

DRAFT SCOPING DOCUMENT

“Framework for the Implementation of Coordinated Groundwater Management

In

Stanislaus County”

April 2014

Introduction:

Stanislaus County adopted a groundwater management ordinance in October 2013 signaling a commitment to address issues related to both short and long-term groundwater use and availability in the County. The ordinance galvanizes both coordination and implementation. It provides a backstop to groundwater management actions by incorporating police powers that prevent irreparable damage to the groundwater system in the areas directly managed by the County and oversight through coordination in the existing State-authorized management plan areas. The following outlines the implementation process needed to attain the goals of the County, the ordinance and the joint partners. The process includes both the elements and the proposed timing of the direct and coordinated management activities. *Activities are mapped on the attached Gantt chart.*

The Implementation Elements

The following are the elements needing implementation:

100 Day Action Plan

Activity 1 – Scoping document for coordinated groundwater management (this document).

Activity 2 – Mining definition, preliminary thresholds adoption.

Thresholds Element:

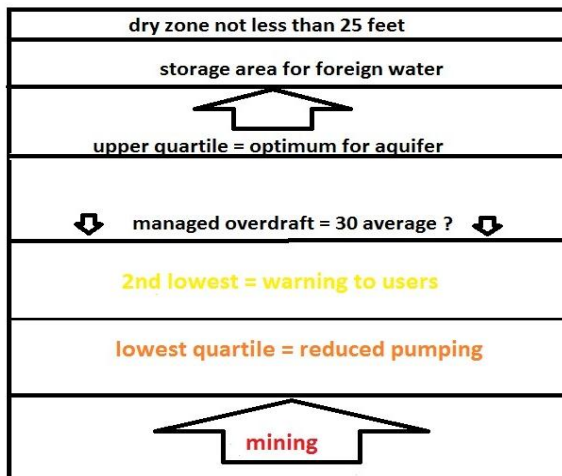
Activity 3 - Where needed and/or information is lacking, systematically evaluate the geology and soils for recharge and discharge and sources and uses of groundwater in the sub-basins in the County in the order agreed upon by the representatives on the County’s advisory committees. The preliminary priority area for this investigation is the northeast portion of the County.

Activity 4 - Obtain the technical information, and develop the planning and policy needs to improve groundwater recharge opportunities and groundwater conditions in the County. Maps have already been created for the groundwater plan areas that show the locations of soil and geology that are conducive to improved groundwater recharge. The next planning and implementation activities potentially involve protecting or mitigating the locations for future recharge as well as developing the methods, procedures and agreements needed to conduct enhanced recharge in the targeted areas.

*Activity 5** - Provide technical evaluation procedures on how to adequately determine factual claims of damage alleged by groundwater users that have lost their ability to pump groundwater, especially shallow groundwater users with units pumping less than 100 gpm. This activity involves developing a process to evaluate whether a well user lost the use due to the sudden drop in the water table or has a well that is at the end of its usable life and needs replacement regardless of the water table condition, or something in between. The concept further involves determining a way to assist with financing wells lost to rapid water table decline by creating a funding source from well permit fees or other means available to the County (see funding element).

* This Activity (and Activity 16) will require input and guidance from the County's Office of Counsel with regards to appropriateness and implementation.

Activity 6 - Evaluate and determine appropriate groundwater elevation levels for groundwater use and sustainability in the areas under County jurisdiction. The suggested conceptual diagram for this exercise is as follows:



Monitoring Element:

Activity 7 - Conduct sufficient data analysis to fully determine area-wide groundwater conditions and determine how to obtain missing data, if any.

Activity 8 - Develop an agreement on coordination and management of information systems needed for groundwater data; what, why, where and financing?

Activity 9 - Construct an improved water well permit process that assists in providing information necessary to improve groundwater management.

Activity 10 - Develop a long-term groundwater network and data acquisition for ongoing assessment of the success and further needs of groundwater management for both quantity and quality.

Activity 11 - A reliable, repeatable water use accounting system must be identified to monitor and report groundwater withdrawals from all pumping facilities. The County considers a reliable water accounting method to be accurate within +/- 10% of the actual flow. Acceptable water use accounting systems include flowmeter records, or pump run-time records which totalize pump operation time multiplied by the discharge rate of the pump. Aggregate monthly withdrawals are to be compiled to the nearest Section in land area and be submitted to the County bi-annually during each calendar year (due April 30th and October 31st). All withdrawal facilities with a rated pump capacity of less than 100 gallons per minute are not required to measure or submit such groundwater withdrawal records.

Governance Element:

Activity 12 - Develop and adopt AB3030/SB1938 plans for areas not covered by such a plan.

Activity 13 - Adopt general plan changes to better protect recharge areas and manage land use changes that have an impact on groundwater use and quality.

Activity 14 - Evaluate IRWMP and its relevance to managing groundwater improvements that enhance supplies and water quality.

Activity 15 - Discuss and develop alternate institutional mechanisms for joint groundwater management strategies with the existing groundwater management plan agencies so as to properly implement the exemption portions of the groundwater ordinance. Upon review and concurrence of groundwater management partners, jointly recommend the best alternative institutional arrangements. Initial meetings should include the WAC and the GMP representatives and should be scheduled as soon as feasible.

Financing Element:

Activity 16 - Recommend alternatives for mitigation funds (linked to *Activity 5* above).

Activity 17 - Review potential costs of groundwater management planning and sources of funding for administration of activities.

Activity 18 - Evaluate IRWMP and its relevance to financing groundwater improvements that enhance supplies and water quality (linked to *Activity 13* above).

Enforcement Element:

Activity 19 - Update the groundwater ordinance (linked to *Activity 2* above) after some preliminary implementation, as needed.

Activity 20 - Establish agreed upon thresholds and mechanisms to manage pumping when critical limits are approached in areas subject to the County ordinance.

Implementation Timing

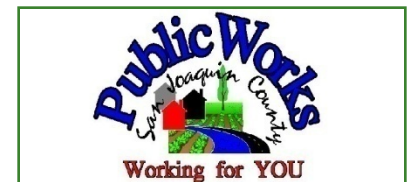
See attached proposed schedule.



One Voice. One Mission.

Eastern San Joaquin County Groundwater Basin Authority

April 30, 2014



GBA Membership

Presentation Agenda:

- About the GBA
 - Current Membership;
 - GBA Mission and Goals;
 - GBA Accomplishments;
 - Current GBA Activities;
 - Basin Operations Criteria – Water Levels;
 - GW Monitoring Program.
-

GBA Membership

Previous:

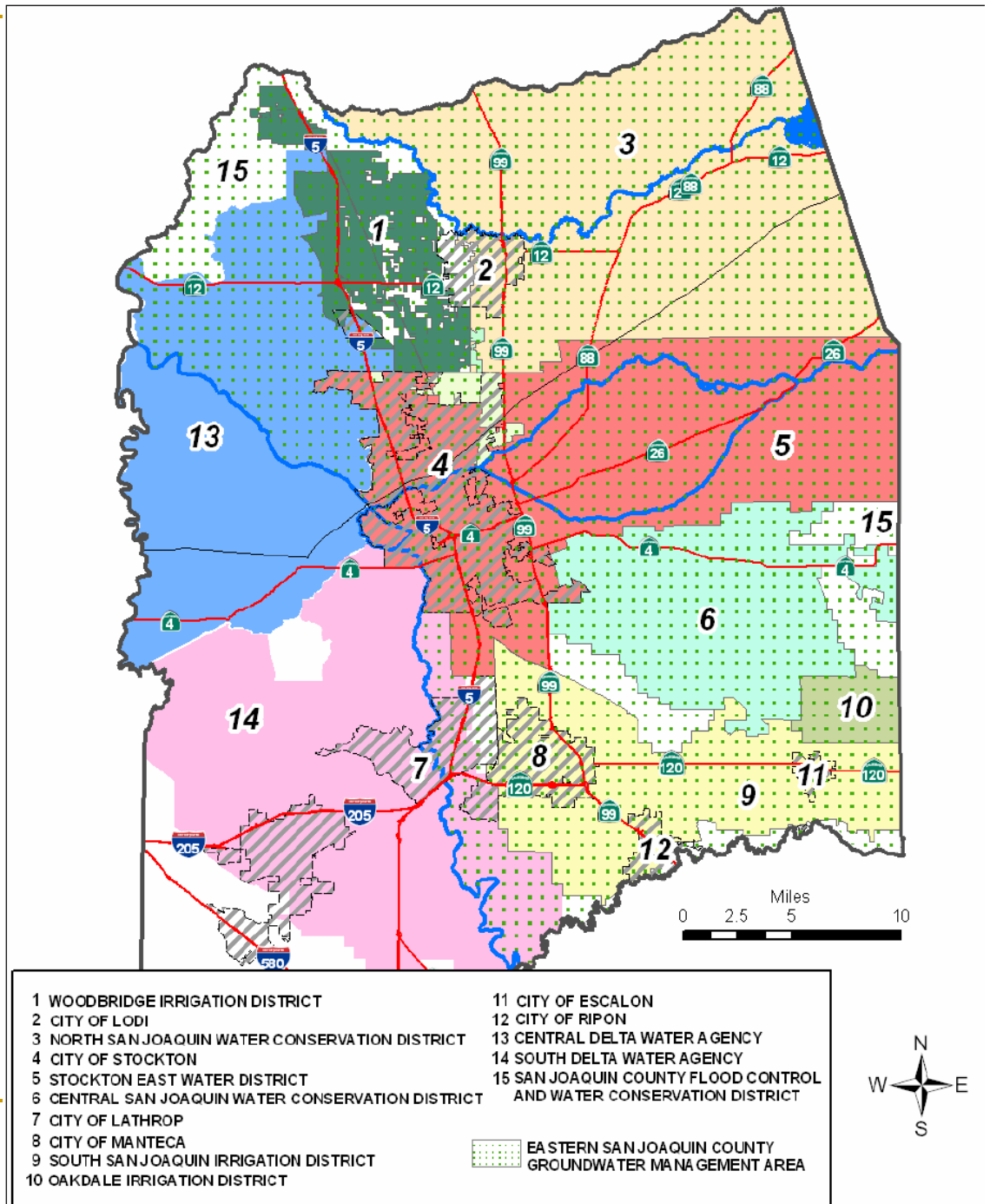
Northeastern San Joaquin County
Groundwater Banking Authority

NEW:

Eastern San Joaquin County
Groundwater **B**asin **A**uthority

Current Members

- WID
- NSJWCD
- City of Lodi
- City of Stockton
- Calwater
- SEWD
- CSJWCD
- CDWA
- SDWA
- San Joaquin County
- SSJID
- SJ Farm Bureau
- And Perhaps...
- City of Manteca

