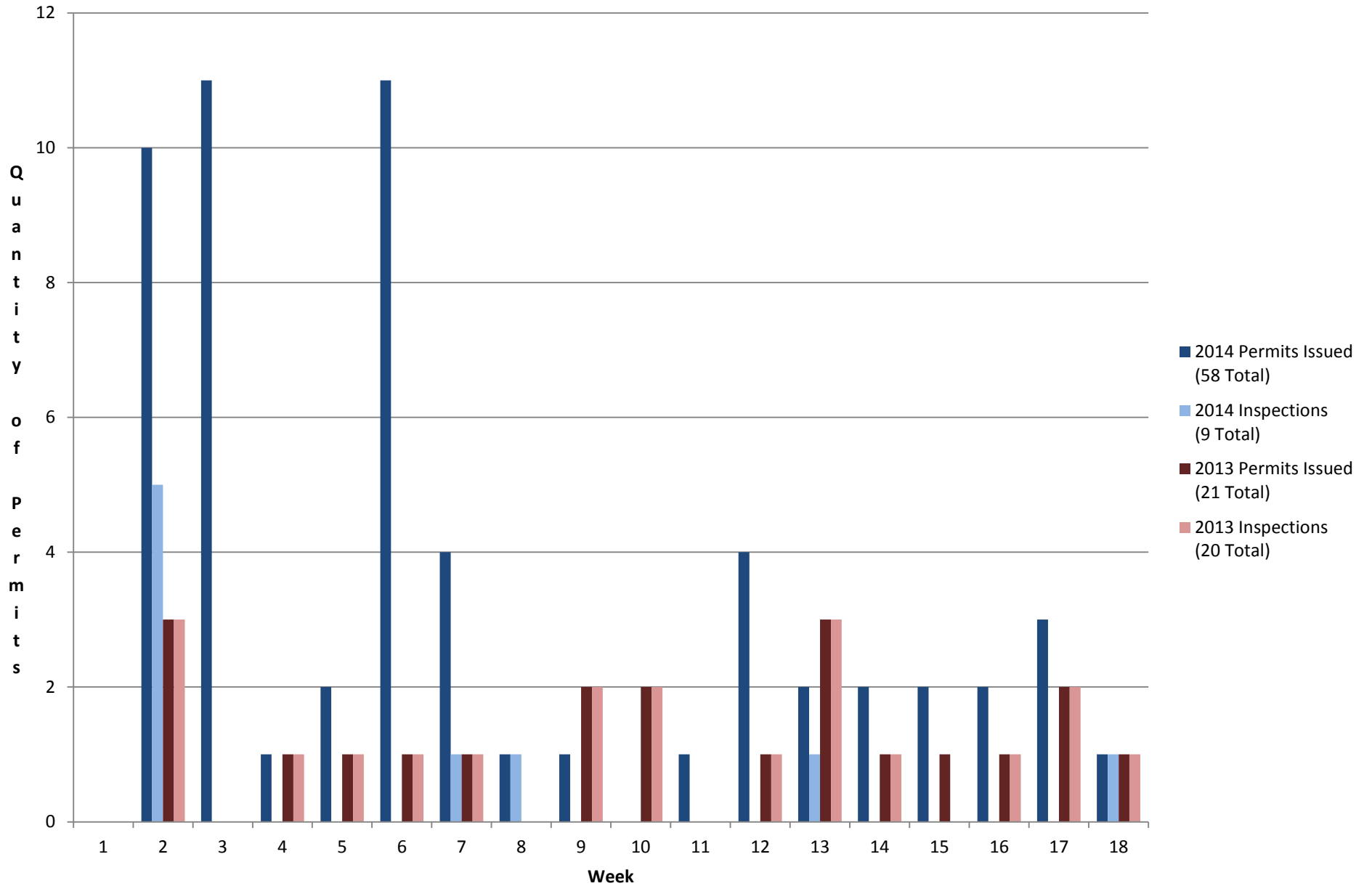


Eastside Ag/Irrigation Well Permits 2013-2014 Comparison



Stanislaus County Groundwater Monitoring Network Program
Draft May 2, 2014

1. Purpose: To establish a program to monitor and collect groundwater information from all areas overlying useable groundwater within Stanislaus County, to encourage the reporting of groundwater elevations by private well owners while maintaining the privacy of that data to the extent requested and authorized by law, and to report monitoring data by sub-area to the public.

