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THE WATER WE DRINK: WHAT IS CALIFORNIA DOING TO ENSURE ITS WATER IS SAFE?

A Review of the State's Drinking Water Program and How the Water We Drink Is Monitored for Safety

"Every citizen of California has the right to pure and safe drinking water," according to California state law. And how safe is the state's water? The most recent statistics indicate that in 2007 about 97 percent of Californians who received their drinking water from a public water system received water that met drinking-water quality standards, compared to the national state average of 92 percent. However, given that California's approximately 8,000 public water systems vary in size, location, and fiscal condition, ensuring that all Californians receive safe drinking water is a challenge.

It's the Law: Californians Have a Right to Clean Drinking Water
The responsibility for ensuring that California's drinking water is healthy and clean rests with the California Department of Public Health's Drinking Water Program.

California's Drinking Water Program: An Overview

California's drinking water program was created in 1915, when the California Bureau of Sanitary Engineering was established by the California State Board of Health. The bureau's primary duty at that time: prevent and eliminate water-borne diseases.

In 1974 the federal Safe Drinking Water Act (SDWA)[1] was passed to protect public health by regulating the nation's public drinking water supply, which requires the United States Environmental Protection Agency (US EPA) to establish mandatory nationwide drinking water standards. It also requires water systems to

monitor public water supplies to ensure drinking water standards are met and report to consumers if the standards are not met.

Two years after the SDWA was passed, California adopted its own safe drinking water act. The state's act has two main goals: to continue the state's drinking water program, and to be the delegated authority (referred to as the "primacy") by the US EPA for enforcement of the federal SDWA. And as required by the federal act, the state's drinking water program must set drinking water standards that are at least as stringent as the US EPA's standards. Each community water system also must monitor for a specified list of contaminants, and the findings must be reported to the California Department of Public Health.

In 1989 the California Legislature passed Assembly Bill 21 (Sher, Chapter 823, Statutes of 1989), which amended California's safe drinking water act. This law requires the development of a comprehensive safe drinking water plan, sets forth requirements for adopting primary drinking water standards, requires large water systems to identify all reasonable measures to reduce contaminant levels in their water, and requires operators of public water systems to notify the department and the public whenever the system is not in compliance with drinking water standards.

California's Water Quality Responsibilities: Who's In Charge of What?

Department	Key Water Quality Responsibilities
California Department of Pesticide Regulation	• Develops mitigation measures to prevent pesticide contamination of groundwater and surface water.
California Department of Public Health	• Enforces the federal and state safe drinking-water acts. • Ensures the quality of the state's drinking water from the point where water is pumped from a drinking-water well or surface-water intake point.
California Department of Toxic Substances Control	• Ensures that groundwater at toxic sites is monitored and remediated.
California Office of Environmental Health Hazard Assessment	• Performs health-risk assessments related to setting drinking water standards.
California Public Utilities Commission	• Ensures that customers of regulated water utilities receive reliable service.
California State Water Resources Control Board and California Regional Water Quality Control Boards	• Protects the quality of surface water and groundwater to the point where the water enters a drinking-water well or surface-water intake point.
Delta Stewardship Council	• Improves Sacramento–San Joaquin Delta water quality for drinking, agriculture, the environment, and Delta species.

With the adoption of Assembly Bill 21, the Legislature intended to enact a law that would be more protective of public health than the federal drinking water act.

Today, the California Department of Public Health's Drinking Water Program is the state party responsible for enforcing both the federal and state safe drinking-water acts. The Department of Public Health's main responsibilities:

- issue permits to drinking water systems
- inspect water systems
- review and approve proposed treatment facilities
- monitor water quality
- set and enforce drinking water standards and requirements
- administer and award infrastructure grants and loans.

Seven state governmental departments have responsibility over the quality of the state's water; however, the California Department of Public Health is the only state agency responsible for the quality of the state's *drinking* water. (See "California's Water Quality Responsibilities: Who's In Charge of What?" on the opposite page for a description of agency responsibilities.)

How Does California Ensure the Quality of Its Drinking Water?

The Drinking Water Program is responsible for the enforcement of the federal and state safe drinking-water acts and the regulatory oversight of about 8,000 public water systems throughout the state.

