



**Stanislaus & Tuolumne Rivers Groundwater Basin Association**  
**Groundwater Sustainability Agency**  
1231 11<sup>th</sup> Street | Modesto, CA 95354  
Email: [strgba@mid.org](mailto:strgba@mid.org)

## Management Actions Workshop

July 16, 2025, 1:30 p.m.

<https://us02web.zoom.us/j/87002976335>

By phone: 1-669-900-9128

Webinar ID: 8700 297 6335

### **PUBLIC PARTICIPATION**

**The public may participate in this meeting in the three ways described below.**

Instructions for Participating in the Workshop via Zoom Webinar or Phone

#### **On your desktop/iPad or tablet/laptop:**

1. To join the webinar, click the link published in the agenda for the current meeting about 5 minutes before the webinar begins.
2. Follow the on-screen instructions to install and/or launch the Zoom application.
3. If prompted, enter the webinar ID published on the agenda.
4. All public attendees will enter the meeting muted.
5. If you wish to speak under Business from the Public, or after the Chairman calls for public comment, click on the "Raise Hand" button to request to speak.

#### **On your phone:**

1. To attend the meeting by phone, call the number published in the agenda for the meeting.
2. Enter the webinar ID published in the agenda, then hit the # symbol.
3. All public attendees will enter the meeting muted.
4. If you wish to speak under Business from the Public, or after the Chairman calls for public comment, press \*9 on your phone to "Raise Hand" or simply request to speak.

**In person:** Modesto Irrigation District Board Room, 1231 11<sup>th</sup> Street, Modesto

*To view a physical copy of the agenda, please visit the Modesto Irrigation District office at 1231 11<sup>th</sup> Street, Modesto. A complete copy of the agenda packet is also available on [www.strgba.org](http://www.strgba.org)*



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## **AGENDA**

1. Call to Order/Welcome and Introductions  
(Four agencies are needed for a quorum)
2. Business from the Public  
Who: Public  
Expected Outcome: Interested persons are welcome to introduce any topic within the GSA's jurisdiction. Matters presented under this heading may be discussed but no action will be taken by the GSA at this meeting. It is not required, but speakers may provide their name and address. Public Comments will be limited to five minutes per speaker.
3. Topic: Management Actions – Draft Groundwater Allocation Recommendations  
[Action item]  
Who: Woodard & Curran, Committee  
Expected Outcome: Approval
4. Next meeting  
TBD
5. Committee Comments/Reports



# MODESTO SUBBASIN GSP

## STRGBA WELL MITIGATION PROGRAM & MANAGEMENT ACTIONS

JULY 16, 2025

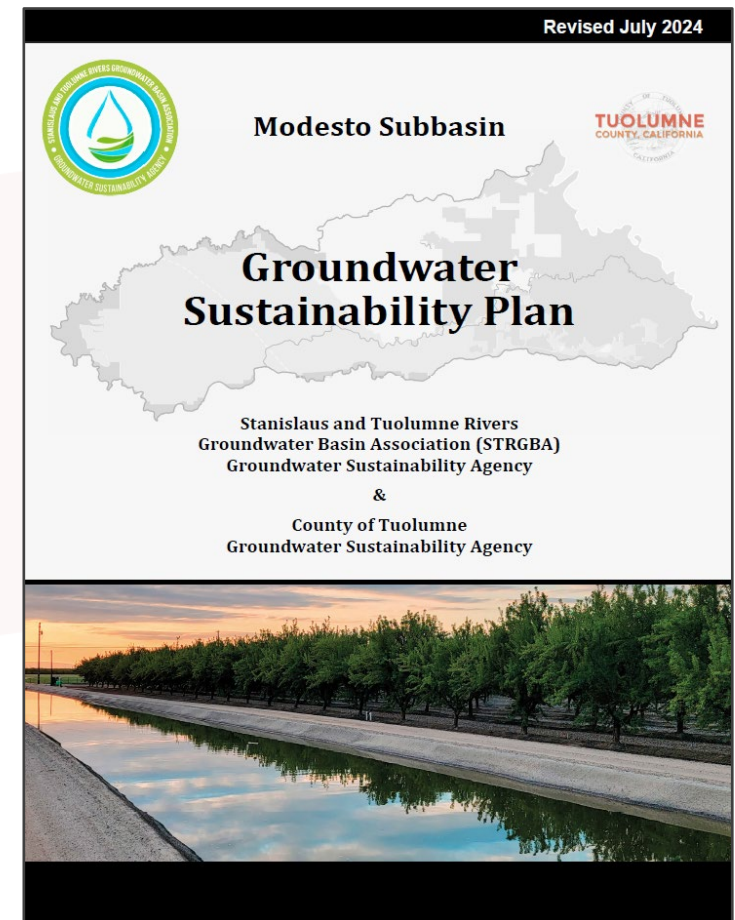


TODD  
GROUNDWATER

# AGENDA - STAKEHOLDER WORKSHOP

## Groundwater Management Program

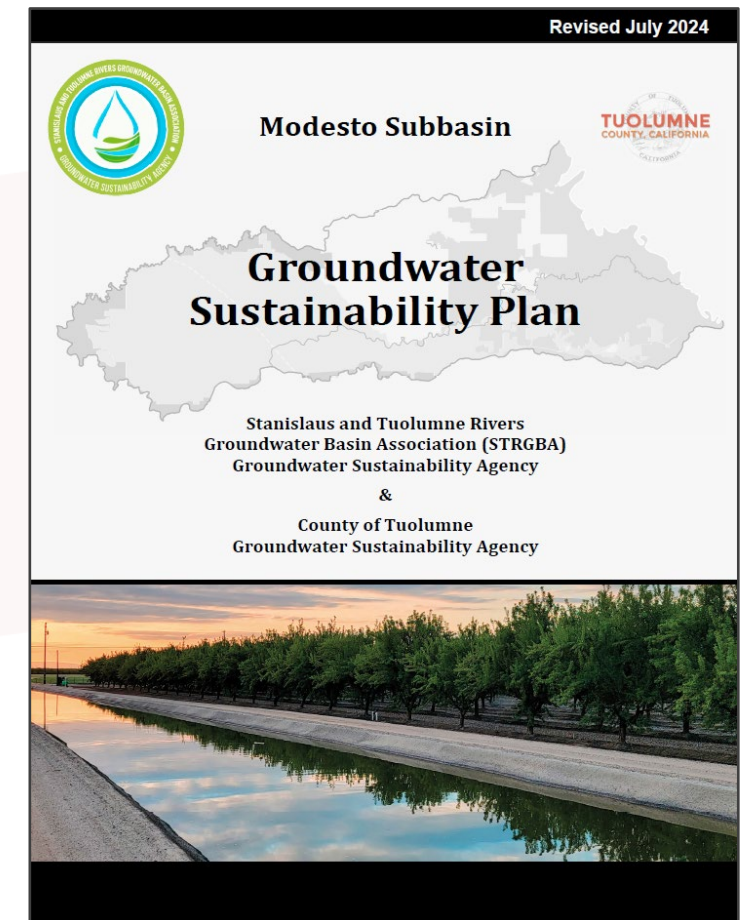
- **Background**
  - SGMA and the Modesto GSP
  - Projects and Management Actions
  - Goals and Objectives
- **Allocation Framework**
  - Introduction
  - Management Factors
  - Example Program



# SGMA AND THE MODESTO GSP

## ■ The Modesto GSP

- Submitted the *original* GSP to DWR in January 2022
  - Received an incomplete determination in January 2024
  - **Deficiency 2:** The GSP does not include sufficient details of projects and management actions to mitigate overdraft in the subbasin or provide a feasible path to achieve sustainability.
- Submitted the *revised* GSP to DWR in July 2024
  - Approved and deemed complete as of in February 2025
  - **Deficiency 2:** The 2024 GSP has provided details for planned demand reductions strategies and a pumping management framework which include groundwater allocation, extraction fees, and a credit trading program.



