

April 23, 2008

# Groundwater Management and Drinking Water Quality Issues

LEGISLATIVE ANALYST'S OFFICE

Presented to:

Assembly Budget Subcommittee No. 3 on Resources

Hon. Ira Ruskin, Chair





## Roadmap for LAO Presentation

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### Section 1: Overview of Groundwater and Drinking Water Issues

- A background on groundwater and drinking water issues.
- Roles and responsibilities of state, local, and federal agencies.
- Historical funding of groundwater and drinking water—regulation, management, and infrastructure financial assistance.

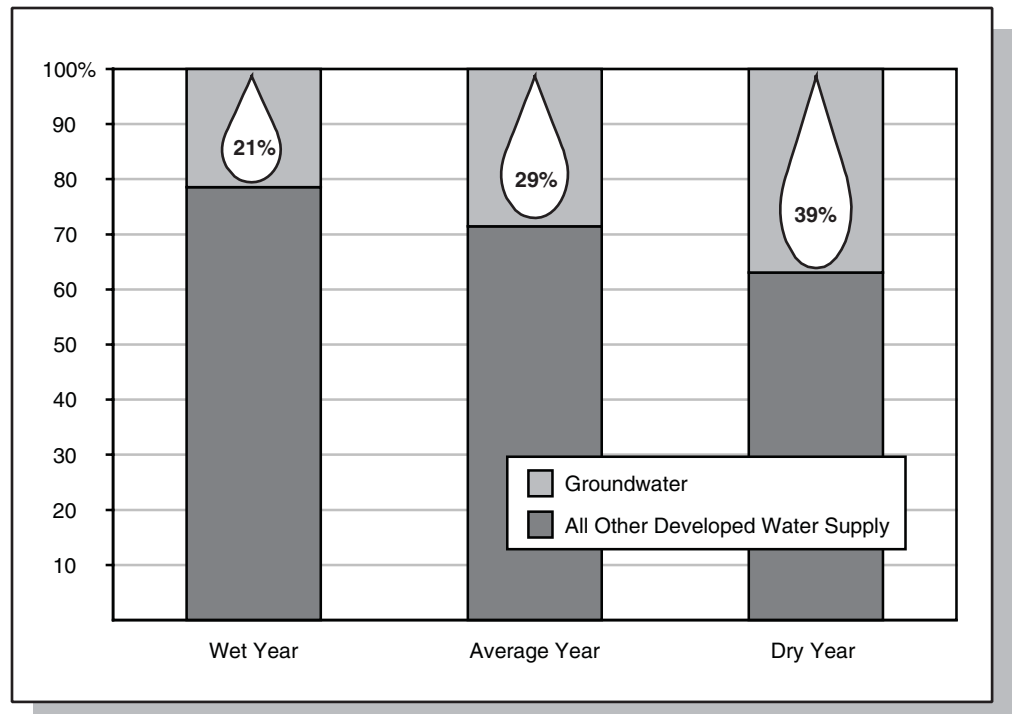
### Section 2: Funding Availability for Groundwater Programs

- Governor's plan for a comprehensive Delta solution.
- Bond fund balances.



## Background

### Groundwater Is Major Contributor to California's Water Supply, More So in Average and Dry Years:



- Groundwater supplies around 30 percent of California's overall water supplies in normal rain years and up to 40 percent in dry years.
- In some areas where surface supplies are not accessible or economically feasible, groundwater provides 100 percent of a community's public water.
- About 43 percent of Californians obtain at least some of their drinking water from groundwater sources.



## Background

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### Groundwater Challenge—Water Supply and Drinking Water Quality Link:

- ***Loss of Water Source Can Be Expensive to Locals.***

Discovery of contamination in a drinking water well often leads to closure of the well. Users of the well must then find replacement sources of water. In areas where other sources such as surface water or alternate groundwater resources are not available, bottled water may be the only available water supply.

The Department of Public Health reported that nitrate (a groundwater contaminant) was detected in levels that exceed safe drinking water standards in 921 public drinking water sources, mostly in agricultural areas.

