9:30 a.m. – 3:30 p.m.
Tachi Palace Hotel & Casino
Lemoore, California

External Meeting Notes
April 12, 2016
Groundwater Sustainability Program

Sustainable Groundwater Management Program
Prepared by the Center for Collaborative Policy, CSUS

Purpose

These notes summarize a workshop conducted by the California Department of Water Resources (DWR) to provide information to Tribes and water agencies in the Central California region about Tribal engagement in groundwater management planning under the Sustainable Groundwater Management Act (SGMA). The goals of the meeting were to:

- *Update on California groundwater regulations*
    - *Discussion on how the regulations relate to Tribes.*
- *Obtain feedback from Tribes on needed tools for reaching groundwater sustainability statewide.*
- *Update on DWR and Tribal Advisory Group development of Best Management Practices for GSA and Tribal engagement, collaboration, and coordination.*

Introduction

The following is a list of Tribes and agencies represented at this meeting. The names of specific individuals who were in attendance are provided in the attached sign in sheet.

- Department of Water Resources, Sacramento office
- Department of Water Resources, South Central Region (Fresno)
- State Water Resources Control Board
- North Fork Rancheria of Mono Indians of California
- Santa Rosa Indian Community of the Santa Rosa Rancheria
- Table Mountain Rancheria of California
- Tule River Indian Tribe of the Tule River Reservation
- Kings County Water District
- Kings River Conservation District

List of Acronyms

DWR	Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
SGMA	Sustainable Groundwater Management Act
SGMP	Sustainable Groundwater Management Program

Upcoming Tribal SGMA Informational Workshops

April 28, 2016 – Valley Center, CA (Southern Region Tribes)
May 12, 2016 – Coyote Valley, CA (Northern Region Tribes)

Issues

A. Sustainable Groundwater Management Act
B. DWR Groundwater Sustainability Program
C. DWR GSP Draft Regulations
D. Website Tools And Information Center
E. Tribal Involvement Roundtable Discussion

Attachments Enclosed

- Appendix A, Participant List
- Appendix B, PowerPoints and Handouts

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Purpose 1

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ACTION ITEMS

1. Kings River Conservation District and Kings County Water Agency**: send contact information to DWR, and to include in this meeting summary.**

2. DWR**: develop a matrix that communicates the benefits to Tribes for participating in groundwater management planning and potential negative outcomes for not engaging.**
3. Tool for Local Agencies with recommendations on engaging with Tribes on GSA formation and GSP development.

A. Welcome and Introductions

Anecita Agustinez, Tribal Policy Advisor for the Department of Water Resources (DWR), welcomed participants. She invited them to introduce themselves and state their reasons for attending. Reasons for attending expressed by Tribal participants included:

- To gather information about the Sustainable Groundwater Management Act (SGMA) and Tribal rights
- To learn about funding possibilities through Proposition 1 and SGMA
- To expand knowledge about SGMA and groundwater
- To understand how SGMA impacts to Tribes.

Anecita Agustinez explained that Tribes are not mandated to participate in SGMA, but that there are benefits to participating, including access to funding. DWR invited local water authorities to participate in this meeting to meet the Tribes, and help encourage collaboration moving forward. She further noted that Tribes can contact the local office of DWR, including Tribal Liaison Christa Collin, for questions on funding and technical assistance.

Anecita Agustinez provided information about the statewide Monthly Drought Tribal Consultation Calls that inform the Governor's Drought Task Force. Anecita Agustinez highlighted that these Consultation Calls are a good place to raise drought related issues and emergencies.

- A number of agencies participate including Cal Office of Emergency Services (OES), State Water Resources Control Board (SWRCB), DWR, Cal Fire, Indian Health Service (IHS), federal partners, and others.
- The calls address drought related issues like tree mortality and marijuana cultivation that require emergency funding.
- Ten Tribes have declared a drought emergency, which is a way to elevate drought emergencies to the state level.

Anecita Agustinez clarified the role of DWR to develop emergency regulations and guidance on the implementation of SGMA. Jessica Bean, State Water Resources Control Board, confirmed the Board's

role is to step in where groundwater resources are not managed properly (For example: where GSAs do not achieve sustainability milestones).

B. Sustainable Groundwater Management Act – Updates

Sustainable Groundwater Management Program and Tribal Participation

Benjamin Gooding, DWR, provided an overview of SGMA. Key points to this presentation included:

- Tribal participation is encouraged, but not mandated by SGMA.
    - However, Tribes and/or Tribal members may be required to comply with SGMA areas of land held in fee.
    - Section 10720.3(c) defines how Tribes may participate as members of Groundwater Sustainable Agencies (GSAs).
    - Federally Recognized Tribes can participate through a legal document such as a Joint Powers Authority (JPA) or Memorandum of Understanding (MOU). Outreach to California Native American Tribes is required by SGMA.
        - Every GSA that forms under SGMA is required to contact the Tribes in their groundwater basin, both federally recognized and unrecognized, as beneficial users of groundwater.
    - Advisory Committees provide another way for Tribes to participate. Advisory Committees allow for input after GSAs are formed but before they finalize Groundwater Sustainability Plans (GSPs).
- Groundwater Basin Mapping
    - Bulletin 118 is the most recent comprehensive groundwater basin map
    - Basins are currently mapped by alluvium
    - SGMA does not apply to areas outside of these basins
- SGMA key intended outcomes
    - SGMA requires that GSPs be adopted for high and medium priority basins.
    - Adjudicated basins are exempt from developing GSPs. They only require minimal reporting.
    - Low or very low priority basins have different requirements from high priority basins.
    - Communities in the Central Valley are in high priority basins.
- There is a groundwater management tool on the DWR website that has a map of the current basin boundaries. It includes a Tribal lands layer, as well as priority basin layers. The map is interactive, Geographic Information Systems (GIS)-based, and you can zoom in for detail.
- Timetable for Sustainable Management
    - 2017: Groundwater Sustainability Agencies (GSAs) must be identified.
    - 2020: Basins in critical overdraft must be covered by a GSP.
    - 2022: Other high and medium priority basins not in overdraft must have GSPs.
    - 2040: Each high and medium priority basin must achieve sustainability.
- SGMA provides new management authority and management tools for GSAs

DRAFT Groundwater Sustainability Plan Emergency Regulations Guide

Benjamin Gooding, DWR, explained the four phases of GSP development and implementation. Key Points to this presentation included: Refer to the Guide: http://www.water.ca.gov/groundwater/sgm/pdfs/GSP_Regulations_Guide.pdf for more information.

Note: DWR is currently reviewing public comments on these draft regulations. The final version may incorporate some changes.

- The General Principles that will guide evaluation of GSPs are:
    - Whether it achieves the established sustainability goal for entire basin in 20 years
    - It cannot adversely affect an adjacent basin.
    - Meets a substantial compliance standard.
    - Provides a description of basin-wide governance to reach sustainability.
    - Establishes a timeline and priority for filling data gaps.
    - Implements an adaptive management process.
- Roles and responsibilities of the implementing agencies are:
    - State Water Board: enforcing agency
    - DWR: regulating and assisting agency
    - GSA: planning and implementing GSP
- There are 4 phases of GSP development and implementation. Mr. Gooding reviewed key activities, roles, considerations, and dates at each phase.
    - Phase 1: GSA formation and coordination
        - Realignment of basins, where applicable
        - Basin governance is established through formation of GSAs
    - Phase 2: GSP Preparation and Submission
        - GSAs develop and adopt GSPs
    - Phase 3: GSP Review and Evaluation
        - DWR staff review and evaluate GSPs to determine adequacy
    - Phase 4: Implementation and Reporting
        - GSAs develop annual reports and GSP assessments every five years during implementation of the GSPs

Additional details for each Phase are as follows:

Phase 1: GSA formation and coordination

- GSAs are forming now.
    - If Tribes seek to be part of a GSA, now is the time to engage and communicate with local agencies forming GSAs.
    - Tribes may want to participate in other ways.
- Highlights for Tribes: Governance configurations
    - Several different governance configurations are possible for GSAs.
    - Knowing the basin boundaries, and where they lie in relation to Tribal allotments and fee lands, will help Tribes determine the most appropriate way for them to participate in SGMA. DWR can help Tribes determine this, for example, through mapping and basin boundary modification/review assistance.

    - Tribes might also want to participate on advisory committees or as stakeholders in basins that include ancestral territories for which the Tribe does not hold trust lands or fee title land.
- Key dates
    - Basin boundary modifications due March 31, 2016
    - GSP regulations adopted June 1, 2016
    - Alternative to GSPs due January 1, 2017
    - GSAs covering an entire basin formed – June 30, 2017

Phase 2: GSP Preparation and Submission by GSAs

- This is a key point of Tribal engagement, after GSAs are formed and before GSPs are completed.
- During this phase GSAs need to coordinate with adjacent hydraulically connected basins and with relevant land use agencies.
- GSPs must include a "Basin Setting"
    - Working with Tribes will help GSAs develop more accurate basin settings.
    - The "basin setting" describes the basin's groundwater conditions in a comprehensive way. This includes the basin's physical characteristics and dynamic conditions such as changes in water supply, demand, and climatic conditions.
        - Dennis Mills, Kings County Water District, noted that the Tulare Lake Sub-basin may be covered by 4-5 GSAs.
- DWR will provide local assistance with development of GSPs, including:
    - Funding support
    - Facilitation
    - Technical support
    - Development of best management practices
    - Water supply options for replenishment
    - Bulletin 118 update (basin boundaries)
    - Consultation with GSAs

Phase 3: GSP Review and Evaluation

- DWR will review submitted GSPs, using methodology and criteria laid out in the regulations.
- This phase includes a public comment period.
- Key Dates
    - GSP submittal open July 1, 2016
    - GSP submittal due 2020 or 2022
    - Review dates and interim milestones – every 5 years
    - 2040 sustainability goal

Phase 4 GSP Implementation and Reporting

- GSAs will implement their GSPs and conduct activities including: GSA and GSP governance, engage stakeholders and land use agencies, implement projects and compliance actions, and data management and analysis.
- GSAs will submit annual and five-year reports to DWR.
- DWR will review the annual reports and five-year reports for compliance.

Discussion, comments, and questions

Facilitator Stephanie Lucero invited participation during and after the presentation:

- Christina McDonald, Northfork Rancheria, noted that the overlap of boundaries for SGMA and Integrated Regional Water Management (IRWM) is confusing. Later in the morning, DWR demonstrated an online mapping tool that can help clarify these boundaries.

    - Tribal lands that are farther up in the mountains may not overlie the basins or sub-basins that SGMA applies to. The sub-basins are usually under foothill and valley floor regions.

- What if a Tribe doesn't participate as a GSA member?
    - GSAs have to reach out to engage Tribes and ask how they want to participate. If Tribes say no, GSAs will do their best to manage without the Tribe's input. The state cannot force a Tribe to participate.
    - Tribal participation will help the state and GSAs fill in data gaps for water use on Tribal land. Without that information, agencies will have to guess.

- What happens at the 5 year milestone if GSAs are not in compliance, and the GSAs blame Tribal water use for noncompliance?
    - Jessica Bean, SWRCB, replied that SWRCB will step in if there is non-compliance. They will investigate and do research to find out what is happening, and come up with a solution. The question points to the benefits of engaging early.
    - Dennis Mills, Kings County Water District, pointed out that the GSAs and not the Tribes will be responsible for non-compliance. That's why they will want to talk to Tribes, to make sure they have the correct data.

    - Victor Silvas, Sr, Tule River: Tribal participation can help protect Tribal assets. However, funding for GSAs is not available to Tribes. Tribes participate in the County's emergency drought committee, but funding to the County does not come to Tribes. Tribes have to go after their own funding.
        - Anecita Agustinez: Some Proposition 1 funds for Integrated Regional Water Management are available to Tribes, under Chapter 7. To qualify, Tribes must be part of the monitoring process.
        - Many Tribes, particularly Sierra Tribes, have developed sustainable practices through forest management grants.
        - Proposition 1, Chapter 10 funds, are for groundwater sustainability.

        - Technical assistance funding for counties and GSAs was not available to Tribes, specifically. The TA funding from SWRCB provided funding to non-profits to provide GSA formation technical assistance to counties.
    - The focus of both IRWM and SGMA is regional collaboration. So accessing those funds requires being part of the collaborative effort.

C. DWR Sustainable Groundwater Management – Online, Mapping, and Technical Assistance Tools

The path to follow to access this website from DWR's home webpage (www.water.ca.gov) is:

- DWR homepage → Issues Tab → Planning Tab → Sustainable Groundwater Management
- Access the "Groundwater Information Center" on the tan-colored side-bar

Water Management Planning Tool

Link: http://water.ca.gov/groundwater/boundaries.cfm

Chris Olvera, DWR, demonstrated various tools from DWR's online Groundwater Information Center. The Water Management Planning tool is a web-based application to assist local agencies in water management planning efforts. It is an interactive map application that allows users to overlay numerous Geographic Information Systems (GIS) layers onto a map of California, and provides access to more information about those data layers. The Water Management Planning Tool is intended to assist local agencies with their responsibilities related to the California Water Plan, Integrated Regional Water Management, and the Sustainable Groundwater Management Act and as an informational tool for all interested parties.

Accessing and using the Water Management Planning Tool:

- Links:
    - The planning tool is available through the DWR Groundwater website at: http://water.ca.gov/groundwater/boundaries.cfm
    - The direct link is: https://gis.water.ca.gov/app/boundaries/

- Some of the boundaries and layers shared include:
    - DWR Regional Office Service Areas
    - Tribal lands
    - CASGEM Groundwater basin prioritization (high/med/low/very low)
    - Water agencies (highlights overlaps)
    - Bulletin 118 basins
        - Bulletin 118 is a DWR document that provides information about groundwater basins and sub-basins, including boundaries, hydrology, hydro geologic characterization, etc.
    - IRWM regions
    - Previous groundwater management plans under A.B. 3030, S.B. 1938, A.B. 359

- Various base maps
- Disadvantaged Community Tracts
  Note:
  - Proposition 1 funding under S.B. 208 enables grants to disadvantaged communities ($50M), that DWR will administer. Tribal governments may apply. Anecita Agustinez encourages people to look into that funding source. You would have to participate in IRWM, but can be a direct recipient.

- Navigating the tool
  - If you click on the map, information about the selected layer will pop up, for the area of the map you click on
  - A box on the right provides information about the layers and links for more information.

GSAs Interactive Map

Link: http://water.ca.gov/groundwater/sgm/gsa_map.cfm

This online mapping tool can help Tribes identify the relevant GSA(s) for their area. It shows the location of local agencies that decided to form GSAs. It also provides a link to GSA submittals that have additional information about GSA outreach to Tribes, and contact information for GSAs.

- Interactive Map Layers discussed:
  - GSAs and overlaps
  - Adjudicated areas
  - Bulletin 118 groundwater basins
  - CASGEM prioritization
  - Counties
  - GSA submittal, which will include whatever information the GSA included about Tribal outreach

- The GSA Interactive Map webpage includes a link to the GSA Formation Table.
  GSA Formation Table: http://water.ca.gov/groundwater/sgm/gsa_table.cfm#table

  - Through this table users can see who has submitted GSA applications and access the submittals. DWR updates the table periodically.

Basin Boundary Assessment Tool

Link: http://water.ca.gov/groundwater/sgm/bbat.cfm

The Groundwater Basin Boundary Assessment Tool is intended to assist local agencies with their planning efforts related to basin boundary modifications. It includes very detailed geologic data.

Groundwater Information Center Interactive Map Application

Link: http://water.ca.gov/groundwater/MAP_APP/index.cfm

This tool provides GIS layers containing geospatially-referenced groundwater-related information on:

- Water levels
- Boundaries
- Subsidence

Discussion, comments, and questions

- The GSAs Interactive Map shows that many areas do not have GSAs formed.
    - Dennis Mills, Kings County Water District: Agencies learned from early mistakes in trying to form too quickly without coordination with neighbors, and are now being more cautious and making sure they have done those steps.
    - If your area does not have a GSA yet, you can talk to the County, or local districts, or Regional Office of DWR to find out who is preparing to submit or considering formation as a GSA.

DWR Technical Assistance Resources

DWR encouraged Tribes to utilize DWR Regional Offices. These offices can provide mapping resources and access to region-specific data about water resources.

DWR South Central Office provided attendees with a packet of region-specific information to help with GSPs or groundwater planning. Materials in the packet included:

- Basin acreages
- Water sources (from California Water Plan)
- Water use by water year and type
- Water budget
- Water budget projections out 50 years
- California Water Plan Update 2013 – Vol 2

GAB: The Groundwater Act Blog

Link: http://groundwater.ca.gov/bloghome.cfm

GAB is a central hub for meetings, workshops, and other information regarding SGMA.