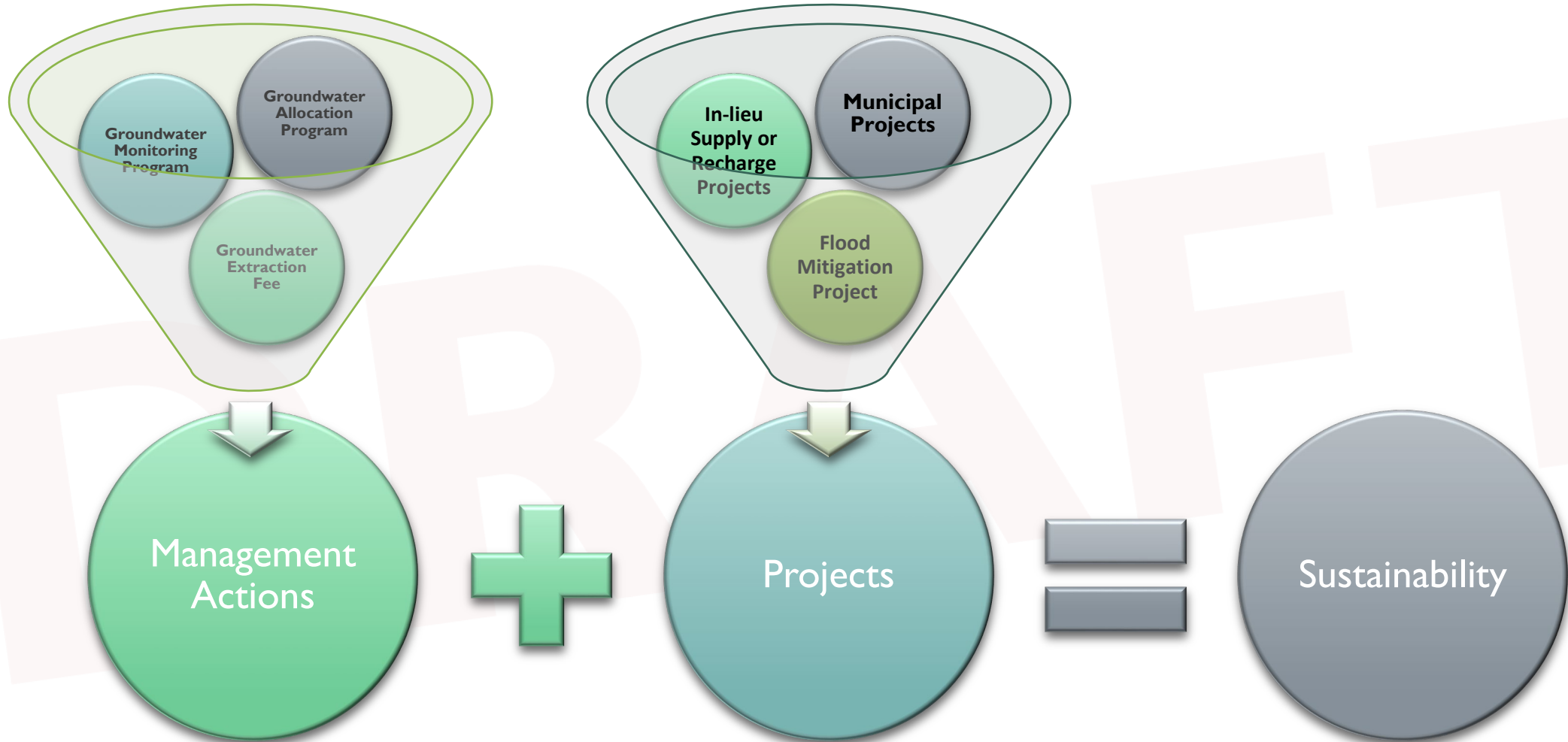
# CORRECTIVE ACTION #2

## KEY TAKEAWAYS FROM DWR DETERMINATION

- The GSA needs the tools to manage if groundwater conditions are unsustainable and/or if projects do not perform as expected.
- Paradigm Shift:
  - Management actions as the **primary** tool to **guarantee** sustainability.
  - Actions will empower the STRGBA GSA to act effectively and efficiently.
  - Used as a backstop to account for uncertainty (hydrology, implementation, etc).
  - Shall present methods, triggers, impacts, and escalating contingencies.
  - Will be offset with projects, dependent on implementation and effectiveness.

# CORRECTIVE ACTION #2

## SUSTAINABILITY PATH







# GROUNDWATER MANAGEMENT PROGRAM

## ALLOCATION FRAMEWORK





# WHAT IS A GROUNDWATER ALLOCATION?

If the groundwater system is a bank account for water, an allocation is like a budget designed to fairly distribute water use, so we don't run out.

An allocation is a spending plan that decides:

- **Who** can take water
- **How** much they can take
- **When** they can take it

This helps make sure:

- **Farmers** have water for crops
- **Cities** have water for homes and businesses
- **Nature** has water for rivers and wetlands
- **Future generations** will have access to a sustainable water supply.

# GROUNDWATER ALLOCATION OVERVIEW

## LOCAL AUTHORITY AND DISCRETION

GSAs have broad authority to develop and implement GSPs that reflect local conditions, priorities, and management objectives.

- **California Water Code § 10725:** *"A groundwater sustainability agency may perform any act necessary or proper to carry out the purposes of this part."*
- **California Water Code § 10726.4(a)(2):** *"A groundwater sustainability agency shall have the authority to control groundwater extractions by regulating, limiting, or suspending extractions from individual wells or from groundwater extraction facilities within a basin."*
- **California Water Code § 10726.8(b):** *"Nothing in this part shall be construed to authorize a [GSA] to make a binding determination of the water rights of any person or entity."*

This includes the power to allocate resources to meet sustainability goals while balancing the needs of its users and protecting existing legal rights.

# EXAMPLE ALLOCATION FRAMEWORK

- ✓ Determine **sustainable yield** of the Subbasin
2. Account for special considerations to obtain allocatable water
  - **Legal Exemptions** (federal & tribal lands, adjudicated areas, developed supplies)
  - **Local Management** (economically distressed areas, small-scale users, etc.)
3. Allocate remaining sustainable yield of native water
  - **Overlying Users** (Land-based Rights)
  - **Appropriative Users** (Permit-Based Rights)
4. **Establish framework** as basis for basin-wide management.
  - Determine triggers, impacts, or conditions to mitigate or intensify PMAs

# GROUNDWATER ALLOCATION OVERVIEW

## LEGAL EXEMPTIONS

**Recovery of Developed Supply** - Water that is intentionally sourced, controlled, and made available for use through human-made systems.

1. **Imported Water:** Surface water brought into the basin from external sources, such as through canals, pipelines, or water transfers.
2. **Recycled Water:** Wastewater or other non-traditional water sources that are treated to meet specific quality standards for reuse.
3. **Artificial Recharge Projects:** Groundwater replenishment efforts using intentionally captured and injected water.

# GROUNDWATER ALLOCATION OVERVIEW

## LEGAL EXEMPTIONS

**Recovery of Developed Supply** - Water that is intentionally sourced, controlled, and made available for use through human-made systems.

