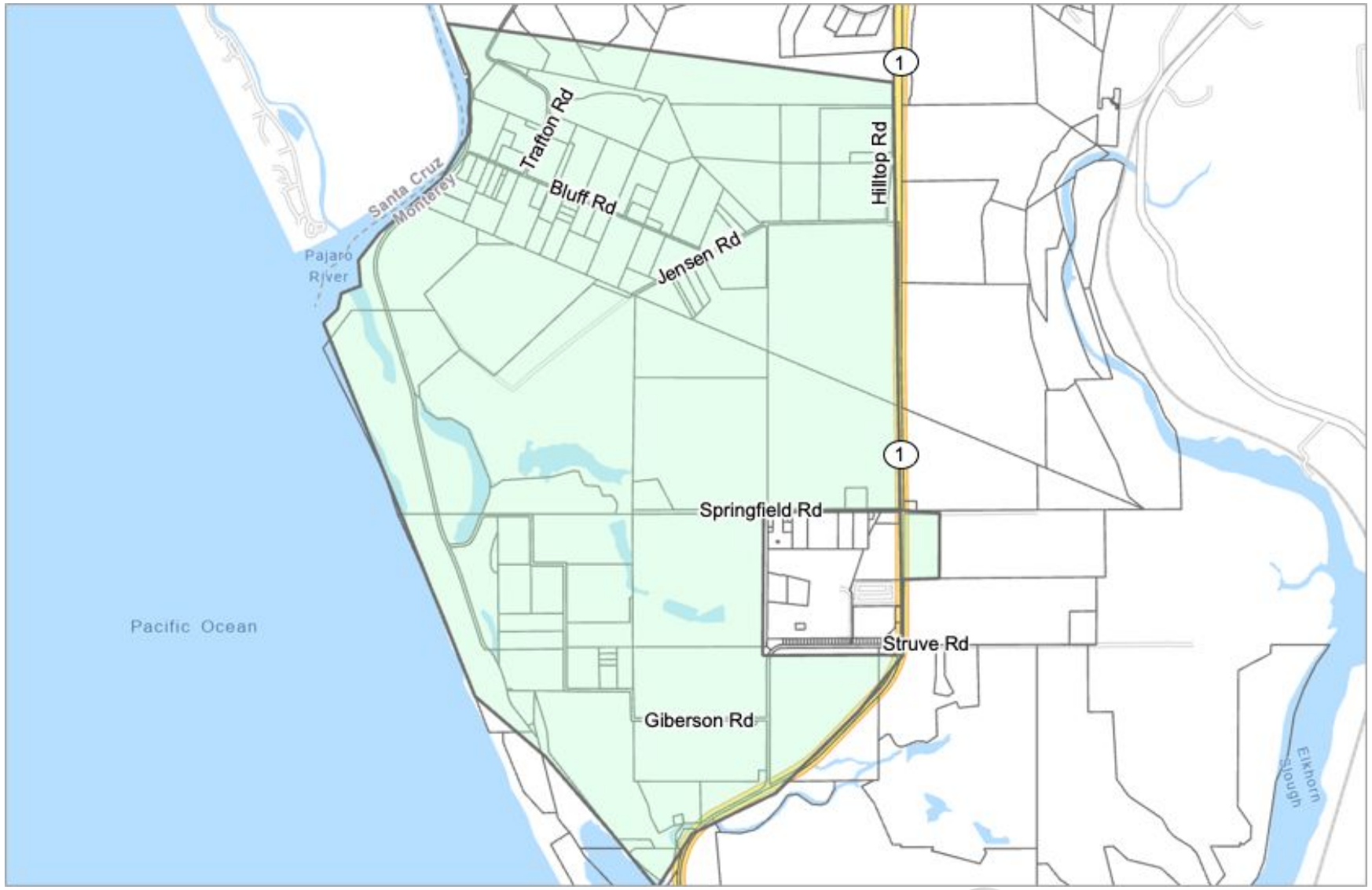


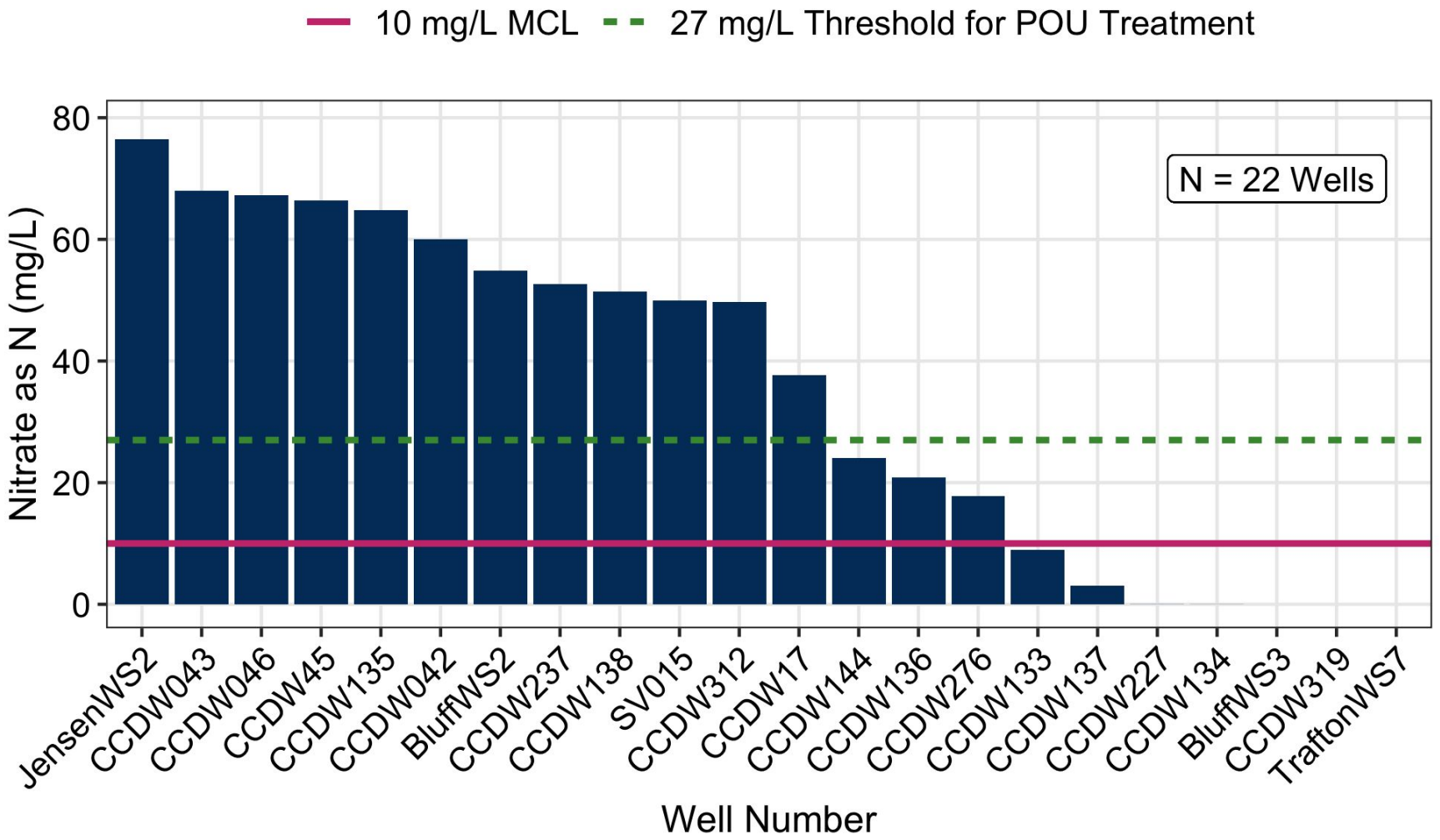
Figure 11. Chronic Lowering of Groundwater Levels Minimum Threshold, Measurable Objective, and Top of Screen 90% Percentile for AWD_Aimee Well