D. DWR Proposition 1 Initiative Updates

Anecita Agustinez provided an update on the Sustainable Groundwater Management Program (SGMP) and DWR's role in this program.

- DWR's approach to Tribal engagement under SGMA includes financial assistance and Tribal outreach, specifically:
    - Funding through Proposition 1 water bond
    - Tribal advisory/technical advisory group (TAG) on the SGMP
        - The TAG is one of many advisory groups advising on SGMA
    - Other communication and outreach to Tribes, including one-on-one meetings and through formal Tribal Consultation in addition to Tribal specific workshops.

- The Proposition 1 Water Bond passed in 2014 authorized over $7 Billion for water projects in California, including groundwater projects.
    - The funds can be used for projects in a number of categories: clean and safe drinking water, watershed restoration/protection, regional water security, statewide system operation, water recycling and advanced treatment, groundwater sustainability, and flood management.
    - Various agencies provide funds within various programs, all with different applications, guidelines, timelines
    - For IRWM funds, Tribes are considered an eligible entity, but they need to participate with local IRWM regions.
    - Groundwater: funds for SGMA implementation are not yet out. They will include:
        - $800 Million to SWRCB to administer, to fund groundwater quality projects
        - $100 Million to DWR to administer, to fund groundwater planning and projects
            - DWR will provide technical assistance to help Tribes to apply for grants.
- Anecita Agustinez noted that funding for both IRWM and groundwater programs are focused at the local level through state bond funds and grants. That is why collaboration is important and why Tribes should engage in those local GSA structures and GSP development. Tribes also need to be part of the monitoring to be eligible for SGMA and IRWM funding.

- DWR SGMP Tribal Advisory Group
    - Includes statewide Tribal membership
        - Tribes in adjudicated basins are included though the adjudication basin their Tribal lands may reside in adjudicated basins are exempt from SGMA.
    - Tasked with development of technical assistance and outreach for Tribes.
    - Has provided testimony to legislature on status of Tribal engagement in SGMA.
    - Has identified SGMA implementation issues for Tribes in a list of Frequently Asked Questions (FAQs), addressing questions such as the following:
        - Does SGMA apply to federally recognized Tribes? Non-federally recognized Tribes?

- What are the Tribal concerns with a utilizing a joint powers authority?
- Can a tribe choose to be a GSA or exercise powers of a GSA?
- Does SGMA affect Tribal water rights?
- What opportunities are there for Tribal governments to provide input during SGMA implementation?
- Do local authorities have an understanding of what is "Tribal Law"?
    - The TAG developed a proposed definition of "Tribal Law" – for agencies/GSAs

Discussion and comments:

- This is first time that DWR has invited non-Tribal participants to one of these workshops.
- Kings County River Conservation District commented that it would help water agencies to have more info on the Tribal engagement requirements and components, process, and best management practices that are developed through the TAG and other SGMA meetings and workshops.

E. Developing Best Management Practices for GSA/Tribal Engagement

This session focused on hearing from Tribes about how they would like to be engaged. Local Agencies in attendance asked questions on appropriate process for engaging with Tribes.

Emily Alejandrino: DWR wants Tribal input on the Best Management Practices (BMPs). The DWR will follow this timeline for development of BMPs for Tribal engagement:

- The SGMA team will begin work to develop BMPs for Tribal engagement in June 2016, after the draft GSP guidelines are published.
- DWR aims to publish the BMPs in January 2017.

Anecita Agustinez emphasized that DWR wants to hear from Tribes on:

- How would Tribes like to be noticed by the Counties?
- What constitutes proper "notice"?
- How should GSAs make initial contact with Tribes?

Discussion, comments, and questions

- Tribal notice and outreach:
    - Original notice should go through the Tribal Chairperson in deference to sovereignty and common practices for government-to-government communication.
    - It is good practice to send a copy or email copy of these communications to the Tribal Administrator. The Administrator oversees the Tribal government's departments. Local

Agencies may also want to copy or email relevant staff like Tribal Environmental Protection staff, utilities staff, etc.

- For questions and information exchange following original notice, local agencies should go through the Tribal Council and/or delegated staff after hearing from the Tribal leadership.
    - Staff will typically write a report or meet with the Council before decisions are made.

- Best approaches to Tribal outreach:
    - Local agencies would value a guide to Tribal engagement that includes the dos and don'ts of Tribal outreach.
        - Don't exclude the Tribal Chairperson in communications
        - Always address your initial communication to the Tribal Chairperson
        - Don't show up to a Council meeting and expect to be able to speak without first making arrangements to address the Council
            - Do develop communication with Tribal Council staff level to request placement on a Tribal Council agenda
            - Develop an agenda in advance through communication with Tribal Council staff
- Finding Tribal contacts. There are several ways that counties, water agencies, GSAs, and others can find contact information for local Tribes.
    - Tribal Directory: Cynthia Gomez, the Governor's Tribal Advisor, compiled a listing of all Tribes statewide, available online
        - To view the directory online (or, if you are a tribe, submit changes): http://tribalgovtaffairs.ca.gov/Regions/index.html#AccessUpdate
            - Also available on this website are maps showing geographic locations of California Tribes.
        - To download a spreadsheet of this directory: https://docs.google.com/spreadsheet/pub?key=0AmA4Eb9Gb_gxdG5lXzhqSzlxYXlPNXVXdWVpWW5VUVE&output=csv
        - Also posted on this website are maps of the geographic locations of California Tribes.
    - Tribal websites typically list contact information for Tribal leadership, administrators, and departments
    - Office of the Governor's Tribal Advisor has a master contacts list California Tribes. http://www.tribalgovtaffairs.ca.gov/
        - Click on "View Tribal Contact Information?" http://www.tribalgovtaffairs.ca.gov/Regions/index.html#AccessUpdate

Anecita Agustinez discussed ways that Tribes can reach out to agencies and/or ensure that GSAs and others have the correct contact information:

- Tribal Staff can reach out to GSAs, counties, water agencies, etc., for inclusion on information distribution lists for interested persons.
- Tribes can submit changes online to the Tribal Directory maintained by the Governor's Office of the Tribal Advisor: http://tribalgovtaffairs.ca.gov/Regions/index.html#AccessUpdate
- The Governor's Office of the Tribal Advisor has posted an online directory of Tribal Liaisons in the state agencies: http://tribalgovtaffairs.ca.gov/pdf/TribalLiaisonContactList_Mar2016.pdf
- Tribes can request formal government-to-government consultation at any time with state agencies and with local agencies.
- DWR focuses on getting to know Tribes, for example through these workshops
    - DWR will also do one-on-one meetings with Tribal staff to share tools and resources.
    - DWRs goal is to continue with quarterly meetings to keep Tribes informed with new developments.

F. Roundtable Discussions

The Roundtable provided opportunity for discussion and general question on SGMA issues of concern for Tribes and local agencies. Participants also discussed how and why Tribes may be involved in GSAs. There was also some discussion on related planning efforts.

- Local GSA formation and Tribal participation
    - Governance structures such as Joint Powers Authorities are currently under development, it is a key time to be involved. If Tribes want to participate, they should consider getting in touch now with those forming GSAs.
    - GSA formation is proceeding in different ways and varies from area to area. Tribes can contact local districts and ask how they are involved or what they know about how a GSA formation within the basin. Regional DWR offices and counties can also provide information.
        - Tribes can check the GSA formation table. Not all GSAs have submitted their notices: http://water.ca.gov/groundwater/sgm/gsa_table.cfm#table
    - $10 Million of initial SGMA funding will go to counties for GSA formation. That might include Tribal outreach at the county level.
- Timing and information sharing
    - Information shared by Tribes can benefit the GSP planning process.
    - However, GSAs are just forming and cannot yet take action on this information. SGMA limits GSA authority until after the GSP is submitted.
- Question: Have Tribes ever been involved with groundwater management planning before?

- Dennis Mills, Kings County Water District: laws first passed in the 1990s required agencies to develop groundwater management plans. SGMA, the new law passed in 2014, requires significantly more in terms of groundwater management planning, including formation of GSAs and development of GSPs with new sustainability requirements. Previously, Tribes were not typically engaged to develop groundwater management plans.
- Tribes are not obligated to participate in SGMA. But without Tribal participation, GSAs will not have complete information about groundwater use in their area.
- Specifically, a GSA needs to know the water balance for its area – total water pumping and recharge. *Without complete information, GSAs may not have data needed to calculate the sustainable yield or track how much is being used or recharged.*
    - Most cities and other entities report that information, and are gathering more information about agricultural groundwater users also.
    - The goal is to protect confidentiality of information about individual groundwater use, while providing enough information to satisfy state entities in showing efforts and outcomes to reach sustainability.
- Working with GSAs can help plan for and address issues the Tribes are dealing with.

- Advisory Committees

    - Dennis Mills, Kings County Water District, suggested advisory committees as a good option for Tribal engagement, but engagement outside this structure is also possible.
    - Santa Rosa Rancheria expressed interest in learning more about Advisory committees
    - This is a potential BMP for Tribes to consider, i.e. whether an Advisory Committee is a useful process for a Tribe to engage with?

- Question: Are there negative impacts for Tribes that do not wish to participate? Our Tribe is self-sufficient. We manage our water and monitor all of the results. The Council deals with and fixes any water problems.

    - Emily Alejandrino, DWR, stated that GSAs need to know all the pieces of the puzzle to reach sustainability.
    - Jessica Bean, SWRCB, stated that the concern would be if a GSA, moving forward without complete information, underestimates how much water the Tribe is using. If so, overall water levels could be drawn down, which could affect everybody's use.
    - Anecita Agustinez agreed that most Tribes already have good management practices. Ideally a GSA can incorporate that information. It is also a good opportunity for Tribes to clarify current and long term needs and understand if those needs are in sync with the aquifer.
    - A Tribal participant noted that the possibility of running out of water is scary and motivating and is causing them to pay more attention to their groundwater.

- Other than overall impacts on the sustainable management of the subbasin, the impact to a Tribe for not participating in a GSA is likely minimal. However there are advantages to participating:

  - More information for contingency planning.
  - More information on the rest of the aquifer.
  - Being part of the dialog and making sure the region is sustainable, and that there is water for the Tribe's future needs and goals, such as ecosystem restoration.

- A Tribal participant requested a matrix showing the benefits of involvement and negative impacts for not engaging with the GSA, GSP, or stand-alone Tribal water management plan. This would be useful for Tribal representatives or staff to present to their Tribes. The matrix could indicate:

  - Benefits by land type (fee land, trust land, etc.)
  - Recommended next steps.
  - Resources.
  - Possible negative outcomes for not engaging.

- Dennis Mills, Kings County Water District, explained that Tribal use of water may be tiny compared to other municipal and agricultural areas. It may be smaller than the margin of error for measuring water use amounts.

  - Given that, Tribal participation is probably not essential to protect that water use.
  - But water agencies are glad to have the interaction and conversation with Tribes and to have better data on water use in the basin.
  - Dennis Mills, Kings County Water District, later noted that Tribes may have an interest engaging with GSA and GSP development for water quality reasons.

- If Tribes do not want to participate:

  - Ideally they should send a letter to the GSA indicating that they are not interested in participating.
  - The GSA then knows the status, and can show DWR that they did due diligence in reaching out.

- Question: Is California Office of Emergency Services (Cal OES) involved in SGMA?
  - No, OES does not have a formal role, however, DWR works closely with them on drought emergencies and other issues. Local outreach is most important. If your Tribe developed a local drought resolution, we encourage you to participate in the biweekly Cal OES outreach calls for the Drought Task Force.
  - Note: that GSAs will not have authority to address drought emergencies until completion of the GSP in 2020.
- The Governor's Office of Planning and Research is updating S.B. 18 guidelines for consultation with California Tribes during planning processes to protect cultural resources.
  - Comment: Dennis Mills urges caution on rule changes that impact the way that GSAs are required to implement SGMA since they can delay the implementation process.

Closing

Stephanie Lucero reviewed the action items and highlights from the roundtable discussions. Anecita Agustinez thanked the attendees for taking time to participants in the workshop and expressed gratitude towards the Santa Rosa Rancheria for hosting the workshop, and look forward to opportunities to work together in the future.

Appendix A. Participants List

NAME	AFFILIATION
Tribes	
Samuel Elizondo	Table Mountain Rancheria
Santa Garcia	Santa Rosa Rancheria
Babs Makinde	Tule River Tribe
Christina McDonald	North Fork Rancheria of Mono Indians of California
Katie Parra	North Fork Rancheria of Mono Indians of California
Norman Quinn	Santa Rosa Rancheria
Victor Silvas, Sr.	Tule River Tribe
Richard Thomas	Santa Rosa Rancheria
Wayne Wilson	Santa Rosa Rancheria
Local Agency	
Dennis Mills	Kings River Water District
Cristel Tufenkijan	Kings River Conservation District
State Staff	
Anecita Agustinez	DWR – Sacramento
Emily Alejandrino	DWR – Sacramento
Jessica Bean	State Water Resources Control Board
Christa Collin	DWR – South Central Region
Siran Erysian	DWR – South Central Region
Greg Farley	DWR – Sacramento
Benjamin Gooding	DWR – South Central Region
Christopher Olvera	DWR – South Central Region
Stephanie Lucero	Center for Collaborative Policy
Sarah DiVittorio	Center for Collaborative Policy

Appendix B. PowerPoints and Handouts

Discussion Paper
Definition of Tribal Law

Sustainable Groundwater Management Tribal Advisory Group
January 13, 2016

1.0 PURPOSE

DEFINITION OF "TRIBAL LAW"

*"To the extent authorized under federal or **tribal law**, this part applies to an Indian tribe..." SGMA, California Water Code §10720.3(b)*

"Tribal Law" should be broadly defined to include all forms of formal expressions of a tribe's sovereign will. It should include, but not be limited to:

1. Written constitutions[1]
2. Articles of Association and equivalent documents
3. Ordinances of the General Council, Tribal Council, or similar governing body
4. Resolutions of the General Council, Tribal Council, or similar governing body
5. Custom and tradition, written and unwritten[2]
6. Delegated federal authority that supplements tribal authority[3]

[1] While many tribes have written constitutions, not all do, and there is no requirement that any tribe have one. The U.S. Supreme Court has noted that "The Navajo Government has been called 'probably the most elaborate' among tribes.... The legitimacy of the Navajo Tribal Council, the freely elected government of the Navajos, is beyond question." And yet the Navajo Nation has no written constitution. *Kerr-Magee Corp. v. Navajo Tribe of Indians,* 471 U.S. 195, 197-199 (1985).

[2] In 1953 Congress enacted Public Law 280, which extended the civil jurisdiction of California's courts over individual reservation Indians (but not tribes) for ordinary civil matters (divorce, contract disputes, car accidents, child custody, etc.). P.L. 280 also preserved the role of written and unwritten tribal custom and tradition in resolving such disputes, in the absence of applicable state law: "Any tribal ordinance or custom heretofore or hereafter adopted by an Indian tribe, band, or community, in the exercise of any authority which it may possess shall, if not inconsistent with any applicable civil law of the State, be given full force and effect in determination of civil causes of action pursuant to this section." 28 U.S.C §1360(c).

[3] e.g. Treatment as a State under the Clean Water Act

A PRIMER ON THE TYPES OF LAND IN FEDERAL INDIAN RESERVATIONS FOR GROUNDWATER SUSTAINABILITY AGENCIES

by Barona Band of Mission Indians & Rincon Band of Luiseno Indians

Background. In California title to all land was transferred from Mexico to the United States by the Treaty of Guadalupe Hidalgo in 1848. The United States immediately enacted a statute setting up a land claims commission to which those who claimed land under Mexican law could present their claims within a 2-year period to the commission and, if found to be proper, the United States would confirm the claim and issue a federal patent. The holders of Spanish and Mexican land grants and pueblos all did so, and their grants were all confirmed. However, no tribe did so because no one ever told them the commission even existed. Therefore, the time period passed and no Indian title was confirmed, even though recognized by Mexican law. In 1903 the U.S. Supreme Court held that this did not matter. Similarly, the United States negotiated 18 treaties with the tribes of California in 1851-1852. In these treaties, the tribes yielded their claims to 7/8 of the land of California to the United States, in return for specified reservations totaling about 1/8 of California. However, the U.S. Senate not only never ratified any of the 18 treaties, it concealed their existence until 1905. Therefore, between the unknown land title commission and the unratified treaties, California tribes were left entirely without any enforceable rights to any land by 1852. Their descendants were later compensated for this loss of most of California's land in 1968 at the munificent rate of 48¢ per acre.