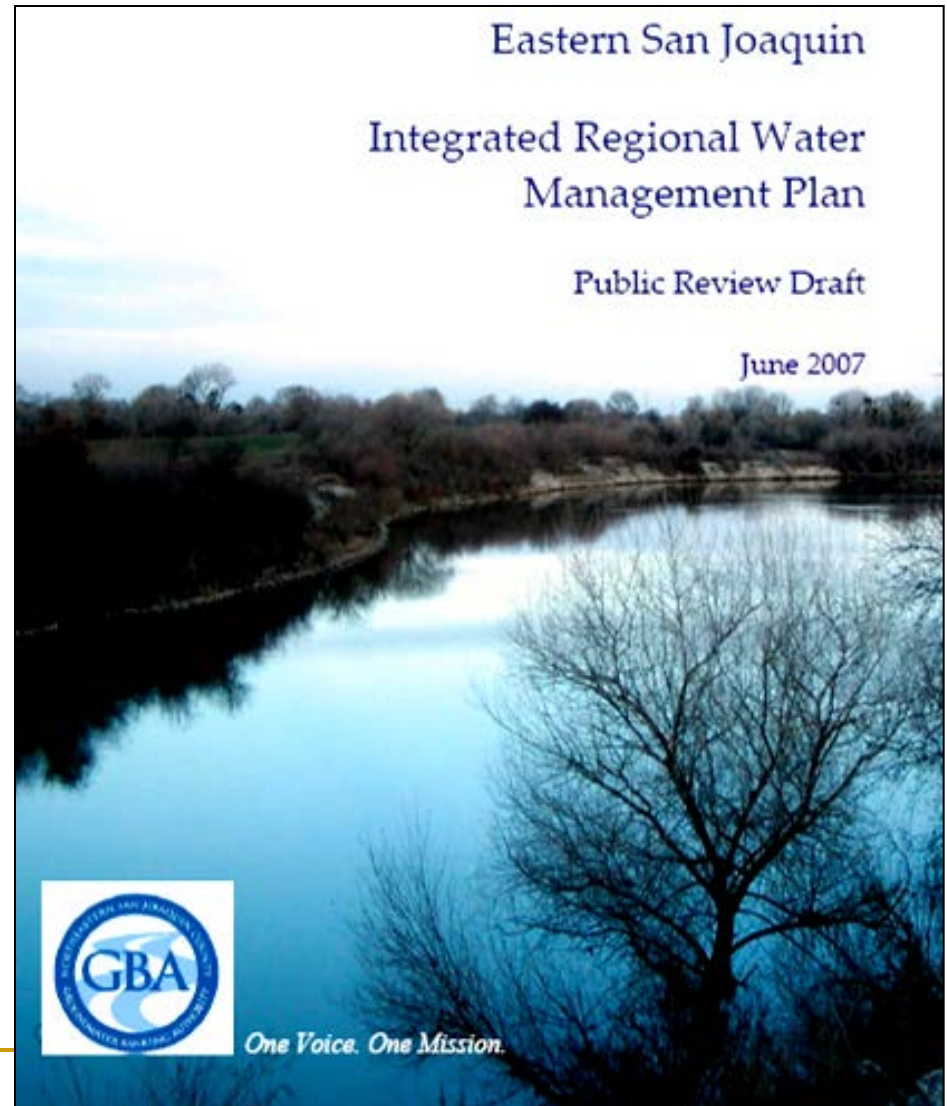


GBA Purpose and Goals

- To provide a consensus-based forum of public water interests...that will work cooperatively with unanimity... and speak on behalf of the Members with One Voice.
 - Long-term goal...to facilitate the development of locally supported projects that improve water supply reliability...and to provide benefits to project participants and San Joaquin County as a whole.
 - Short-term goals:
 - To develop and maintain the Eastern San Joaquin County IRWMP.
 - To facilitate the financing & construction of projects in the IRMWP.
 - To apply for grant funding
-

Eastern San Joaquin IRWMP

- Adopted July 2007
- Integrated Conjunctive Use Program
- Framework for Groundwater Basin Operation Criteria
- GBA Qualifies for Prop 1E and 84 Grant Funding



ICU Program Projects

STOCKTON DELTA WATER SUPPLY PROJECT

Final Program Environmental Impact Report
State Clearinghouse No. 2003112060

Prepared for:
City of Stockton

October 2005



MORE WATER PROJECT

A Regional Water Storage and Conjunctive Use Project



FREEPORT REGIONAL WATER AUTHORITY

Home | Project Info | Construction Activities | News | Contracting Opportunities | About FRWA | Contact Us

OF INTEREST



The Freeport Regional Water Project (FRWP) is a joint venture of the Sacramento County Water Agency and East Bay Municipal Utility District of Oakland to supply water from the Sacramento River to customers in Sacramento County and the East Bay.

The above is a rendering for the FRWA water intake facility. [Learn more.](#)



Current Activities

■ IRWMP Update

□ New Standards

- Disadvantaged Communities
- Integrate Water and Land Use Decisions
- Climate Change
- Integrate Flood and Stormwater Management
- Governance
- Finance Projects

□ Grant Funding

Current Activities

- **Mokelumne River Watershed Investigation Sustainability Evaluation (Mokelumne WISE)**
 - **Groundwater Management Reform**
-

Benefits of Regional Efforts

- Benefits Achieved with Cities, Water Districts, and County
 - Regional Planning & Project Development
 - Groundwater Recharge and Conjunctive Use Projects
 - Groundwater Science and Monitoring
 - More Competitive for State & Federal Funds
 - Region-wide Support for Projects
 - Inter-Regional Collaboration
 - Mokelumne WISE
 - San Joaquin River Flow and New Melones Operations
 - Long-term Regional Financing
 - Funding, Funding, Funding
-

Intra-Regional Areas

Groundwater Management Area

1. Maintain or enhance groundwater elevations to meet long-term needs of groundwater users

Basin Operation Areas

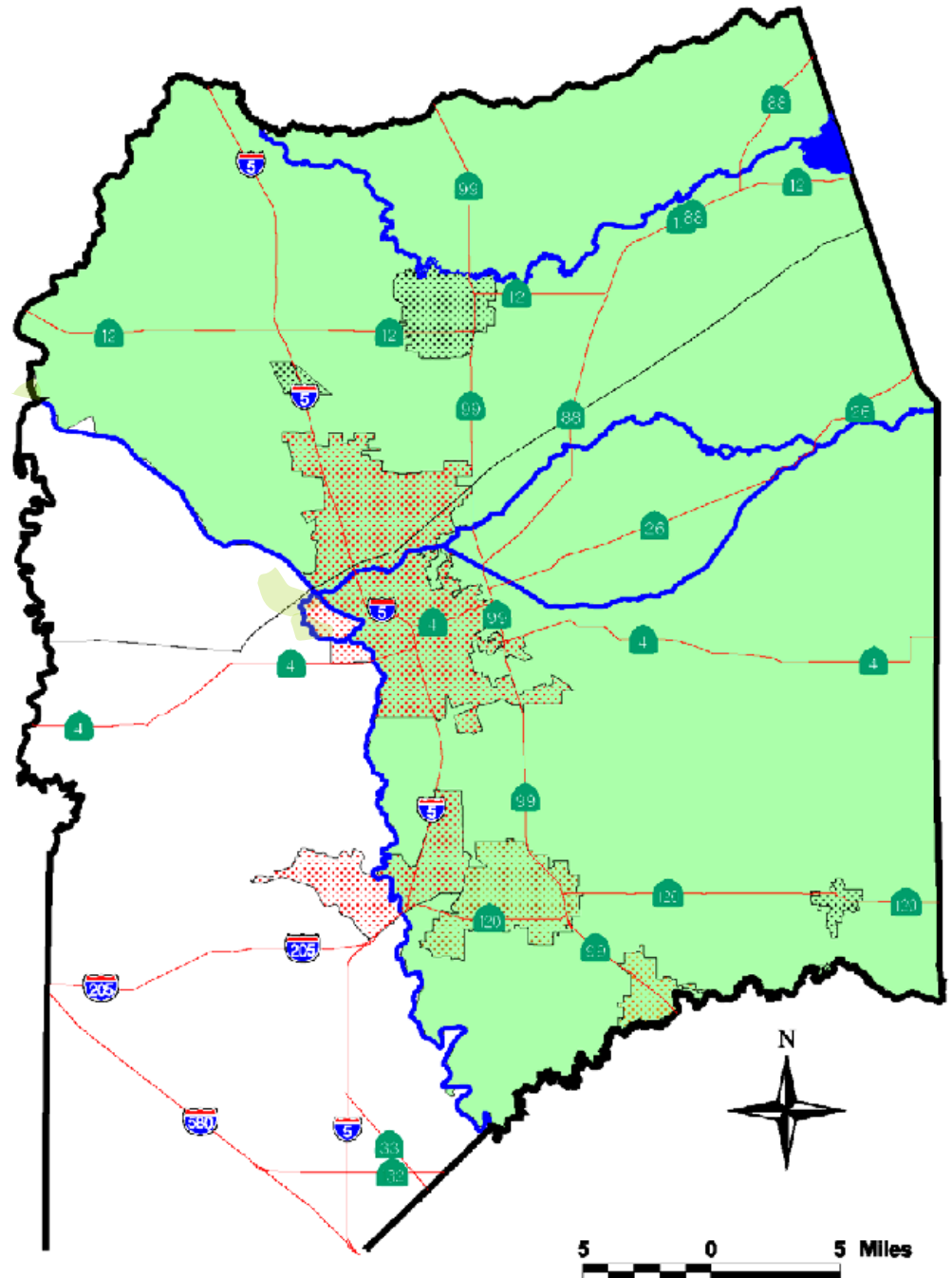


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graph LR; A[Groundwater Management Area] --> B[Basin Operation Areas]; B --> C[Operation Zones]
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Operation Zones

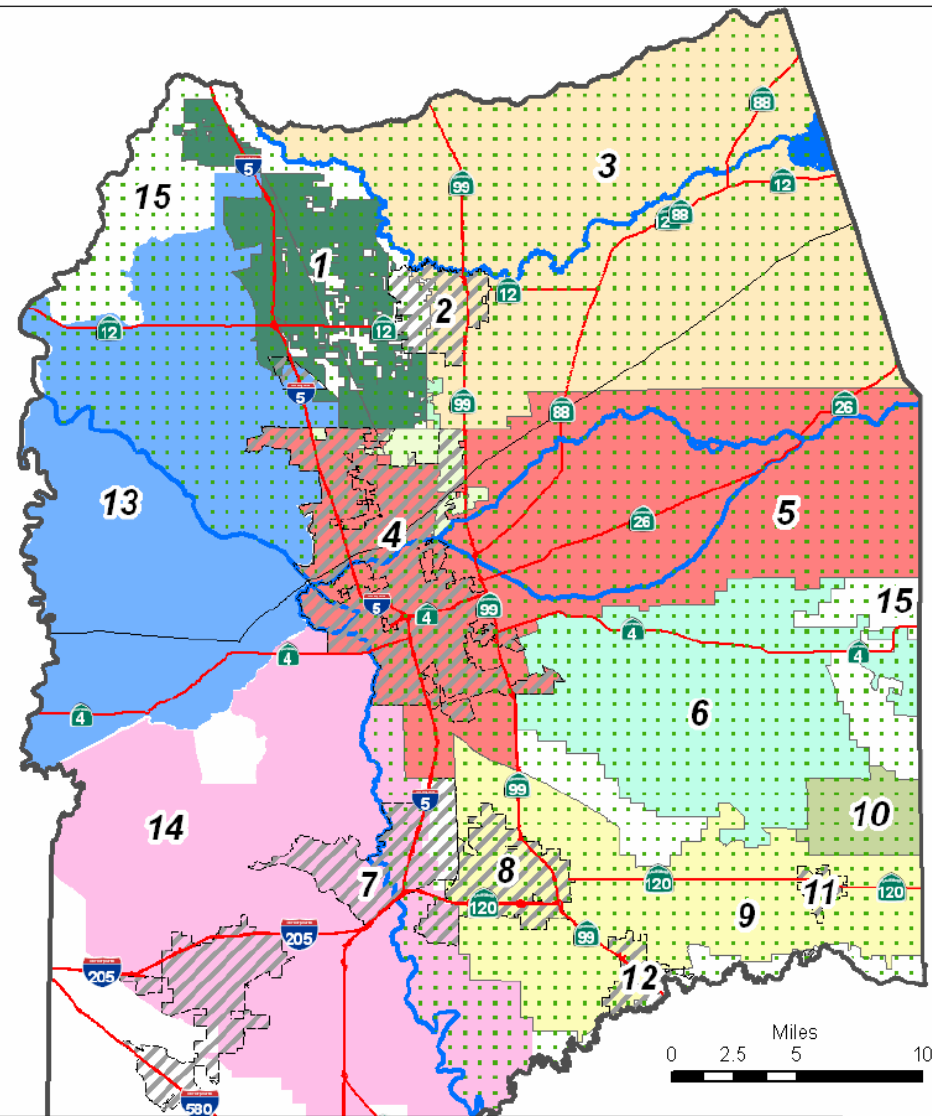
Groundwater Management Area


Groundwater Management Area – that portion of San Joaquin County that overlies the Eastern San Joaquin County, Cosumnes, and Tracy Sub-Basins of the greater San Joaquin Valley Groundwater Basin.



Basin Operations Area

Basin Operation Area – a jurisdictional subset (City, District or Agency, etc.) of the Eastern San Joaquin Groundwater Management Area.