AWD_Aimee
GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (MSL)
DEPTH TO WATER IN FEET BELOW GROUND SURFACE
80
60
40
20
0
-20
-40
-60
-80
140
160
180
200
220
240
260
280
10/01/88
10/01/90
10/01/92
10/01/94
10/01/96
10/01/98
10/01/00
10/01/02
10/01/04
10/01/06
10/01/08
10/01/10
10/01/12
10/01/14
10/01/16
10/01/18
10/01/20
AWD_Aimee Groundwater Elevation
Measurable Objective
Minimum Threshold
95th% Domestic Top of Screen
95th% Domestic Bottom of Screen
Ground Surface Elevation= 208 ft MSL
Well Type: Monitoring Well
Total Depth: 340 ft bgs
Well Screen Interval= 320-340 ft bgs
Water Year Classification
Very Wet
Wet
Average
Dry
Very Dry
*Note: Pumping measurements and outlier data removed where applicable
Land surface and screening for nearby domestic wells shown on following figure
Screening ranges from -321 to 122 ft amsl
MT higher than 76% of domestic well TOS and 86% of domestic well BOS


Trafton Rd
Bluff Rd
Jensen Rd
Hilltop Rd
1
1
Springfield Rd
Struve Rd
Giberson Rd
Santa Cruz
Monterey
Pajaro
River
Pacific Ocean
Elkhorn
Slough