In 2007 an estimated 36.6 million (97 percent) of the state's 37.9 million residents received their water from public water systems. The remaining population either received water from private wells or very small water systems not regulated by the state. About half of California's drinking water is drawn from surface water and the other half comes from groundwater. (Surface water is from lakes, rivers, streams, reservoirs, and the ocean; groundwater is found below the earth's surface.)

How Is California's Drinking Water Tested for Safety?
Public water systems must comply with state and federal drinking water requirements, which dictate that state and local agencies inspect water systems, monitor water quality, and enforce numerous drinking-water requirements and standards.

The California Department of Public Health's responsibility for the quality of these drinking water sources begins at the point where water is pumped from a drinking-water well or surface-water intake point. Before the water is pumped, the State Water Resources Control Board and the Regional Water Quality Control Boards maintain responsibility for the quality of these drinking water sources.

The state's Drinking Water Program directly regulates more than 3,400 large and small public water systems with a budget of about $26 million (approximately $2.4 million comes from the state's general fund), and a regulatory staff of about 145 people working in more than 20 locations statewide. These public water systems serve 25 to more than 200,000 people.

California has delegated the drinking-water-program regulatory authority for small water systems (fewer than 200 service connections) in 33 California counties to local primacy agencies (counties). These primacy agencies are responsible for regulating approximately 4,600 small public-water systems statewide; small water-system owners may be churches, schools, restaurants, and hotels. About 50 employees work on these county programs statewide.

> Drinking Water System Permits

The Safe Drinking Water Act requires any operating public water system to have a water supply permit from the department or local primacy agency. A public water system is one that serves drinking water to at least 25 people for at least 60 days throughout the year, or one that serves domestic water to 15 or more service connections.

The US EPA requires any new public water system to demonstrate it has, or will have, adequate technical, managerial, and financial capability to reliably operate a public water system in compliance with all drinking water requirements for the foreseeable future. Additionally, permit holders are required to submit a water quality monitoring plan, water-systems operations plan, and an emergency-response plan.

Aside From Water, What Else Is in That Glass of Water?
Drinking water standards specify the maximum level of chemicals that may be present in drinking water. While these standards primarily are based on how the chemicals could affect one's health, they also take into account technical and economic feasibility.

Is California's Drinking Water Quality Improving?

Evaluating how the state's drinking water quality has changed over the years is difficult, as drinking water standards have become tougher, technology to measure contaminant levels has improved, and the number of water systems being monitored and evaluated has increased.

One of the California Safe Drinking Water Act's provisions requires the state Drinking Water Program to submit to the California Legislature a comprehensive Safe Drinking Water Plan. This plan must include the California Department of Public Health's assessment of the overall quality of the state's drinking water, the identification of specific water quality problems, an analysis of the known and potential health risks that may be associated with drinking water contamination in California, and specific recommendations to improve drinking water quality.

The last (and only) plan was submitted in 1993. As a result, the California Department of Public Health is being sued for not preparing a Safe Drinking Water Plan, as required by Health and Safety Code Section 116355 *(Gonzalez et al. v. Horton and California Department of Public Health,* Court of Appeal, Fifth Appellate District No. F060147 [Superior Court No. 09CECG03979]).

Without a report card on the quality of the state's drinking water, California residents and policy makers are unable to easily assess whether their water is safe to drink—or even how their drinking water has improved over time.

The department and local primacy agencies issued 15 new water system permits in fiscal year 2008–09.

> Water System Inspections

The Drinking Water Program (DWP) and local primacy agencies inspect water systems to detect potential problems and eliminate them before the problem results in a water quality failure. For water systems under the DWP's jurisdiction, state law establishes minimum inspection frequencies of one, two, or three years, depending on the source of the water and/or the treatment provided. Required inspection frequencies for water systems under local primacy agencies are two or five years, which also depends on the source of the water and/or the treatment provided.

Over the past five years, the DWP and local primacy agencies have conducted an average of 3,500 water-system inspections per year. In addition, an average of 2,000 sanitary surveys—complete reviews of the physical structures of water systems, evaluation of treatment facilities, operation

and maintenance activities of the system, and compliance with all monitoring requirements placed on the systems—were conducted annually over the last five years.

> Water Quality Monitoring

DWP monitors water quality to ensure compliance with all drinking water standards. These monitoring requirements vary depending on the type of public water system, the water source, and how vulnerable the source and system are to potential sources of contamination.