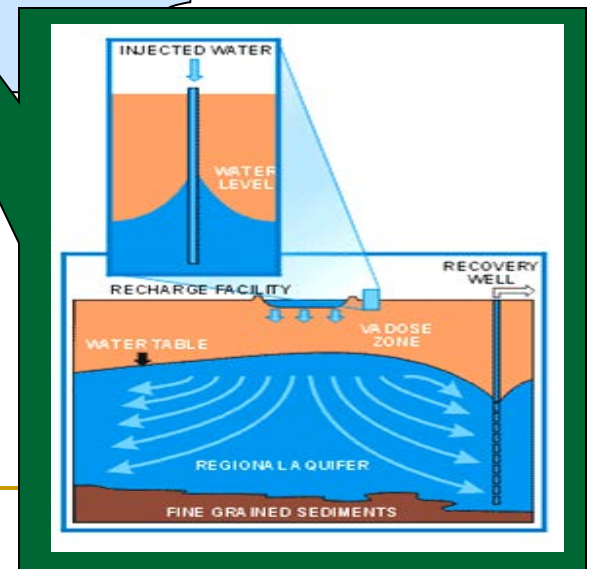
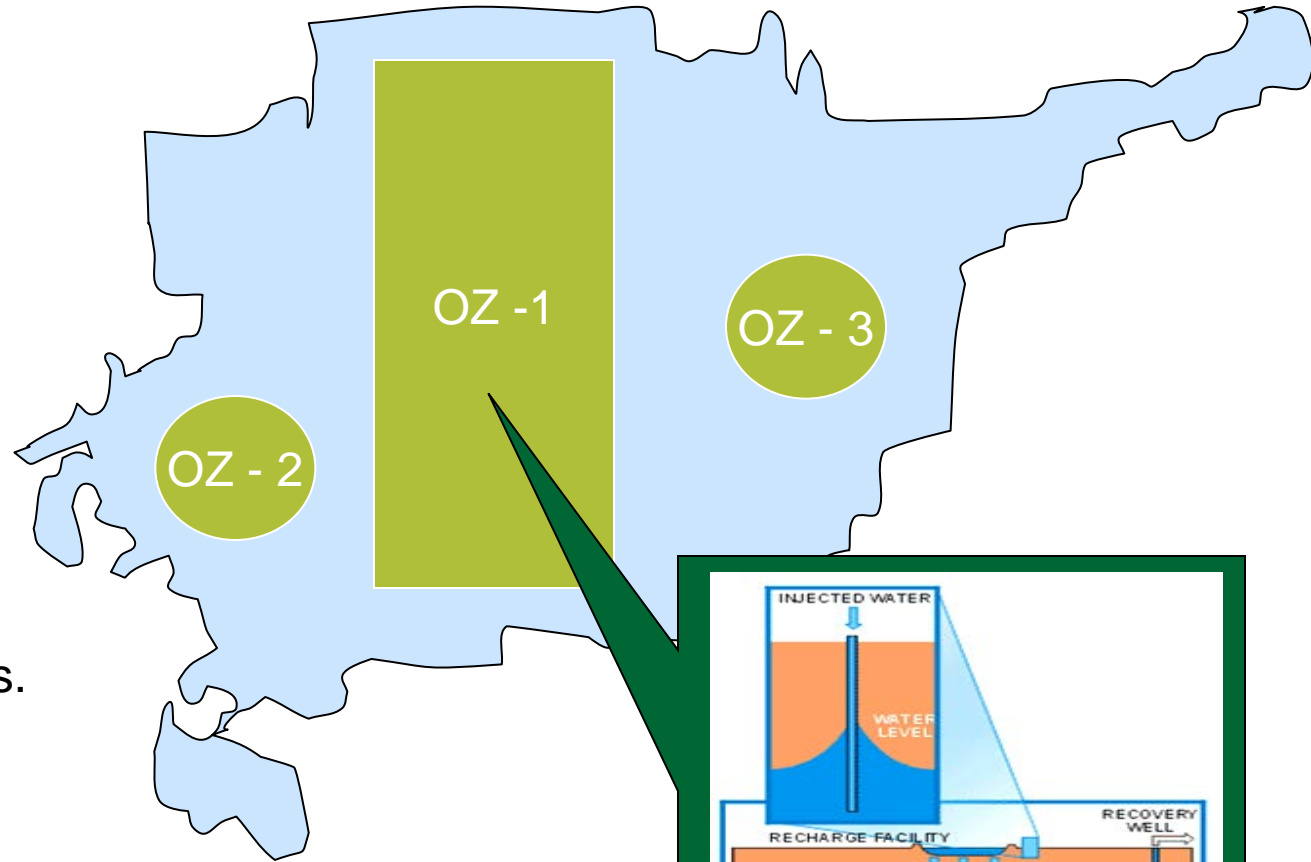
- | | |
|---|---|
| 1 WOODBRIDGE IRRIGATION DISTRICT | 11 CITY OF ESCALON |
| 2 CITY OF LODI | 12 CITY OF RIPON |
| 3 NORTH SAN JOAQUIN WATER CONSERVATION DISTRICT | 13 CENTRAL DELTA WATER AGENCY |
| 4 CITY OF STOCKTON | 14 SOUTH DELTA WATER AGENCY |
| 5 STOCKTON EAST WATER DISTRICT | 15 SAN JOAQUIN COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT |
| 6 CENTRAL SAN JOAQUIN WATER CONSERVATION DISTRICT | |
| 7 CITY OF LATHROP | |
| 8 CITY OF MANTECA | |
| 9 SOUTH SAN JOAQUIN IRRIGATION DISTRICT | |
| 10 OAKDALE IRRIGATION DISTRICT | |
-  EASTERN SAN JOAQUIN COUNTY GROUNDWATER MANAGEMENT AREA



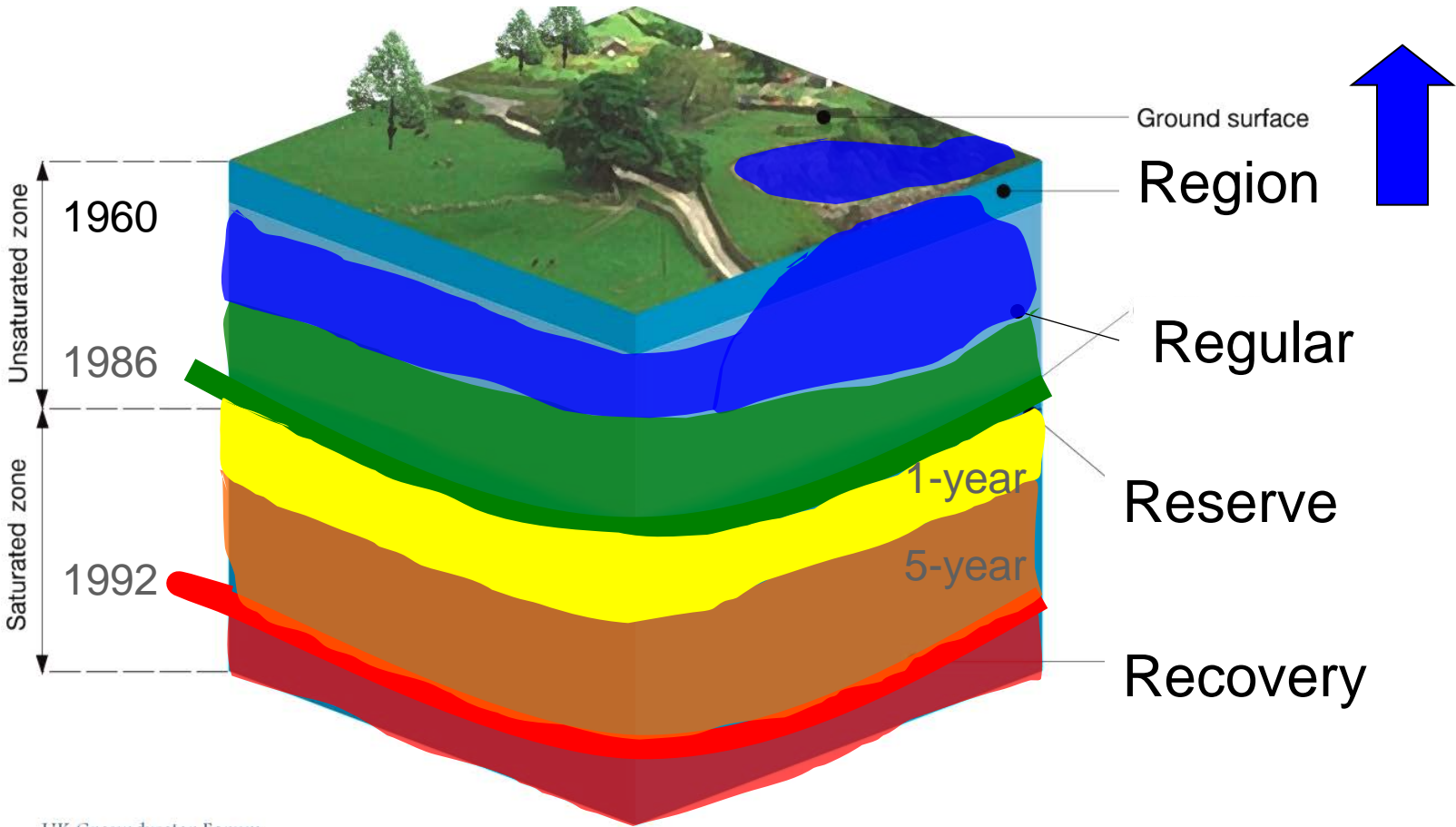
Basin Operation Zone

Basin Area No. 5

Basin Operation Zone—
that area beneath a
given Basin Operation
Area dedicated for
conjunctive water
management operations.