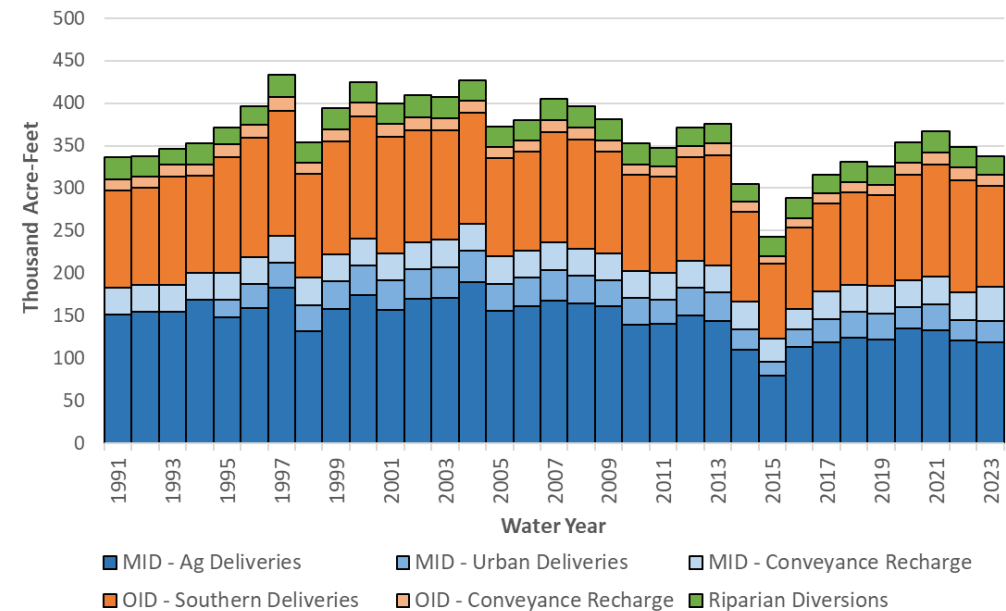
**Modesto Subbasin 44,100 AFY**

### 1. Modesto Irrigation District

- Reservoir Seepage 23,600 AFY
- Canal Seepage 8,000 AFY

### 2. Oakdale Irrigation District

- Canal Seepage 12,500 AFY



# GROUNDWATER ALLOCATION OVERVIEW

## LOCAL MANAGEMENT OBJECTIVES

**Local Management Factors** - SGMA grants GSAs flexibility to implement local groundwater management objectives, including the ability to provide special treatment in groundwater allocations.

- Management Zones
- De Minimis Water Use
- Small-Scale Agriculture
- Disadvantaged Communities
- Urban Growth and Conservation
- Developed vs Undeveloped Land
- Water Accounting, Credits, and Trading

### **Brainstorm Activity:**

Are there any other special considerations that should be considered or evaluated

# GROUNDWATER ALLOCATION OVERVIEW

## LOCAL MANAGEMENT OBJECTIVES

**Local Management Factors** - SGMA grants GSAs flexibility to implement local groundwater management objectives, including the ability to provide special treatment in groundwater allocations.

| Allocation of                        | Consumptive Use       | <b>Pumping</b>   | Other                |
|--------------------------------------|-----------------------|------------------|----------------------|
| Spatial Extent                       | <b>Subbasin Wide</b>  | Management Zones | Other                |
| Pro Rata Allocation per              | <b>Overlying Area</b> | Developed Area   | Historical Water Use |
| De Minimis Water Use                 | <b>Exempt</b>         | Limited          | Full                 |
| Municipal Users                      | Exempt                | <b>Limited</b>   | Full                 |
| Small-Scale Agriculture              | Exempt                | Limited          | <b>Full</b>          |
| Water Accounting, Credits, & Trading | Prohibited            | <b>Limited</b>   | Allowed              |



# UP NEXT – GROUNDWATER ALLOCATION PROGRAM

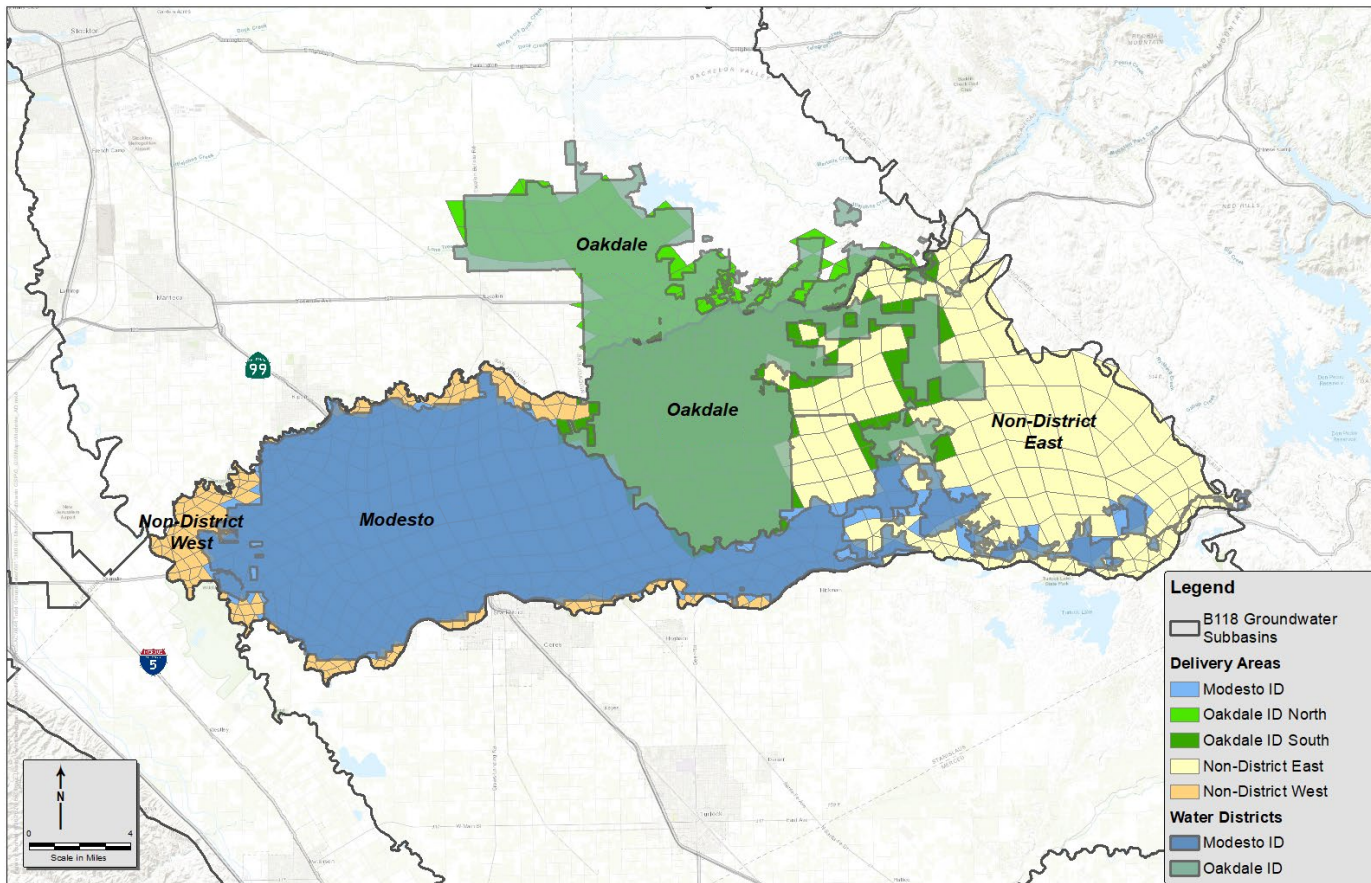
## ALLOCATION METHOD

| Allocation Basis | Description                                                                                  |
|------------------|----------------------------------------------------------------------------------------------|
| Consumptive Use  | Water rights are based on the amount consumed, not returned to the basin.                    |
| Pumping          | Water is allocated based on the total volume extracted.                                      |
| Other            | Allocation is based on metrics, such as crop type, economic value, or negotiated agreements. |

| Spatial Extent   | Description                                                   |
|------------------|---------------------------------------------------------------|
| Subbasin         | Rules apply uniformly across the entire groundwater subbasin. |
| Management Zones | Water use rules differ across defined management areas.       |
| Other            | Custom zones or boundaries dictate water use policies.        |