The public domain. Aside from the confirmed Mexican and Spanish grants, all land in California thus belonged to the United States by 1852. Such federal land, not designated for any other use, was and is the public domain. Some of this original vast public domain remains today, and is administered by the Bureau of Land Management. But over the years, much of the public domain in California has been designated, by Congress or the President, for other specified uses such as: Indian reservations, military reservations, national parks, national forests, national monuments, seashores, etc., all of which are public uses serving a public purpose. In each of these other kinds of designations, the United States continues to hold fee simple title to the land in its own name, but subject to the designation. However, title is different for federal Indian reservations.

Federal Indian Reservations and Rancherias. For federal Indian reservations and rancherias, the fee title is not simply in "United States". Instead, title is held as "United States in trust for X Indian tribe". The United States owns the fee, as with other federal reservations and uses, but holds it in trust for a specified tribe. Starting mostly in the 1870's, the President and Congress made attempts to provide some tiny land base for California's otherwise landless tribes by designating specified parcels of public domain land as federal Indian reservations, with title held this way. Rancherias are not lands reserved for the public domain, but rather lands purchased by Congress for groups of otherwise landless Indians, with title held the same way: the United States holds the fee title, but in trust for a specified tribe. This is what is called "trust land", land that the United States holds in trust for a tribe. Such trust land cannot be condemned, sold, leased, conveyed, taxed, regulated, or otherwise dealt with by others unless by specific authorization by Congress. There is a process (often called "fee-to-trust") by which a tribe can now take a piece

of fee land and have the United States accept it into trust as new or additional trust land for that tribe, but the process is onerous and difficult, and does not always succeed, especially if the parcel is not on or contiguous to a reservation or rancheria.

Trust Allotments. Many reservations now remain as they were established: blocks of land whose title is held in trust for the tribe by the United States. However, starting in 1887, many, but not all, reservations went through a process called "allotment" by which larger parcels of tribal trust land were subdivided into parcels as small as 5 acres, and allocated to individual Indians. These parcels are known as "allotments" by which the title to the individual parcel stayed in trust, but for the individual Indian, not the tribe. Such allotted trust land is different from un-allotted tribal trust land. Allotted trust land can be sold so that the buyer receives fee title. It can be condemned. It can be more easily leased. The Indian owner (called the "allottee") can also take it out of trust and receive a fee patent. When such land passes out of trust and into fee, it is subject to state and local taxation and, in many but not all cases, is subject to state and local regulation (zoning, land use, county ordinances regarding wells, etc.). Reservations that have been allotted typically are a patchwork of (1) un-allotted tribal trust land, (2) allotted trust land, and (3) fee land. However, the boundaries of the reservation are not affected by allotment or issuance of a fee patent. Each reservation is different. Outsiders will simply have to inquire to see if a particular reservation was ever allotted and, if so, what the status of individual parcels on it are. In addition, a very few allotments to individual Indians were made from lands of the public domain, known as "public domain allotments", and not within any reservation or rancheria. Some have passed into fee, but a few remain in trust.

Tribal governments. Indian tribes are not just voluntary social organizations of people of Indian descent, like the Knights of Columbus. Membership is usually limited to those who can show direct descent from those whose names appear on a "base roll" of members of the tribe, often from the 19th Century, and other factors. Federally-recognized tribes (there are over 500 in the official list) are governments that exercise normal sovereign powers of self-government on the reservation or rancheria over their people and over at least all trust land on the reservation and, sometimes, over fee land on the reservation. This includes misdemeanor criminal jurisdiction and the kinds of local powers commonly exercised by counties, such as zoning and land use, environmental controls, and control over wells and groundwater, as well as federally-delegated authority. Many tribes, especially in remote areas, have been exercising effective sustainable groundwater management on their reservations or rancherias for decades. Under federal law, state law and county ordinances do not apply to a tribe on its reservation or rancheria, and cannot be enforced against tribes, except where Congress has specifically said so. Although tribes are beneficial owners of trust land, they are also the local governments over the reservations and rancherias. The federal government, and state and local governments, must relate to tribal governments on a government-to-government basis, as well as landowners. Tribes themselves cannot be GSAs, but can choose to participate in GSAs by joint powers agreements MOUs, and similar arrangements. Such voluntary participation benefits all who rely on the basin. Some tribes may choose not to participate at all. Others may choose varying degrees of participation, depending on their own situations.

SGMA Update

Department of Water Resources

South Central Region Office

April 12, 2016

DWR SGMA Outreach

GSA Involvement – As a Member

10720.3(c) – The federal government or any federally recognized Indian tribe, appreciating the shared interest in assuring the sustainability of groundwater resources, may voluntarily agree to participate in the preparation or administration of a GSP or GWMP under this part through a JPA or other agreement with local agencies in the basin. A participating tribe shall be eligible to participate fully in planning, financing, and management under this part, including eligibility for grants and technical assistance, if any exercise of regulatory authority, enforcement, or imposition and collection of fees is pursuant to the tribe's independent authority and not pursuant to authority granted to a GSA under this part.

GSA Involvement – Beneficial User of GW

10723.2 – The groundwater sustainability agency shall consider the interests of all beneficial uses and users of groundwater, as well as those responsible for implementing groundwater sustainability plans. These interests include, but are not limited to, all of the following:

(h) California Native American tribes.

GSA Involvement – Advisory Committee

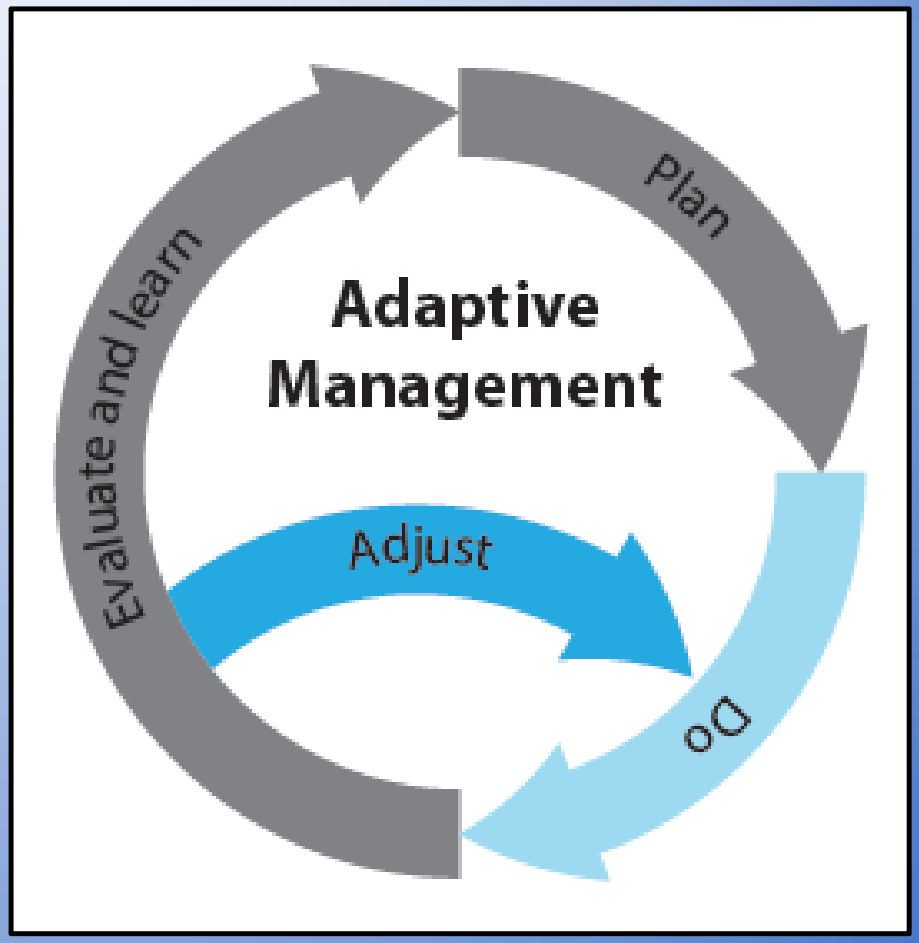
10727.8(a) – Prior to initiating the development of a GSP, the GSA shall make available to the public and the department a written statement describing the manner in which interested parties may participate in the development and implementation of the GSP. The GSA may appoint and consult with an advisory committee consisting of interested parties for the purposes of developing and implementing a GSP. The GSA shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin prior to and during the development and implementation of the GSP.

SGMA Communication

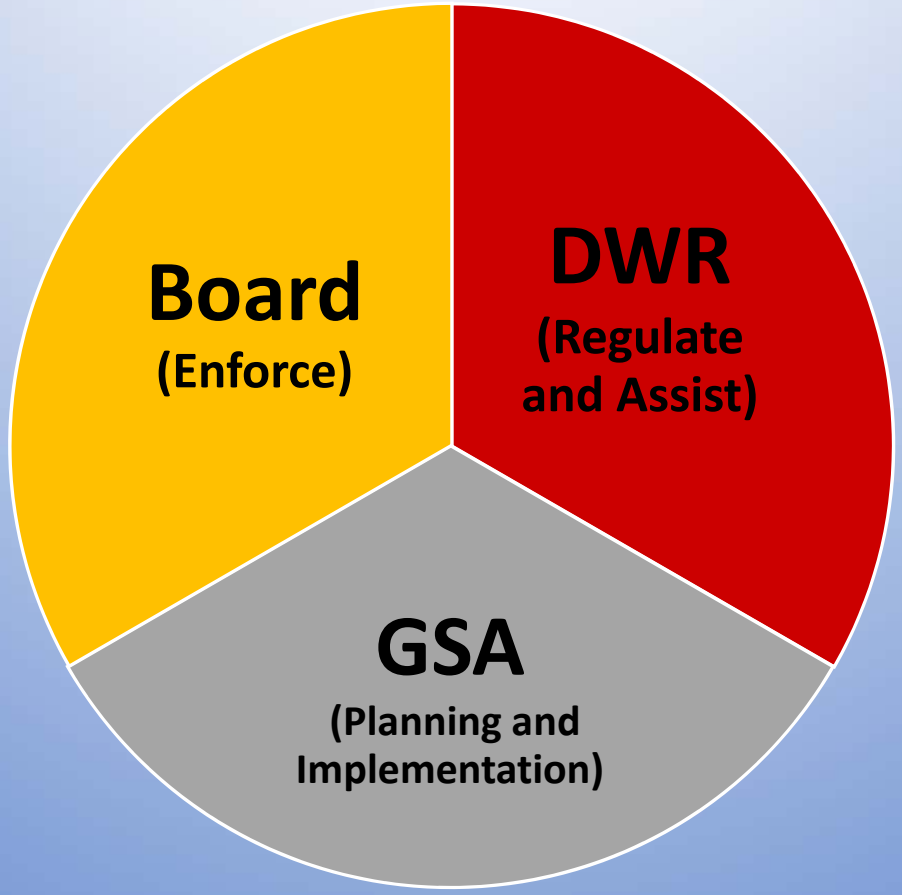
Draft GSP Regulations Overview

GSP General Principals (Article 1)

- Must achieve sustainability goal for an entire basin in 20 years
- Cannot adversely affect an adjacent basin
- Meet a substantial compliance standard
- Provide a description of basin-wide governance
- Establish timeline and priority for filling data gaps
- Implement an adaptive management process (as necessary)



General Roles and Responsibilities



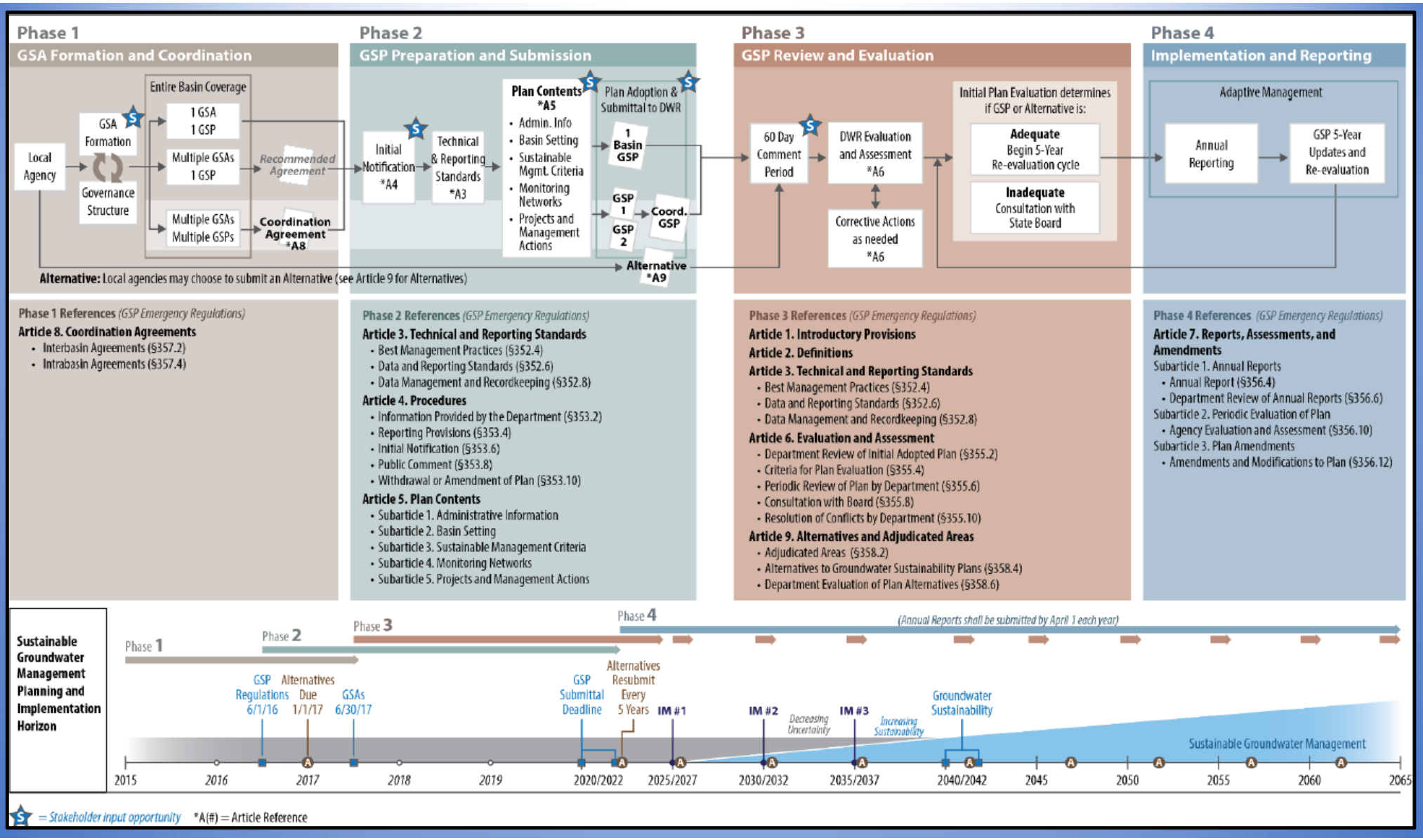
Phases of GSP Development and Implementation