2. Establishment of Groundwater Monitoring Sub-areas within the county.

2.1. The WAC, based upon the recommendation of the TAC, shall establish no less than five (5) groundwater monitoring sub-areas within the county.

2.2. Possible sub-areas include, but are not limited to, the following:

a. Eastern Modesto sub-area: North of the Tuolumne River and South of the Stanislaus River, from the eastern county line, west to _____.
Also North of the Stanislaus River encompassing all of the north eastern portions of Stanislaus County.

b. Western Modesto sub-area: From the western boundary of the Eastern Modesto sub-area, west to the San Joaquin River.

c. Eastern Turlock sub-area: South of the Tuolumne River and North of the Merced River, from the eastern county line, west to _____.

d. Western Turlock sub-area: From the western boundary of the Eastern Turlock sub-area, west to the San Joaquin River.

e. Westside sub-area: All that portion of the county from the San Joaquin River, west to the Santa Clara County line, but excluding that portion of the sub-area, which does not overly useable groundwater.

f.

2.3. Each sub-area shall be entitled to at least one representative on both the WAC and the TAC.

3. Monitoring Network.

3.1. The TAC shall develop a monitoring network designed to detect changes in groundwater elevations within each sub-area.

3.2. The monitoring network may include as many of the following as are feasible: dedicated monitoring wells and selected domestic, irrigation, and drainage wells owned by water

Stanislaus County Groundwater Monitoring Network Program
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districts, private owners, and municipal and industrial water purveyors. [Note: The locations of wells owned by public water purveyors cannot be disclosed because of Homeland Security regulations.]

3.2a. Type of well: Domestic, Agriculture, Industrial and Municipal

3.2b. Use of the well: seasonal or continuous

3.2c. Mandatory well information

1. total well depth
2. depth to top perforations
3. well casing diameter
4. Well casing material
5. elevation above sea level
6. year well was constructed

3.2d. Location of well.

1. What five areas does it fall in?
2. GPS location

3.3. Participation in monitoring activities by private well owners shall be on a voluntary basis. If requested by a private well owner and to the extent authorized by law, the county shall treat the groundwater elevation information from a private well as confidential and exempt from release to the public under the California Public Records Act. The county understands and agrees that, unless otherwise authorized by the private well owner, the private well owner is only allowing the collection of groundwater elevation information from the owner's well on the condition that all such information and the location of the well shall remain confidential.

3.4. The selection of the wells to be monitor within each sub-area shall be made by the WAC in consultation with the TAC and the applicable sub-area representative.

4. Monitoring Frequency for Groundwater Elevations.

4.1. At a minimum, groundwater water elevations within each sub-area shall be monitored two (2) times during the year: one (1) measurement prior to the irrigation season in March and one (1) measurement following the irrigation season in November.

Stanislaus County Groundwater Monitoring Network Program
Draft May 2, 2014

4.2. If the WAC determines based upon the TAC's evaluation of the groundwater elevation data that monitoring needs to occur on a more frequent basis, then the county may make changes to the monitoring schedule as then available resources allow.

5. Monitoring Protocol and Review of Technical Data.

5.1. All data shall be collected and recorded through methods generally accepted in the applicable scientific field.

5.2. The TAC shall establish methods for data collection, storage, and dissemination. Methods for collecting groundwater elevations shall follow established quality assurance and quality control guidelines.

5.3. Standard methods for review and analysis of the collected data shall be established by the TAC.

5.4. The TAC shall review, analyze, and evaluate the data collected at least annually after the November measurements are collected and that analysis shall consider all available pertinent hydrologic and precipitation data and any additional information provided by the sub-area representatives.

6. Reporting.

6.1. The county shall disseminate information on the monitoring network, data collected, and TAC reports to the public and through a county website.

6.2. The WAC shall report to the Board of Supervisors on the Groundwater Monitoring Network Program during February of each year.

7. We recommend that Stanislaus County Adopt the Integrated Regional GW Plan Final Draft and amend it so that the whole county can be included and participate.

8. We recommend that Stanislaus County Board of Supervisors lobby the Water Board in order to protect all of Stanislaus County's Surface Water Rights that are held by both public Irrigation Districts and Private Entities within the Stanislaus County.