# GROUNDWATER ALLOCATION OVERVIEW

## ALLOCATIONS AT THE SUBBASIN-SCALE



### Modesto Subbasin Stewards (GSA Board)

#### Modesto Area

- Modesto Irrigation District
- City of Modesto
- City of Waterford

#### Oakdale Area

- Oakdale Irrigation District
- City of Oakdale

#### Non-District West

- Stanislaus County
- City of Riverbank

#### Non-District East

- Stanislaus County

# GROUNDWATER ALLOCATION OVERVIEW

## ALLOCATIONS AT THE SUBBASIN-SCALE

### Stewardships of Management Areas

- Allocations granted to Management Areas.
- Stewards may be responsible for:
  - Local management
  - Pooling resources
  - Assigning credits
  - Facilitating trades
  - Distribution of allocation
  - Assessing use (metering)

### Modesto Subbasin Stewards (GSA Board)

#### **Modesto Area**

- Modesto Irrigation District
- City of Modesto
- City of Waterford

#### **Oakdale Area**

- Oakdale Irrigation District
- City of Oakdale

#### **Non-District West**

- Stanislaus County
- City of Riverbank

#### **Non-District East**

- Stanislaus County

# UP NEXT – GROUNDWATER ALLOCATION PROGRAM

## ALLOCATION METHOD

| Proportional Allocation      | Description                                                                                                                                                                                 |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Overlying Area</b>        | Distribution based on the total area.                                                                                                                                                       |
| <b>Developed Area</b>        | Distribution based on the area that is irrigated.                                                                                                                                           |
| <b>Historical Use</b>        | Distribution based on past groundwater use patterns.                                                                                                                                        |
| <b>Comprehensive Methods</b> | A basin-wide approach that formalizes groundwater rights - <i>often through adjudication</i> - and may incorporate overlying area, developed area, or historical use as part of its formula |

### Reason for “overlying area” as recommendation for proportional allocation:

- **Simplicity** – comprehensive methods, like an adjudication, are expensive and time consuming.
- **Optimization** – facilitates resource pooling in the areas most reliant on groundwater.
- **Equity** – All overlying users should share in the costs and benefits of groundwater management.

**Note:** An example of an allocation based on overlying vs developed area will be presented in a later slide

# UP NEXT – GROUNDWATER ALLOCATION PROGRAM

## ALLOCATION METHOD

| Municipal Users | Description                                                                             |
|-----------------|-----------------------------------------------------------------------------------------|
| Exempt          | Not subject to regulation.                                                              |
| Limited         | Municipal users may face some restrictions. (consistent pumping and continued metering) |
| Full            | All municipal users must fully comply with groundwater rules.                           |

### Reason for “limited” recommendation on municipal users:

- **Conservation Requirements** – Mandated efficiency reflecting “conservation-as-a-way-of-life”.
- **Growth Obligations** – Mandated housing and population growth targets drive water demand.
- **Public Service Constraints** – Not-for-profit entities; operate with limiting flexibility in pricing.
- **Supply Limitations** – Current supply is capped; meeting future demand will require surface water development, recharge projects, additional conservation, or purchased credits.

# UP NEXT – GROUNDWATER ALLOCATION PROGRAM

## ALLOCATION METHOD

| De Minimis | Description                                                |
|------------|------------------------------------------------------------|
| Exempt     | Not subject to regulation.                                 |
| Limited    | Small domestic users may face some restrictions.           |
| Full       | All domestic use must fully comply with groundwater rules. |

| Small-Scale Agriculture | Description                                                     |
|-------------------------|-----------------------------------------------------------------|
| Exempt                  | Not subject to regulation.                                      |
| Limited                 | Small farms have partial regulation, or delayed implementation. |
| Full                    | All agricultural use must fully comply with groundwater rules.  |

# UP NEXT – GROUNDWATER ALLOCATION PROGRAM

## ALLOCATION METHOD

| Water Accounting,<br>Credits, & Trading | Description                                    |
|-----------------------------------------|------------------------------------------------|
| Prohibited                              | No trading or crediting of groundwater.        |
| Limited                                 | Trading is allowed under strict conditions     |
| Allowed                                 | No limitations on groundwater trading systems. |

### Trading limitations :

- Trading will only be allowed within management areas.
- Trading may be limited based on response-level actions.
- Trading may be suspended at the discretion of the GSA.

# GROUNDWATER ALLOCATION OVERVIEW

## LOCAL MANAGEMENT OBJECTIVES

**Local Management Factors** - SGMA grants GSAs flexibility to implement local groundwater management objectives, including the ability to provide special treatment in groundwater allocations.

| Allocation of                        | Consumptive Use       | <b>Pumping</b>   | Other                |
|--------------------------------------|-----------------------|------------------|----------------------|
| Spatial Extent                       | <b>Subbasin Wide</b>  | Management Zones | Other                |
| Pro Rata Allocation per              | <b>Overlying Area</b> | Developed Area   | Historical Water Use |
| De Minimis Water Use                 | <b>Exempt</b>         | Limited          | Full                 |
| Municipal Users                      | Exempt                | <b>Limited</b>   | Full                 |
| Small-Scale Agriculture              | Exempt                | Limited          | <b>Full</b>          |
| Water Accounting, Credits, & Trading | Prohibited            | <b>Limited</b>   | Allowed              |



# EXAMPLE ALLOCATION FRAMEWORK

- ✓ Determine **sustainable yield** of the Subbasin
- ✓ Account for special considerations to obtain allocatable water
  - **Legal Exemptions** (federal & tribal lands, adjudicated areas, developed supplies)
  - **Local Management** (economically distressed areas, small-scale users, etc.)
- 3. Allocate remaining sustainable yield of native water
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  - **Appropriative Users** (Permit-Based Rights)
- 4. **Establish framework** as basis for basin-wide management.
  - Determine triggers, impacts, or conditions to mitigate or intensify PMAs

# I. DETERMINE SUSTAINABLE YIELD OF BASIN

**Sustainable Yield** = long term average annual groundwater pumping sustainable without causing undesirable results

**Note<sup>1</sup>:** This analysis was performed using the 2015-2024, 10-year historical period.

**Note<sup>2</sup>:** The numbers presented are based on historical use rather than the location of production



**267,000 AF**

**\*Estimated using C2VSim™ model simulations. Future refinements will consider effects to minimum thresholds and undesirable results.**

## 2. ACCOUNT FOR SPECIAL CONSIDERATIONS

**Developed Supply (44,100 AFY)** – Recovery of surface water that has been made available and imported through human-built infrastructure.

**De Minimis Use (13,800 AFY)** – Individuals that extract two acre-feet per year or less, such as household use or small-scale irrigation.

**Municipal Use (35,000 AFY)** – Water use referring to the provision of water for residential, commercial, and public services within a city.