California requires routine and follow-up monitoring: routine monitoring is conducted at prescribed frequencies to assess the quality and changes in water delivered to consumers over time; follow-up monitoring is conducted to confirm results of routine monitoring when a drinking water standard has been exceeded or an organic chemical or microbial agent has been detected. Since 2001, electronic submissions of the water-quality analyses have been required.

> Enforcement

The department may take various types of enforcement actions for drinking-water law violations, such as the failure to meet drinking water standards, failure to notify the public of drinking-water standard violations, and failure to meet monitoring requirements. If a water system is likely to correct the violation, the DWP usually sends a corrective-action letter specifying the violation, the corrective actions required, and a target date by which the problem should be corrected. In 2009–10, the department issued 803 corrective-action letters.

If a water system violates monitoring or notification requirements, the department notifies the public about the system's failure

TABLE 1
Enforcement Actions

	2005–06	2006–07	2007–08	2008–09	2009–10
Corrective-Action Letters	1,018	1,438	1,127	1,108	803
Public Notifications	83	131	135	75	36
Citations	325	396	598	577	585
Compliance Orders	13	20	40	128	35
Court Actions	1	0	0	0	0

TABLE 2
Fines and Penalties

	2005–06	2006–07	2007–08	2008–09	2009–10
Small Water Systems	$3,200	$2,550	$1,750	$3,650	$6,050
Large Water Systems	$22,430	$8,310	$4,127	$4,487	$0

and has the authority to issue citations, compliance orders, and fines. Citations and compliance orders specify in detail the violation, the violation history, any actions taken by the water system to make corrections (or lack thereof), and a schedule of actions to be taken by the water system to bring it into compliance.

Citations generally are given to water systems to make low-cost and short-term corrective actions and may be issued with or without fines; compliance orders usually are issued for long-term and expensive corrective measures. In rare circumstances, the department may initiate court action against a public water system. During 2009–10, the department issued 585 citations; 35 compliance orders; $6,050 in fines; and no court actions. (See "Table 1: Enforcement Actions" and "Table 2: Fines and Penalties" on the opposite page for data on enforcement actions.)

> Water System Violations

The California Department of Public Health is required to report drinking-water-system violations to the US EPA and the public. Each quarter, the department submits water-system inventory information, violation incidents, public and consumer notification violations, and information on enforcement activities to the US EPA's Safe Drinking Water Information System. Additionally, the department is required by federal law to submit an annual compliance report of violations of the primary drinking-water standards and requirements to the US EPA. (As of the publication of this

What Is the Quality of Your Drinking Water?

The federal Safe Drinking Water Act requires most public water systems to deliver to customers a brief drinking-water-quality report by July 1 of every year. The report must include information on the system's source water, levels of any detected contaminants, compliance performance with drinking water rules, and other specified educational information.

In most systems, these reports must be delivered to each customer, either with his or her water bill or in a separate mailing (systems that serve more than 100,000 people also must post their reports on the Internet).

In addition, the California Department of Public Health annually submits to the United States Environmental Protection Agency a compliance report listing violations of primary drinking water standards and requirements. These reports are posted on the department's Web site under the Compliance section, and specific public water system violations are listed by county and by contaminant in the appendices: http://www.cdph.ca.gov/certlic/drinkingwater/pages/publications.aspx

report, the department has not submitted 2008 data to the US EPA and is out of compliance with the above-mentioned reporting requirement.)

The compliance report includes violations for: (1) maximum contaminant levels (MCLs), (2) treatment techniques (methods to control unacceptable levels of certain contaminants), (3) variances and exemptions, and (4) monitoring and reporting requirements. The state is required to make the annual compliance report available to the public; the department posts the report on its Web site. (See "Table 3: California's Drinking Water Standard Violations Reported to the US EPA" below for a summary of violations reported by the department.)

In 2007 approximately 1.2 million California residents—a little more than 3 percent of the population that receives water from public water systems—may have been affected by water that violated a drinking-water standard or treatment technique as reported by the department to the US EPA.[2]

The US EPA's national goal in 2007 for drinking-water regulatory programs: for 95 percent of the population served by public water systems to receive drinking water that complies with health-based drinking-water standards. California's compliance rate was 97 percent; the average compliance rate for all states that year was 92 percent.