Stanislaus County should speak with one voice on all Water Issues both Groundwater and Surface Water Issues.

[end of draft program]

COORDINATED GROUNDWATER MANAGEMENT IN STANISLAUS COUNTY

Proposed Work Plan FY 2014/15 through FY 2018/19 (Draft - 5/12/2014)

WORK PLAN TASKS	FY2014/15	FY2015/16	FY2016/17	FY2017/18	FY2018/19
Bundle I					
Activity 1 – Scoping document for coordinated groundwater management. This includes finalizing the document and meeting with the TAC, WAC & Board of Supervisors to review and approve it. Staff Time: 40hrs.	\$3,000	\$0	\$0	\$0	\$0
Activity 2 - Mining definition, preliminary thresholds adoption. This work is in progress and the TAC will continue discussing this topic. The definition will then go forward to the WAC & Board of Supervisors for approval. Staff Time: 8hrs.	\$600	\$0	\$0	\$0	\$0
Bundle II					
Funding (F-17) Review potential costs of groundwater management planning and sources of funding for administration of activities. Consider moving this Activity up into the 1st year of the Work Plan. Staff time 8hrs.	\$600	\$0			
Bundle III					
Enforcement (E-19) Update the groundwater ordinance as needed. Staff time 16hrs.	\$1,200	\$0	\$0	\$0	\$0
Monitoring (M-9) Construct an improved water well permit process that assists in providing information necessary to improve groundwater management. Consider moving this Activity up into the 1st year of the Work Plan. Staff Time 80hrs.	\$0	\$6,000	\$0	\$0	\$0
Bundle IV					
Monitoring (M-8) Develop an <i>agreement</i> on coordination and management of information systems needed for groundwater data. Consider moving this Activity up into the 1st year of the Work Plan. Staff Time 80hrs.	\$6,000	\$0	\$0	\$0	\$0

Proposed Work Plan FY 2014/15 through FY 2018/19 (Draft - 5/12/2014)

<p>Monitoring (M-7) Conduct sufficient data analysis to determine groundwater conditions and how to obtain missing data. This would include the tasks of Data Gathering, Identifying & Obtaining missing Data, GIS Mapping, etc. (this task was performed in the Well Field Optimization Project Phase II (WFO-P2) and cost around \$50K; however, the work here may not be as intensive). Consultant and Staff Time \$40,000.</p>	\$40,000		\$0	\$0	\$0
<p>Monitoring (M-10) Develop a long term groundwater network and data acquisition for ongoing assessment, and further needs of groundwater management for quantity & quality. A significant amount of coordination work will be required with all of the agencies within the County. Staff Time 240 hrs.</p>	\$0	\$0	\$18,000	\$0	\$0
<p>Monitoring (M-11) Develop a reliable accounting system to monitor groundwater pumping. Staff Time 80hrs.</p>	\$6,000	\$0	\$0	\$0	\$0
Bundle V					
<p>Thresholds (T-3) Systematically evaluate the geology and soils for recharge and uses of groundwater in the subbasins in the County. This would include the tasks of Data Collection, Hydrogeological Analysis, and conducting a Water Balance Study (Modesto is spending ~ \$150K for similar work over an area roughly 1/2 the size; however, the consultant for the City will be hired to conduct a 'turn-key' level of service; whereas, County staff may conduct much of the initial data gathering effort resulting in the an anticipated similar cost). Consultant and staff time: \$150,000.</p>	\$150,000		\$0	\$0	\$0
<p>Governance (G-12) Develop and adopt an AB3030 / SB1938 guided Groundwater Management Plan (GMP) for areas not covered by existing GMP's. Utilizing the extensive amount of information from the existing GMP is expected (this effort should also include the County's adoption of the existing GMP's). Consultant and Staff Time \$75,000.</p>	\$0	\$75,000	\$0	\$0	\$0
Bundle VI					

Proposed Work Plan FY 2014/15 through FY 2018/19 (Draft - 5/12/2014)

