The Nexus of Groundwater and Land Use Planning
Background Material

September 12-13, 2013
Stanford University

Groundwater has become an increasingly important component in California's water supply in recent years. This has lead, in many regions of the State, to declining groundwater elevations, and in some areas, groundwater overdraft. Legislation implemented in California in the past 20 years reflects the increasing need for collaboration between land use planners and resource managers to protect groundwater resources. While these laws have continued to evolve with the passage of Senate Bills (SB) 610 and 221, several challenges and constraints to these partnerships still exist.

This Uncommon Dialogue focuses on three questions fundamental to the integration of land use planning with groundwater management and seeks to make specific recommendations to leverage and enhance existing requirements and propose new recommendations for sustainable groundwater and land use management. These questions are:

1) What are the major legal, economic, social and technical constraints or challenges facing collaboration between groundwater managers and land use planners?
2) Do Integrated Regional Water Management Plans (IRWMPs) provide opportunities for improved coordination between land use and groundwater management?
3) Can we use or leverage other water and land use planning laws to strengthen existing resource management? If so how?

Background Material

What follows is a brief history of land use and groundwater regulation and legislation in California, as well as information on three case studies.

City and County Comprehensive or General Land Use Plans

Under state planning law, cities and counties must adopt a long-term comprehensive or general plan for the physical development of the county or city and any land outside its boundaries which bears relation to the city or county's planning. The plans typically consist of a statement of development policies and include one or more diagrams and text setting forth objectives, principles, standards, and plan proposals. General Plans consist of seven mandatory elements and any optional element that the county or city chooses to adopt. The seven mandatory elements for a general plan are: 1) Land use, 2) Circulation, 3) Housing, 4) Conservation, 5) Open Space, 6) Noise and 7) Safety.

The conservation element of the general plan addresses the identification, conservation, development and utilization of natural resources, including water, forests, soils, waterways, wildlife and mineral deposits. This element may also consider issues such as flood control, water and air pollution, erosion, conversion of farmland, endangered species, and the timing and impact of mining and logging activities. While some elements of the general plan may overlap – and the entire general plan must be internally consistent - the conservation element should primarily focus on natural resources. The portion of the conservation element addressing water issues must be developed in coordination with all local agencies that deal with water in your community.

Many counties have used the conservation element of their General Plans as a policy guide for groundwater resources. Groundwater resource provisions in the General Plan incorporate specific goals, policies, actions and development standards intended to improve the coordination of groundwater supply and land use planning within the county. Those policies may also stabilize groundwater levels and protect the basin from contamination. Goals recognizing the value of voluntary cooperative efforts, rather than specific county regulatory actions, have been developed to provide guidance for the county's planning, decision-making and information collection and dissemination.

In addition to the conservation element, some counties and water management districts are addressing groundwater management issues in an optional stand-alone Water Resources Element of their General Plan. The Water Element provides background information on water resources in the region, as well as making goals, objectives, and policies for the sustainable use and protection of water resources in the area. Finally, the Water Resource Element provides a description of the implementation program for the goals, objectives and policies outlined in the document.

Land Use Planning and Water Legislation

SB901

Prior to the passage of SB901 in 1995 requiring local planning agencies to consider the availability of water when approving a new project, the California Environmental Quality Act (CEQA) was the main way that potential impacts from a proposed development project were assessed for water and groundwater resources. According to the original bill, as part of the CEQA, a Public Water Supplier (PWS) with more than 3,000 service connections was to provide a water supply assessment – but if not provided in 30 days, the lead agency must assume that the water purveyor has nothing to submit (where there could be any number of reasons for not having the assessment done). Little direction for the water supply assessment was provided in the bill, other than asking whether currently available supplies could meet the water needs of the proposed project. Further, cities and counties still retained the authority to approve a project when water availability

was not firmly established. Finally, the assessment was only solicited if the project required an Environmental Impact Report (EIR), involved adopting and/or changing a specific or general plan and resulted in an increase in population density or building intensity.