Water systems also are required to monitor and verify that the levels of contaminants

TABLE 3
California's Drinking Water Standard Violations Reported to the US EPA (2002–07)

VIOLATION CATEGORY	VIOLATIONS					
	MAXIMUM CONTAMINANT LEVELS / TREATMENT TECHNIQUES					
	2002	2003	2004	2005	2006	2007
Inorganic Contaminants	86	159	89	101	120	273
Organic Contaminants	4	8	2	4	5	4
Radionuclide Contaminants	1	2	6	3	7	10
Total Coliform Rule	579	732	563	643	723	456*
Disinfectant and Disinfection By-Products Rule	2	3	18	100	74	31
Surface-Water Treatment Rule and Enhanced Surface-Water Treatment Rule	94	87	39	70	50	26
Filter Backwash Recycle Rule	–	–	–	–	0	0
Lead and Copper Rule	–	–	–	0	1	4

*In 2007 there were 37 acute violations of the total coliform rule and 419 non-acute violations of the total coliform rule. An acute violation indicates a public water system test detected fecal coliform or E. coli bacteria in the drinking water supply. A non-acute violation indicates a public water system test detected total coliform bacteria (an indicator the water may be contaminated with potential disease-causing bacteria) in greater than 5 percent of the drinking-water distribution system's water samples analyzed in a one-month period.

TABLE 4
California's Monitoring and Reporting Violations (2002–07)

VIOLATION CATEGORY	VIOLATIONS					
	MONITORING AND REPORTING					
	2002	2003	2004	2005	2006	2007
Inorganic Contaminants	90	119	76	106	330*	334
Organic Contaminants	32	60	116	31	3	18
Radionuclide Contaminants	1	0	12	5	9	22
Total Coliform Rule	922	1,107	799	725	790	680
Disinfectant and Disinfection By-Products Rule	0	2	74	170	80	113
Surface-Water Treatment Rule and Enhanced Surface-Water Treatment Rule	4	30	15	17	11	18
Filter Backwash Recycle Rule	–	–	–	–	0	0
Lead and Copper Rule	–	–	–	17	29	21
Public Notification Requirements	–	–	–	1	5	0
Consumer Confidence Report Notification Requirements	–	–	168	213	122	106
Variances and Exemptions	–	–	–	0	0	0

*According to the California Department of Public Health, the increase in inorganic contaminant monitoring and reporting violations between 2005 and 2006 was due to the lowered arsenic drinking water standard that went into effect in 2006.

present in the water do not exceed the maximum contaminant levels. A monitoring violation occurs when a water system fails to have its water tested as required, or fails to report test results correctly to the primacy agency. Furthermore, water systems must notify their customers when they violate drinking water standards or fail to comply with the conditions of a special circumstance (the California Department of Public Health is authorized to issue variances and exemptions from meeting drinking water standards under special circumstances).

These customer notifications must include a clear and understandable explanation of the nature of the violation, potential adverse health effects from the violation, steps the water system is taking to correct the problem, and possible use of alternative water supplies while the correction is being addressed. (See "Table 4: California's Monitoring and Reporting Violations" above for details on water systems that failed to monitor for contaminants or failed to notify their customers of violations.)

In 2007, approximately 1.5 million California residents—4 percent of the population that gets water from public water systems—received water from a system that had a monitoring or reporting violation.

What Is Considered Safe Drinking Water?

The California Department of Public Health protects drinking water quality by setting drinking water standards and advisories. There are two types of standards: maximum contaminant levels (also known as primary drinking water standards), and secondary drinking water standards.

Prior to the establishment of a drinking water standard, the agency sets notification levels, which are intended to provide the public with an advance warning of the potential health effects that could occur from drinking the water.

Drinking-Water Infrastructure Funding Is Available in California
Since 2000, California voters have approved $855 million in drinking-water bond funds for infrastructure and water quality improvements. Of this amount, approximately $640 million is still available (as of June 30, 2010) for state drinking-water system enhancements.

> Maximum Contaminant Levels

Establishing primary drinking water standards is one way the state protects its drinking water quality. These standards—called maximum contaminant levels (MCLs)—are "health based" (established to ensure effective health protection), whereas secondary drinking water standards are based on aesthetics.

For the state to retain its authority and funding to enforce the federal Safe Drinking Water Act (approximately $7 million in federal funds went to the Drinking Water Program in 2010–11), it must adopt the same or more stringent drinking water standards than those set by the US EPA.