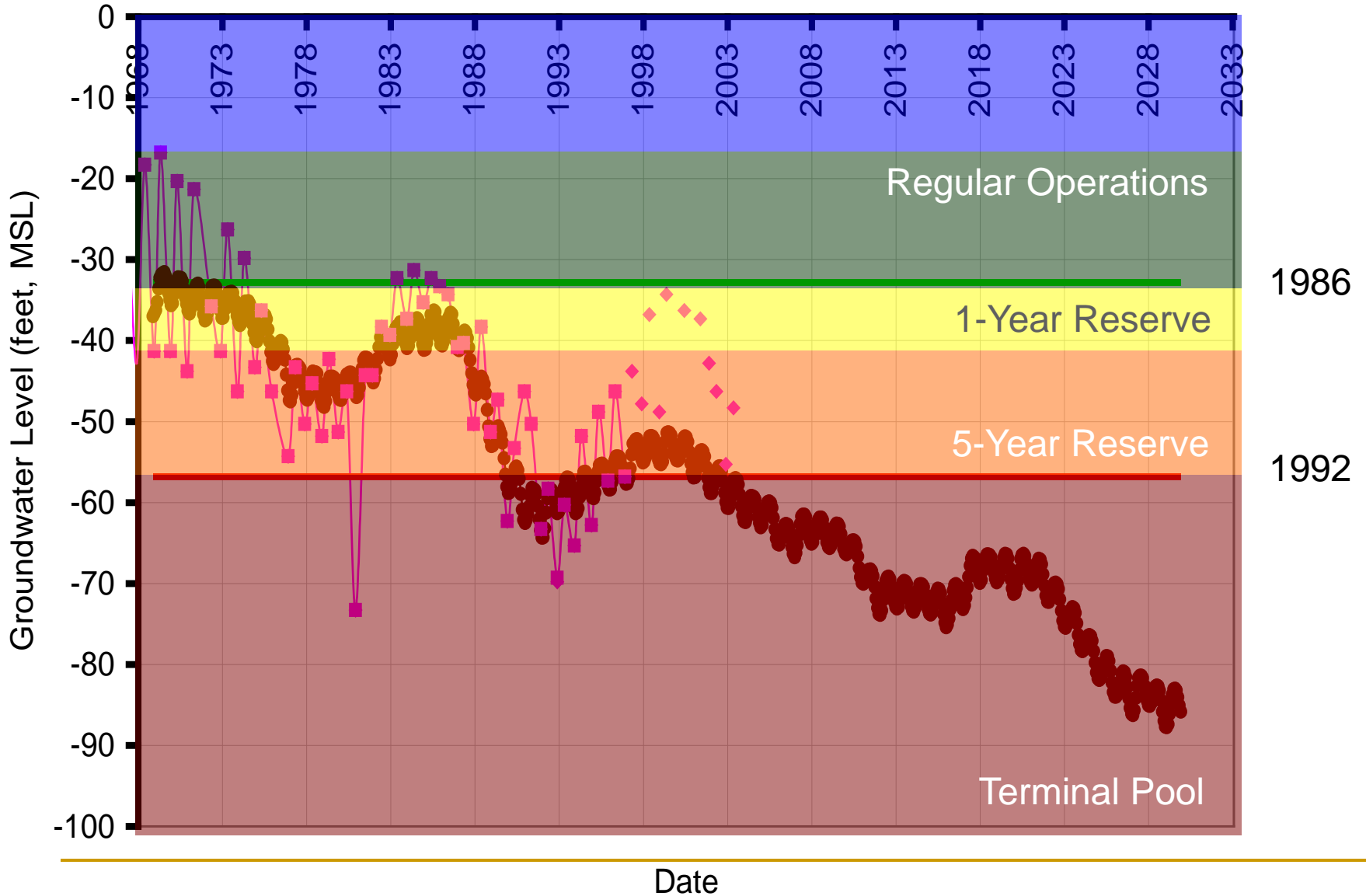


Drought Scenario



Simulated Predicted Water Levels

Typical simulated groundwater levels in central portion of the Basin

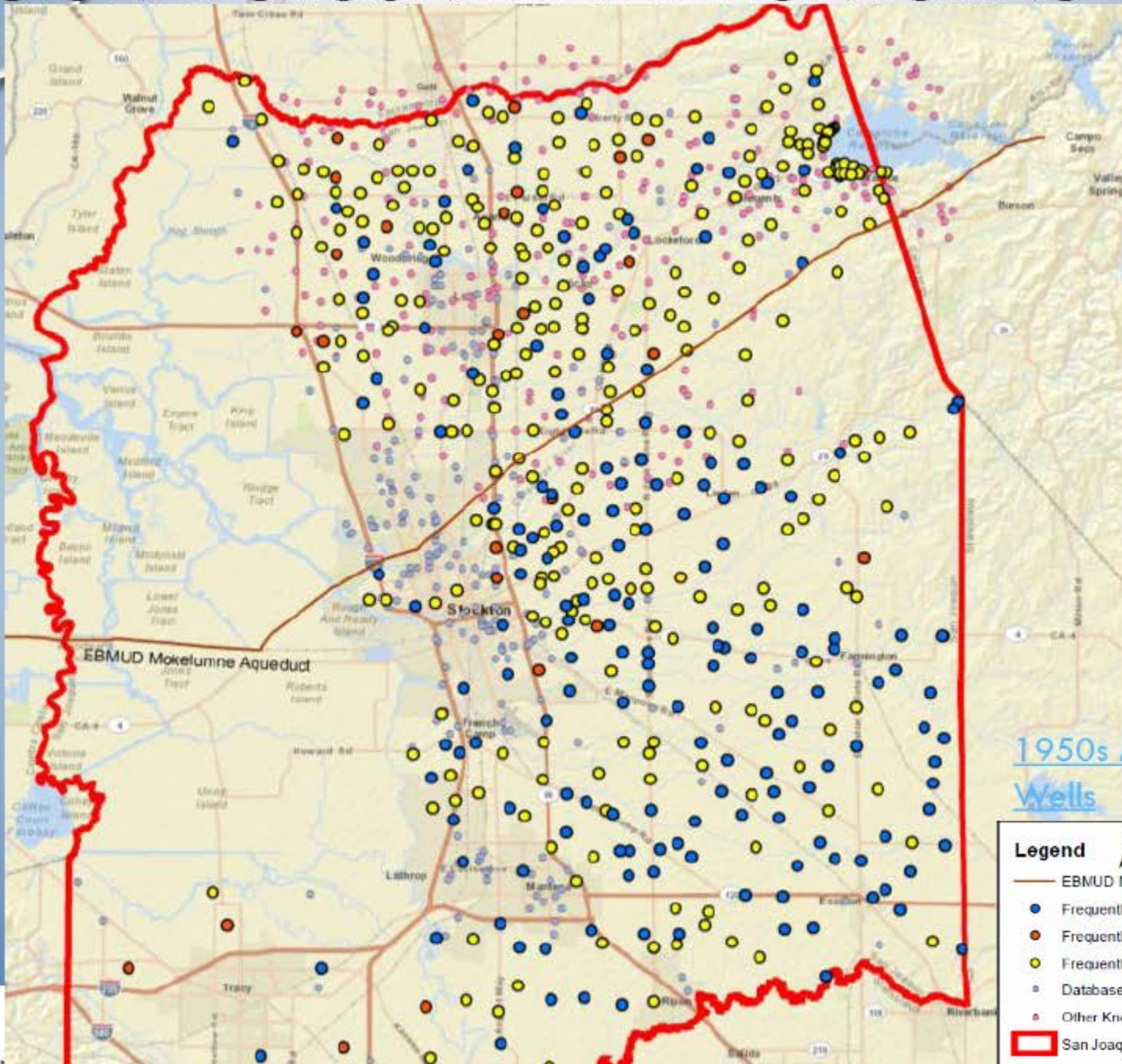


NEVER LET A GOOD CRISIS GO TO WASTE

- DRY-YEAR DATA COLLECTION PROGRAM

- OPPORTUNITY TO LEARN ABOUT THE BASIN RESPONSE
- OPPORTUNITY TO LEARN ABOUT STAKEHOLDER INTERESTS AND USES
- PROVIDE OPPORTUNITIES TO MANAGE WATER-USE ISSUES THIS YEAR AND IN FUTURE DRY-YEARS
- ABILITY TO EVALUATE WHAT WORKED AND WHAT DIDN'T FOR CONJUNCTIVE USE WATER MANAGEMENT

REGIONAL GROUNDWATER MONITORING WELLS



1950s Monitoring Wells

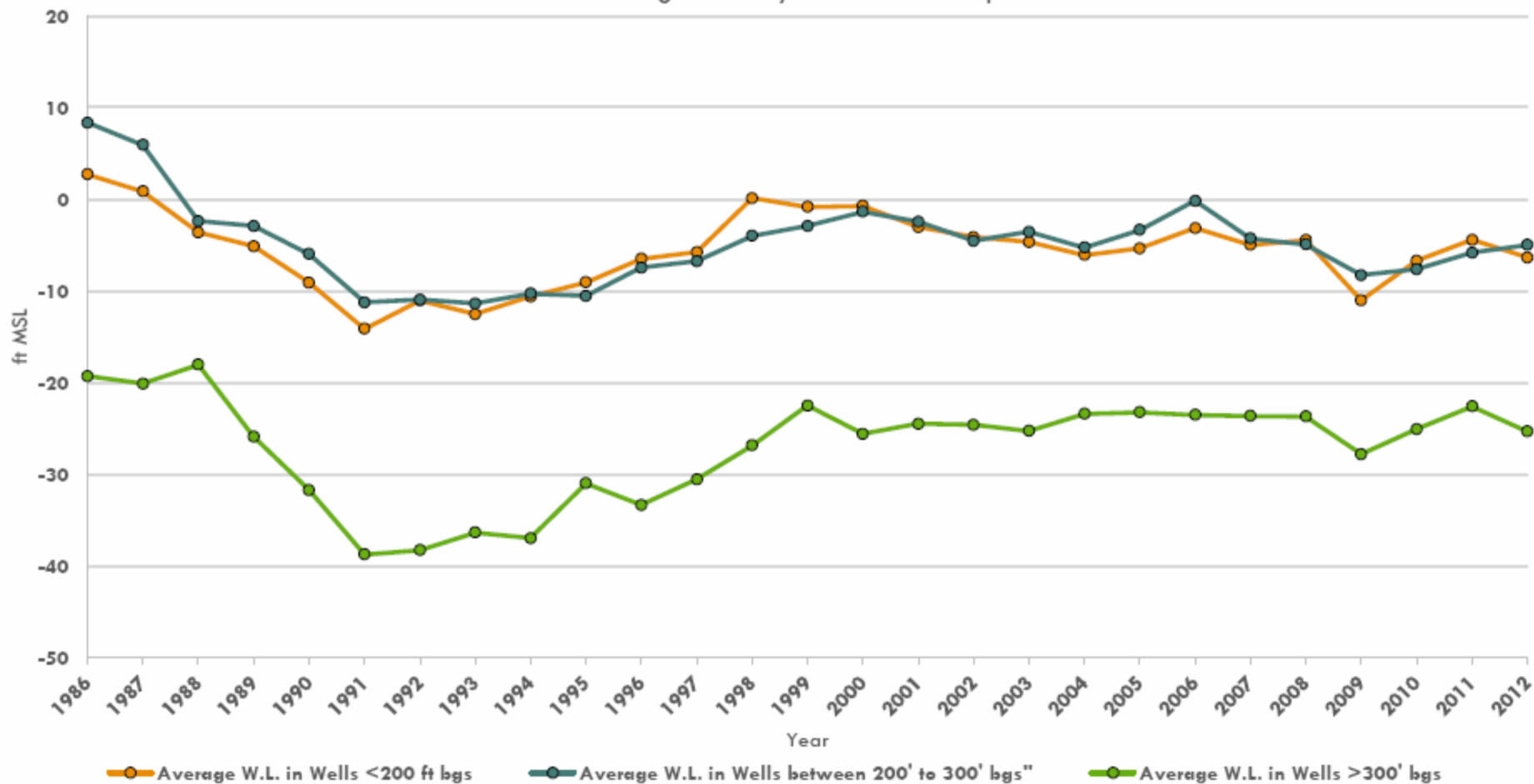
Legend

North Arrow

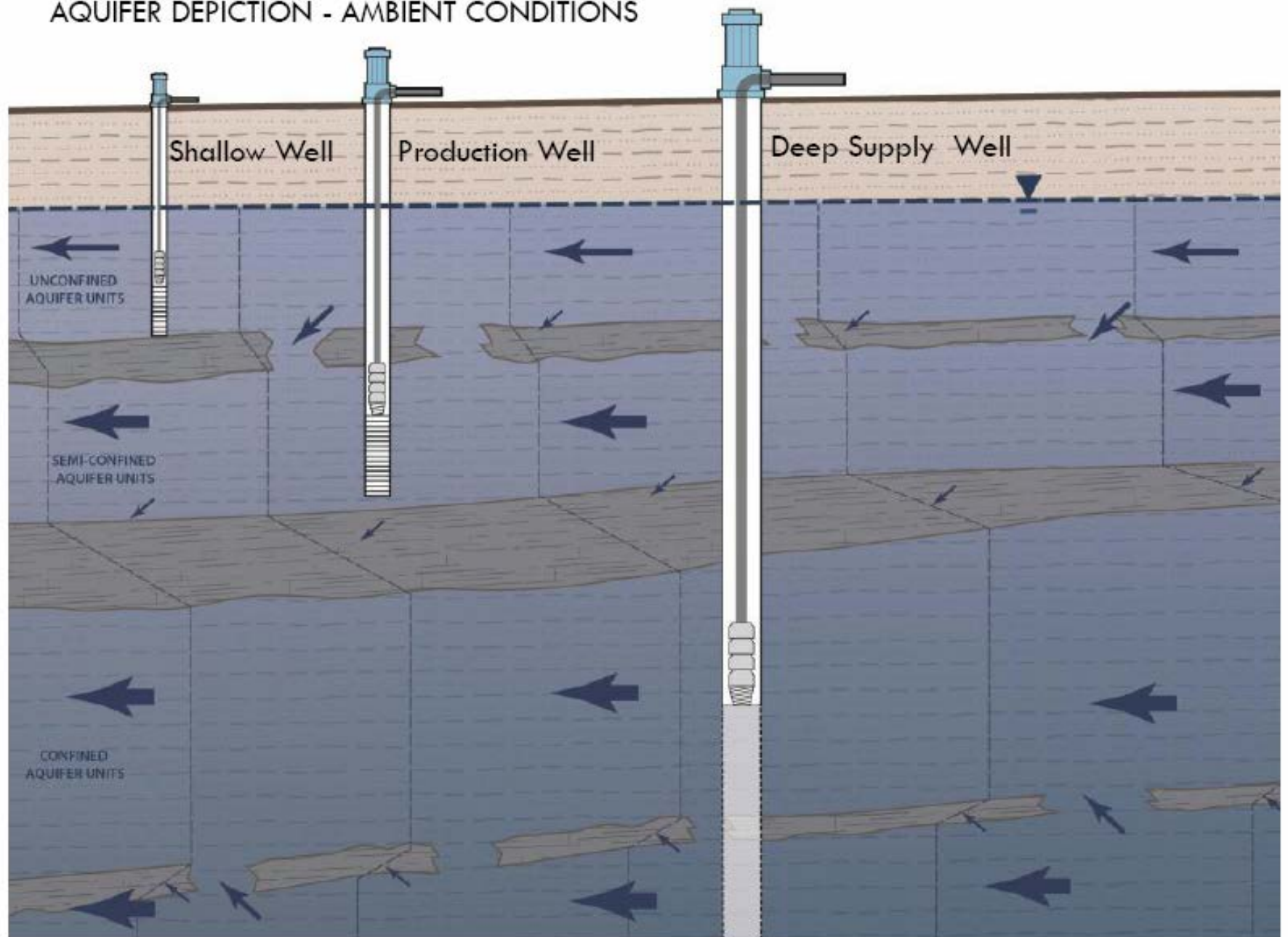
0 1.5 3 6 Miles

- EBMUD Mokelumne Aqueduct
- Frequently-Monitored Wells - Updated
- Frequently-Monitored Wells - With Total Depth
- Frequently-Monitored Wells - Not Updated
- Database Wells Not Frequently Monitored
- Other Known Well Locations not in Database
- ▭ San Joaquin County

