The Safe Drinking Water Bond Program

A Review

Office of the Legislative Analyst

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Introduction

Introduction

The Safe Drinking Water Bond program provides grants and low-interest loans to assist local water suppliers in meeting minimum drinking water standards. This report presents our findings and recommendations regarding the bond program as required by Section 13819(d) of the Water Code, which was added by the Safe Drinking Water Bond Law of 1984 (Ch 378/84). This section requires the Legislative Analyst to "review the grant program and report to the Legislature not later than June 1, 1987." In a letter dated January 13, 1987, we notified the Legislature that the report would be delayed by six months. The delay was necessitated because only a small number of the loans and grants had been issued at that time, making a report premature.

In addition to reviewing the grant program under the 1984 bond law, we broadened our study to include (1) an evaluation of the loan program and (2) an assessment of the preliminary implementation of the Safe Drinking Water Bond Law of 1986. We also make several recommendations for modifying any future safe drinking water bond act in order to improve the effectiveness of the program.

Chapter I of this report (1) provides background on the Safe Drinking Water Bond program and the key provisions of the 1976, 1984, and 1986 bond acts and (2) summarizes how the 1984 and 1986 bond acts have been implemented. Chapter II presents our program review with our findings and recommendations.

This report was prepared by Kate W. Hansel under the supervision of Daniel Rabovsky and Carol Bingham. Steve Hammer compiled much of the information for this report and performed the initial program review as an intern during the summer of 1987. ❖

Executive Summary

Executive Summary

The California Safe Drinking Water Bond program provides grants and low-interest loans to assist local water systems in meeting the minimum state drinking water standards. Three bond acts, approved in 1976, 1984, and 1986, have provided a total of $350 million for the program. As of September 30, 1987, about $222 million had been committed to 356 specific projects; and by March 1988, applications for most of the remaining funds will be under final consideration. The Department of Health Services (DHS) ranks funding applications according to the seriousness and immediacy of the health threat addressed by each project, while the Department of Water Resources (DWR) determines the ability of water suppliers to repay a loan and the need for any grant. Currently, the maximum loan amount is $5 million and the maximum grant amount is $400,000. The majority of the water systems receiving funding under the program are very small, publicly owned systems with fewer than 200 connections, located primarily in the rural areas of the state.

Legislative Analyst's Findings

- ***Effectiveness of Bond Program Unknown.*** Although the number of small drinking water systems with violations of the primary drinking water standards has declined by approximately 38 percent statewide since 1977-78, there is no information available to determine how much of this improvement is due to the bond program. Clearly, the limited amount of funding available has prevented the bond program from addressing many of the state's water system deficiencies. Furthermore, neither the DHS nor the DWR follow up on the fate of projects that do not receive bond funds in order to determine how crucial state funding is to making improvements.
- ***Funding Priorities Emphasize Projects to Correct Bacteriological Contamination Rather Than Toxic Chemical Contamination.*** The project ranking system used by the DHS generally gives a higher priority to projects addressing bacteriological contamination of drinking water versus projects addressing contamination by toxic chemicals. As a result, relatively few projects to correct chemical contamination problems receive funding due to the limited amount of money available in the program.
- ***The Health Risk Ranking System for the 1984 Bond Act Overemphasized Administrative Cleanup Orders.*** The project ranking system established by the DHS

to implement the 1984 bond act automatically placed water systems in the first priority group for funding if they were under a county health department order to make improvements. Such orders, however, do not necessarily indicate a critical health problem, and some counties may have issued orders to systems primarily to qualify them for bond funding. The DHS has recognized this problem and eliminated this criterion from its 1986 ranking system.