Phase 1
GSA Formation
and Coordination

Phase 2
GSP Preparation
and Submission

Phase 3
GSP Review
and Evaluation

Phase 4
Implementation
and Reporting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Local Agency
GSA Formation
Governance Structure
Entire Basin Coverage
1 GSA 1 GSP
Multiple GSAs 1 GSP
Multiple GSAs Multiple GSPs
Recommended Agreement
Coordination Agreement *A8
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Initial Notification *A4
Technical & Reporting Standards *A3
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Plan Adoption & Submittal to DWR
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GSP 1
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Alternative *A9
Alternative: Local agencies may choose to submit an Alternative (see Article 9 for Alternatives)
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60 Day Comment Period
DWR Evaluation and Assessment *A6
Corrective Actions as needed *A6
Initial Plan Evaluation determines if GSP or Alternative is:
Adequate Begin 5-Year Re-evaluation cycle
Inadequate Consultation with State Board
Phase 4
Implementation and Reporting
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Annual Reporting
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IM #3
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2016
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2018
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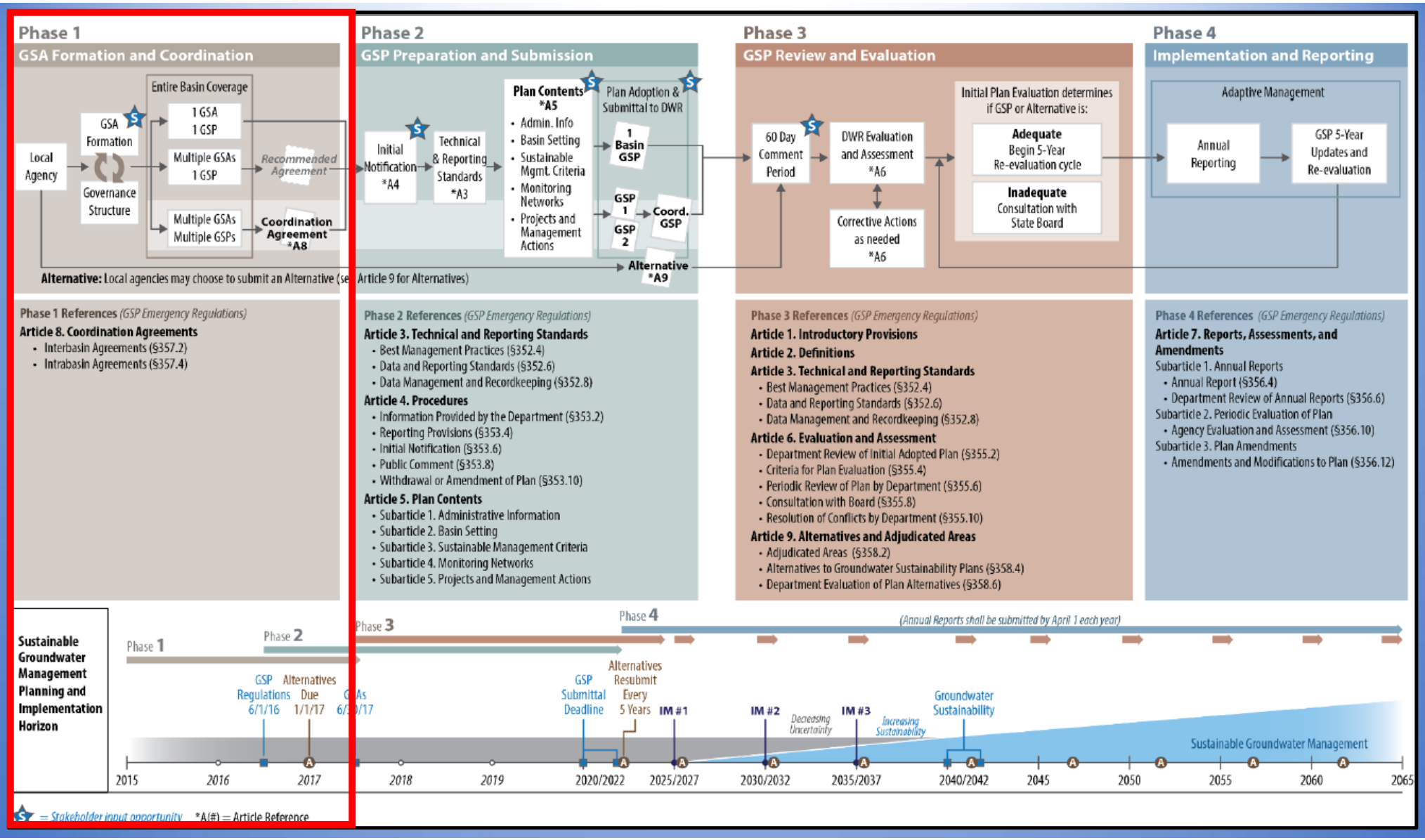
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Phase 1 Overview

1. Realignment of basin boundaries according to approved basin boundary modification requests

- Five initial notifications submitted in Stanislaus County.
- All notifications involve the Delta-Mendota Subbasin

2. Establishment of basin governance through the formation of GSAs

Phase 1 References *(Draft GSP Regulations)*

Article 8. Coordination Agreements

- Interbasin Agreements (§357.2)
- Intrabasin Agreements (§357.4)

GSA Considerations

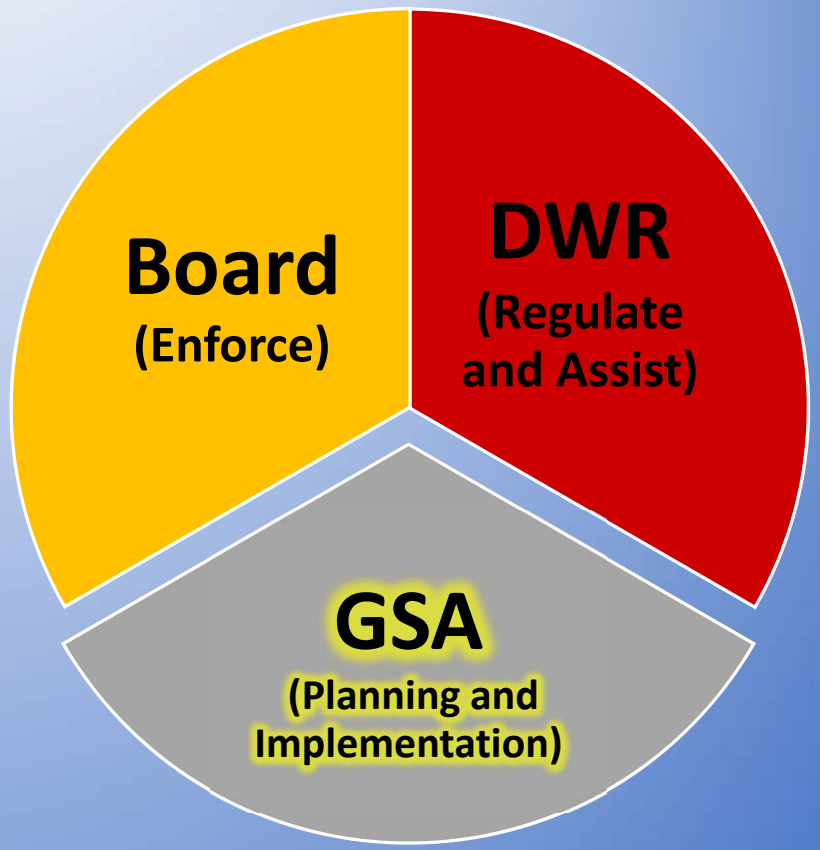
1. Establish the existing basin boundary and determine if the submittal of a boundary modification request is required

- Requests are due by March 31, 2016. Potential for future basin boundary modification windows.

2. Coordinate with other agencies within a basin and establish GSAs

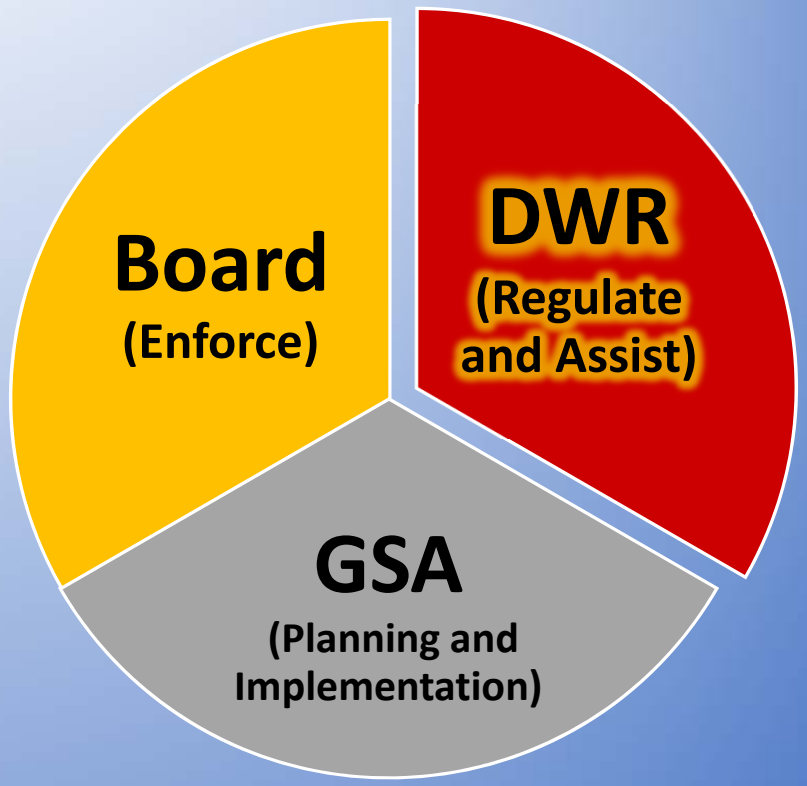
- Entire basin must be covered by GSAs by June 30, 2017

3. Establish coordination agreements where required or voluntary agreements where desired

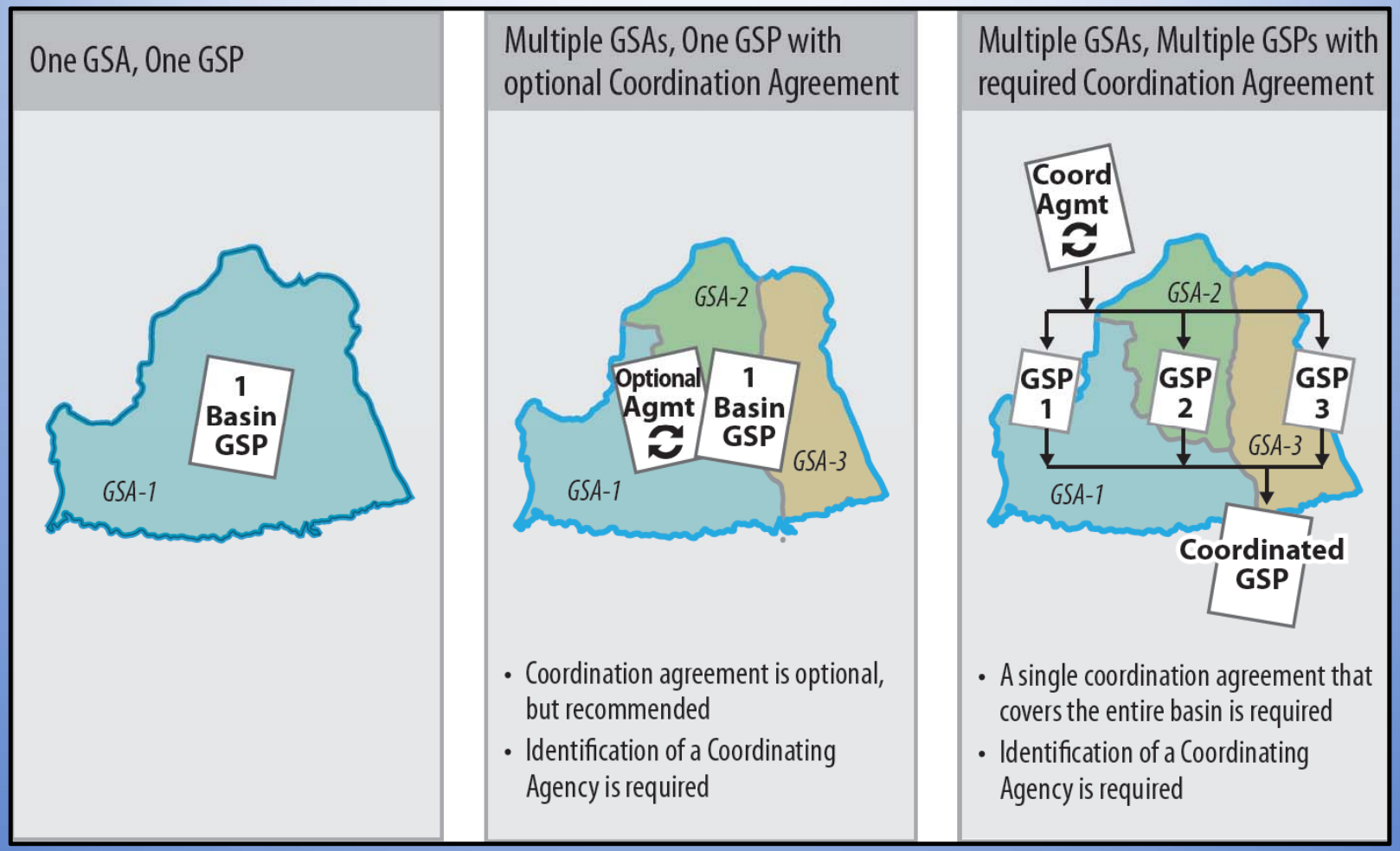


DWR's Role During Phase 1

1. Prepare final GSP regulations
2. Provide facilitation services to local agencies involved in GSA formation
3. Review submitted basin boundary modification requests and update Bulletin 118 with approved basin boundary modifications
4. Review GSA formation submittals for completeness as required by SB 13



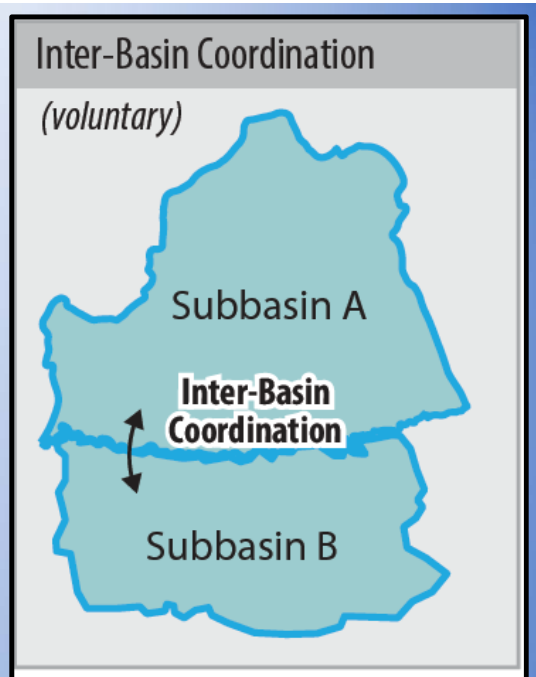
GSA Formation and Governance Structure

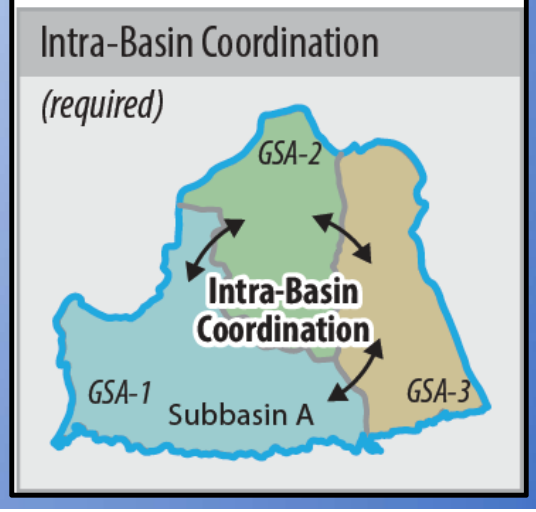


Coordination Agreements (Article 8)

1. **Inter-Basin Coordination:** Voluntary coordination between two or more basins that are hydraulically connected

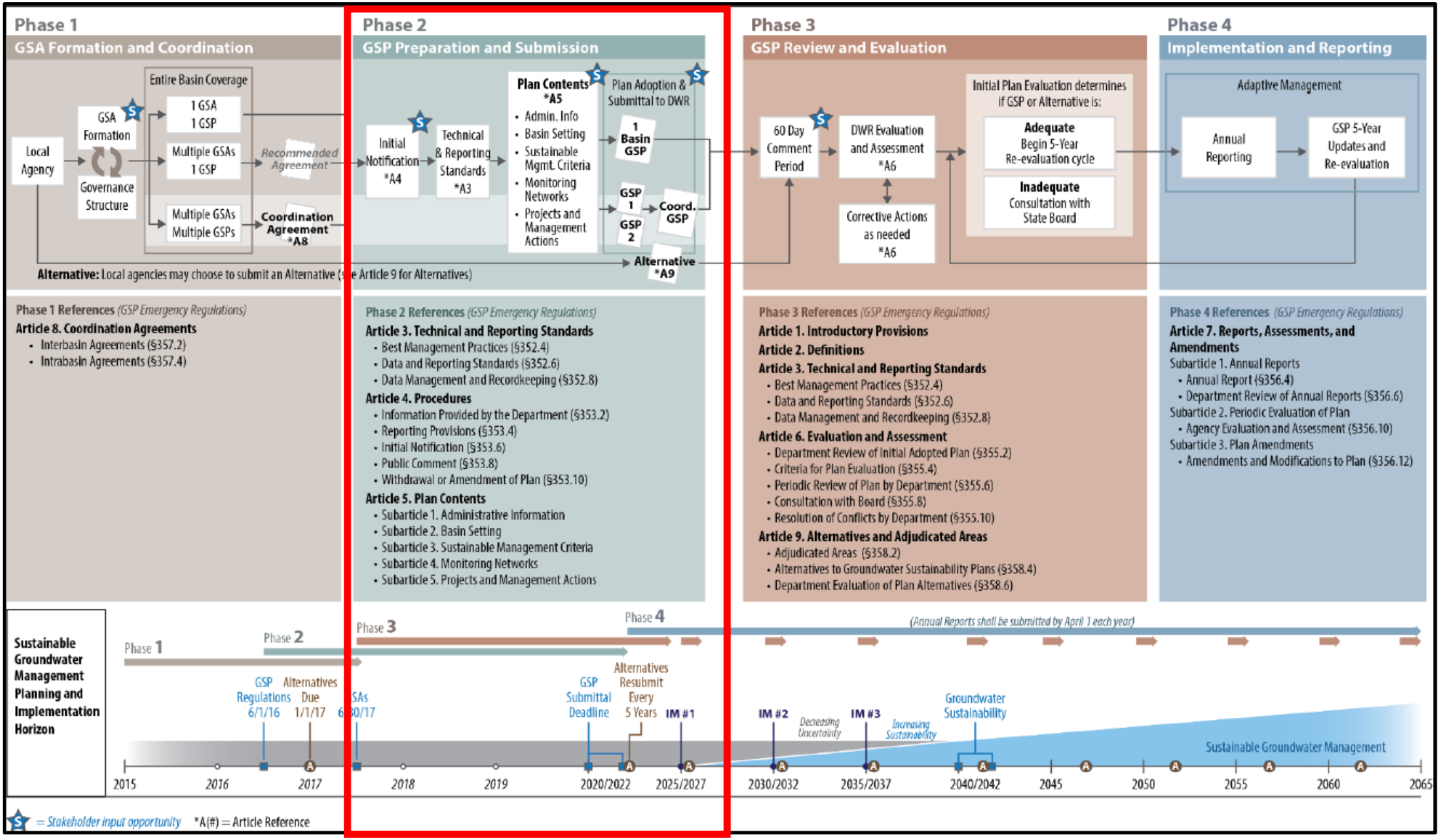
2. **Intra-Basin Coordination:** Required coordination for basins with multiple GSPs and recommended for basins with multiple GSAs preparing a Single GSP