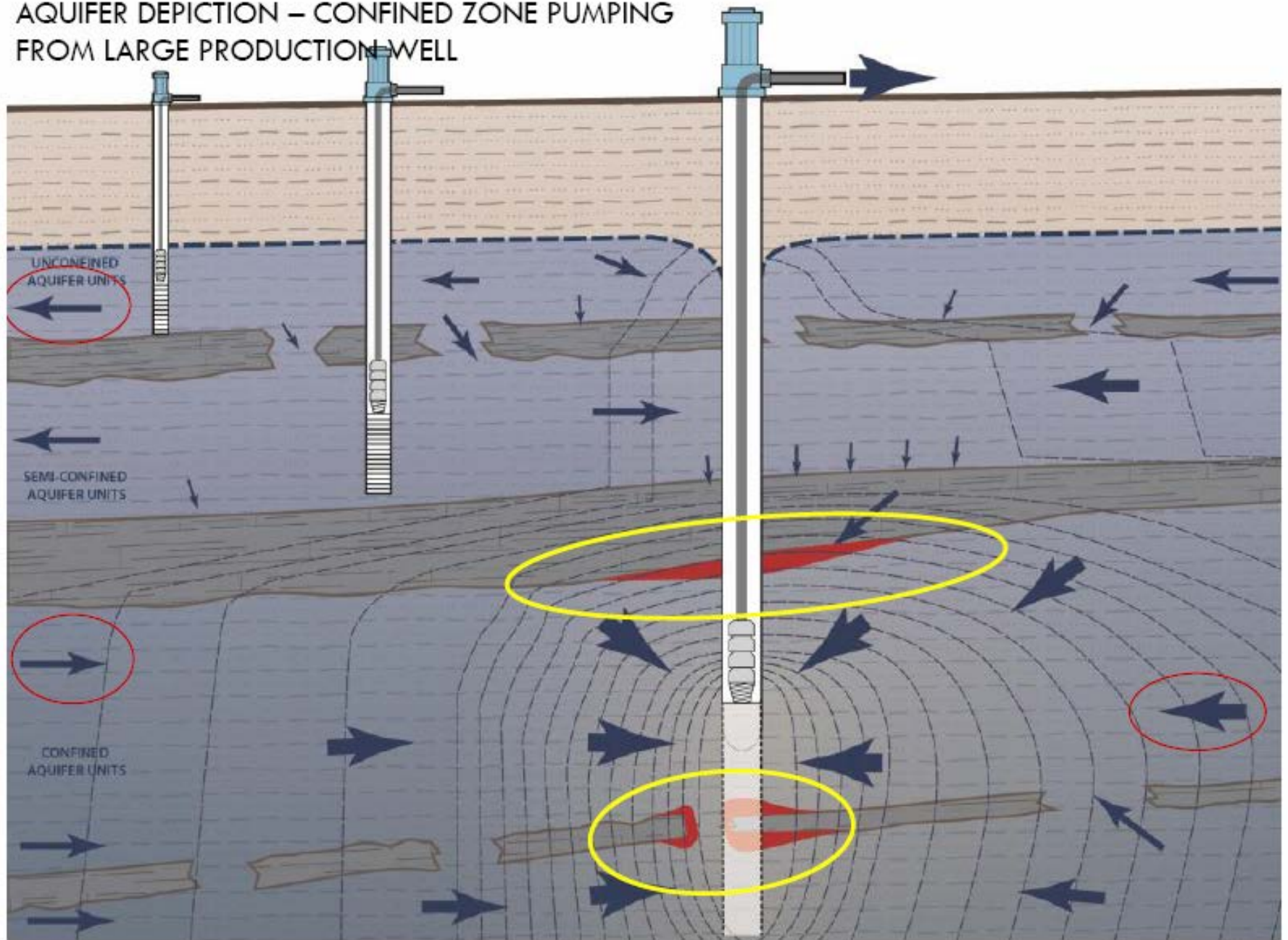
Regional Average Groundwater Elevations
Wells Categorized by Mid-Screen Depth



AQUIFER DEPICTION - AMBIENT CONDITIONS



AQUIFER DEPICTION – CONFINED ZONE PUMPING FROM LARGE PRODUCTION WELL





Questions?

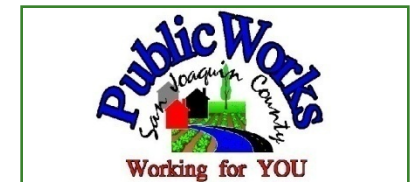
www.GBAWater.org

www.SJWater.org

www.SJCleanWater.org

www.MOREWATER.org

www.SJSavewater.org



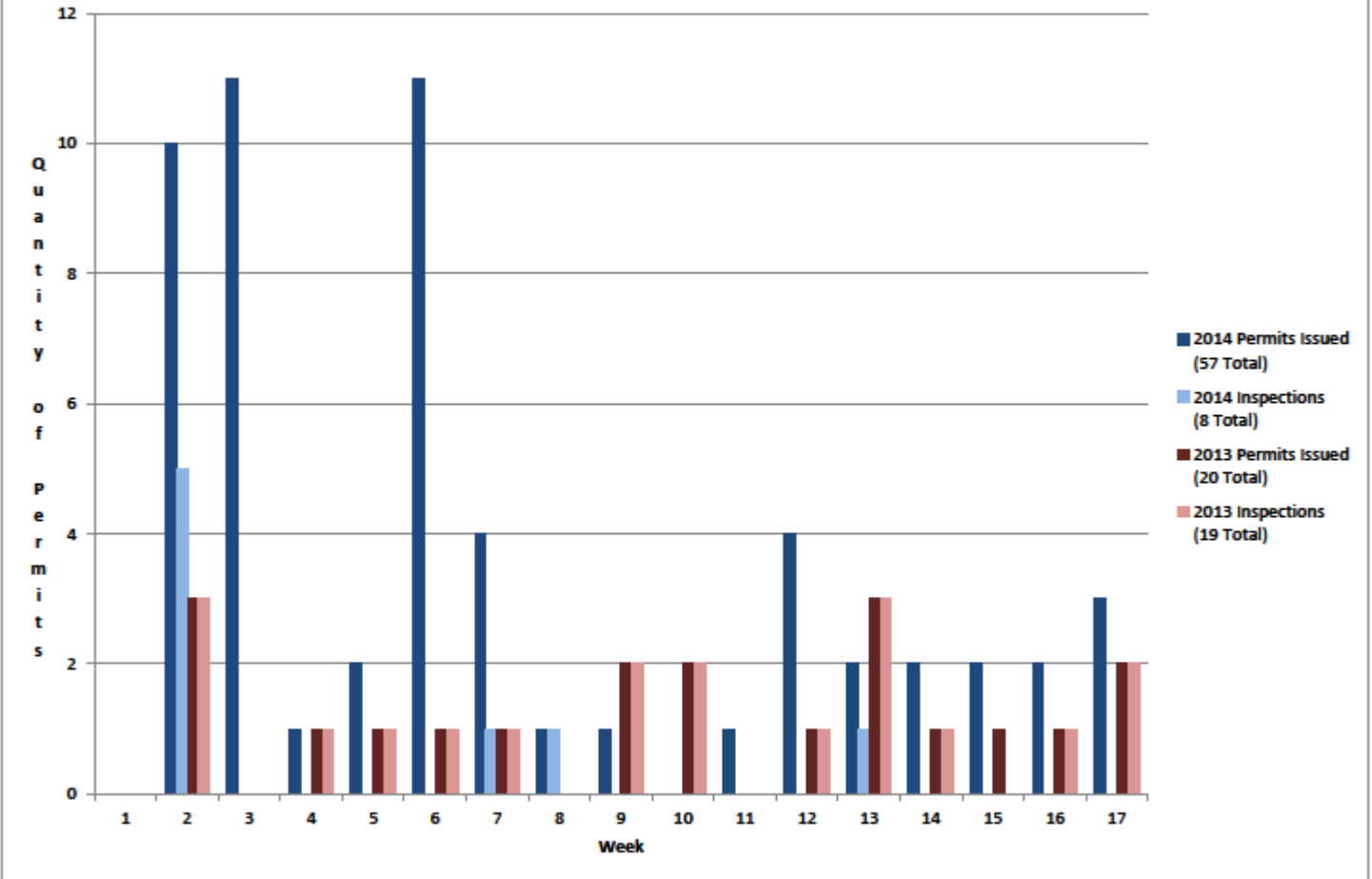
Stanislaus County Water Advisory Committee Meeting

April 30, 2014

“Eastside” Stanislaus County Water Well Construction Permitting Activity (Agenda Item VII)

Comparison between 2013 and 2014

Eastside Ag/Irrigation Well Permits 2013-2014 Comparison



ATTACHMENT B

Discussion

Permit Issuance vs. Well Construction

Well Construction vs. Pump/Motor Installation

About a one year lead time between permit issuance and construction

“Framework for the Implementation
of Coordinated Groundwater
Management
In
Stanislaus County”

Water Advisory Committee

Agenda Item VIII

April 30, 2014

100 Day Action Plan

- Recommended Actions for Board of Supervisors consideration on June 10, 2014
- Activity 1: Scoping Document
 - Five Elements
 - 20 Activities
 - Implementation Timeline
- Activity 2: Groundwater “Mining” definition

Framework Elements

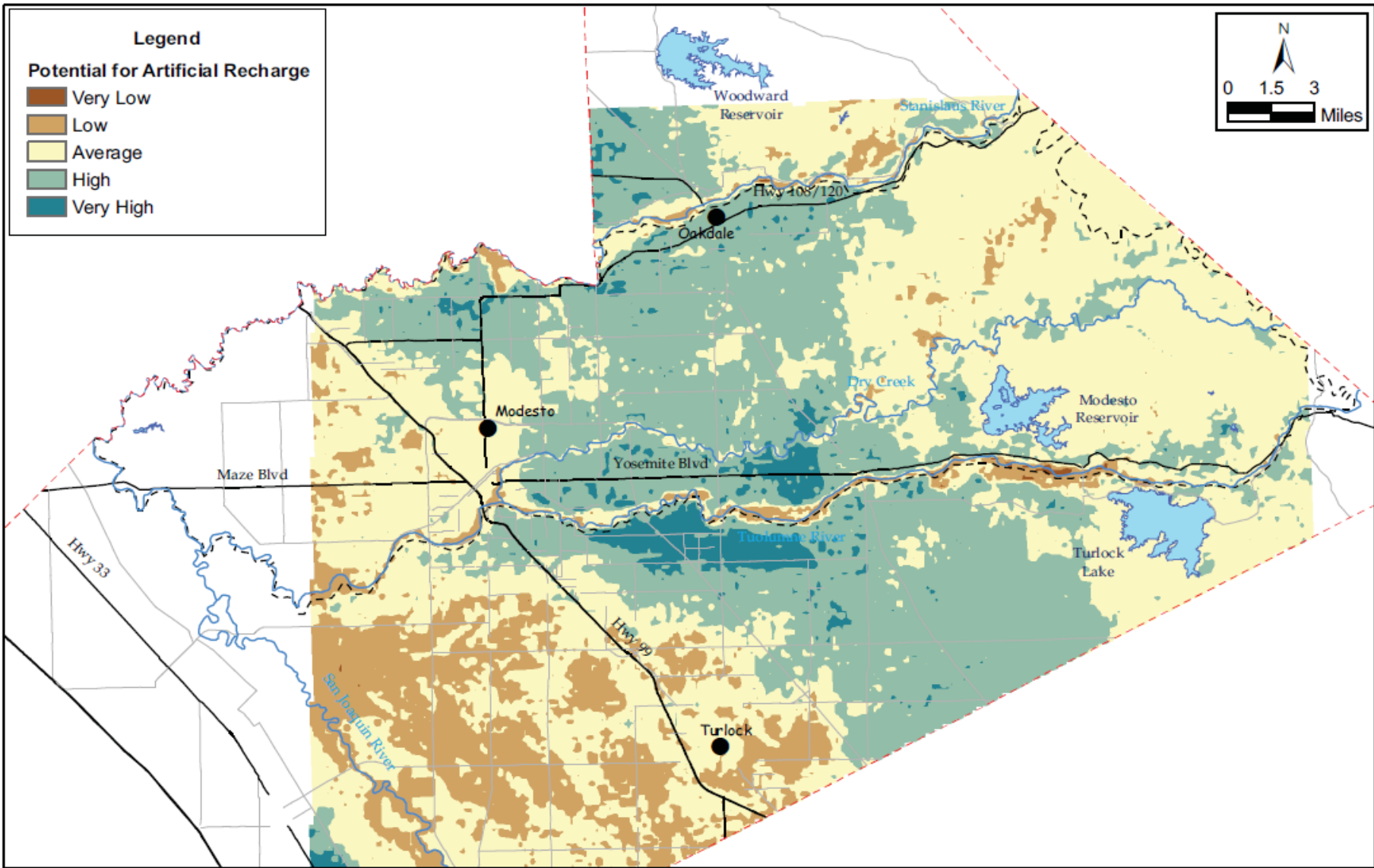
- Thresholds
- Monitoring
- Governance
- Funding
- Enforcement

Thresholds – Activity 3

- Systematically evaluate the geology and soils for recharge/discharge and sources/uses of groundwater in the subbasins in the County in the priority agreed upon by the representatives on the County's advisory committees.
 - *The preliminary priority area for this investigation is the Northeast County Foothills Area of the County.*

Thresholds – Activity 4

- Obtain the technical information, and develop the planning and policy needs to improve groundwater recharge opportunities and groundwater conditions in the County.
- Maps have already been created for the groundwater plan areas that show the locations of soil and geology that are conducive to improved groundwater recharge.
- The next planning and implementation activities potentially involve protecting or mitigating the locations for future recharge as well as developing the methods, procedures and agreements needed to conduct enhanced recharge in the targeted areas.