- ***1984 Ranking System Emphasized the Number, Rather Than the Seriousness, of Violations.*** Under the 1984 ranking system, projects addressing a larger number of water system deficiencies (even though some were minor) generally received a higher funding priority than projects addressing fewer deficiencies. There was no attempt, however, to consider the overall health risk addressed by each project. The DHS has corrected this problem in the 1986 ranking system.
- ***1986 Ranking System Does Not Reflect Varying Health Risks of Different Chemical Substances.*** The 1986 system does not sufficiently discriminate among the varying health risks associated with chemical substances. This problem currently has little practical effect because projects addressing bacteriological contamination generally receive a higher priority than projects involving chemical contamination and therefore will receive most of the available money. In the future, however, distinguishing the health risks due to different types of chemical contamination will be more important if additional bond funds become available.
- ***Ranking Systems Too Subjective.*** The 1984 ranking system used many vague terms, such as "inadequate treatment" and "moderate sewage hazard." As a consequence, there was a high degree of subjectivity in project rankings. Although the DHS has corrected many of these problems in the 1986 ranking system, some categories still require better definition. The DHS currently is revising its 1986 ranking categories to further improve their objectivity.
- ***Funding Was Not Limited to Critical Health Risk Problems Under the 1984 Ranking Procedures.*** Applicants that ranked high on the 1984 priority list due to a health threat also received funds to correct relatively low-priority problems, such as low water pressure. The DHS has corrected this problem in the 1986 ranking system by limiting funding to project components that correct the most serious health problems.
- ***Financial Need Not Considered in Providing Loans.*** Although both the 1984 and 1986 bond acts required that water systems with a "lesser capability to finance system improvements" receive a higher priority for loans, neither the DHS nor the DWR considered financial need in approving loans. Since the interest rate charged on the loans is only half the rate paid by the state to borrow the money, these loans result in a substantial net cost to state taxpayers. As a result, state taxpayers may be providing subsidies to water systems that could finance projects without a subsidy, or even without any state assistance at all.
- ***No Limit on Project Cost per Service Connection.*** Although the bond acts place limits on the maximum grant and loan amounts that any water system can receive, there is no limit on the cost per service connection of projects financed with bond funds. Consequently, the state has provided grants to some water systems of up to $22,000 per residential service connection to pay for improvements.
- ***Financial Review Lacks Clear Procedures and Criteria.*** The DWR has not

developed clear criteria or a written manual for its staff to use in determining an applicant's ability to repay a loan or the need for a grant. For example, DWR staff indicate that a grant would be justified if loan repayments would result in "unreasonably high" water rates within a water system. The department, however, does not have a consistent definition of an "unreasonable" water rate.

- *Caps on Grant and Loan Amounts Are Not Preventing Funding of Projects.* It does not appear that any project has been denied funding because of the overall limit of $25 million on grant funds or due to the individual project caps of $400,000 on grants and $5 million on loans. Although the grant cap has not been increased since 1976, the need for outright grants has been reduced since the 1986 bond act authorized subsidized interest rates on loans.
- *Distribution of Funds Significantly Delayed.* As of September 1987, only $50 million of the $75 million available from the 1984 bond act had been committed. One reason for this delay is the length of the financial evaluation process at the DWR—usually more than 6 months and up to 18 months after DHS approval of a project. In response to a legislative directive to reduce these delays, the DWR has increased funding for its financial consultant by a small amount. It is too early to tell whether this action will be enough to remedy the problem.

Legislative Analyst's Recommendations

Based on our findings, we have identified a number of problems in the Safe Drinking Water Bond program that can be addressed by modifying future bond acts, such as AB 1439 (O'Connell), which currently is pending. Below are our recommendations to the Legislature for these modifications.

- *A More Complete and Specific Ranking System Should Be Developed.* The project ranking system currently used by the DHS generally is not sensitive to the health risks posed by different types of toxic chemical contamination or to weighing those risks against more traditional types of water system deficiencies, such as sewage contamination. Historically, the DHS has used an in-house committee consisting primarily of sanitary engineers to develop its ranking systems. An advisory committee with broader expertise, however, would be useful in devising future ranking systems. Accordingly, we recommend that any future safe drinking water bond acts require the DHS to establish an advisory committee for project selection consisting of sanitary engineers and public health specialists, both from within and outside the DHS, having expertise in bacteriological and toxic chemical contamination health problems. The committee should include a member from local government and present written recommendations on the components of a project ranking system to the Director of Health Services.
- *Financial Need Should Be a Requirement for Loans.* The DHS and the DWR do not consider financial need in approving loans. Making loans to water systems with the capability to finance their own improvements results in less money being available to water systems that have no other means to finance improvements. In addition, state taxpayers provide a substantial subsidy to water systems that receive low-interest loans under the bond program. In order to use bond funds more efficiently and to improve the quality and safety of the state's

drinking water, we recommend that the Legislature specify in any future safe drinking water bond act that funding for loans be limited to water systems with a demonstrated financial need.