Establishing these drinking water standards is a two-step process:

The first step: assessing a contaminant's health risk. This is done when the Office of Environmental Health Hazard Assessment (OEHHA) at the California Environmental Protection Agency (Cal-EPA) develops a public health goal for a contaminant. Public health goals are determined by assessing what the maximum concentration level of a drinking water contaminant can be without posing a significant health risk if consumed over a lifetime. These goals are based solely on public health considerations and current risk-assessment principles, practices, and methods.

Every contaminant for which the California Department of Public Health proposes a

primary drinking water standard must have a public health goal. And once a draft public health goal is developed (which can take anywhere from one to multiple years), it usually takes OEHHA several months to more than a year to finalize the goal.

The second step: the risk management process. The California Department of Public Health takes into account a contaminant's health risks (the public health goal) and factors such as a contaminant's detectability, treatability, and its treatment cost. The department must set a contaminant's maximum contaminant level so it is as close to its established public health goal as is technically and economically feasible, placing primary emphasis on the protection of public health. Once a public health goal is developed, it generally takes the department at least three years to develop a maximum contaminant level (MCL).

According to state law, the department must review each MCL to determine if changes in technology or treatment techniques have enabled greater protection of public health or if new scientific evidence indicates the substance may present a different public-health risk than previously determined.

Through 2008, there were 81 contaminants with MCLs that have public health goals; of these MCLs, 37 have contaminant concentrations higher than their public health goals. Both the public health goals and MCLs must be reviewed every five years.

> Secondary Drinking Water Standards

Secondary drinking water standards are set to control water color, odor, appearance, and other characteristics affecting consumer acceptance. Drinking water that exceeds the secondary standards may be aesthetically objectionable to consumers, but should not pose health risks.

> Notification Levels

Notification levels (previously called action levels) are health-based advisory levels for chemicals in drinking water based on potential health impacts; they are established prior to setting a drinking water standard.

Notification levels may be established by the California Department of Public Health when a chemical is found in—or there is a threat that it may be found in—drinking water sources, and they are derived from risk assessments performed by the US EPA or other federal or state agencies. For some chemicals, the Drinking Water Program's toxicologist performs a risk-and-exposure assessment and may seek feedback from OEHHA. A notification level (NL) is then established by the California Department of Public Health; the level is amended as necessary if conditions or risk-assessment methods change.

NLs are established as precautionary measures for contaminants that may be considered candidates for a maximum contaminant level, but have not yet undergone or completed the regulatory standard-setting process.

When NLs are exceeded, the drinking water system is required to notify the local governing body. Additionally, the California Department of Public Health recommends that the utility inform its customers and consumers about the presence of the contaminant and

Whatever Happened to Chromium-6, the Carcinogen Made Famous by the Film *Erin Brockovich*?

The 2000 film *Erin Brockovich* is about the residents of Hinkley, California, who were exposed to chromium-6 in their drinking water. These residents alleged they suffered various health conditions as a result of this exposure, including cancer, and filed a class-action lawsuit. Ultimately, they made a $333 million settlement with Pacific Gas and Electric.

Chromium-6 (hexavalent chromium) is a metal widely used for industrial purposes and has the potential to contaminate drinking water. When the residents of Hinkley filed their lawsuit in the mid-1990s, chromium-6 was a known carcinogen when inhaled; however, public health agencies had not yet determined whether it was carcinogenic when ingested.

In response to the public's concern about chromium-6, the California Legislature passed Senate Bill 351 (Ortiz, Chapter 602, Statutes of 2001), which required the California Department of Health Services (now the California Department of Public Health) to establish a primary drinking water standard for chromium-6 on or before January 1, 2004.

In May 2002 the California Office of Environmental Health Hazard Assessment (OEHHA) announced the beginning of the risk-assessment process for chromium-6. Seven years later, in August 2009, OEHHA released a draft public health goal for chromium-6, which underwent a peer review, public workshop, and public comment periods.

In response to the public comments and a scientific peer review, OEHHA released a revised draft public health goal for chromium-6 on December 31, 2010. When OEHHA finalizes the public health goal for chromium-6, the department estimates it will take an additional three years to develop the drinking water standard.

In the meantime, there is no drinking water standard or notification level set for chromium-6. However, many public water systems were required to perform one-time monitoring for chromium-6 in 2003–04, and some have continued this monitoring. As of 2008, 55 public water systems had current or historic levels of chromium-6 that were 50 times higher than the current draft public health goal of 0.02 parts per billion.

about the health concerns associated with its exposure.