Potential for Artificial Recharge

STRGBA Recharge Analysis

February 2007

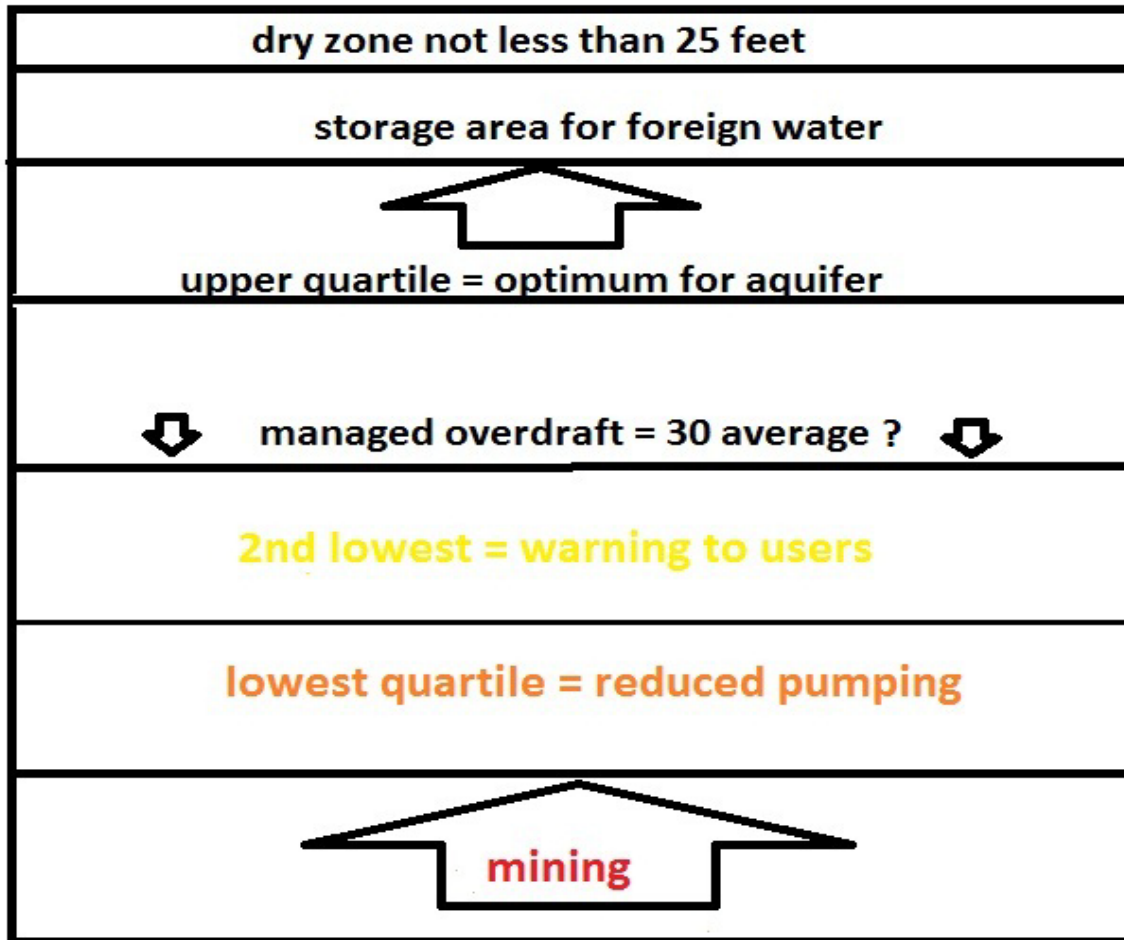
Figure 10

Thresholds – Activity 5

- Develop technical evaluation procedures on how to adequately determine factual claims of damage alleged by groundwater users that have lost their ability to pump groundwater, especially shallow groundwater users with units pumping less than 100 gpm.
- This activity involves developing a process to evaluate whether a well user lost the use due to the sudden drop in the water table or has a well that is at the end of its usable life and needs replacement regardless of the water table condition, or something in between.
- The concept further involves determining a way to assist with financing wells lost to rapid water table decline by creating a funding source from well permit fees or other means available to the County (see Funding Element - Activity 16).
 - *This Activity (and Activity 16) will require input and guidance from the County's Office of Counsel with regards to appropriateness and implementation.

Thresholds – Activity 6

- Evaluate and determine appropriate groundwater elevation levels for groundwater use and sustainability in the areas under County jurisdiction. The suggested conceptual diagram for this exercise is shown on the next page.



Monitoring – Activity 7

- Conduct sufficient data analysis to fully determine area-wide groundwater conditions and determine how to complete data gaps.
 - DWR database (completion reports/water levels)
 - Mapping of well locations by aquifer and use type
 - Regional and local water well hydrographs (information sharing)
 - Geologic mapping of subsurface

Monitoring – Activity 8

- Develop an agreement on coordination and management of information systems needed for groundwater data:
 - What, Why, Where and Financing?
 - Database management and maintenance
 - Decision Support Systems (DSS)
 - Central repository with “portals” for user input
 - “Heavy Lifting” on the front end

Monitoring – Activity 9

- Construct an improved water well permit process that assists in providing information necessary to improve groundwater management.
 - Section, Township and Range identification
 - Other conditions of issuance?

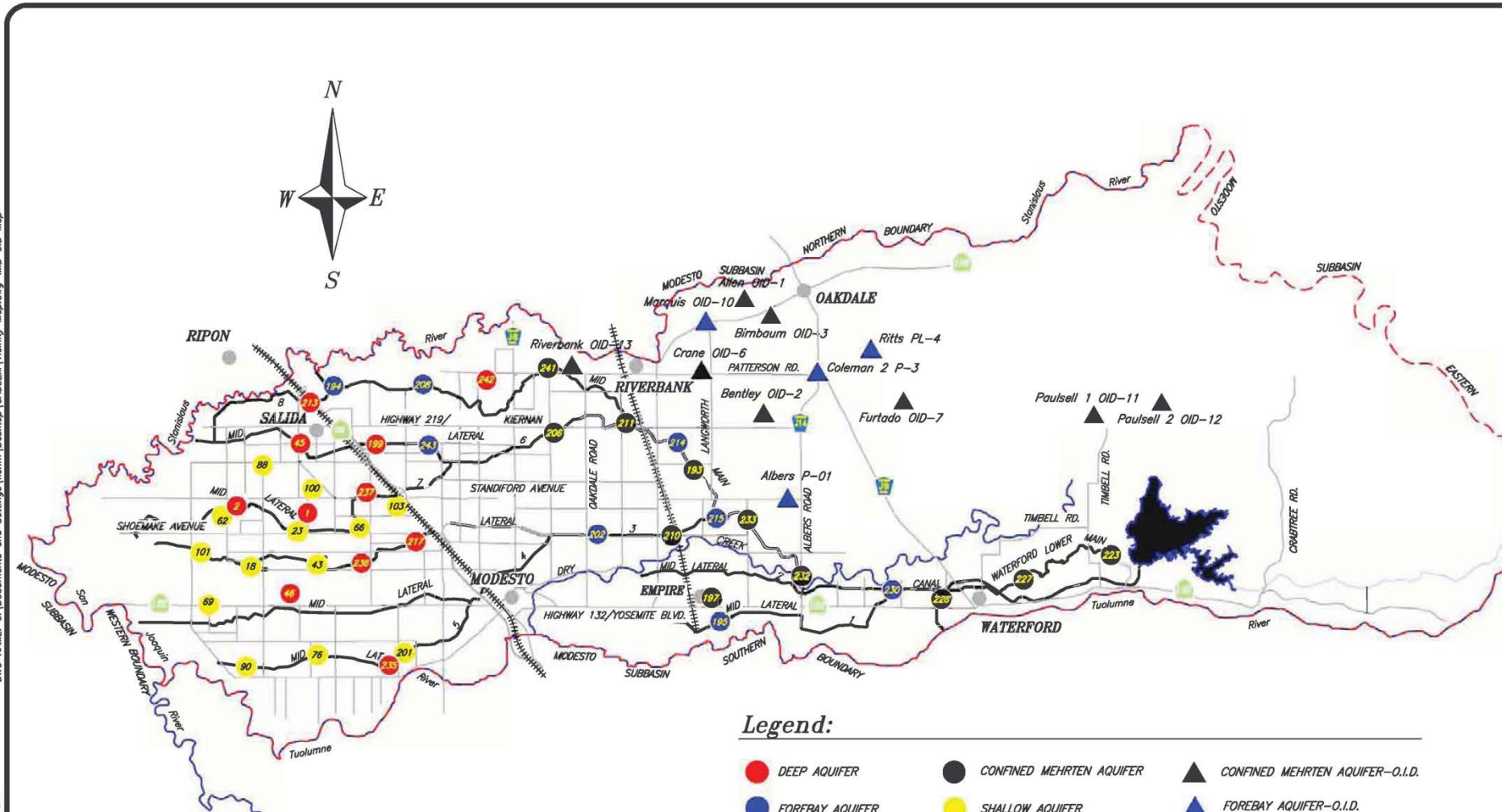
Monitoring – Activity 10

- Develop a long-term groundwater monitoring network and data acquisition program for ongoing assessment (performance-based) and further needs analysis (areas of concern) regarding adaptive groundwater management, for both quantity and quality.