Phase 1 Key Dates

1. Basin Boundary Modifications due – March 31, 2016
2. GSP Emergency Regulations adopted – June 1, 2016
3. Alternative to GSPs due – January 1, 2016
4. GSAs covering an entire basin formed – June 30, 2017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2040/2042
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Phase 2 Overview

1. Development and adoption of GSPs submitted by GSAs
2. Locally-driven phase with all activities required to be completed in adherence to the statutory milestones required by SGMA

Phase 2 References *(Draft GSP Regulations)*

Article 3. Technical and Reporting Standards

- Best Management Practices (§352.4)
- Data and Reporting Standards (§352.6)
- Data Management and Recordkeeping (§352.8)

Article 4. Procedures

- Information Provided by the Department (§353.2)
- Reporting Provisions (§353.4)
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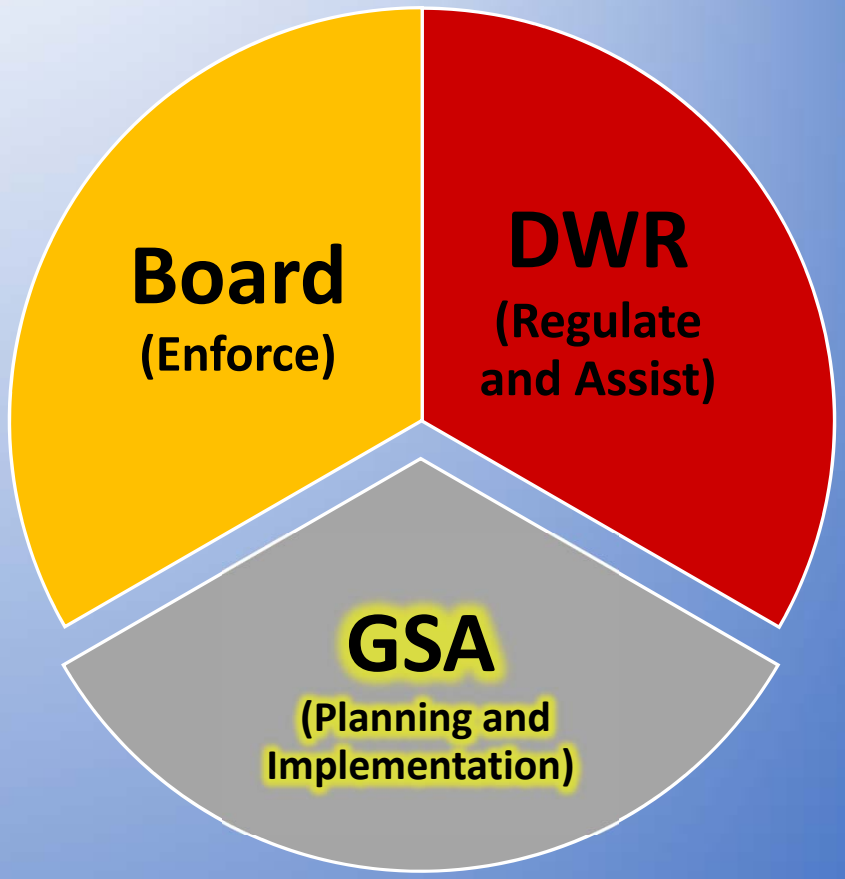
- Subarticle 2. Basin Setting
- Subarticle 3. Sustainable Management Criteria
- Subarticle 4. Monitoring Networks
- Subarticle 5. Projects and Management Actions

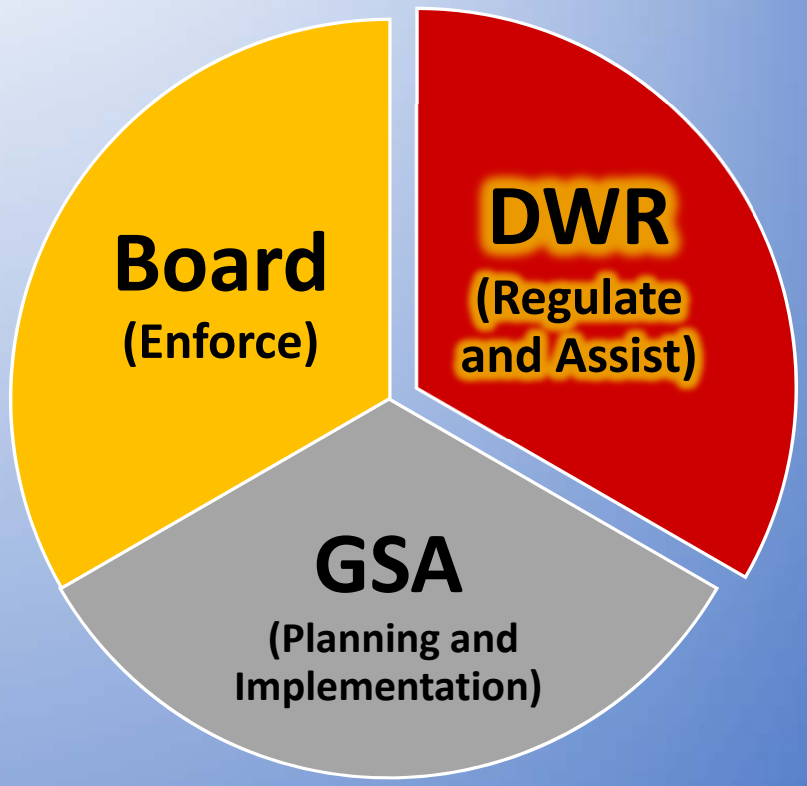
GSA Considerations

1. **GSA coordination with adjacent hydraulically connected basins should start now**
2. **Foundation for GSP development should begin now through:**
   - Thorough understanding of GSP regulations
   - Setting GSP expectations based on existing data or plans
   - Creation of a communication plan
3. **Land use agencies should begin to consider GSPs in their basin and coordinate with GSAs before amending or adopting general plans**



DWR's Role During Phase 2

1. Funding support - $100M to support SGMA activities
2. Continued facilitation
3. Technical support with basin information and water budgets
4. Development of best management practices
5. Water supply available for replenishment
6. Bulletin 118 update
7. Consultation with GSAs



Key Definitions

Critical Parameters – Conditions related to chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence that substantially interferes with surface land use, and depletion of interconnected surface water, that if significant and unreasonable may cause the occurrence of undesirable results

Minimum Threshold – Refers to the point at which groundwater conditions for a given critical parameter are significant and unreasonable

Key Definitions

Measurable Objectives – Specific, quantifiable goals for the maintenance or improvement of specified groundwater conditions outlined in a GSP

Interim Milestone – Target value for management actions or measurable groundwater conditions set by an agency as part of their GSP implementation

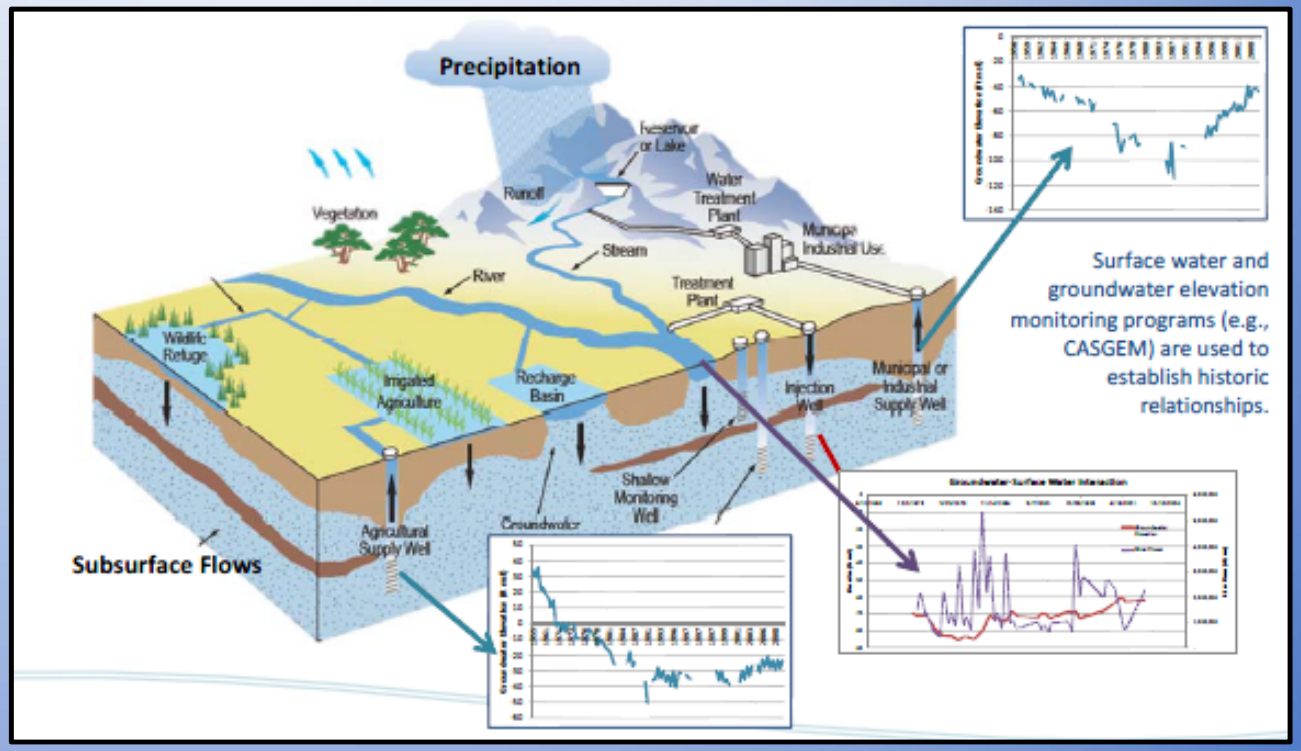
Baseline Conditions – Historic information used to project future conditions for hydrology, water demand, and availability of surface water and to evaluate potential sustainable management practices of a basin

Preparing a “Basin Setting” for GSP’s (Article 5)

Static Conditions:
Hydrogeologic conceptual model that includes regional geology, principal aquifers and aquitards, cross-sections, and maps

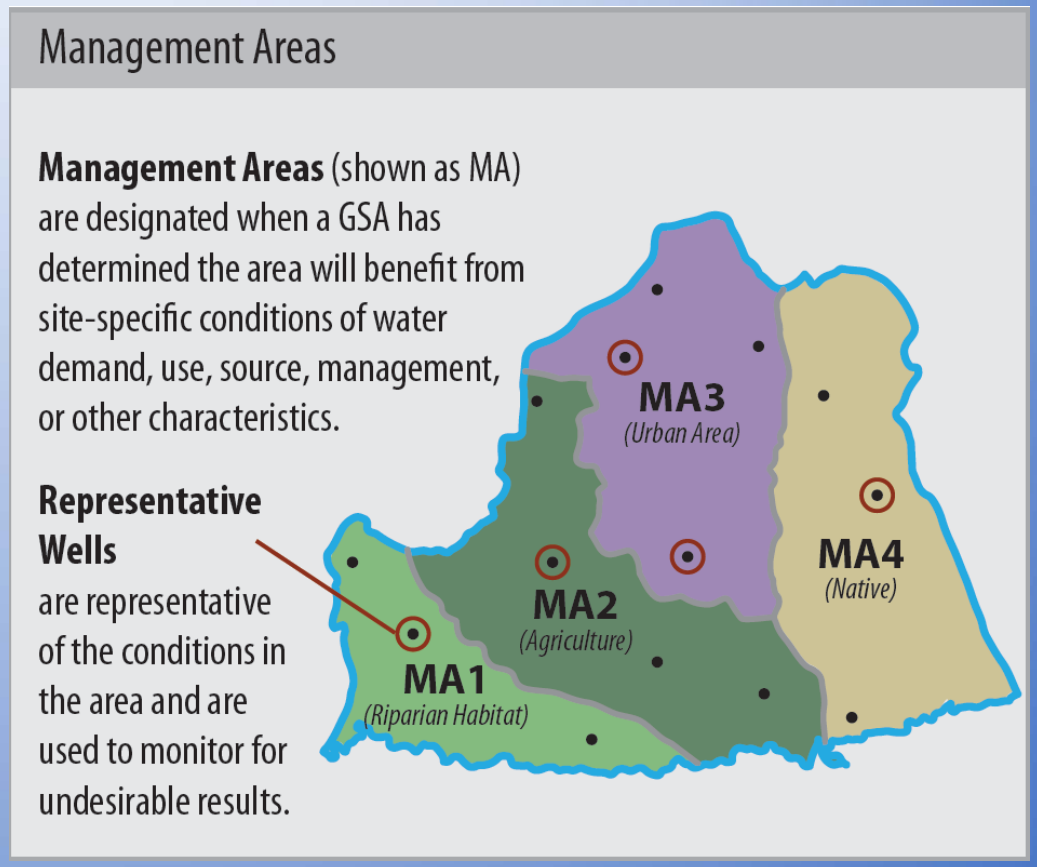
Dynamic Conditions:
Description of historical and present day basin conditions related to undesirable results

Water Budget:
Quantitative description of groundwater and surface water inflows and outflows



Management Areas (Article 5)

1. Areas where the presence of local conditions for one or more critical parameters differ from those of the basin at large
2. Measurable objectives, minimum thresholds, and undesirable results are established for Management Areas



Sustainable Management Criteria (Article 5)

- Establishment of minimum thresholds for each critical parameter to avoid undesirable results
- Identification of one or more measurable objectives for each critical parameter
- Establishment of interim milestones for every 5-year interval
- Assessment of a GSPs minimum thresholds and interim milestones are reported to DWR, adjustment of minimum thresholds if needed

Sustainability Goal
- Basin wide Goal
- Achieved by 2040/42

Sustainable Groundwater Management
- During Plan Implementation
- Avoid Undesirable Results

Sustainable Yield
- Basin wide Sustainable Yield
- Achieved by 2040/42
- Avoid Undesirable Results

Monitoring Networks (Article 5)