Since the early 1980s, NLs for 93 contaminants have been established. Of those, 39 have gone through the formal regulatory process and now have maximum contaminant levels. The department has not added new chemicals to the lists of contaminants with NLs since 2005; however, it has amended numeric values for some chemicals with NLs to reflect new toxicological information, with the latest updates occurring in 2010. Generally, it takes up to a few months to establish an NL.

How Are Drinking Water Projects Financed?

Drinking water infrastructure generally is financed by three fund sources: federal funds, state bond funds, and local water system funds.

> Federal Safe Drinking Water State Revolving Fund

Since 1997, the US EPA has provided the California Department of Public Health an annual Safe Drinking Water State Revolving Fund (SDWSRF) capitalization grant to use for low-interest loans and grants to assist public water systems in achieving and maintaining compliance with safe drinking water standards. The SDWSRF provides public water systems the opportunity to use subsidized funding to correct infrastructure problems, assess and protect source water, and improve technical, managerial, and financial capability.

California has received 12 capitalization grants from the US EPA totaling $1.03 billion, which includes American Recovery and Reinvestment Act of 2009 funding. Since the program began in May 1998, the California Department of Public Health has executed 167 loans totaling $847 million through June 30, 2010, and the American Recovery and Reinvestment Act funding accounted for an additional 51 funding agreements totaling $150 million.

The state must provide a 20-percent match to receive SDWSRF funding. In the past, matching funds have come from the general fund; propositions 13, 50, and 84 funds; and local funds. In 2008, $2.3 million was provided through a local match; in 2009, $6.1 million was provided through a local match. (See "Table 5:

TABLE 5
Projected Summary—Safe Drinking Water State Revolving Fund

FISCAL YEAR	20-PERCENT STATE MATCH	FEDERAL AMOUNT	TOTAL
2009–10	$7.2 million from Proposition 84 $6.1 million from large water systems	$66.4 million	$79.7 million
2010–11	$25.4 million from Proposition 84	$126.9 million	$152.3 million
2011–12	$13.3 million from Proposition 84 $12.1 million from unidentified source	$126.9 million	$152.3 million
2012–13	$25.4 million from unidentified source	$126.9 million	$152.3 million
2013–14	$25.4 million from unidentified source	$126.9 million	$152.3 million
2014–15	$25.4 million from unidentified source	$126.9 million	$152.3 million

Projected Summary—Safe Drinking Water State Revolving Fund" on page 13; note that additional unidentified state funds will be needed to match the federal funds.)

> State Bond Funding

The Drinking Water Program also reviews and processes applications for various grants associated with general obligation bond programs. Since 2000, the program has been responsible for implementation of three safe drinking water bond laws that provide a total of $855 million in grants to water systems. (See "Table 6: Recent Drinking Water Bond Funds Approved by California Voters" below.) At the end of fiscal year 2009–10, approximately $640 million of these drinking water bond funds were still available. The department plans to award the remaining funds by 2014–15.

According to a US EPA report, public water systems in California estimated in 2007 that $39 billion will be necessary over the next 20 years for drinking-water infrastructure sustainment and improvements. An estimated $23 billion of that amount will be needed for transmission and distribution of drinking water, and about $16 billion will be necessary for treatment, storage, and other needs.

> State Funding Prioritization

The California Department of Public Health uses a universal "pre-application" for drinking-water infrastructure funding to help establish a priority project list for each funding program. The department then sends an invitation letter to the highest ranked systems or projects to complete a full application for funding.

For each funding category for the proposition bond funds, the department develops criteria and points to rank the projects. These criteria are presented at public meetings, and public comments are invited before the criteria are finalized. For example, for the small-community infrastructure improvements for Proposition 84's chemical and nitrate contaminants section, the

TABLE 6
Recent Drinking Water Bond Funds Approved by California Voters

FUNDING SOURCE	DESCRIPTION	AMOUNT
The Safe Drinking Water, Water Quality and Supply, Flood Control, River, and Coastal Protection Bond Act of 2006 (Proposition 84)	Funding for emergency clean water grants, small-community infrastructure improvements for chemical and nitrate contaminants, and grants and loans to prevent or reduce contamination of groundwater that serves as a source of drinking water.	$300 million See Appendix A on page 17 for the Proposition 84 spending plan.
The Water Security, Clean Drinking Water, Coastal, and Beach Protection Act of 2002 (Proposition 50)	Funding for grants to public water systems for water security, grants and loans for water quality, and grants for treatment technology.	$485 million See Appendix B on page 18 for the Proposition 50 spending plan.
The Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000 (Proposition 13)	Funding for public water-system infrastructure improvements and technical assistance to public water systems, including in disadvantaged communities.	$70 million These funds have been completely awarded.

department awarded points to water systems that were under orders to boil their water, had four or more contaminants exceeding established maximum contaminant levels, were in communities with a median household income of less than 20 percent of the statewide median household income, and addressed regional issues with three or more systems, among other criteria.