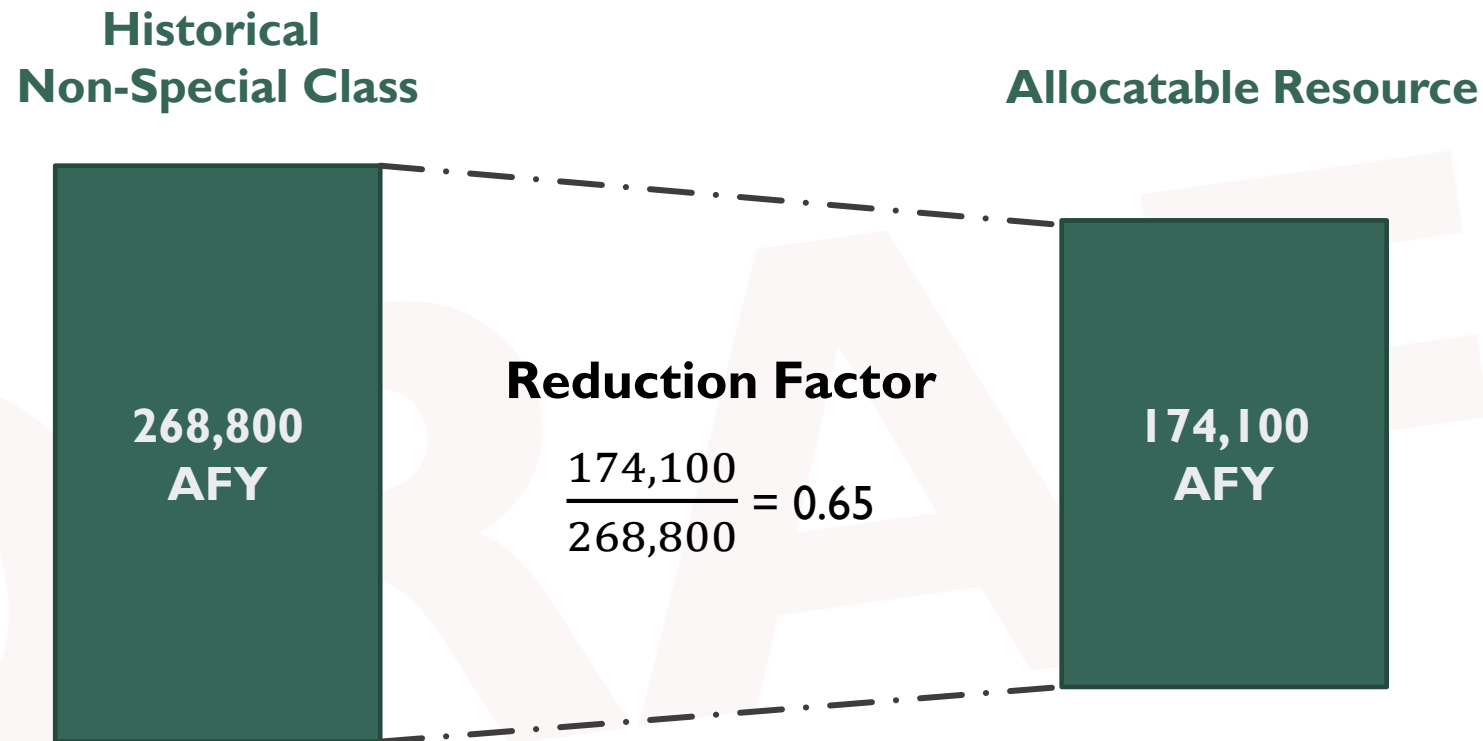
Non-allocatable yields are estimated at **92,900 AFY**

## 2. ACCOUNT FOR SPECIAL CONSIDERATIONS



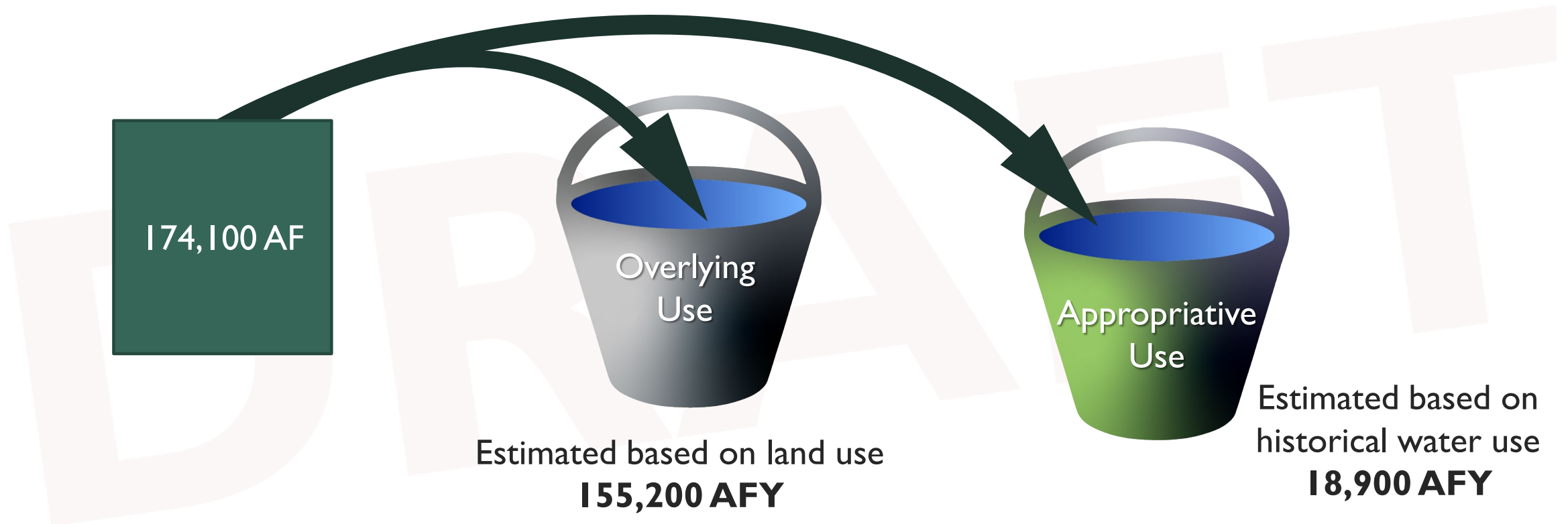
**Note:** This analysis was performed using 10-year (2015-2024) historical period.

### 3. APPORTION SUSTAINABLE YIELD BETWEEN OVERLYING AND APPROPRIATIVE USERS BASED ON HISTORICAL USE



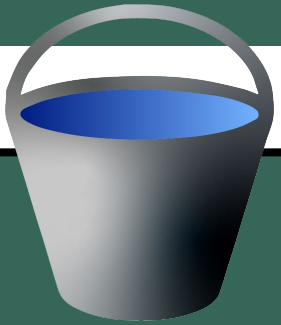
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### 3. APPORTION SUSTAINABLE YIELD BETWEEN OVERLYING AND APPROPRIATIVE USERS BASED ON HISTORICAL USE



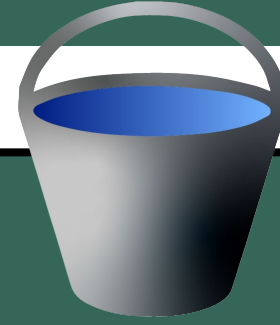
**Note:** This analysis was performed using 10-year (2015-2024) historical period.