- ***Cleanup Is Costly.*** Cleaning up groundwater can be very expensive. For example, the Underground Storage Tank (UST) Cleanup Fund was established in 1989 to provide financial assistance to the owners and operators of USTs containing petroleum to remediate conditions caused by leaking USTs—which include contamination of groundwater supplies. (The fund is supported by an annual assessment based on the volume of petroleum in the tank, levied on tank owners.) Annual expenditures have varied between about \$180 million to \$280 million over the last ten years. Individual site cleanups have reached as much as \$1.5 million.



## Public Agency Roles and Responsibilities

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### Who Manages Groundwater?

- ***No Statewide Groundwater Use Permitting System.***

California is one of two states without a comprehensive state-managed groundwater use permitting and groundwater rights system. In California, landowners are in general entitled to the reasonable use of groundwater on property overlying the groundwater basin. In contrast, the state's surface water is appropriated through a statewide water rights permitting system.

- ***Court Adjudications and Local Regulations.*** Rather, in addition to court-adjudicated groundwater rights in some parts of the state (mainly in urban Southern California), groundwater is regulated on an ad-hoc basis statewide by a disparate group of local agencies. These agencies include local districts with statutory authority to manage groundwater (such as water conservation districts), local water agencies that have adopted groundwater management plans pursuant to statute, and cities and counties that have adopted local groundwater ordinances. Local groundwater ordinances are largely designed to protect the local jurisdiction's water supply and, as such, can operate to limit groundwater transfers out of the local area.

- ***State Supports Local Groundwater Management, Including Water Quality Improvements.*** While the state does not directly regulate groundwater use, the Legislature has supported local groundwater management through financial incentives, mainly bond-funded programs. Many of these, including the Integrated Regional Water Management (IRWM) Program, seek to increase water supply by allowing the cleanup or removing contaminated water in groundwater basins as an eligible project type.



## Public Agency Roles and Responsibilities (Continued)

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### Key State Laws Governing Groundwater:

Bill	Support/Incentives for Local Management	Protect or Monitor Groundwater Quality
Porter-Cologne Water Quality Act (1969)		X
The Pesticide Contamination Prevention Act of 1985		X
Local Groundwater Management Act of 1992 (AB 3030)	X	
Local Groundwater Management Assistance Act of 2000 (AB 303)	X	
Groundwater Quality Monitoring Act of 2001		X
Amendment to Land Use Laws 2001 (SB 221)	X	
Amendment to the Urban Water Management Act 2001 (SB 610)	X	
Groundwater Management Water Code Amendment 2002 (SB 1938)	X	



## Public Agency Roles and Responsibilities (Continued)

### Many State Agencies Are Involved in Groundwater and Drinking Water Management:

	Water Supply	Regulate to Protect Water Quality	Science and Monitoring	Cleanup	Local Financial Assistance
California Public Utilities Commission	X	X			
Department of Food and Agriculture			X		X
Department of Pesticide Regulation		X	X		
Department of Public Health		X	X		X
Department of Toxic Substances Control		X	X	X	X
Department of Water Resources	X		X		X
Integrated Waste Management Board		X			
Office of Environmental Health Hazard Assessment			X		
Pollution Control Financing Authority					X
State Water Resources Control Board		X	X	X	X



## Public Agency Roles and Responsibilities

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### State Water Resources Control Board (SWRCB) and Department of Public Health (DPH) Are Key Players in Water Quality Regulation:



#### DPH—Drinking Water Program

- Regulates water systems with over 15 connections for water quality; oversees water-recycling projects; permits water treatment devices; and provides various technical assistance and financial assistance programs for water system operators, including bond and federally funded programs for infrastructure improvements in public water systems to meet state and federal safe drinking water standards.
- Prior to passage of Proposition 50 (November 2002), the department had a limited role in groundwater issues through the Public Water Supervision System program funded mainly by fees on public water systems, federal grants, and the General Fund. Propositions 50 and 84 (November 2006) expanded the department's role to include local assistance grant programs for source water protection projects, many of which are groundwater projects.



#### SWRCB

- Primary state entity responsible for meeting state and federal water quality standards within the state.
- State and regional water boards assess ground water quality, permit discharges which may impact ground and surface waters, and investigate and direct the cleanup of contaminated groundwater resources. May require groundwater monitoring to assess the extent of contamination and impact of treatment technologies.