<p>Governance (G-15) Discuss and develop alternate institutional mechanisms for joint groundwater management strategies with the existing groundwater management plan agencies. <i>This will involve a number of meetings on groundwater management strategies with the Groundwater Subbasin Associations and their member agencies. Staff time: 120hrs.</i></p>	\$0	\$9,000	\$0	\$0	\$0
<p>Governance (G-14) Evaluate the IRWMP and its relevance to managing groundwater improvements that enhance supplies and water quality. <i>This will involve meetings with the IRWMP Project Manager and IRWMP Steering Committee, as necessary, to possibly include additional groundwater protection language into the IRWMP Plan and include related projects of benefit. Consider moving this Activity up into the 1st year of the Work Plan. Staff time: 16hrs.</i></p>	\$0	\$1,200	\$0	\$0	\$0
<p>Funding (F-18) Evaluate IRWMP and its relevance to financing groundwater improvements that enhances the quality of water. <i>Consider moving this Activity up into the 1st year of the Work Plan. Staff time 8hrs.</i></p>	\$600	\$0	\$0	\$0	\$0
Bundle VII					
<p>Thresholds (T-6) Evaluate and determine groundwater elevation levels for groundwater use under County jurisdiction. <i>This is a groundwater yield Analysis. Consultant and Staff Time: \$50,000.</i></p>	\$50,000	\$0	\$0	\$0	\$0
<p>Enforcement (E-20) Establish agreed upon thresholds and mechanisms to manage pumping when critical limits are approached in areas subject to the County ordinance. <i>This will involve a number of meetings with the Groundwater Subbasin Associations and their member agencies. Staff time 240hrs.</i></p>	\$0	\$0	\$18,000		
Bundle VIII					
<p>Thresholds (T-4) Obtain technical information and develop the planning and policy needs to improve groundwater recharge opportunities and groundwater conditions in the County. <i>This would include numerous Planning Commission, Council Committee, Council, and Board meetings with the various agencies in the County. Staff Time: 120hrs.</i></p>	\$9,000		\$0	\$0	\$0

Proposed Work Plan FY 2014/15 through FY 2018/19 (Draft - 5/12/2014)

<p>Governance (G-13) Adopt general plan changes to protect recharge areas and manage land use that has an impact on groundwater use and quality. <i>A significant amount of coordination work will be required with all of the agencies within the County (this assumes 'recharge areas of interest' have already been identified under Activity 3).</i> <i>Staff time: 240hrs.</i></p>	\$0	\$18,000		\$0	\$0
Bundle IX					
<p>Thresholds (T-5) Provide technical evaluation procedures on how to adequately determine factual claims of groundwater users that have lost their ability to pump groundwater, which the concept further involves to generate money by creating a funding from well permit fees or other means available to the County. <i>Staff time: 80hrs.</i></p>	\$0	\$0	\$6,000	\$0	\$0
<p>Thresholds (T-16) Recommend alternatives for mitigation funds (linked to Activity 5 above). <i>Staff time 8hrs.</i></p>		\$0	\$0	\$600	\$0

TOTAL	\$267,000	\$109,200	\$42,000	\$600	\$0
FINAL COST	\$418,800				

NOTES:

The estimated 'staff time' cost of \$75/hr. includes benefits and is an average for the County's Water Resources Manager, County support staff, and other member agency staff. However, the Work Plan does not include the annual salary of the Water Resources Manager beyond a portion of the total 'staff time' shown above. The Work Plan does not include any environmental review (CEQA) or public outreach work.

100 Day Action Plan

- Recommendations for Board of Supervisors consideration on June 10, 2014
 - Bundles & Prioritization
 - Timeline/Phasing
 - Cost Estimates
 - Funding Alternatives

Bundle I

BOS Action

- 100 Day Action Plan Recommendations for Implementation
- Groundwater Mining Definition Revision

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. It is NOT proposed to use this definition.
- 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 deliveries 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” 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.” (Pavley, SB 1168)
- “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.

Bundle II

Funding (F-17)

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

Bundle III

Enforcement (E-19)

- Update the existing Stanislaus County Groundwater Mining and Export Prevention Ordinance, as needed and deemed necessary.
 - Groundwater Mining definition and linkage to sustainable groundwater management

Monitoring (M-9)

- Revise the County water well construction permit process that assists in providing information necessary to improve groundwater management.

Bundle IV

Monitoring (M-8)

- Develop an agreement regarding the coordination and management of and information database 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 (M-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 (M-10)

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

Monitoring (M-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.