# 3B. SUMMARY OF OVERLYING WATER USE



per Overlying Area

|                                            | Subbasin<br>TOTAL | Modesto<br>Area | Oakdale<br>Area | NDW<br>Area | NDE<br>Area |
|--------------------------------------------|-------------------|-----------------|-----------------|-------------|-------------|
| <b>Total Area</b><br>(acres)               | 245,900           | 106,100         | 55,200          | 14,500      | 70,100      |
| <b>Percent of Subbasin</b>                 | 100%              | 43%             | 22%             | 6%          | 29%         |
| <b>Overlying Allocation</b><br>(feet)      | 0.63              | 0.63            | 0.63            | 0.63        | 0.63        |
| <b>Overlying Allocation</b><br>(acre-feet) | 155,200           | 67,000          | 34,800          | 9,200       | 44,200      |
| <b>Overlying Hist. Use</b><br>(acre-feet)  | 241,400           | 115,300         | 27,400          | 9,500       | 89,200      |
| <b>Reduction Required</b><br>(acre-feet)   | 86,200            | 48,300          | 0               | 300         | 45,000      |
| <b>% of Historical</b>                     | 65%               | 58%             | 127%            | 97%         | 50%         |

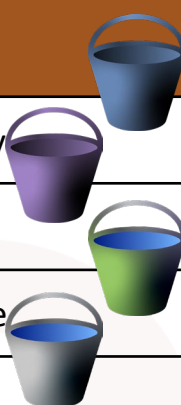


per Developed Area

|                                            | Subbasin<br>TOTAL | Modesto<br>Area | Oakdale<br>Area | NDW<br>Area | NDE<br>Area |
|--------------------------------------------|-------------------|-----------------|-----------------|-------------|-------------|
| <b>Total Area</b><br>(acres)               | 130,000           | 59,400          | 38,900          | 7,700       | 24,000      |
| <b>Percent of Subbasin</b>                 | 100%              | 46%             | 30%             | 6%          | 18%         |
| <b>Overlying Allocation</b><br>(feet)      | 1.19              | 1.19            | 1.19            | 1.19        | 1.19        |
| <b>Overlying Allocation</b><br>(acre-feet) | 155,200           | 70,900          | 46,400          | 9,200       | 28,700      |
| <b>Overlying Hist. Use</b><br>(acre-feet)  | 241,400           | 115,300         | 27,400          | 9,500       | 89,200      |
| <b>Reduction Required</b><br>(acre-feet)   | 86,200            | 44,400          | 0               | 300         | 60,500      |
| <b>% of Historical</b>                     | 65%               | 61%             | 169%            | 97%         | 32%         |

**Note:** This analysis was performed using 10-year (2015-2024) historical period.

# ALLOCATION SUMMARY

|                                                                                                    | Subbasin<br>TOTAL | Modesto<br>Area | Oakdale<br>Area | NDW<br>Area | NDE<br>Area |
|----------------------------------------------------------------------------------------------------|-------------------|-----------------|-----------------|-------------|-------------|
| Developed Supply  | 44,100            | 31,600          | 12,500          | 0           | 0           |
| Special Cases                                                                                      | 48,800            | 33,700          | 8,900           | 6,200       | 0           |
| Appropriative Use                                                                                  | 18,900            | 16,400          | 2,500           | 0           | 0           |
| Overlying Use                                                                                      | 155,200           | 67,000          | 34,800          | 9,200       | 44,200      |
| Total Allocation                                                                                   | 267,000           | 148,700         | 58,700          | 15,400      | 44,200      |
| Total Historical Pumping                                                                           | 317,600           | 173,000         | 39,800          | 15,100      | 89,700      |
| Reduction Required                                                                                 | 50,600            | 24,300          | 0               | 0           | 45,500      |
| Total Allocation (% Hist)                                                                          | 84%               | 86%             | 147%            | 102%        | 50%         |

## Summary

- Sustainability can be met with management actions.
- Projects will mitigate the need for reductions.
- Resource optimization and may further mitigate impacts; redistributions would require formal approval by the GSA and management area stewards.

**Note:** This analysis was performed using 10-year (2015-2024) historical period.



# ALLOCATION SUMMARY

|                               | Subbasin<br>TOTAL | Modesto<br>Area | Oakdale<br>Area | NDW<br>Area | NDE<br>Area |
|-------------------------------|-------------------|-----------------|-----------------|-------------|-------------|
| Base Allocation               | 267,000           | 148,700         | 58,700          | 15,400      | 44,200      |
| Excess Allocation             | 0                 | 0               | 18,900          | 300         | 0           |
| Redistributed Allocation      | 0                 | 12,600          | -18,900         | -300        | 6,600       |
| Optimized Allocation          | 267,000           | 161,300         | 39,800          | 15,100      | 50,800      |
| Total Historical Pumping      | 317,600           | 173,000         | 39,800          | 15,100      | 89,700      |
| Reduction Required            | 50,600            | 11,700          | 0               | 0           | 38,900      |
| Overlying Allocation (% Hist) | 84%               | 93%             | 100%            | 100%        | 57%         |

## Sample Optimization

- Developed supplies remain under the control of the importing agency.
- Unused allocations may be redistributed at the discretion of the GSA.
- In this **example** the excess allocation is equally distributed based on historical pumping.

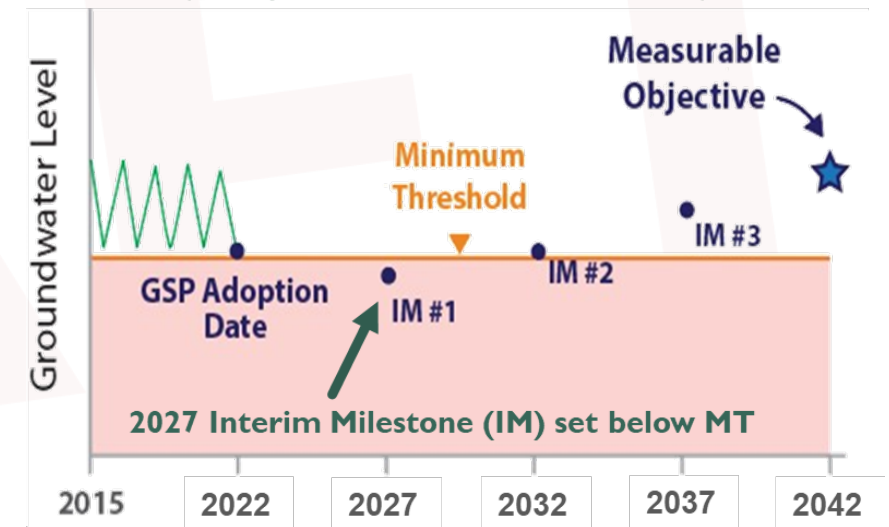
**Note:** This analysis was performed using 10-year (2015-2024) historical period.

# IMPLEMENTATION OF MANAGEMENT ACTIONS

## Goals:

- Achieve sustainability as outlined in the GSP
  - Mandated as **primary** tool to **guarantee** sustainability.
  - Will be offset with projects, dependent on implementation and effectiveness.
- A framework for groundwater management
  - First step, is significant but not overly conservative
  - Incorporate a ramping implementation period
  - Driven by observed groundwater level data
  - Supported though adaptive management

SGMA allows GSAs to define *Interim Milestones* as a “glide path” to sustainable management



# IMPLEMENTATION OF MANAGEMENT ACTIONS

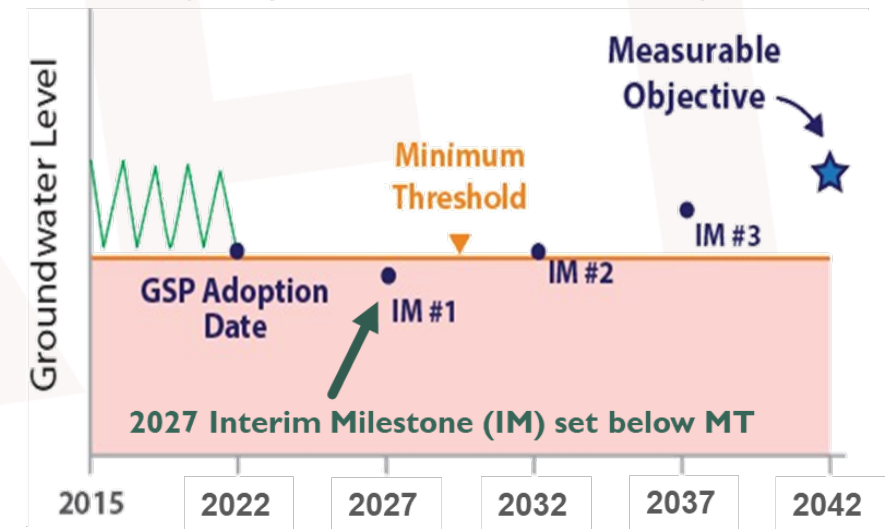
## Interim Milestones Timeline

- **2027** - Arrest overdraft and GWL decline
- **2032** - Raise GWLs to minimum thresholds
- **2037** - Raise GWLs to halfway between minimum thresholds and measurable objectives
- **2042** - Raise GWLs to measurable objectives