SB221 & SB610[1]

SB610 (Chapter 643, Statutes of 2001) and SB221 (Chapter 642, Statutes of 2001) amended state law, effective January 1, 2002, to improve the link between information on water supply availability and certain land use decisions made by cities and counties. SB610 and SB221 are companion measures that seek to promote more collaborative planning between local water suppliers and cities and counties. Both statutes require detailed information regarding water availability to be provided to the city and county decision-makers prior to approval of specified large development projects. Both statutes also require this detailed information be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects.

Both measures recognize local control and decision-making regarding the availability of water for projects and the approval of projects. Under SB610, water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects (as defined in Water Code 10912 [a]) subject to the California Environmental Quality Act. Under SB221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

If coordinated and comprehensive water supply planning is underway at the time that the SB610-water assessment is prepared, compliance with SB221 will be greatly facilitated. SB221 is intended as a 'fail safe' mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs when it should – before construction begins.

Not every project that is subject to the requirements of SB610 would also require the mandatory water verification of SB221 (e.g. if there is no subdivision map approval). Conversely, not every project that is subject to the requirements of SB221 would also require the environmental document to contain an SB610 water supply assessment. Projects approved before January 1, 2002 were not subject to the requirements of SB610 or SB221; however, some projects may have been subject to the requirement to prepare a water supply assessment as set forth in SB901 of 1995 (Chapter 881, Statues of 1995).

[1] For more information on the implementation of SB611 and 221, see Ellen Hanak's 2010 report entitled, "Show me the Water Plan: Urban Water Management Plans and California's Water Supply Adequacy Laws" and her 2005 Public Policy Institute of California report, "Water for Growth: California's New Frontier."

A foundational document for compliance with both SB610 and SB221 is the Urban Water Management Plan (UWMP). Both of these statutes repeatedly identify the UWMP as a planning document that, if properly prepared, can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners, and developers will all be able to utilize this document when planning for and proposing new projects.

UWMPs serve as important source documents for cities and counties as they update their General Plan. Conversely, General Plans are source documents as water suppliers update their UWMPs. These planning documents are linked and their accuracy and usefulness are interdependent. It is crucial that cities /counties and water suppliers work closely when developing and updating these planning documents.

SB610 and SB221 serve to insert the PWS into the project approval chain of events. The land use agency must formally request the evaluation, and the PWS typically has 90 days to create and approve the requisite supply evaluations.

Of the two bills, SB610 has the broadest applicability. All "projects" that meet any of the following criteria require the assessment:

- A proposed residential development of more than 500 dwelling units
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 ft^2 of floor space
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 ft^2 of floor space
- A proposed hotel or motel, or both, having more than 500 rooms
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 ft^2 of floor area
- A mixed-use project that includes one or more of the projects specified in this subdivision
- Any project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project

SB221 applies to any "subdivision," defined as:

- A proposed residential development of more than 500 dwelling units, if the PWS has more than 5,000 service connections
- Any proposed development that increases connections by 10% or more, if the PWS has fewer than 5,000 connections
- Does NOT apply to any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses
- Does NOT apply to housing projects that are exclusively for very low and low-income households

Under SB221, the PWS is required to provide "written verification" of "sufficient water supplies." This bill defines sufficiency in a different manner than SB610, by requiring consideration of the following factors:

- The availability of water over the past 20 years
- The applicability of any urban water shortage contingency analysis prepared per Section 10632 of the Water Code
- The reduction in water supply allocated to a specific use by an adopted ordinance
- The amount of water that can be reasonably relied upon from other water supply projects, such as conjunctive use, reclaimed water, water conservation and water transfer

The written verification must also provide evidentiary proof of the water supply, and the standard for that proof is largely similar to SB610. In most cases, the water supply assessment prepared under SB610 will meet that requirement.