DWG NAME: C:\Documents and Settings\kenm\Desktop\CAGGSA\Modesto\Modesto_Vicinity_Map.dwg-MID_OID_Map

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DTED: 05/10/13 14:15



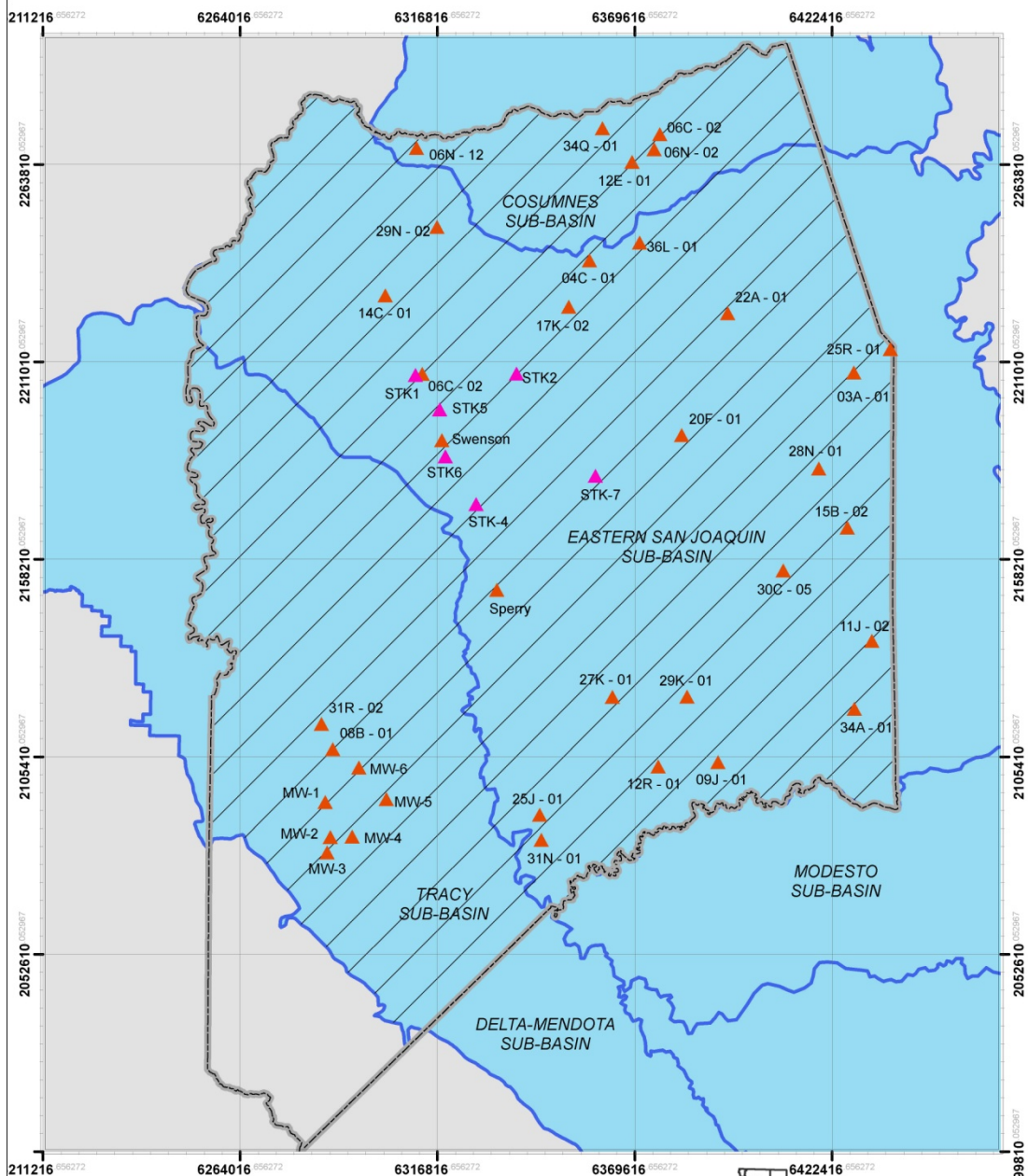
Legend:

- DEEP AQUIFER
- FOREBAY AQUIFER
- MODESTO GROUNDWATER SUBBASIN BOUNDARY
- CONFINED MEHRTEN AQUIFER
- SHALLOW AQUIFER
- ▲ CONFINED MEHRTEN AQUIFER-O.I.D.
- ▲ FOREBAY AQUIFER-O.I.D.



Well Location Proximity Map
M.I.D and O.I.D. Wells

DATE: May 10, 2013	18	DWG BY: K
SCALE: NOT TO SCALE		APP. BY:



- ▲ Nested Wells
- ▲ Single Wells
- ▬ San Joaquin County
- ▬ San Joaquin County Groundwater Monitoring Area
- ▬ San Joaquin Valley Basin

San Joaquin County Groundwater Monitoring Area



Monitoring – Activity 11

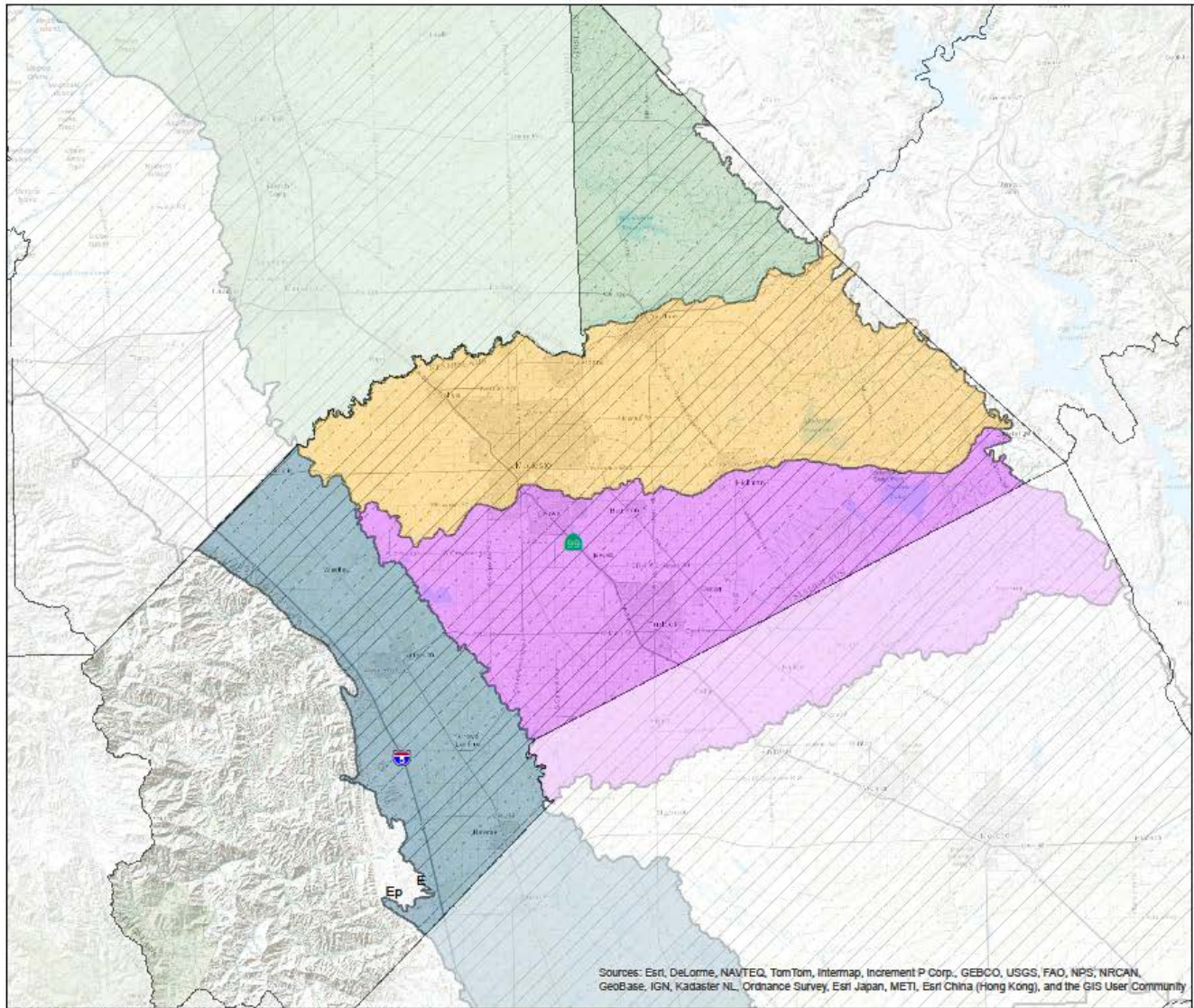
- Develop a water use accounting system to monitor and report *groundwater withdrawals from all pumping facilities*.
- Acceptable methods could include flowmeter records or pump run-time records which totalize pump operation time multiplied by the discharge rate of the pump.
- Monthly aggregated withdrawals compiled to the nearest Section in land area
- Submitted bi-annually during each calendar year (spring/fall)
- Withdrawal facilities with a rated pump capacity of less than 100 gallons per minute are not required to measure or submit such groundwater withdrawal records.

Governance – Activity 12

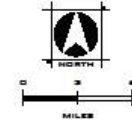
- Develop and adopt AB3030/SB1938 plans for areas not covered by such a plan.

San Joaquin Hydrologic Region/Groundwater Subbasins





GROUNDWATER BASIN AND SUBBASIN MAP
STANISLAUS COUNTY, CALIFORNIA
 APRIL 2014



Groundwater Basin

San Joaquin Valley

Subbasin

Eastern San Joaquin

Modesto

Turlock

Delta-Mendota

County

Stanislaus County

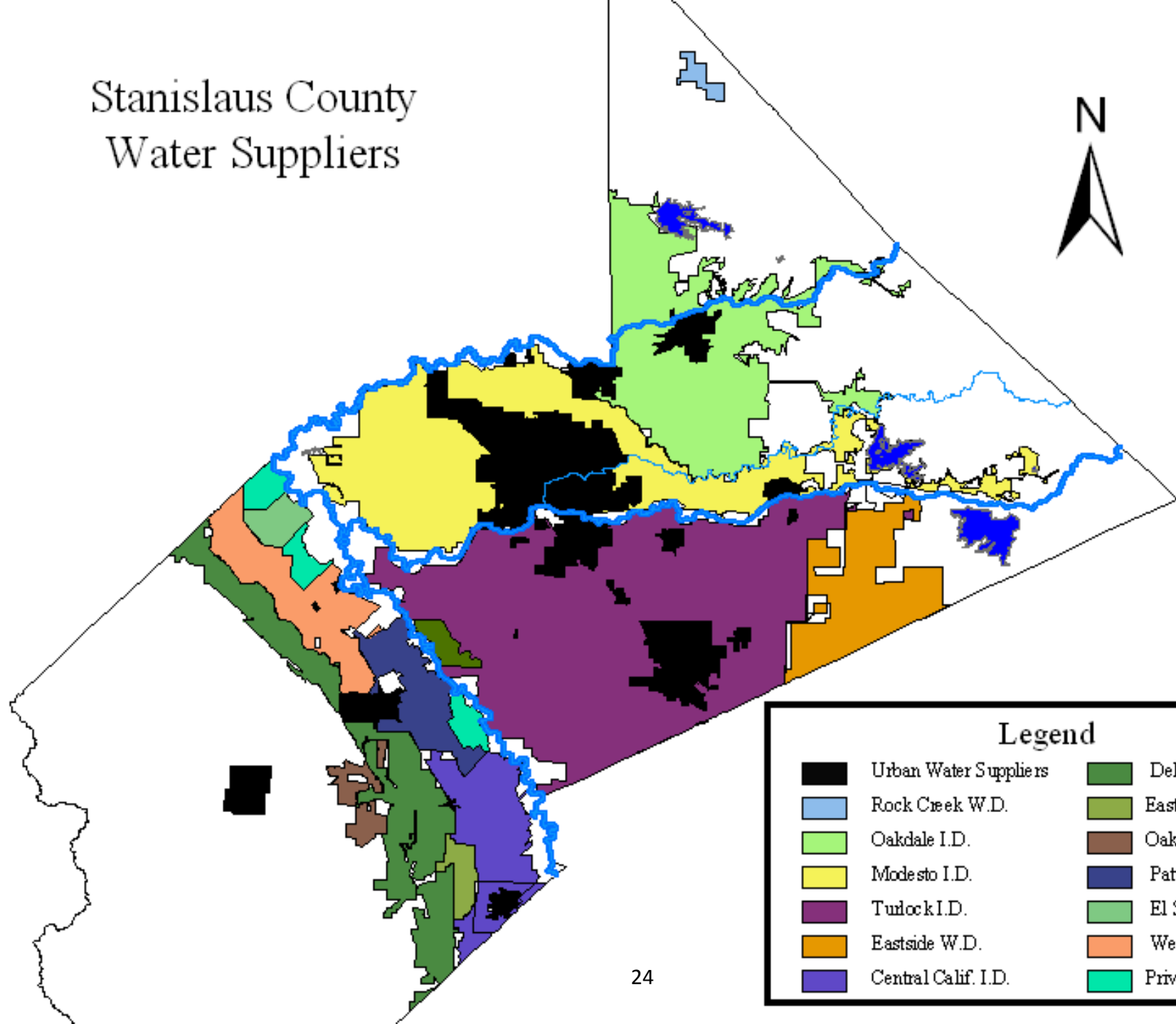
Sources: California Department of Water Resources