## Implementation Timeline

- **2027 – 2031** 50% of target allocation
- **2032 – 2036** 75% of target allocation
- **2037 – 2042** 100% of target allocation

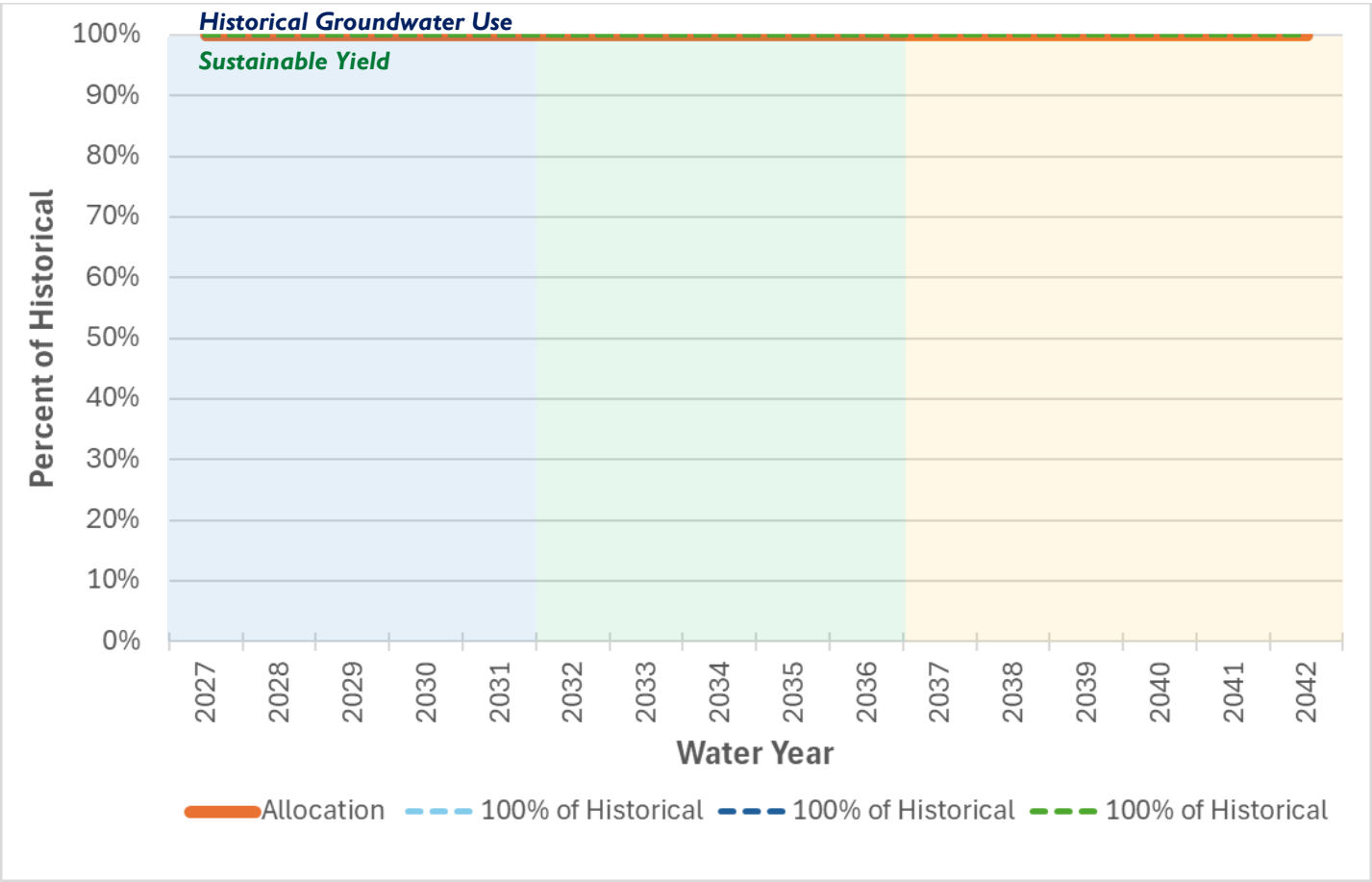
SGMA allows GSAs to define *Interim Milestones* as a “glide path” to sustainable management



# IMPLEMENTATION

## OAKDALE & NON-DISTRICT WEST AREAS

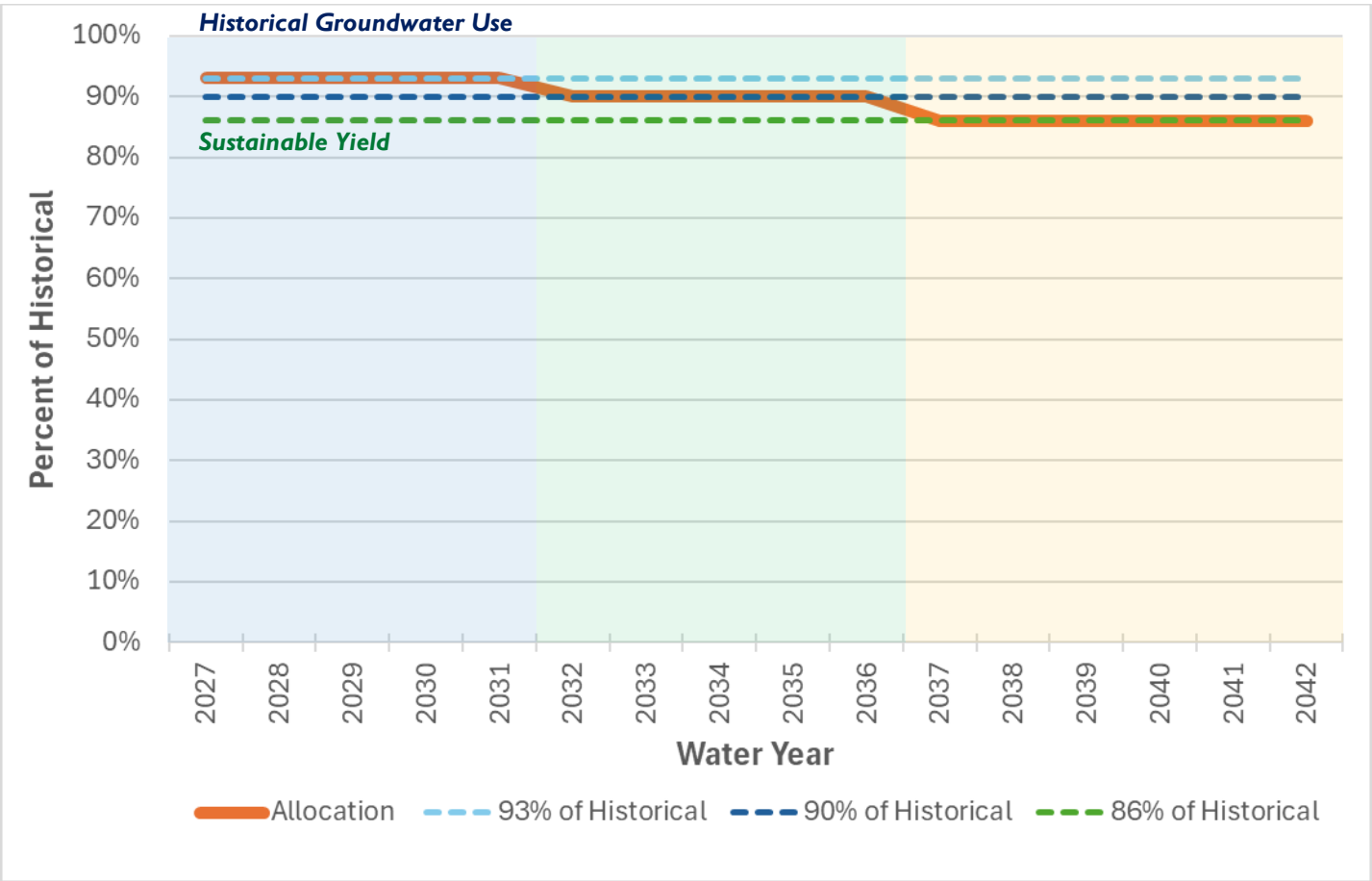
| Oakdale and NDW Areas |                               |                                    |
|-----------------------|-------------------------------|------------------------------------|
| Year                  | Base Reduction<br>(acre-feet) | Optimized Reduction<br>(acre-feet) |
| 2027-2032             | N/A                           | N/A                                |
| 2033-2037             | N/A                           | N/A                                |
| 2038-2042             | N/A                           | N/A                                |