## Public Agency Roles and Responsibilities

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- Administers the Groundwater Ambient Monitoring and Assessment (GAMA) Program, a multiyear program designed to obtain information on groundwater quality in California.
- Works with Department of Water Resources (DWR) to administer and set guidelines for IRWM Program and other programs where crossovers exist between water quality and water supply.
- In addition to administering the UST Cleanup Fund discussed earlier, administers several local assistance programs (funded from bond funds and federal funds) to improve water quality.



## Public Agency Roles and Responsibilities (Continued)

### Federal Government— A More Limited Role:

- **No Direct Federal Regulation.** The federal government does not directly administer programs to regulate the quality of groundwater as it does with surface water under the Clean Water Act. In most cases, the federal water quality role has been delegated to the state to administer, such as in implementing federal safe drinking water standards.
- **Federal Support for Groundwater Programs.** Federal legislation and federal agencies have played an important role in supporting California groundwater management through technical and financial assistance programs.

#### Key Federal Agencies and Roles

Agency	Role
U.S. Environmental Protection Agency	Works with California Department of Public Health to ensure that groundwater drinking water supply sources comply with mandated federal drinking water programs and standards. Administers grant and loan programs for water treatment and cleanup.
U.S. Geological Survey	Conducts studies and provides groundwater monitoring for the State Water Resources Control Board's Groundwater Ambient Monitoring and Assessment Program. Monitors national water use and conducts scientific studies.
U.S. Bureau of Reclamation	Monitors the impact of the surface water on groundwater basins in areas of the Central Valley Project, a surface water distribution project similar to the State Water Project.



## Historical Funding

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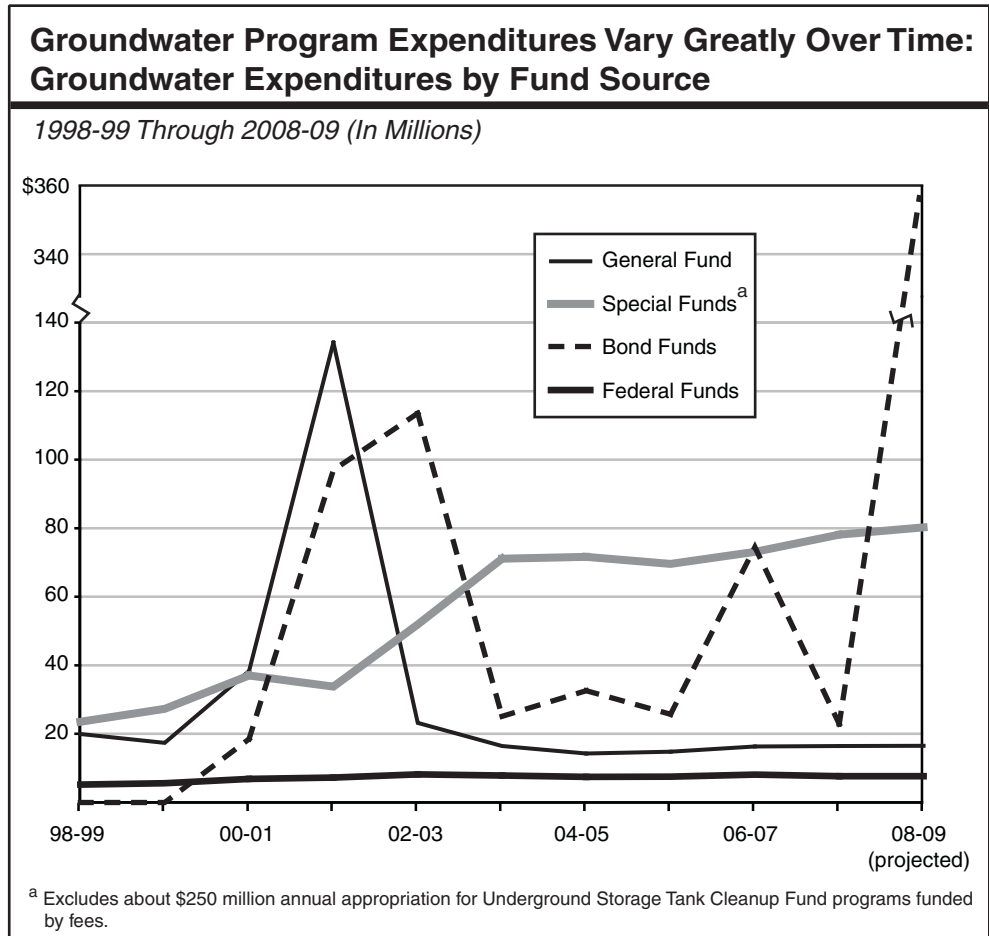
### Funding Groundwater and Drinking Water Programs— An Overview:

- ***Separating Groundwater Expenditures Difficult.*** Many agencies work on groundwater and drinking water issues. However, much of this work is done in conjunction with other program priorities. For example, a program addressing groundwater contamination might also address surface water and soil contamination. Where possible, we have tried to separate out groundwater expenditures.
- ***Most Ongoing Funding From Special Funds (Mainly Fees).*** Most funding for ongoing groundwater quality programs has been from special funds (mainly fees) for such purposes as regulating water quality, reducing leaks from underground storage tanks, cleaning up groundwater sources, and managing groundwater resources.
- ***Bond Funds Provide Large One-Time Influxes.*** Bond funds have provided large one-time influxes of money for many programs from drinking water to integrated regional water management. One program, the GAMA Program, is using a \$50 million appropriation (in addition to some baseline special fund support) from Proposition 50 to conduct a comprehensive assessment of statewide groundwater quality. This program is spread out over several years.



## Historical Funding

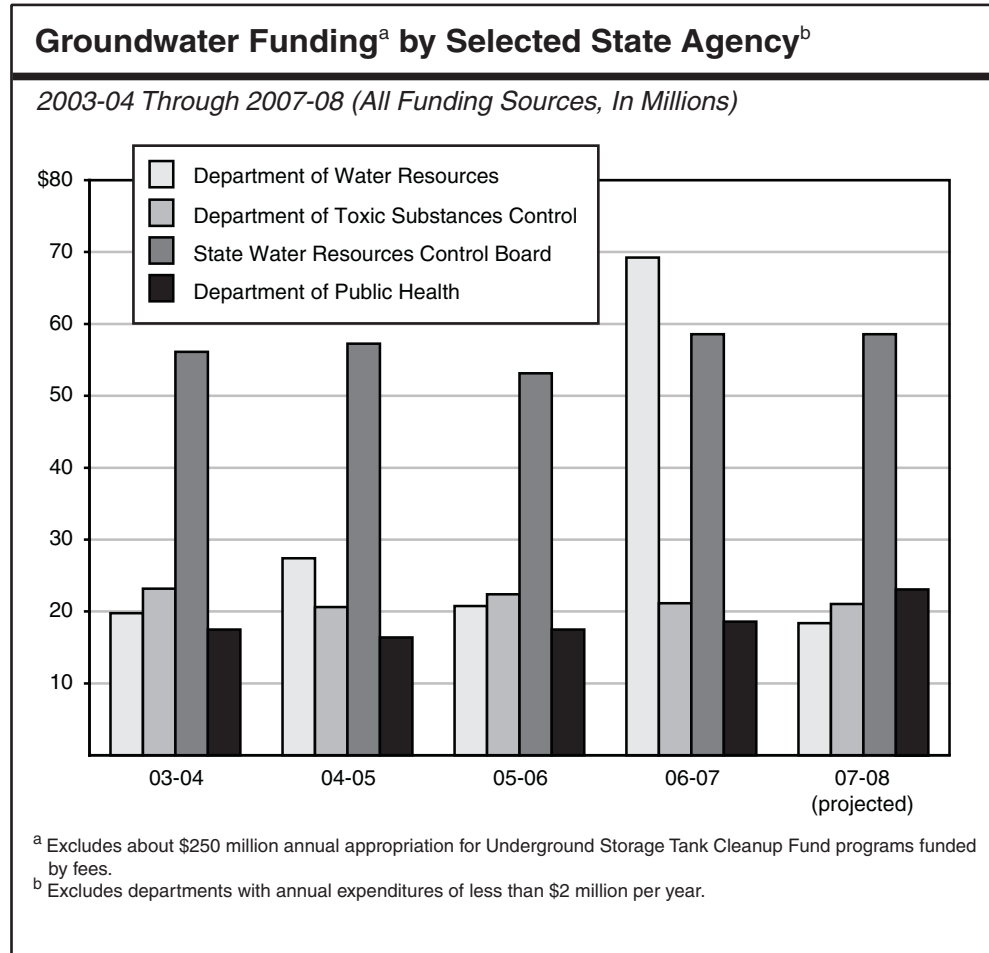
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# Historical Funding

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## Funding Availability

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### Governor's Proposal on Comprehensive Delta Solution Seeks to Expedite Funding for Groundwater Storage Projects:

As part of a presentation to the Senate Natural Resources and Water Committee on the Governor's proposal for a comprehensive Delta solution, the administration proposed to expedite funding for groundwater storage projects. Our office analyzed the current/prior level of investment and available funding for this and related groundwater management purposes.