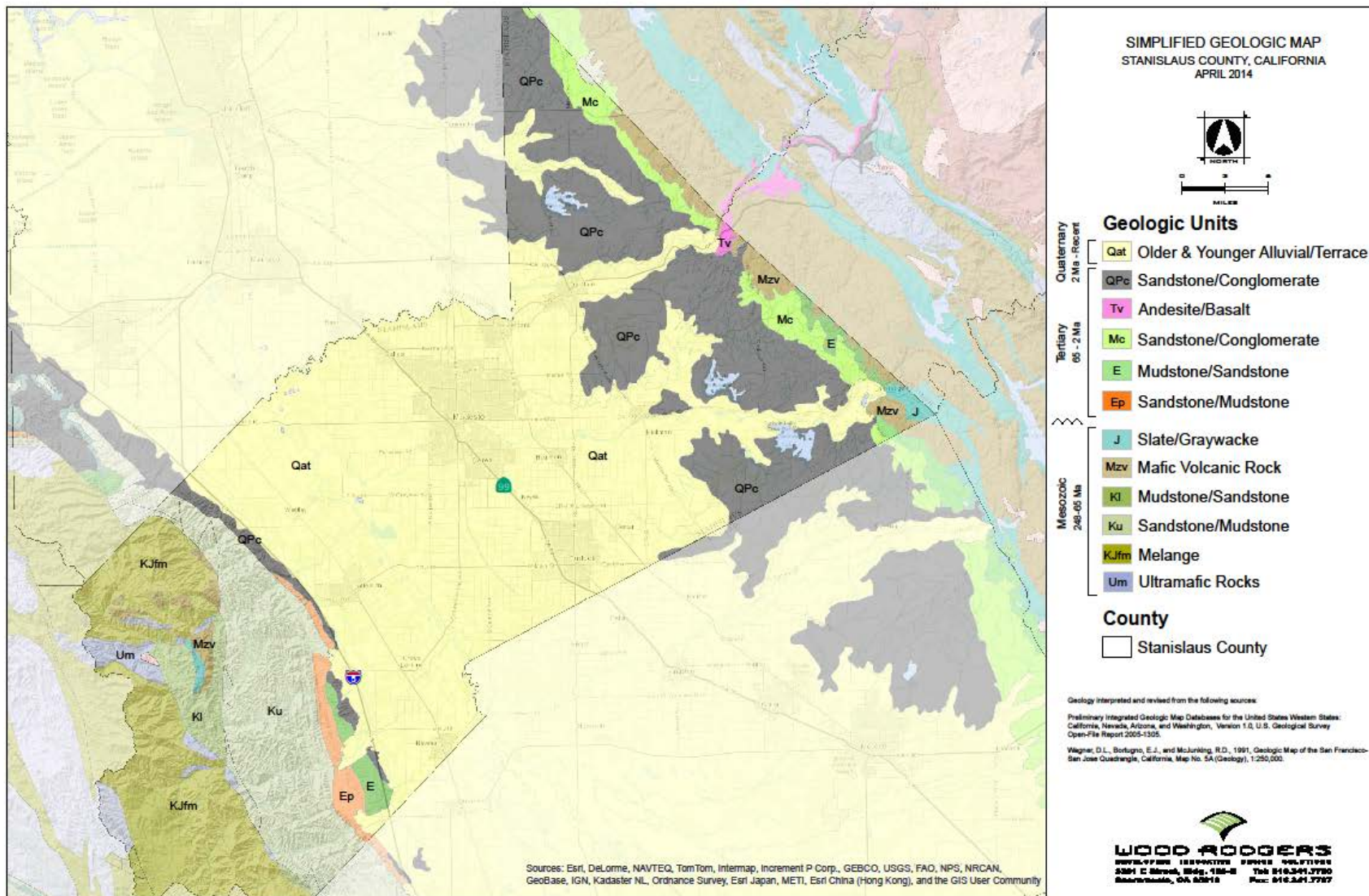
File Path: E:\Groundwater\GIS\Tasks\Stanislaus_County_GW Subbasin Map_20140425_mxd

FIGURE

Stanislaus County Water Suppliers



Legend	
Black square	Urban Water Suppliers
Light blue square	Rock Creek W.D.
Light green square	Oakdale I.D.
Yellow square	Modesto I.D.
Purple square	Turlock I.D.
Orange square	Eastside W.D.
Dark purple square	Central Calif. I.D.
Dark green square	Del Puerto W.D.
Light green square	Eastin W.D.
Brown square	Oak Flat W.D.
Dark blue square	Patterson I.D.
Light green square	El Solys W.D.
Orange square	West Stanislaus I.D.
Cyan square	Private W.D.



File Path: Z:\GIS\Tasks\Stanislaus_County_GeologicMap_20140425_mxd

FIGURE

Governance – Activity 13

- Adopt General Plan changes to better protect recharge areas and manage land use changes that have an impact on groundwater use and quality.

Governance – Activity 14

- Evaluate the need for an Integrated Regional Water Management Plan and its overall relevance to managing groundwater improvements that enhance agricultural and urban/domestic water supply and water quality.

Governance – Activity 15

- Evaluate the groundwater management strategies (Basin Management Objectives) incorporated in the existing GMP's in the County to determine the adequacy of progress toward implementation.
- Explore institutional mechanisms regarding joint groundwater management strategies with the existing groundwater management plan agencies, including plan updates and amendments, so as to properly implement the exempted portions of the existing Groundwater Ordinance.
- Initial meetings/presentations should include the WAC and the GMP representatives and should be scheduled as soon as feasible.

Financing – Activity 16

- Evaluate and Recommend alternatives for mitigation funds (linked to Thresholds - *Activity 5*).

Financing – Activity 17

- Review potential costs of groundwater management planning and sources of funding for administration of activities.
- 2014 Integrated Regional Water Management Implementation Grant Program (Proposition 84)
 - The Draft Proposal Solicitation Package (PSP) has just been released by the DWR for public comment

Financing – Activity 18

- Evaluate the development and adoption of an IRWMP and its relevance to *financing groundwater improvements* that enhance supplies and water quality (linked to Governance - *Activity 14*).

Enforcement – Activity 19

- Update the existing Stanislaus County Groundwater Mining and Export Prevention Ordinance (linked to *Activity 2*), as needed and deemed necessary.

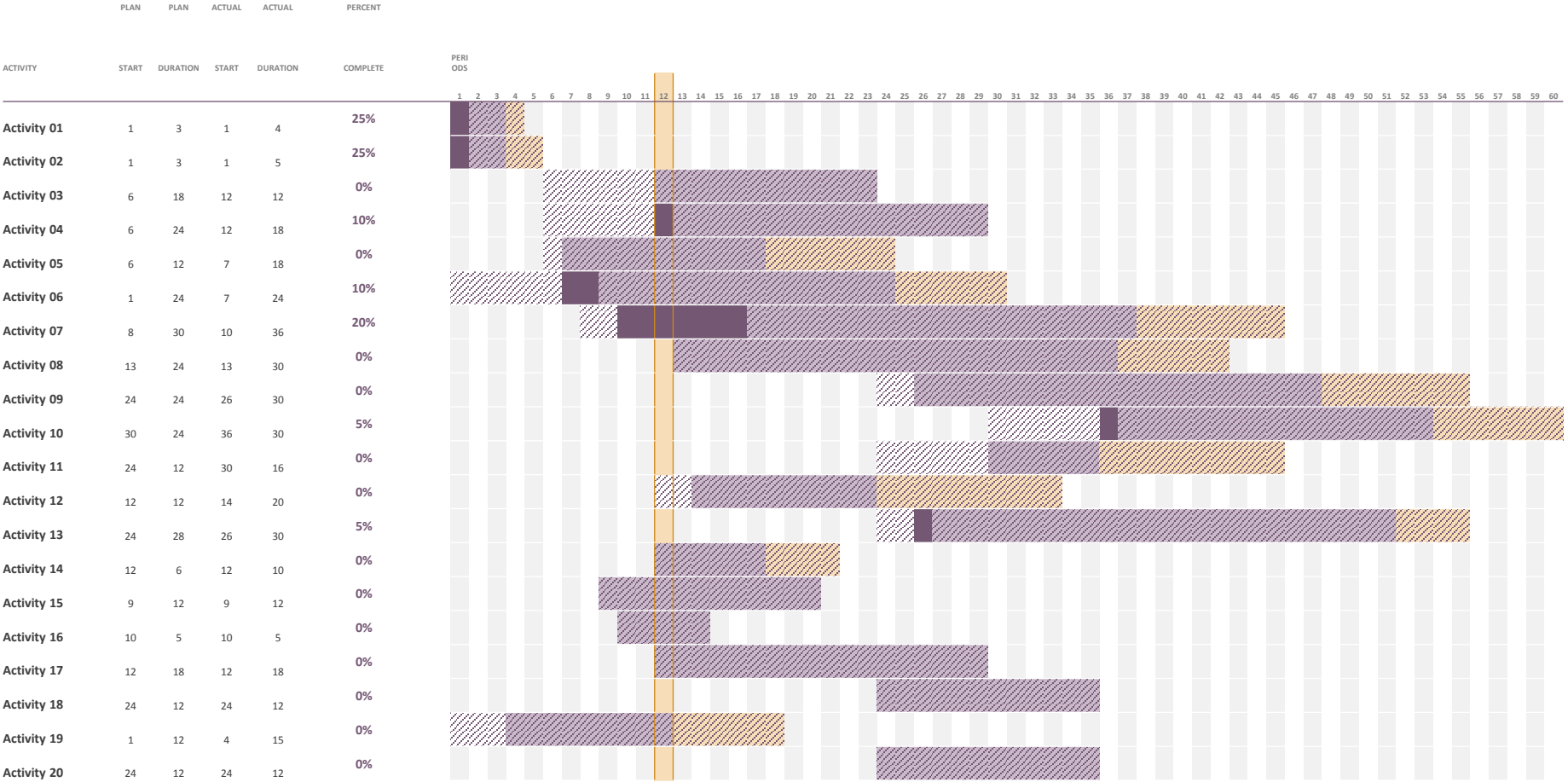
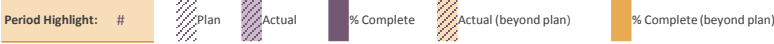
Enforcement – Activity 20

- Establish agreed upon thresholds and mechanisms to manage pumping when critical limits are approached in areas subject to the County ordinance.

Implementation Timing

See attached proposed schedule
(work in progress)

StanCo GW mgmnt



Discussion

Agenda Item IX

Groundwater “Mining”

Groundwater Mining

- ***“The process, deliberate or inadvertent, of extracting groundwater from a source at a rate in excess of the replenishment rate such that the groundwater level declines persistently, threatening exhaustion of the supply or at least a decline of pumping levels to uneconomic depths.”***
- This is an accepted definition that has been adopted in other county groundwater ordinances in other parts of the state.
- The concept of “sustainability” is embedded in the definition of “mining” which is consistent with the Mission Statement of the Water Advisory Committee.

Sustainable Groundwater Management

Association of California Water Agencies (Groundwater Committee)

- “The management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing unacceptable related environmental, economic or social consequences through the development, implementation and updating of plans and programs based on the best available science, monitoring, forecasting and use of technological resources.”

Senator Pavley (SB 1168: Groundwater Management)

- “Means the management of a groundwater basin to provide for multiple long-term benefits without resulting in or aggravating conditions that cause significant economic, social or environmental impacts such as long-term overdraft, land subsidence, ecosystem degradation, depletions from surface water bodies, and water quality degradation, in order to protect the resource for future generations.”

Managed Overdraft

- Some water management agencies “exercise” their basins and utilize regular withdrawals and drawdown (“managed overdraft”) as a tool within their comprehensive multi-source, multi-year planning horizon. These agencies develop relevant measures of “overdraft” and “critical overdraft.”
- DWR Bulletin 118 has the following definitions:
 - GW “overdraft” is “the condition of a ground water basin where the amount of water extracted exceeds the amount of ground water recharging the basin over a period of time.”
 - A “critical condition of overdraft” is defined as water management practices that “would probably result in significant overdraft-related environmental, social, or economic effects.”

Sustainable Groundwater Management

- One consideration would be to include this definition in the existing GWO to address "managed overdraft" (which is what we have occurring in most of the county, **in particular where surface water supplies are made**).
- In this sense, the definition of “**sustainable groundwater management**” becomes the hinge point.
- Very simply put;
 - Mining = *Unsustainable* groundwater extraction
 - Managed Overdraft = *Sustainable* groundwater extraction.

Proposed Ordinance Definitions

- “Sustainable Groundwater Management” as defined in prevailing statutory law and/or California Water Code.
- “Mining” is the unsustainable management and use of groundwater.
- “Managed Overdraft” is method of exercising the groundwater basin where groundwater is regularly used (withdrawals and drawdown) as a tool within an agencies comprehensive multi-source, multi-year planning horizon. These agencies develop relevant measures of “overdraft” and “critical condition of overdraft.”
- Groundwater “overdraft” is the condition of a ground water basin where the amount of water extracted exceeds the amount of ground water recharging the basin over a period of time.
- A “critical condition of overdraft” is water management practices that would probably result in significant overdraft-related environmental, social, or economic effects.

Discussion