Drinking Water Infrastructure Projects: Two Stories

Safe Drinking Water State Revolving Fund

The Plainview Mutual Water Company in Tulare County serves about 190 households—nearly 900 individuals—in a community with a median household income of $15,500 per year. A $1 million grant and a $294,075 loan from the Safe Drinking Water State Revolving Fund bought the residents a new water distribution system, sand separator, back-up generator, chlorinator, and storage tanks—all improvements that were necessary to address the system's nitrate, dibromochloropropane (DBCP), and bacteria problems due to the condition of the water system's old well and water pipelines. Half of the system's piping was used oil-field pipeline installed more than 60 years ago.

Proposition 84 Funding

The Arvin Community Services District in Kern County serves an 18,500-resident "severely disadvantaged community" (it is considered disadvantaged because the annual household income is less than 60 percent of the statewide annual median household income). About $5 million in Proposition 84 funds was awarded to its water system to correct an arsenic contamination problem; $500,000 will be used for a feasibility study of new drinking water sources; and $4.3 million will be allocated to replacing old wells and providing necessary infrastructure.

In 2008 this community's water system applied to the Drinking Water Program for project funding, however, because bond funding had been frozen due to the state's fiscal situation, they were not awarded funding until 2010.

Prior to receiving the Proposition 84 funds, the state advised the water system to place a measure on the local ballot asking its consumers if they wanted to assess themselves with an additional fee to immediately pay for and purchase the needed infrastructure improvements. The ballot measure was defeated; consequently, the community is still waiting to make the water-system improvements.

> Local Water System Funds

In addition to federal and state funds, local public water systems may raise funds to finance drinking water infrastructure. As previously mentioned, local water system funds have been used as a match for Safe Drinking Water State Revolving Fund grants.

Working With California's Water Systems: A Balanced Approach

Because California's approximately 8,000 public water systems vary in size, location, and fiscal condition, the Drinking Water Program faces the difficult task of ensuring that all Californians receive safe drinking water. Through its enforcement activities, the Drinking Water Program works with these public water systems to address violations of drinking water standards and monitoring requirements. And through its infrastructure funding, the program works with the public water systems—and in particular the systems with health risks—to award funding to those most in need of drinking water infrastructure improvements.

Although a vast majority of Californians who receive drinking water from a public water system received water that met quality standards in recent years, there are still 1.2 million who may have consumed unsafe water. Consequently, California's Drinking Water Program must continue its efforts to ensure that Californians have access to drinking water that is pure and safe for all.

APPENDIX A
California's Proposition 84 Expenditure Plan*

DESCRIPTION	2007–08	2008–09	2009–10	2010–11 (Projected)	2011–12 (Projected)	2012–13 (Projected)	2013-14 (Projected)	2014-15 (Projected)
STATE OPERATIONS								
Infrastructure Improvements	$354,904	$1,370,797	$1,094,113	$1,738,250	$1,938,000	$2,134,866	$2,182,997	$2,084,628
Senate Bill X2 1 (Perata), Chapter 1, Statutes of 2008	–	$9,820	$295,456	–	–	–	–	–
Prevention of Groundwater Contamination	$59,004	$96,624	$172,426	$306,750	$342,000	$376,741	$385,235	$367,875
Subtotal State Operations	**$413,908**	**$1,477,241**	**$1,561,996**	**$2,045,000**	**$2,280,000**	**$2,511,607**	**$2,568,232**	**$2,452,503**
LOCAL ASSISTANCE								
Emergency Grants	$639,560	$396,884	$439,562	$1,792,151	$1,739,535	$1,423,643	$1,423,643	$1,295,021
Infrastructure Improvements	–	$97,000	$2,040,144	$13,326,000	$43,941,216	$37,500,000	$39,471,463	$27,850,106
Senate Bill X2 1 (Perata), Chapter 1, Statutes of 2008	–	$16,500	$457,571	–	–	–	–	–
State Match for State Drinking Water Revolving Fund	–	–	–	–	$22,875,000	$22,875,000	–	–
Prevention of Groundwater Contamination	–	–	$949,837	–	$13,500,000	$10,200,000	$15,600,000	$14,650,163
Subtotal Local Assistance	**$639,560**	**$510,384**	**$3,887,114**	**$15,118,151**	**$82,055,751**	**$71,998,643**	**$56,495,106**	**$43,795,290**
TOTAL	**$1,053,468**	**$1,987,625**	**$5,449,109**	**$17,163,151**	**$84,335,751**	**$74,510,250**	**$59,063,338**	**$46,247,793**

