"Framework for the Implementation of Coordinated Groundwater Management

In

Stanislaus County"

May 2014 Update

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 goal of the ordinance is to make sure groundwater management is provided for all areas of the County that have groundwater. The ordinance and the allied actions by the Board of Supervisors galvanize both coordination and implementation. The coordination is provided by the formation of a County Water Advisory Committee, a Technical Advisory Committee and a staff Water Resources Manager. The goal of the coordination effort is to work with existing groundwater management authorities in the County while also developing the equivalent structure and management for areas in the County that are not part of any existing plan. The ordinance further 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 management plan areas. The following outlines the implementation process needed to attain the goals of the County, the ordinance and the joint groundwater management partners in the existing plan areas. The process described below includes both the elements and the proposed timing of the direct and coordinated management activities. Activities of a direct substantive nature primarily managed by the County are noted as "*County*" and joint, coordinated activities are noted as "*jointly*". Finally the preliminary estimated costs of many of the activities are also included as a supplement to this framework. The "*Activities"* are then tentatively sequenced on the attached Gantt chart.

The Implementation Elements

The following are the elements needing implementation:

<u>100 Day Action Plan</u>

Activity 1 – The *County* will develop a scoping document for coordinated groundwater management and implementation of the ordinance (this document).

Activity 2 – The *County* will re-construct the" mining" definition, and propose a preliminary thresholds adoption process.

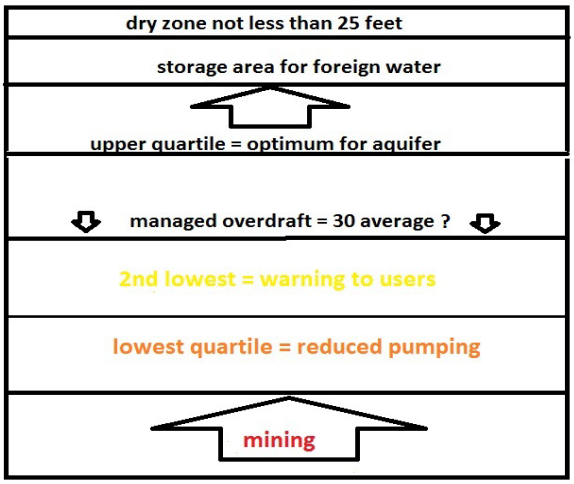
Thresholds Element:

Activity 3 - The *County*, where needed and/or information is lacking and no other management authority exists, will systematically evaluate the geology and soils for groundwater sub-basin recharge and discharge areas (subsurface movement) 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. Based on current information the suggested preliminary area for this investigation is the northeast portion of the County.

Activity 4 - Jointly 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 – The "*County"* will 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 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 6 – The "*County"* with the advice and approval of the WAC and TAC will evaluate and determine appropriate groundwater elevation levels for groundwater use and sustainability in the areas under County jurisdiction. A preliminary suggested conceptual diagram for this exercise is as follows:



Monitoring Element:

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

Activity 8 – *Jointly* develop an agreement on coordination and management of information systems needed for groundwater data; what, why, where and financing?

Activity 9 – *Jointly* construct an improved water well permit process that assists in providing information necessary to improve groundwater management.

Activity 10 – *Jointly* 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 – The *County* will propose a reliable, repeatable water use accounting system 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. All withdrawal facilities with a rated pump capacity of less than 100 gallons per minute will not be required to measure or submit such groundwater withdrawal records.

Governance Element:

Activity 12 – The *County* will develop and adopt AB3030/SB1938 plans for areas not covered by such a plan.

Activity 13 – The *County* will 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 – *Jointly* evaluate IRWMP and its relevance to managing groundwater improvements that enhance supplies and water quality.

Activity 15 – *Jointly* develop alternate institutional mechanisms (MOU? JPA?) for 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 institutional arrangements. Initial meetings should include the WAC and the GMP representatives and should be scheduled as soon as feasible.

Financing Element:

Activity 16 – The *County* will recommend alternatives for mitigation funds (linked to *Activity 5* above).

Activity 17 – *Jointly* review potential costs of groundwater management planning and sources of funding for administration of activities.

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

Enforcement Element:

Activity 19 - The *County* will review and update the groundwater ordinance (linked to *Activity 2* above), as needed.