Water Quality: Nitrate

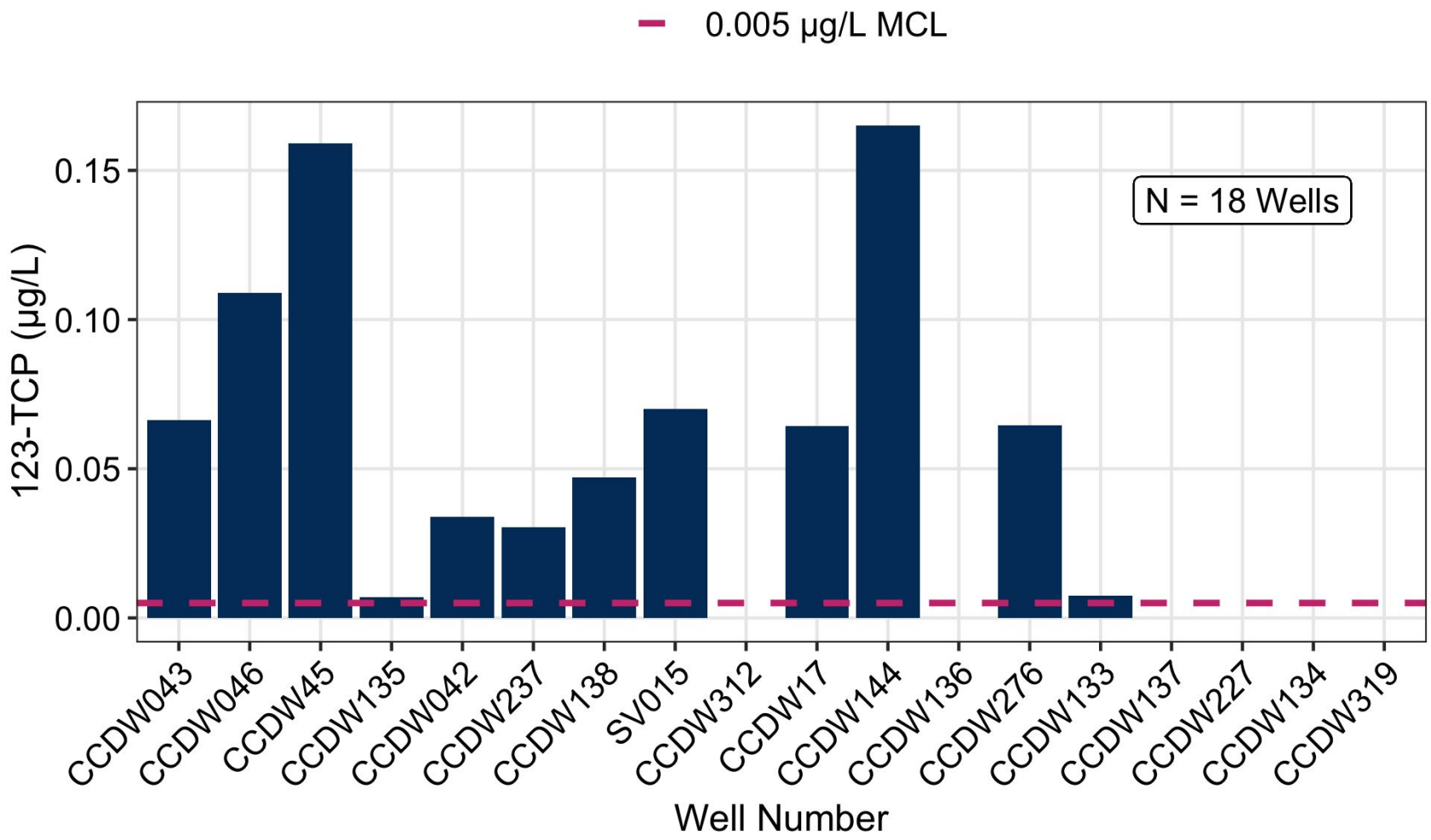
Calidad de Agua: Nitrato



Regional Water Board Well Testing Program + County Data

Water Quality: 123-TCP

Calidad de Agua: 123-TCP



Regional Water Board Well Testing Program + County Data

GSPs are responsible for avoiding drinking water impacts to domestic well users and DACs

SGMA requires GSAs to "**consider the interests"** of all beneficial users, including **domestic well users and disadvantaged communities.**

SGMA requires GSAs to **avoid "significant and unreasonable" impacts** to beneficial users, including water quality impacts.

"Management of a basin… should not result in further water quality degradation that is significant and unreasonable, either due to routine groundwater use or as a result of implementing projects or management actions."
-DWR's Cuyama GSP Notification June 2021

Drinking water is the **primary beneficial use** of water under CA law:

> "*It is hereby declared to be the established policy of this State that the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation." (Water Code § 106)*

California law enshrines the Human Right to Water:

> "*Every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes*."

Elementos Básicos del Programa de Mitigación

1) **Activación**: Pérdida o contaminación de agua ha ocurrido, o es probable.

2) Determinación de **causa** (por análisis independiente)

3) **Implementación** de acciones para resolver problemas causados por el manejo de la agencia

Basic Elements of a Mitigation Program

1) **Trigger**: Loss of water supply or water contamination has occurred or is likely to occur.

2) Determination of **cause** (by an independent party)

3) **Implementation** of actions to address problems caused by the GSA's management

1) Sistema de Activación

- Manejo adaptativo
- Responsivo a la realidad en el lugar
- Evita daño a los usuarios
- Evita estrategias costosas de reemplazo

Triggers	Groundwater Conditions and Impacts	Examples of Quantifiable Measures
Green light	Groundwater levels and quality are stable.	Firmly in compliance with Measurable Objectives and MCLs.
Yellow light	Groundwater levels and quality are approaching concerning levels and impacts may occur or are occurring. Some corrective actions are needed.	Groundwater levels[7]: 3% of drinking water wells have gone partially or fully dry, or 5% of drinking water wells in the GSP area are projected to go dry if current trends continue. Groundwater quality: Water quality reaches 70% of the MCL in any given monitoring well.
Red light	Time to stop groundwater pumping and any projects or management actions which are causing dry wells. The GSA needs to mitigate as significant impacts are imminent or are occurring.	Groundwater levels: More than 7% of drinking water wells have gone dry, or 10% of drinking water wells in the GSP area are projected to go dry if current trends continue. Groundwater quality: Water quality reaches 85% of the MCL in any given monitoring well.

1) Trigger System

- Adaptive management
- Responsive to on-the-ground reality
- Avoid harm to users
- Avoid costly replacement strategies

3) Solutions: Contaminated Drinking Water

Bottled Water / Agua Embotellada	$75 per month, per house
Point of Use Filters / Filtros de Punto de Utilización	$1,000 to $4,500 per unit per home, for one year
Water Tank / Cisternas de Agua	$3,680, plus up to $900 for tank refills
Community Water Treatment System / Sistema comunitario de tratamiento de agua	costs vary depending on the technology, water contaminant(s), and number of households
Consolidation / Consolidación	costs vary
Alternate Supply Source / Fuente Alternativa de Agua	costs vary
Prevention of contamination / Prevención de contaminación	costs vary
Remediation of contamination / Remediación de contaminación	costs vary