- ***A Ceiling on the Amount of State Funding Provided Per Service Connection Should Be Considered.*** The very high cost per connection of some projects (up to $22,000 per connection) raises the question of whether funding them is an efficient and equitable use of bond funds. Consequently, we recommend that the Legislature, for the reasons discussed above, consider placing a ceiling in future bond acts on the cost per connection of projects.
- ***Clear Financial Criteria Should Be Established for Grant and Loan Recipients.*** Currently, the DWR has no firm specific criteria to determine whether an applicant can repay a loan or requires a grant. In order to minimize the possibility for inconsistent financial determinations by the DWR, we recommend that the Legislature require the DWR, in any future safe drinking water bond act, to develop and publish a manual to guide staff in conducting the financial review of the applications. ❖

Chapter I

Chapter I

Background on the Safe Drinking Water Bond Program and the Implementation of the 1984 and 1986 Bond Acts

Background

The California Safe Drinking Water Bond program provides loans and grants to assist local water systems in meeting the state minimum drinking water standards. The program is funded by three safe drinking water bond measures, which were approved in 1976, 1984, and 1986. Collectively, these measures provide funding totaling $350 million. Table 1 describes the key fiscal provisions of each bond act.

All three measures have provided both loans and grants. The maximum loan per project increased from $1.5 million under the 1976 act to $5 million under the 1984 and 1986 acts. The maximum grant per project has remained at $400,000, but the amount available for grants increased from $15 million under the 1976 law to $25 million in 1984 and 1986. All three bond acts have restricted grants to publicly owned water suppliers that could not afford to repay the full amount of the loan required for a project.

Subsidized Interest on Loans. One of the more significant changes in the bond program was the introduction of subsidized interest rates for loans in the 1986 bond act. This provision also applied retroactively to loans made under the 1984 act. The 1986 act set the interest rate on loans at one-half of the average interest rate paid by the state on general obligation bonds in the calendar year prior to issuance of the loan. The interest rate currently offered under the program is 3.4 percent.

Administration. Under the bond acts, the DHS and the DWR share the administration of the Safe Drinking Water Bond program. The DHS ranks the project applications in terms of severity and immediacy of the health risks and conducts technical reviews to determine if the proposed projects correct the water system deficiencies in an effective and efficient manner. The application process has two steps: a pre-application and final application. The DHS uses the pre-application as the basis for ranking the projects according to degree of health risk. The DHS then invites applicants at the top of

Table 1

Safe Drinking Water Bond Acts Funding and Program Descriptions

(dollars in millions)

YEAR APPROVED	AMOUNT AUTHORIZED	NUMBER OF PROJECTS FUNDED	TOTAL AMOUNT COMMITTED	KEY PROVISIONS
1976	$175	289[a]	$172.2[a]	• Up to $15 million available for grants to publicly owned water systems • Remaining funds available for loans to both privately owned and publicly owned water systems • $1.5 million loan cap per water system, $400,000 grant cap per water system • Interest on loans at state bond rate
1984	75	67[a,b]	49.9[a]	• Up to $25 million available for grants to publicly owned water systems • Remaining funds available for loans to both privately owned and publicly owned water systems • $5 million loan cap per water system, $400,000 grant cap per water system • Interest on loans at **half** of state bond rate[c]
1986	100	NA[d]	NA[d]	• Up to $25 million available for grants to publicly owned water systems • Remaining funds available for loans to both privately owned and publicly owned water systems • $5 million loan cap per water system, $400,000 grant cap per water system • Investigative grants and short-term loans available for up to $25,000 • Interest on loans at **half** of state bond rate

[a] *As of September 30, 1987.*

[b] *Anticipated number of commitments by end of program equal 86.*

[c] *Required by the 1986 bond law.*

[d] *Funding commitments have not been made under the 1986 bond law. Final applications are due by March 1988 for the first phase of project funding.*

the list to submit final applications that include an in-depth description of the problem, the proposed solution, and the applicant's financial background. The number of applicants invited to submit final applications depends on the amounts requested and the bond funds available.

While the DHS is conducting the engineering review of the final application, the DWR evaluates the applicant's ability to repay a loan and determines whether any grant is necessary. The DWR distributes the loans and grants.

Implementation of the 1984 Bond Act

Table 2 summarizes the funding commitments made under the 1984 bond act as of September 30, 1987. (The 1986 act still is in the application review stage; and, therefore, no funding commitments have been made.) Of the $75 million available under the 1984 act, the DWR has made funding commitments totaling approximately $50 million to 67 water systems. Of the $50 million, 69 percent ($34 million) was for loans and 31 percent ($16 million) was for grants. According to the DWR, the majority of the remaining 1984 bond funds (approximately $25 million) will be committed by June 1988.