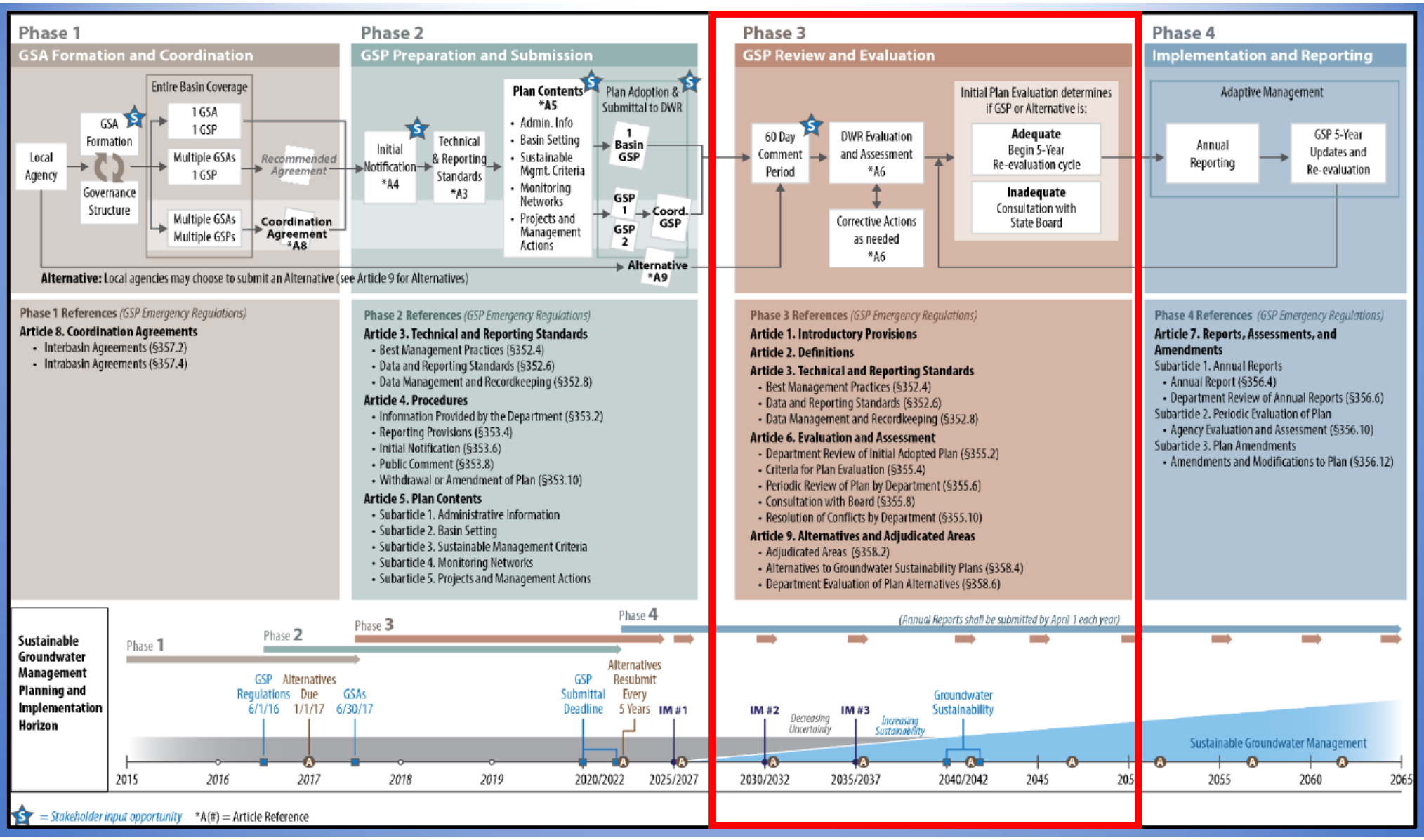
- Creation of a detailed basin-specific monitoring network
- GSP may incorporate data from other programs (CASGEM, etc.)
- Minimum standards and measurements of each applicable critical parameter required
- Monitoring density and frequency based on groundwater use, aquifer characteristics, impacts, and uncertainty
- Representative monitoring sites may be used
- Groundwater elevations may be used as a proxy for other critical parameters

Projects and Management Actions (Article 5)

- Determination of projects and actions that will address groundwater problems and help achieve sustainability
- Design of projects and actions, that will allow measurable objectives to be met, is required during GSP development
- Should outline required permitting, implementation time-table, expected benefits, required legal authority, and estimated costs for implementation

Phase 2 Key Dates

1. GSP Regulations adopted – June 1, 2016
2. Alternative to GSPs due – January 1, 2017
3. GSAs covering an entire basin formed – June 30, 2017
4. GSPs submittal date – 2020/2022
5. First Alternative to GSPs due - 2022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GSA Formation
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Adequate
Begin 5-Year Re-evaluation cycle
Inadequate
Consultation with State Board
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GSAs 6/30/17
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IM #2
Decreasing Uncertainty
IM #3
Increasing Sustainability
Groundwater Sustainability
Sustainable Groundwater Management
2015
2016
2017
2018
2019
2020/2022
2025/2027
2030/2032
2035/2037
2040/2042
2045
2055
2060
2065
= Stakeholder input opportunity
*A(#) = Article Reference

Phase 3 Overview

1. DWR driven phase
2. Review and evaluation of GSPs to determine adequacy

Phase 3 References *(Draft GSP Regulations)*

Article 6. Evaluation and Assessment

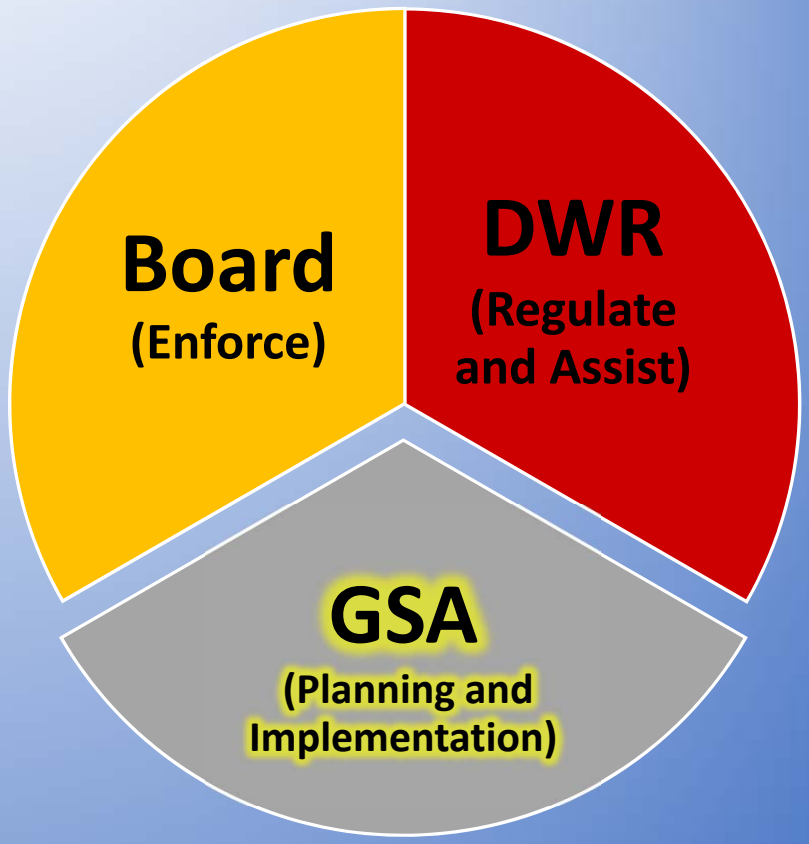
- Department Review of Initial Adopted Plan (§355.2)
- Criteria for Plan Evaluation (§355.4)
- Periodic Review of Plan by Department (§355.6)
- Consultation with Board (§355.8)
- Resolution of Conflicts by Department (§355.10)

Article 9. Alternatives and Adjudicated Areas

- Adjudicated Areas (§358.2)
- Alternatives to Groundwater Sustainability Plans (§358.4)
- Department Evaluation of Plan Alternatives (§358.6)

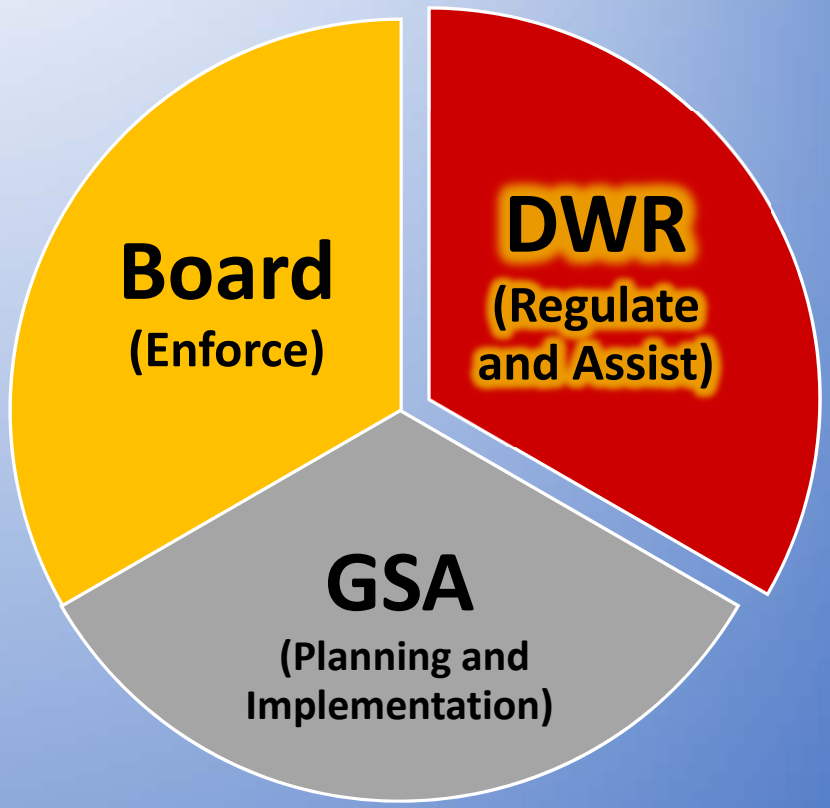
GSA Considerations

1. Develop and adopt a GSP to be submitted to DWR for review and approval
2. Required time for DWR to review and approve a GSP can vary and be substantial based on the complexity of a basin
3. GSAs should initiate planning steps to ensure required GSP SGMA deadlines are met



DWR's Role During Phase 3

1. Review and evaluate GSPs and Alternatives
2. Ensure GSPs conform with SGMP, GSP regulations, and are likely to achieve the sustainability goal of the basin
3. Determination of which GSPs do not contain all required components and potentially consult with the SWRCB
4. Evaluate GSAs progress towards sustainability and make a inadequate determination, triggering SWRCB intervention, if required



Evaluation and Assessment (Article 6)

DWR will assess GSPs over the 20-year implementation period and initial plans will be evaluated within a 2-year period.

Levels of DWR Assessment Include:

1. Adequate Plan or Adequate Process
2. Conditionally Adequate
3. Inadequate Determination

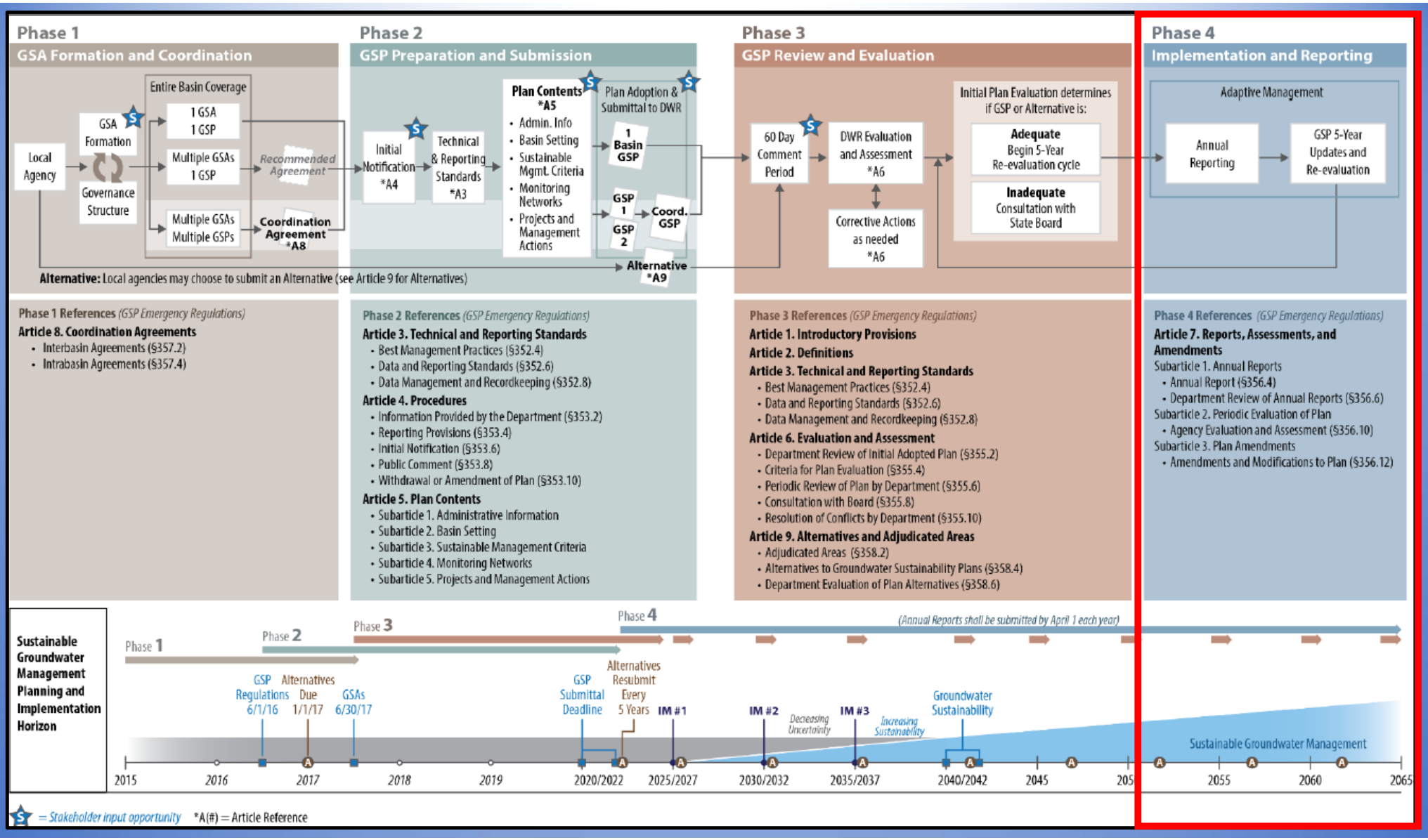
Pass/Fail Criteria

A GSP or Alternative may be inadequate unless it satisfies all of the following conditions:

1. Submitted within the statutory period established by Water Code
2. Complete and includes all information required by SGMA and the regulations
3. One or Multiple GSPs must cover the entire basin.
4. The GSA or local agency has taken corrective actions, and addressed deficiencies in the GSP or Alternative identified by the DWR.