#### Current/Prior Level of Investment

- **Funding to Date.** The state has expended at least \$352 million (mainly Propositions 13 and 50 bond funds) in local assistance for groundwater storage and groundwater recharge, including a proportion (about 40 percent) of funding from IRWM Program. Of the approximately \$58 million remaining to be allocated for IRWM from previous appropriations, \$23.2 million is estimated to be used for groundwater projects. Additionally, the department plans to award \$6.4 million in the current year for the Local Groundwater Assistance Program (Chapter 708, Statutes of 2000 [AB 303, Thomson]) for projects to improve groundwater management.
- **Expediting Groundwater Funding.** The DWR and SWRCB recently have expedited a second round of IRWM grant funding of about \$150 million. Based on previous allocations, about \$60 million will be used for groundwater projects.
- **Local Funding Exceeds State Funding.** Though we do not have an estimate of local funding, it is likely based on required local matches and a qualitative assessment of local activities that local funding for groundwater management exceeds state local assistance funds by more than 2 to 1.



## Funding Availability

(Continued)



### Available Funding

- ***Proposed 2008-09 Budget and Available Funding.*** Funding for groundwater storage projects is proposed through the IRWM Program in the budget year. If past guidelines are used, approximately \$480 million of the \$1.2 billion total available for IRWM over the coming years will address groundwater management in some manner. Additionally, the SWRCB expends a limited amount of Proposition 50 bond funds (less than \$10 million annually) for the GAMA Program for state-wide analysis and monitoring of groundwater basins (Chapter 599, Statutes of 2001 [AB 599, Liu]).
- ***Opportunity to Redirect IRWM Guidelines.*** The DWR has not yet drafted guidelines for Proposition 84 IRWM local assistance grants. The Legislature may wish to set its own priorities on the use of these funds if it wishes to alter the traditional 40 percent allocated to groundwater programs.



## Funding Availability

(Continued)

### Bond Funds Available for Specific Groundwater Purposes:

<b>Pre-2006 Water/Resources Bond Fund Conditions<sup>a</sup> By Selected Programmatic Area</b>			
<i>(In Millions)</i>			
	<b>Total Authorization In Bonds</b>	<b>2008-09 Proposed Budget</b>	<b>Balances (July 1, 2009)<sup>b</sup></b>
Groundwater Supply and Seawater Intrusion Control (DWR and SWRCB)	\$265	\$2	\$25
Water Recycling (SWRCB)	100	11	11
Drinking Water (DPH)	555	111	41
Contaminant Treatment (DWR)	50	17	19
Integrated Regional Water Management (DWR and SWRCB)	500	10	7

<sup>a</sup> Includes Propositions 204, 13, and 50.  
<sup>b</sup> Reflects most recent data available.  
DWR = Department of Water Resources, SWRCB = State Water Resources Control Board, and DPH = Department of Public Health.





## Funding Availability

*(Continued)*

### Recent Bond Funds Increase Funding Availability for Groundwater Programs:

<b>Proposition 84 Fund Conditions By Selected Programmatic Area</b>			
<i>(In Millions)</i>			
	<b>Total Authorization In Bonds</b>	<b>2008-09 Proposed Budget</b>	<b>Balances (July 1, 2009)<sup>a</sup></b>
Integrated Regional Water Management (DWR)	\$1,000	\$350	\$615
Drinking Water (DPH and SWRCB)	380	40	195
Water Supply Planning (DWR)	65	16	46
Agricultural Water Quality (SWRCB)	15	8	—

<sup>a</sup> Reflects most recent data available.  
DWR = Department of Water Resources, DPH = Department of Public Health, and SWRCB = State Water Resources Control Board.