# IMPLEMENTATION

## MODESTO AREA

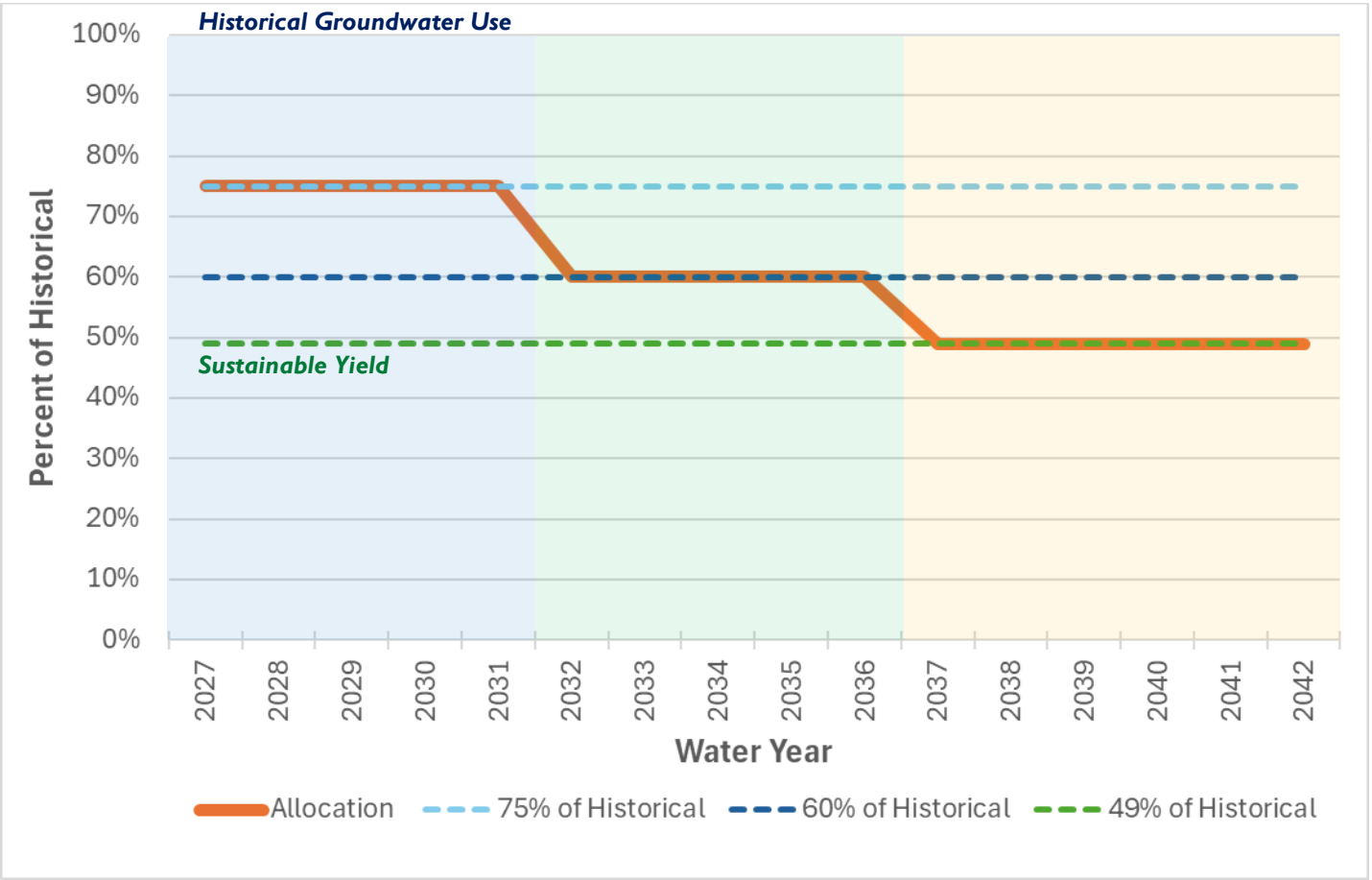
| Modesto Area |                               |                                    |
|--------------|-------------------------------|------------------------------------|
| Year         | Base Reduction<br>(acre-feet) | Optimized Reduction<br>(acre-feet) |
| 2027-2032    | 12,100<br>(7%)                | 6,900<br>(4%)                      |
| 2033-2037    | 17,300<br>(10%)               | 10,400<br>(6%)                     |
| 2038-2042    | 24,300<br>(14%)               | 11,700<br>(7%)                     |



# IMPLEMENTATION

## NON-DISTRICT EAST AREA

| NDE Area  |                               |                                    |
|-----------|-------------------------------|------------------------------------|
| Year      | Base Reduction<br>(acre-feet) | Optimized Reduction<br>(acre-feet) |
| 2027-2032 | 22,400<br>(25%)               | 22,400<br>(25%)                    |
| 2033-2037 | 35,900<br>(40%)               | 31,400<br>(35%)                    |
| 2038-2042 | 45,500<br>(50%)               | 38,900<br>(43%)                    |



# GROUNDWATER ALLOCATIONS

## MANAGEMENT AREA SUMMARY

### Base Reduction

|                 | Reduction from Historic Use |            |            |
|-----------------|-----------------------------|------------|------------|
|                 | 2027-2032                   | 2033-2037  | 2038-2042  |
| Oakdale         | 0%                          | 0%         | 0%         |
| NDW             | 0%                          | 0%         | 0%         |
| Modesto         | 7%                          | 10%        | 14%        |
| NDE             | 25%                         | 40%        | 51%        |
| <b>Subbasin</b> | <b>11%</b>                  | <b>17%</b> | <b>22%</b> |

### Optimized Reduction

|                 | Reduction from Historic Use |            |            |
|-----------------|-----------------------------|------------|------------|
|                 | 2027-2032                   | 2033-2037  | 2038-2042  |
| Oakdale         | 0%                          | 0%         | 0%         |
| NDW             | 0%                          | 0%         | 0%         |
| Modesto         | 4%                          | 6%         | 7%         |
| NDE             | 25%                         | 35%        | 43%        |
| <b>Subbasin</b> | <b>9%</b>                   | <b>13%</b> | <b>16%</b> |

# IMPLEMENTATION OF MANAGEMENT ACTIONS

## Goals:

- Achieve sustainability as outlined in the GSP
  - Mandated as **primary** tool to **guarantee** sustainability.
  - Will be offset with projects, dependent on implementation and effectiveness.
- A framework for groundwater management
  - First step, significant but not overly conservative
  - Incorporate a ramping implementation period
  - Driven by observed groundwater level data
  - Supported though adaptive management

SGMA allows GSAs to define *Interim Milestones* as a “glide path” to sustainable management