Phase 3 Key Dates

1. GSP submittal open – July 1, 2017
2. GSP submittal due – 2020/2022
3. First Alternative resubmittal due – 2022
4. Alternatives resubmit every five years
5. GSP re-evaluation every five years after GSP submittal
6. Interim milestones every five years after GSP submittal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Phase 4 Overview

- Locally driven phase
- Development of annual reports
- Development of GSP assessments completed every five years during the implementation of GSPs

Phase 4 References *(Draft GSP Regulations)*

Article 7. Reports, Assessments, and Amendments

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Subarticle 2. Periodic Evaluation of Plan
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Subarticle 3. Plan Amendments
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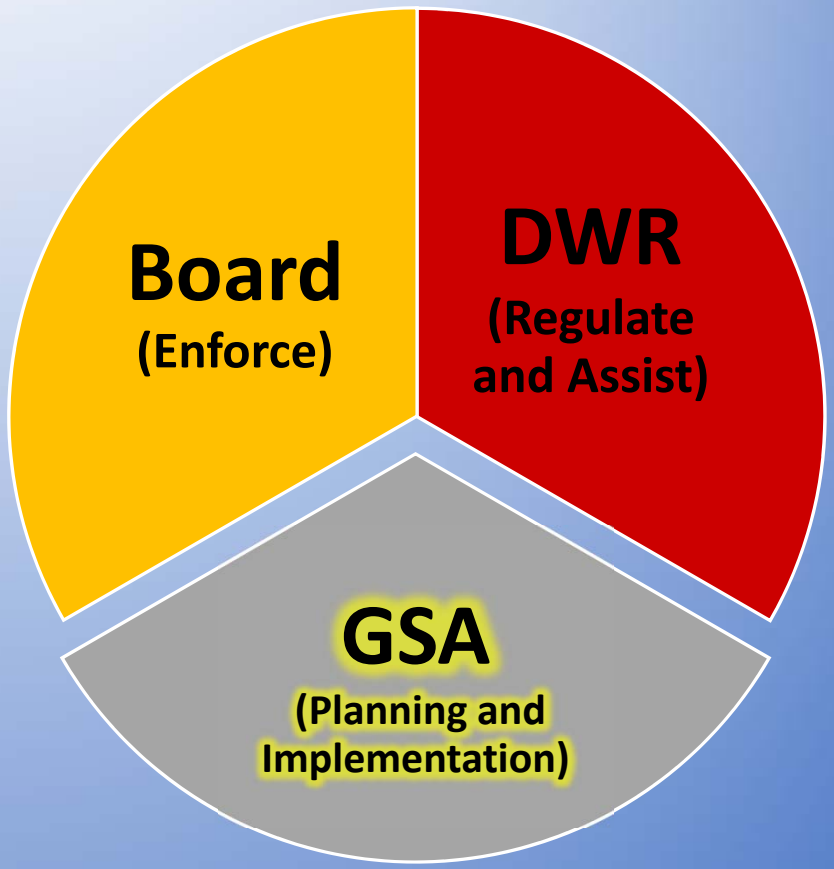
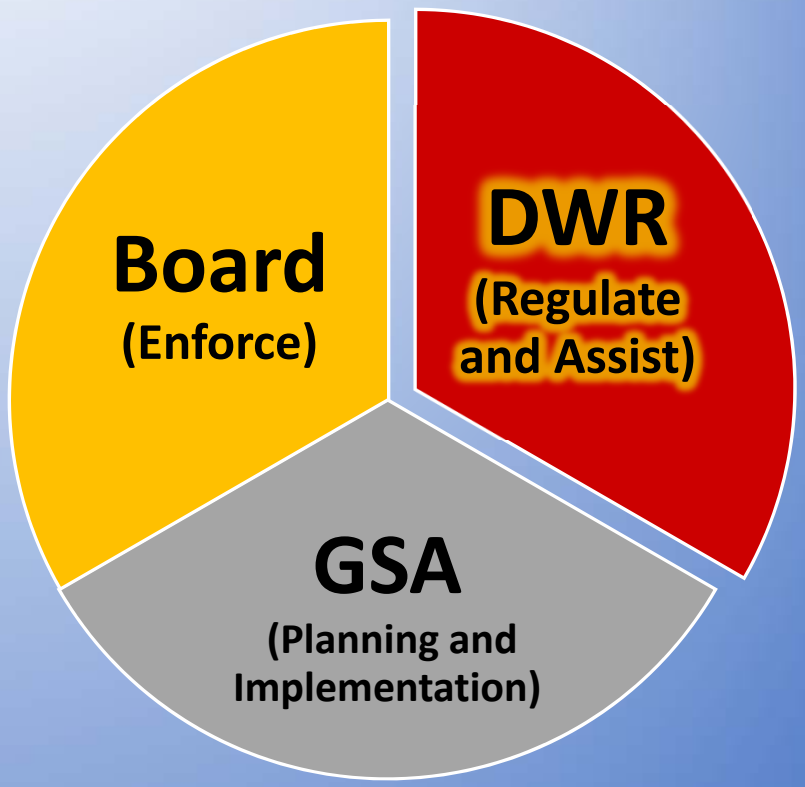
GSA Considerations

1. Continued GSA and GSP governance
2. Engage stakeholders and land use agencies
3. Implement compliance actions and projects
4. Conduct monitoring and data management
5. Conduct detailed analysis, which may include groundwater-surface water modeling
6. Submit annual reports following a standard DWR format

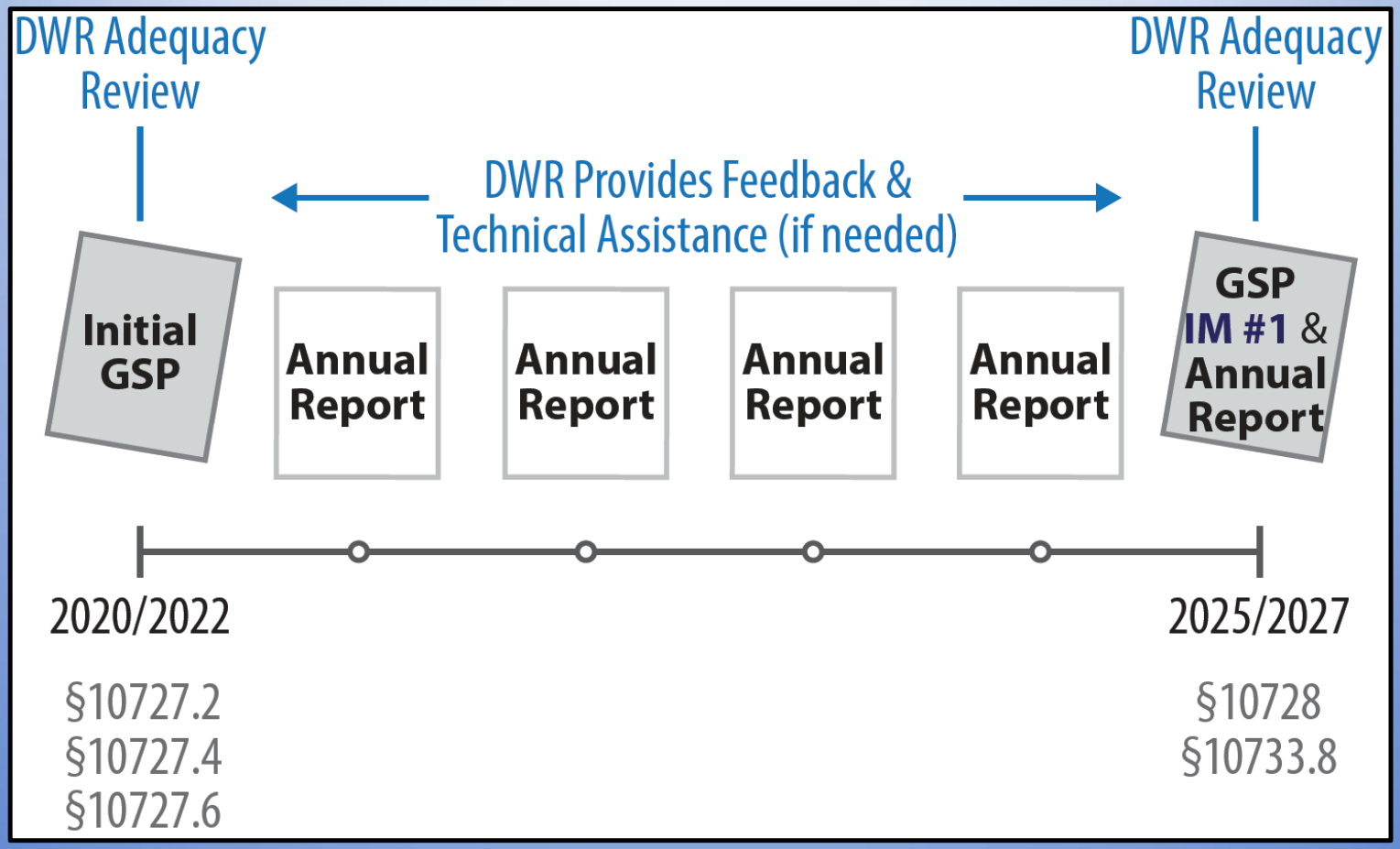


DWR's Role During Phase 4

1. Review and evaluate annual reports, GSP and Alternative updates
2. Ensure annual reports and GSPs conform with SGMA, regulations, and are still on course to likely achieve the sustainability goal of the basin
3. Determine any annual reports or GSP updates that do not meet the required SGMA components and consult with the SWRCB



Five-Year and Annual Reporting (Article 7)



Phase 4 Key Dates

1. First Alternative resubmittal due – 2022
2. Alternatives resubmit every five years
3. Interim milestones every five years after GSP submittal
4. Annual reports submitted by April 1 each year
5. Groundwater sustainability goals attained – 2040/2042

DWR Contact Information

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GSA Project Manager

Mark Nordberg - Senior Engineering Geologist

Phone: (916) 651-9673

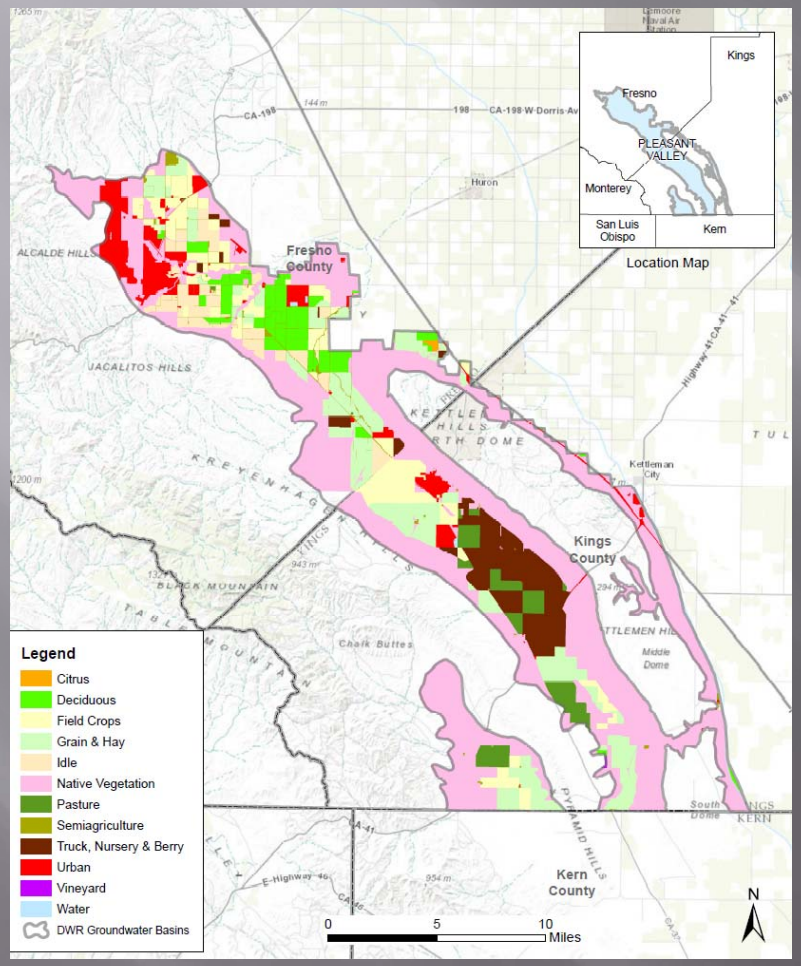
Email: Mark.Nordberg@water.ca.gov

TECHNICAL ASSISTANCE

Chris Olvera

April 12, 2016

Acreages


Kings
Fresno
PLEASANT VALLEY
Monterey
San Luis Obispo
Kern
Location Map
Fresno County
Kings County
Kern County
Legend
Citrus
Deciduous
Field Crops
Grain & Hay
Idle
Native Vegetation
Pasture
Semiagriculture
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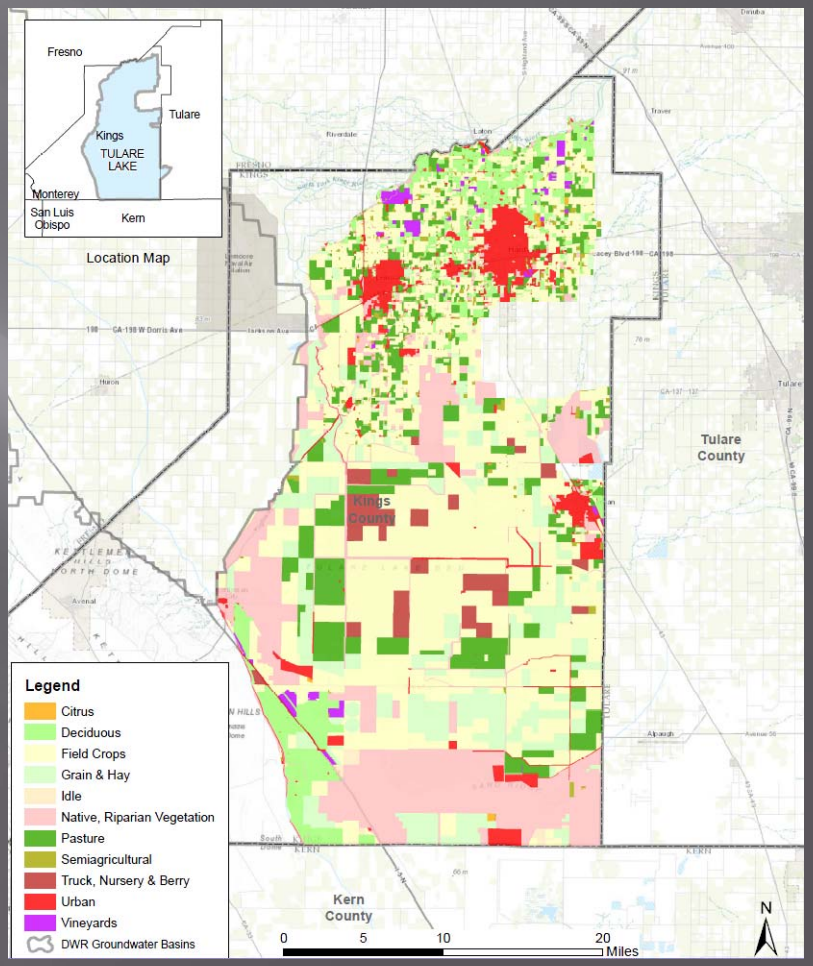
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San Luis Obispo
Kern
Location Map
Tulare County
Kings County
Kern County
Legend
Citrus
Deciduous
Field Crops
Grain & Hay
Idle
Native, Riparian Vegetation
Pasture
Semiagricultural
Truck, Nursery & Berry
Urban
Vineyards
DWR Groundwater Basins
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Miles
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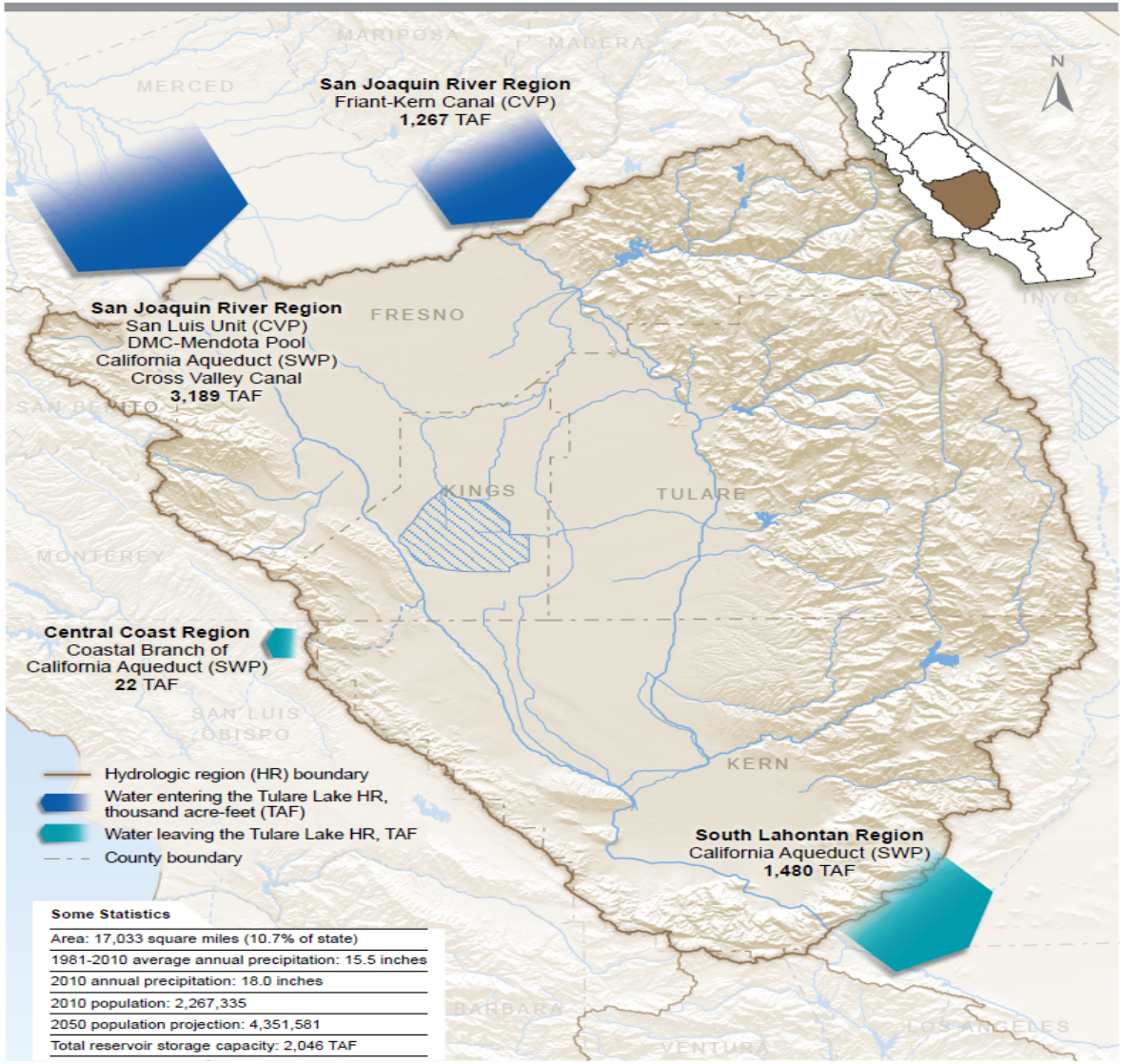
Water Sources