*Includes expenditures and encumbrances. Detail may not add to totals due to rounding. On December 17, 2008, the California Department of Public Health (CDPH) was directed to cease entering into new construction grants, loans, and other agreements that committed the expenditure of bond funds, and to freeze all bond-funded disbursements. In March 2009, bond sales at the state level resumed. CDPH did not issue funding agreements again for projects until May 2010.

APPENDIX B
California's Proposition 50 Expenditure Plan*

DESCRIPTION	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11 (Projected)	2011–12 (Projected)	2012-13 (Projected)	2013-14 (Projected)
STATE OPERATIONS											
Water Security	$11,740	$239,522	$68,849	$109,699	$71,011	$64,972	$64,786	$286,792	$286,792	$286,792	$279,456
Safe Drinking Water	$187,000	$998,000	$1,373,000	$2,001,000	$2,120,768	$1,883,869	$1,476,051	$3,194,208	$3,730,208	$1,737,792	$1,620,761
Subtotal State Operations	**$198,740**	**$1,237,522**	**$1,441,849**	**$2,110,699**	**$2,191,779**	**$1,948,841**	**$1,540,837**	**$3,481,000**	**$4,017,000**	**$2,024,584**	**$1,900,217**
LOCAL ASSISTANCE											
Water Security	–	–	–	$3,266,001	$4,667,999	$219,107	$2,589,000	$10,000,000	$10,000,000	$10,000,000	$5,737,481
Safe Drinking Water	–	–	–	$3,310,574	$2,291,259	$6,200,118	$961,546	$7,635,240	$7,635,240	$28,221,237	$20,549,830
Safe Drinking Water—Southern California Requirements	–	–	–	–	$24,898,412	$43,628,628	–	$24,570,760	$24,570,760	$59,138,594	$63,312,211
State Match for State Drinking Water Revolving Fund	–	–	–	–	–	$1,234,492	$13,317,764	$27,400,000	$27,400,000	$20,100,000	$2,500,604
Subtotal Local Assistance	**$0**	**$0**	**$0**	**$6,576,575**	**$31,857,670**	**$51,282,345**	**$16,868,310**	**$69,606,000**	**$69,606,000**	**$117,459,831**	**$92,100,126**
TOTAL	**$198,740**	**$1,237,522**	**$1,441,849**	**$8,687,274**	**$34,049,449**	**$53,231,186**	**$18,409,147**	**$73,087,000**	**$73,623,000**	**$119,484,415**	**$94,000,343**

*Includes expenditures and encumbrances. Detail may not add to totals due to rounding. On December 17, 2008, the California Department of Public Health (CDPH) was directed to cease entering into new construction grants, loans, and other agreements that committed the expenditure of bond funds, and to freeze all bond-funded disbursements. In March 2009, bond sales at the state level resumed. CDPH did not issue funding agreements again for projects until May 2010.

Endnotes

1. The federal Safe Drinking Water Act was amended in 1986 and 1996.

2. For a list of public water systems with violations in 2007, see the appendices of the "Annual Compliance Report of Public Water Systems in California," California Department of Public Health, August 18, 2009: http://www.cdph.ca.gov/certlic/drinkingwater/Documents/DWdocuments/2007ComplianceReportAmendedAug182009corrected.pdf

Written by Michelle Baass. The California Senate Office of Research is a nonpartisan office charged with serving the research needs of the California State Senate and assisting Senate members and committees with the development of effective public policy. It was established by the Senate Rules Committee in 1969. For more information and copies of this report, please visit **www.sen.ca.gov/sor** or call **(916) 651-1500.**