Bundle V

Thresholds (T-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.*

Governance (G-12)

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

Bundle VI

Governance (G-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.

Governance (G-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.
- 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

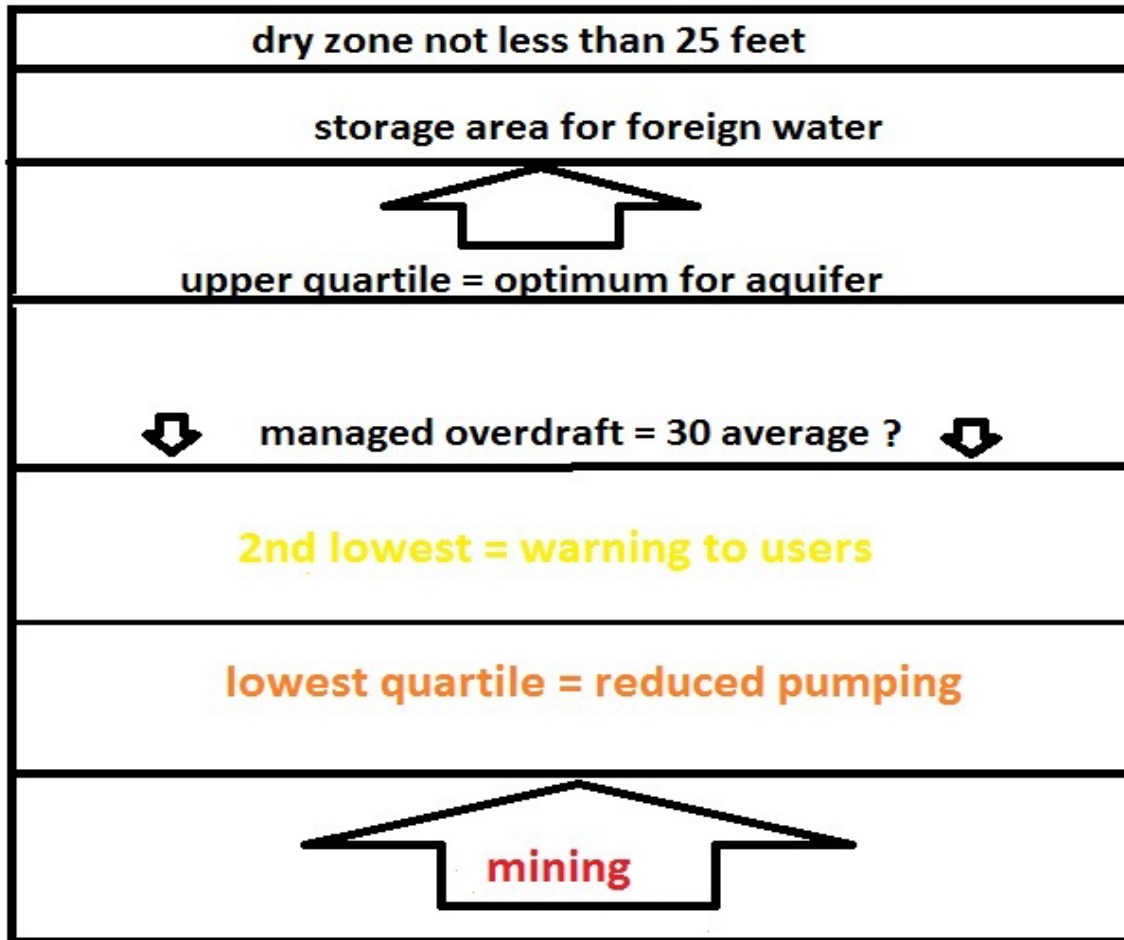
Funding (F-18)

- Evaluate the development and adoption of an IRWMP and its relevance to *financing groundwater improvements* that enhance supplies and water quality.

Bundle VII

Thresholds (T-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.



Enforcement (E-20)

- Establish agreed upon thresholds and mechanisms to manage pumping when critical limits are approached.

Bundle VIII

Thresholds (T-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.

Governance (G-13)

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

Bundle IX

Thresholds (T-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.

Funding (F-16)

- Evaluate and Recommend alternatives for mitigation funds related to adversely affected domestic wells.

Discussion