Figure TL-11 Tulare Lake Regional Inflows and Outflows in 2010

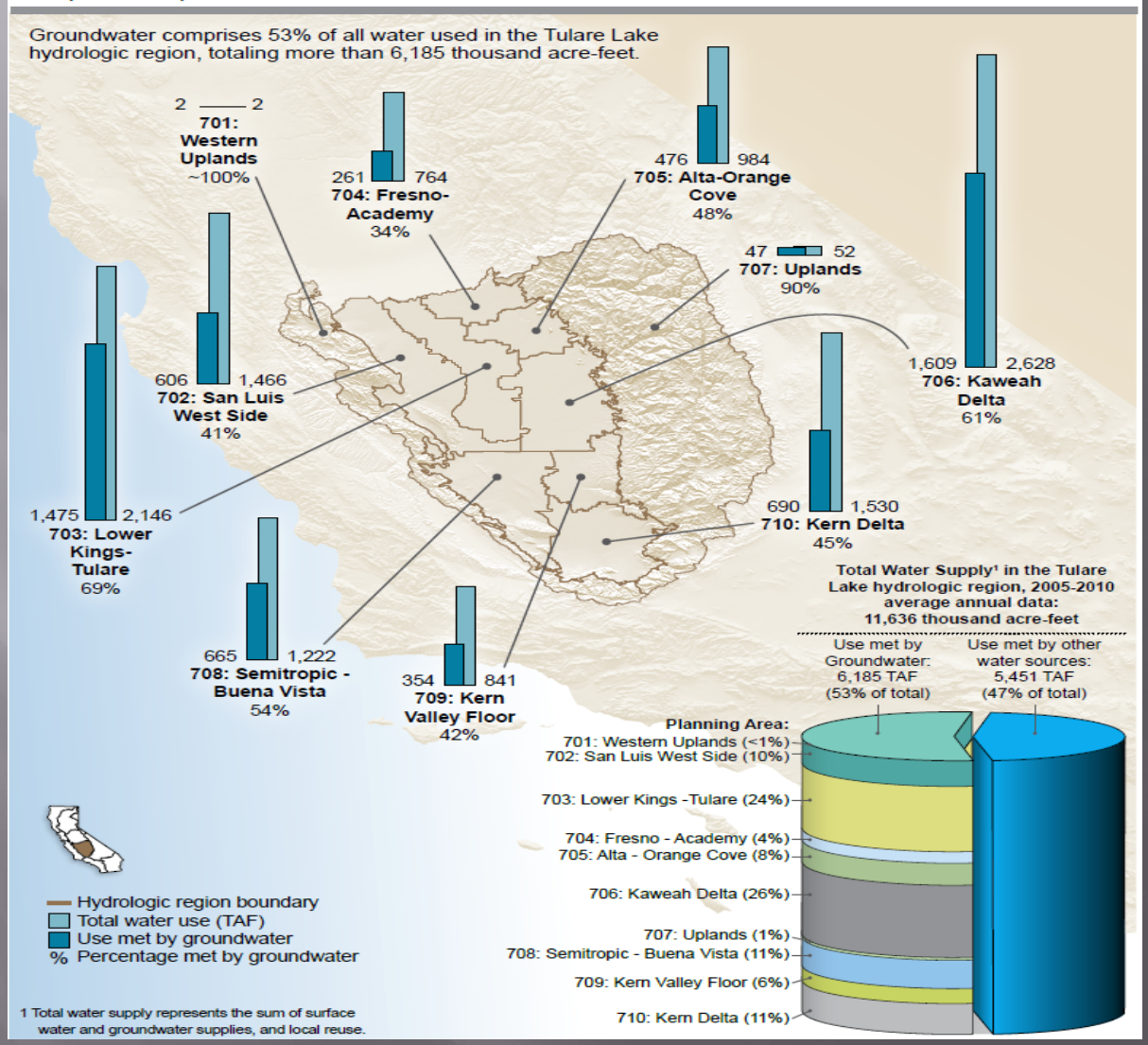


Some Statistics

Area: 17,033 square miles (10.7% of state)
1981-2010 average annual precipitation: 15.5 inches
2010 annual precipitation: 18.0 inches
2010 population: 2,267,335
2050 population projection: 4,351,581
Total reservoir storage capacity: 2,046 TAF

Water Use

Figure TL-12 Contribution of Groundwater to the Tulare Lake Hydrologic Region Water Supply by Planning Area (2005-2010)



Water Use by Water Year Type

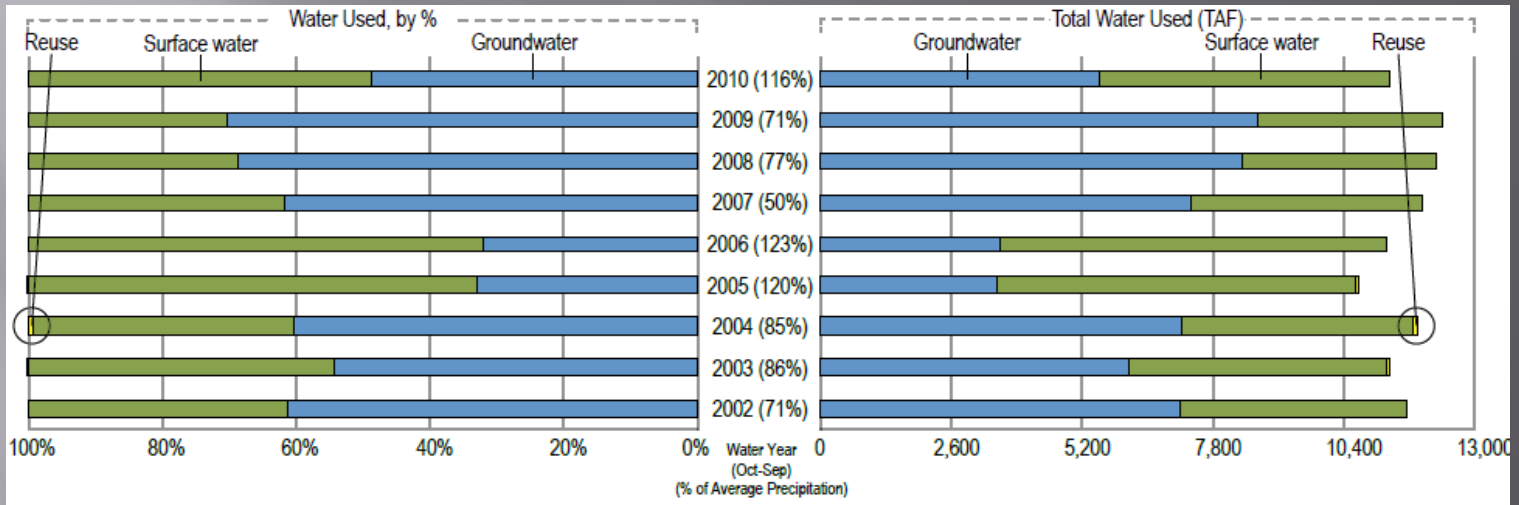
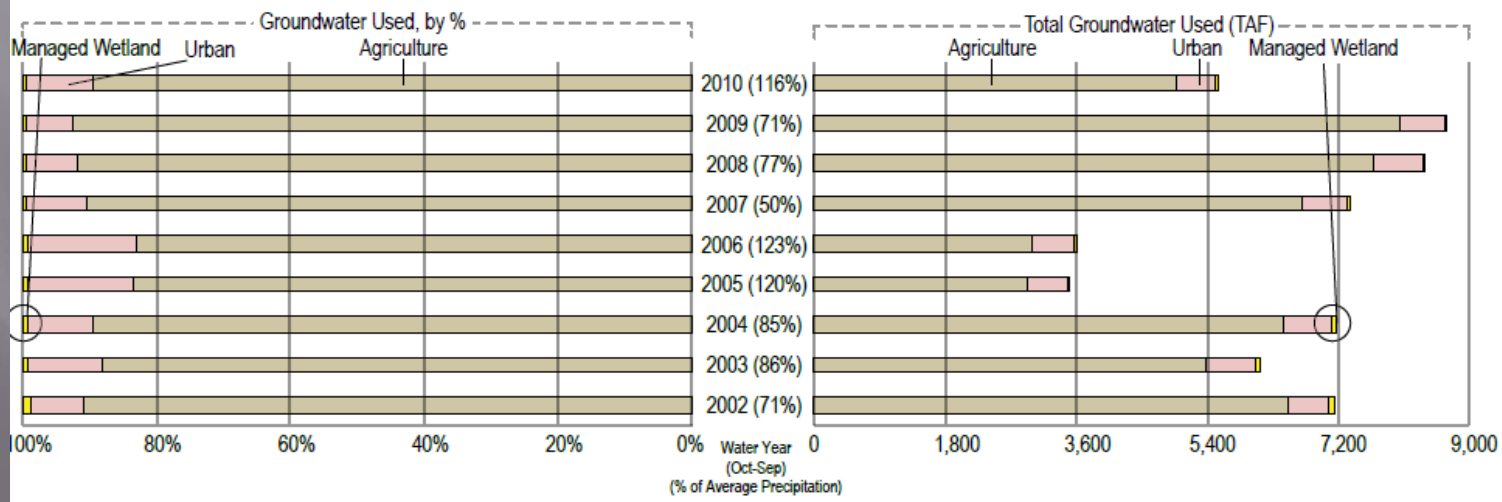
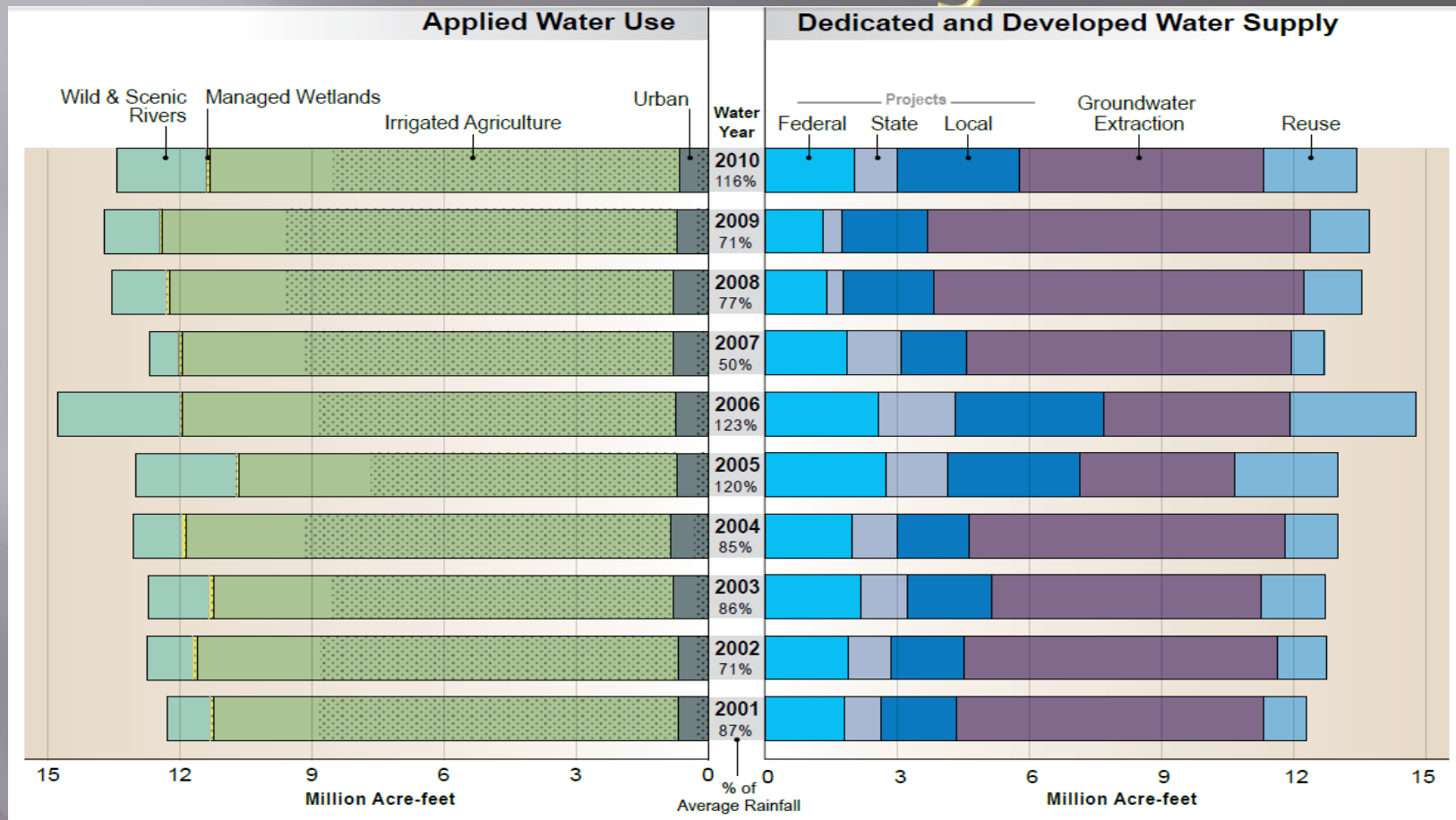


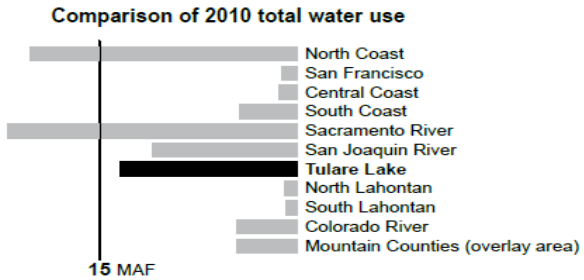
Figure TL-14 Tulare Lake Hydrologic Region Annual Groundwater Supply Trend by Type of Use (2002-2010)



Water Budget



Stippling in bars indicates **depleted (irrecoverable) water use** *(water consumed through evapotranspiration, flowing to salt sinks like saline aquifers, or otherwise not available as a source of supply)*



Water Budget Projections out 50 years

Table TL-32 Conceptual Growth Scenarios

Scenario	Population Growth	Development Density
LOP-HID	Lower than Current Trends	Higher than Current Trends
LOP-CTD	Lower than Current Trends	Current Trends
LOP-LOD	Lower than Current Trends	Lower than Current Trends
CTP-HID	Current Trends	Higher than Current Trends
CTP-CTD	Current Trends	Current Trends
CTP-LOD	Current Trends	Lower than Current Trends
HIP-HID	Higher than Current Trends	Higher than Current Trends
HIP-CTD	Higher than Current Trends	Current Trends
HIP-LOD	Higher than Current Trends	Lower than Current Trends

Water Budget Projections out 50 years

Table TL-33 Growth Scenarios (Urban) — Tulare Lake Hydrologic Region

Scenario[a]	2050 Population (thousand)	Population Change (thousand) 2006[b] to 2050	Development Density	2050 Urban Footprint (thousand acres)	Urban Footprint Increase (thousand acres) 2006[c] to 2050
LOP-HID	3,588.5[d]	1,445.6	High	627.0	129.3
LOP-CTD	3,588.5	1,445.6	Current Trends	647.5	149.8
LOP-LOD	3,588.5	1,445.6	Low	667.3	169.6
CTP-HID	4,351.6[e]	2,208.7	High	727.1	229.4
CTP-CTD	4,351.6	2,208.7	Current Trends	756.8	259.1
CTP-LOD	4,351.6	2,208.7	Low	787.1	289.4
HIP-HID	5,345.9[f]	3,203.0	High	785.9	288.2
HIP-CTD	5,345.9	3,203.0	Current Trends	829.3	331.6
HIP-LOD	5,345.9	3,203.0	Low	873.7	376.0

Notes:

[a] See Table TL-32 for scenario definitions.

[b] 2006 population was 2,142.9 thousand.

[c] 2006 urban footprint was 497.7 thousand acres.

[d] Values modified by the California Department of Water Resources (DWR) from the Public Policy Institute of California.

[e] Values provided by the California Department of Finance.

[f] Values modified by DWR from the Public Policy Institute of California.

CALIFORNIA WATER PLAN UPDATE 2013

Investing in Innovation & Infrastructure

TULARE LAKE HYDROLOGIC REGION

VOLUME 2

Regional Reports