Source: Framework for a Drinking Water Mitigation Program

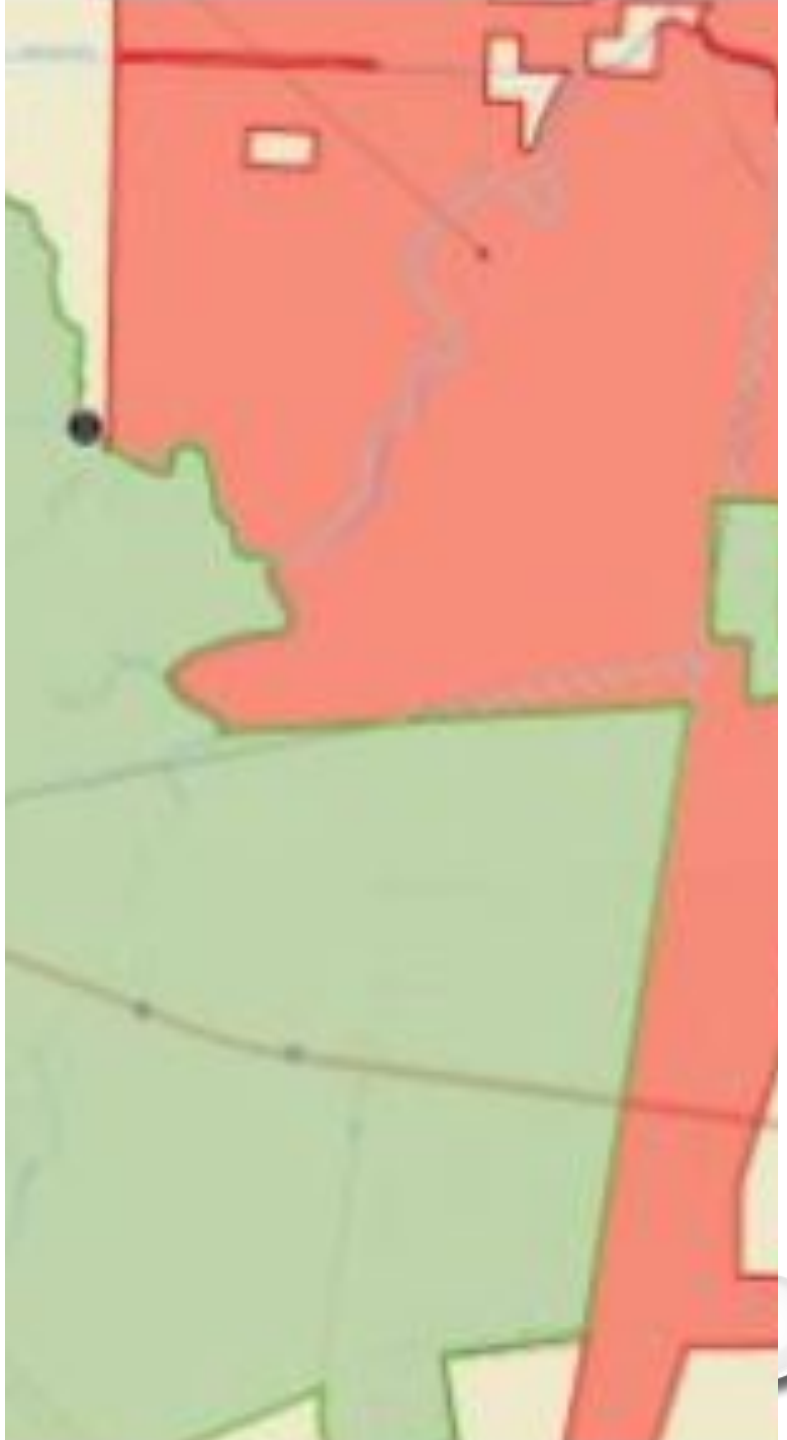
3) Solutions: Dry Wells

Bottled Water / Agua Embotellada	$75 per month, per house
Water Tank / Cisternas de Agua	$3,680, plus up to $900 for tank refills
Lowering well pump / Bajada de bomba de pozo	$5,000 to $10,000
Deepening a domestic well / Profundizar pozo doméstico	$20,000 to $45,000
Deepening a community well / Profundizar pozo comunitario	up to $1.5M
Consolidation / Consolidación	costs vary
Alternate Supply Source / Fuente alternativa de agua	costs vary
Prevention of water supply loss / Prevención de pérdida de agua	costs vary

Source: Framework for a Drinking Water Mitigation Program

¿Como se puede evitar estos costos?