These water supply evaluations cannot prohibit a land use agency approving a project, but the approving agency must recognize that the SB610 water supply assessment must be included in its environmental document for the project. For SB221, if a written verification concludes that water supplies are insufficient, the approving agency can either find that water sources not considered by the PWS will be available or waive the condition imposed by SB221.

Special Recommendations on the Implementation of SB221 & SB610:
The California Department of Water Resources (DWR) makes the following recommendations for the implementation of SB221 and SB610. Given that water suppliers face statutory time limits within which to provide water supply information, it is recommended that they check with planning staff from the cities and counties that the suppliers serve to see if the planning staff plan to process project permits requiring either water supply assessments or verifications of sufficient water supply.

It is also recommended that city and county planning staff immediately identify water suppliers serving their land-use planning area and determine the availability of water supply information to facilitate timely compliance with SB610 and SB221. Both SB610 and SB221 suggest that UWMPs may be a good source of information for developing water assessments and verifications. Therefore, it is recommended that each water supplier review its adopted UWMP to determine if the supply and demand analysis meets the requirements of these two laws, including the substantial evidence required by SB221.

Groundwater Management Legislation: AB3030, SB1938, SBX7-6, SB1672 and AB359[2]

AB3030

The Groundwater Management Act, commonly referred to as AB3030, was signed into law on September 26, 1992, and became effective on January 1, 1993. The legislation is designed to provide local public agencies with increased management authority over groundwater resources in addition to their existing groundwater management authority. The Association of California Water Agencies' Groundwater Committee, in response to the Environmental Protection Agency's (EPA) Comprehensive State Ground Water Protection Programs (CSGWPP) developed AB3030.

The CSGWPP promoted comprehensive groundwater quality management on the state level with EPA providing proposed oversight and coordinated funding. The program encouraged states to adopt groundwater quality management guidelines and/or regulations which local agencies would be compelled to follow. Pressure for groundwater management programs also developed at both state and local levels as a result of worsening overdraft and groundwater contamination problems. In response to mounting pressure for authorization of statewide groundwater management legislation, the legislature opted instead for voluntary groundwater management at the local level.

Water Code section 10753.7 recommends, but makes no requirements for twelve components for inclusion in a groundwater management plan, including:

- The review of land use plans and coordination with land use planning agencies to assess activities that create a reasonable risk of groundwater contamination.

In 1999, DWR was required by legislation to develop components that should be included in any groundwater management plan. One of the 14 components suggests connecting with local land use planning:

- Describe any current or planned actions by the local managing entity to coordinate with other land use, zoning, or water management planning agencies or activities.

SB1938

The 2002 amendments to Water Code section 10750 *et seq.*, enacted through passage of SB1938 (Statutes of 2002, Chapter 603), require new groundwater management plans prepared under that authority (commonly referred to as AB3030 plans) to include component number one below. To be eligible for funding administered by DWR for groundwater or groundwater quality

[2] To learn more about groundwater management legislation, refer to the Department of Water Resources, "Bulletin 118 – Update 2003."

projects, an agency must prepare and implement a groundwater management plan that includes components 2-6 below.

1) Include documentation that a written statement was provided to the public "describing the manner in which interested parties may participate in developing the groundwater management plan," which may include appointing a technical advisory committee.
2) Include a plan by the managing entity to "involve other agencies that enables the local agency to work cooperatively with other public entities whose service area or boundary overlies the groundwater basin." A local agency includes "any local public agency that provides water service to all or a portion of its service area."
3) Provide a map showing the area of the groundwater basin, as defined by DWR Bulletin 118, with the area of the local agency subject to the plan as well as the boundaries of other local agencies that overlie the basin in which the agency is developing a groundwater management plan.
4) Establish management objectives (MOs) for the groundwater basin that is subject to the plan.
5) Include components relating to the monitoring and management of groundwater levels, groundwater quality, inelastic land surface subsidence, and changes in surface-water flow and surface-water quality that directly affect groundwater levels or quality or are caused by groundwater pumping. Consider additional components listed in Water Code section 10753.8 (a) through (l).
6) Adopt monitoring protocols for the components in number 5. Monitoring protocols are not defined in the Water Code, but the section is interpreted to mean developing a monitoring program capable of tracking changes in conditions for the purpose of meeting MOs.