Activity 20 – The *County* will establish thresholds and mechanisms to manage groundwater use when critical limits are approached in areas subject to the County ordinance.

Implementation Timing

See attached proposed schedule.

100 Day Action Plan

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

Bundle I

Funding (F-17)

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

Bundle II

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 III

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 IV

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 V

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

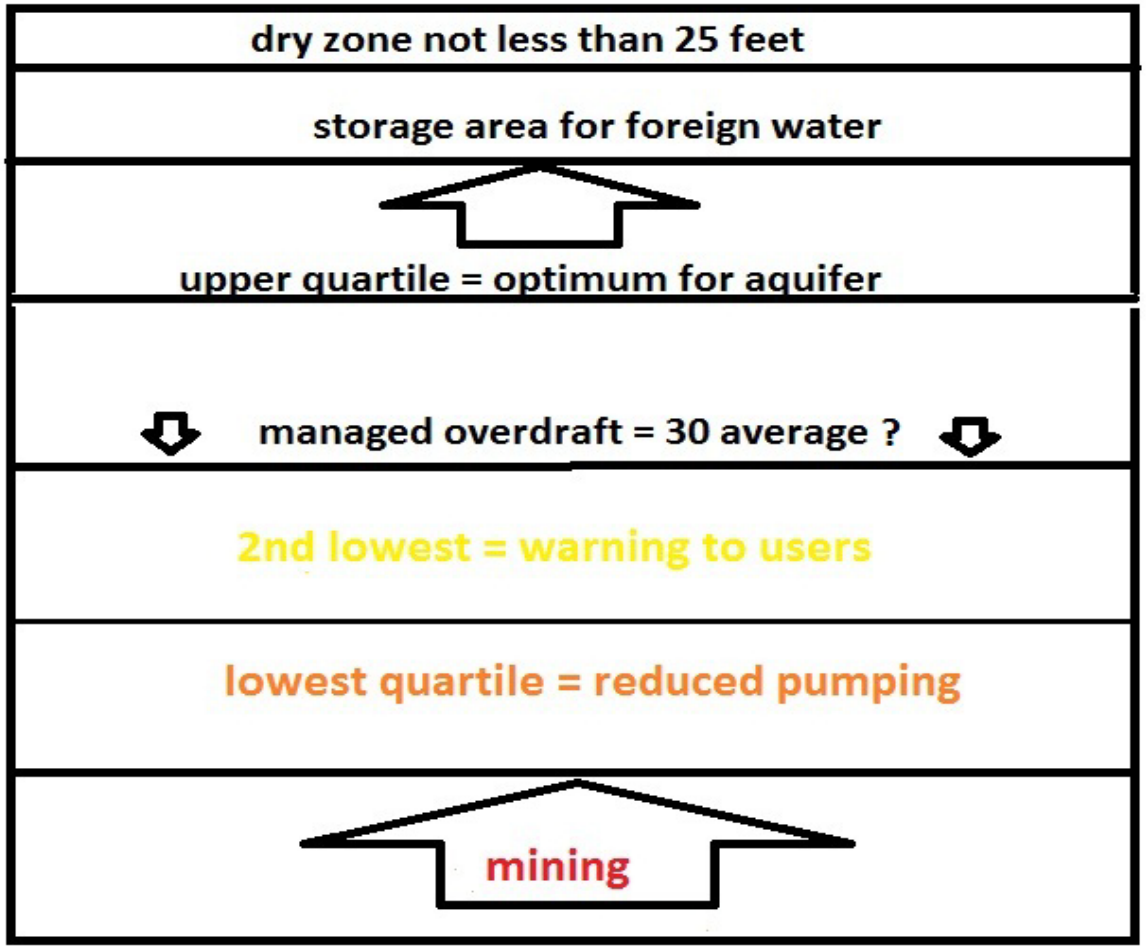
Funding (F-18)

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

Bundle VI

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.


dry zone not less than 25 feet
storage area for foreign water
upper quartile = optimum for aquifer
managed overdraft = 30 average ?
2nd lowest = warning to users
lowest quartile = reduced pumping
mining

Enforcement (E-20)

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

Bundle VII

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 VIII

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.

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