- Ajustar las pólizas para no permitir que los niveles lleguen debajo de los pozos existentes
- Monitorear atentamente los niveles de agua y la calidad del agua en y alrededor de las casas vulnerables
- Utilizar el manejo adaptativo para ajustar el bombeo en función a los cambios de los niveles y la calidad del agua

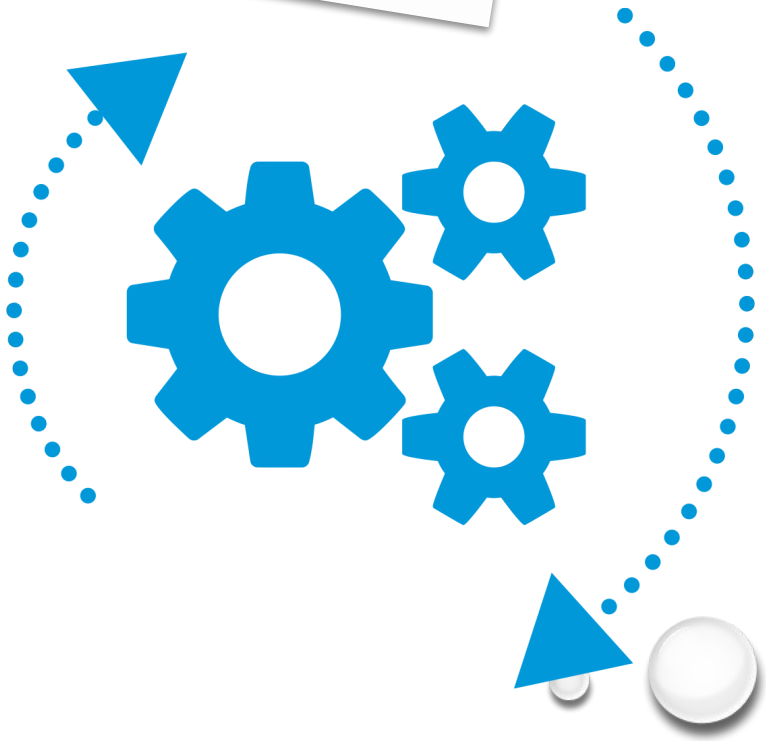


How can the GSA avoid these costs?

- Adjust policies of the GSA to not let water levels fall past the level of existing wells
- Closely monitor the water levels and water quality in and around vulnerable households
- Use adaptive management to adjust pumping based on changing water levels and quality

Diseño del Programa

- Diseño del programa debe ser basado en el expertis de las comunidades afectadas
- Asegurar de que no hayan obstáculos para poder recibir los beneficios (idioma, lugar, et cetera)



Designing the Program

- Base program design on the expertise of affected communities
- Ensure that there are no obstacles to qualifying for benefits of the program (language, place, etc.)

¿Como Se Financiaria Tal Programa?

- Tarifas de la Agencia de Eastern Tule en los usuarios de la cuenca
- Tarifas basadas en propiedad (Prop 26, Prop 218)
- Fundos del estado (DWR, CV-Salts)
- Becas federales (USDA)
- Colaborar con programas/fondos ya existentes

How Would Such a Program Be Financed?

- Fees on water users in the basin
- Land-based fees (Prop 26, Prop 218)
- State Funding (DWR, CV-Salts)
- Federal Grants (USDA)
- Collaborate with programs and funding sources that already exist

COMMUNITY WATER CENTER
EL CENTRO COMUNITARIO POR EL AGUA

LEADERSHIP COUNSEL FOR JUSTICE & ACCOUNTABILITY

Self-Help Enterprises

¿PREGUNTAS?

QUESTIONS?

¡GRACIAS!

THANK YOU!

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