<u>SBX7-6</u>

In November 2009, the California Legislature passed a series bills focusing on the management, monitoring and conservation of the State's water resources. SBX7-6 mandates a statewide groundwater elevation monitoring program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. The amendment requires collaboration between local monitoring entities and DWR to collect and disseminate groundwater elevation data. Groundwater elevations are published on the publicly available California Statewide Groundwater Elevation Monitoring (CSGEM) database.

SBX7-6 provides that:

- Local parties may assume responsibility for monitoring and reporting groundwater elevations
- DWR work cooperatively with local Monitoring Entities to achieve monitoring programs that demonstrate seasonal and long-term trends in groundwater elevations

- DWR accept and review prospective Monitoring Entity submittals, then determine the designated Monitoring Entity, notify the Monitoring Entity and make that information available to the public.
- DWR perform groundwater elevation monitoring in basins where no local party has agreed to perform the monitoring functions.
- If local parties (for example, counties) do not volunteer to perform the groundwater monitoring functions, and DWR assumes those functions, then those parties become ineligible for water grants or loans from the state.

SB1672

The State's Integrated Regional Water Management (IRWM) program was established in 2002 in response to SB1672. IRWM is a collaborative effort to coordinate the management of water quality, quantity and reliability issues within a region. IRWM attempts to address the many issues and differing perspectives of the entities and stakeholders involved in water management by involving multiple agencies, stakeholders, individuals and groups across jurisdictional, watershed, and political boundaries. Since the passage of SB1672, several State propositions have passed providing grant opportunities for IRWM Planning and Implementation.

AB359

AB359 was passed in 2011 and requires that for a public agency to be eligible for state funding for water projects, groundwater management plans must include groundwater recharge maps. The groundwater recharge maps must be provided to local land use planning agencies for use in land use planning decisions. This statute is non-prescriptive as to how the recharge mapping is completed and what type of information is provided to the local land use planning agencies.

Case Studies

Case Study #1: Kings River Conservation District

In a targeted effort to encourage collaboration between land use planners and groundwater managers, the Kings River Conservation District recently received a grant from the California Water Foundation (CWF) that focuses on providing education and awareness to land-use planners and decision makers about groundwater conditions and issues.

To read more about the Kings River Conservation District, links between land use planning and the basin's IRWMP, an example of a conflict between land use and groundwater management , and the CWF grant click the hyperlinks above.

Case Study #2: San Luis Obispo

The San Luis Obispo (SLO) County Planning Department is currently struggling with groundwater and land planning issues. Of primary importance in the region is:

1) the issue of groundwater as a common good and the free rider problem;
2) apportioning the costs for water infrastructure across widely differing land uses; and
3) the regulation of new development to reduce groundwater demand. The SLO County Planning Department has been experimenting with the idea that in times of resource shortage, one can design programs to reduce overall demand while increasing development. The basis for this experimentation is that, 1) new development is more water (and energy) efficient than existing development; 2) inefficient existing development out numbers new development.; and 3) new development will pay into a fund to pay to be used to retrofit existing development.

To read about the Paso Robles Groundwater Basin Resource Capacity Study and recent basin activities here click on the hyperlink above.

On Tuesday August 27, 2013 the SLO County Board of Supervisors passed an emergency moratorium on new wells and new irrigated cropland in the Paso Robles basin. Details of the hearing and ordinance can be found in this article from the SLO Tribune.

Case Study #3: Butte County

In 2010 the Butte County Department of Water and Resource Conservation adopted the Butte County General Plan 2030. The document focuses on protection and conservation of water resources throughout the county through a variety of measures, including the identification and characterization of groundwater recharge zones in a format suitable for use by land use planners. To read more about groundwater recharge mapping and its potential application in land use planning in Butte County click on the hyperlink above.