Table 2
Safe Drinking Water Bond Act of 1984
Summary of Loan and Grant Commitments[a]

	Number of Projects	*Loans*	*Grants*	*Totals*
Private	13	$9,175,660	--	$9,175,660
Public				
Loan only	6	7,985,640	--	7,985,640
Grant only	26	--	$7,518,253	7,518,253
Loan/grant	22	17,097,792	8,173,000	25,270,792
Subtotals (public)	54	$25,083,432	$15,691,253	$40,774,685
Grand total	67	$34,259,092	$15,691,253	$49,950,345
Percent	--	69%	31%	100%

[a] *As of September 30, 1987.*

Of the water systems that have received funding under the 1984 act, the majority are very small (fewer than 200 connections) publicly owned water systems located primarily in rural areas of the state. As shown in Table 3, of the 67 water systems that have actually received funding under the 1984 act, 64 percent are very small water systems, and 81 percent are publicly owned water systems. Although the majority (64 percent) of the water systems that received funding are very small, most of the money (69 percent) went to the larger systems. In fact, the largest water systems (nine systems with 1,000 or more connections) received 45 percent of the funds ($22.6 million).

Table 3
Safe Drinking Water Bond Act of 1984
Funding Commitments By Ownership and Size of Water System[a]
(dollars in thousands)

		Ownership		Number of Service Connections		
	Total	Public	Private	Less Than 200	200-1,000	Over 1,000
Number of systems	67	54	13	43	15	9
Percent	100%	81%	19%	64%	23%	13%
Funding	$49,950	$40,774	$9,176	$15,373	$12,023	$22,554
Percent	100%	82%	18%	31%	24%	45%

[a] *As of September 30, 1987.*

The water system serving the largest population was Hesperia Water District in San Bernardino County, which serves 11,500 connections. Even the largest water systems receiving funding under the 1984 act, however, are still relatively small when compared to some of the largest systems in the state, such as in Los Angeles (632,000 connections), San Francisco (160,000 connections), and Sacramento (102,000 connections).

The largest funding commitment was for $5.4 million, the maximum amount allowed. There were two systems that received this amount, both in the El Dorado Irrigation District: Pleasant Oak Service Area (541 connections) and Diamond Springs Service Area (7,065 connections).

The distribution of funding by county is provided in Table 4. Of the funded water systems, 88 percent are located primarily in rural counties north of the Tehachapi Mountains. The county that received the largest amount was El Dorado ($11.2 million). A southern California county (San Bernardino), however, received the second largest amount ($9.8 million). Most (56 percent) of the 32 counties received less than $1 million each.

Implementation of the 1986 Bond Act

The DHS has divided the allocation of the 1986 bond funds, totaling $100 million, into two phases. Based on pre-applications, the DHS has invited the top 233 water systems to submit final applications for the first phase. The applications are due by March 1988. The amount of funds requested by the 233 top applicants totals $70.6 million. The applicant profile for the top 233 applicants is very similar to that of the water systems funded by the 1984 bond funds; the majority are small water systems with less than 200 connections located primarily in rural areas. In fact, 141 of the 233 applicants (67 percent) are from two rural counties: Placer and Nevada. The funding requests for the 141 applicants, however, are relatively small, totaling $16 million (23 percent). ❖

Table 4

Safe Drinking Water Bond Act of 1984
Funding Commitments By County

COUNTY	FUNDS	NUMBER OF PROJECTS
Butte	$120,000	1
Calaveras	568,380	1
Contra Costa	949,220	2
El Dorado	11,220,000	3
Humboldt	1,543,050	5
Imperial	350,000	1
Kern	571,000	3
Madera	100,000	1
Mariposa	249,000	1
Mendocino	2,145,000	2
Merced	1,435,000	4
Mono	800,000	2
Monterey	585,000	3
Napa	2,925,200	2
Nevada	1,235,200	3
Placer	1,004,500	3
Plumas	390,377	2
San Bernardino	9,753,950	3
San Joaquin	1,578,550	2
San Luis Obispo	126,000	1
Santa Cruz	1,083,500	1
Shasta	1,740,000	2
Sierra	247,000	3
Siskiyou	1,348,272	4
Sonoma	1,241,250	4
Sutter	412,000	1
Trinity	1,398,765	1
Tulare	160,000	1
Tuolumne	522,400	2
Ventura	650,000	1
Yolo	286,700	1
Yuba	744,500	1

Chapter II

Program Review: Findings and Recommendations

In reviewing the 1984 and 1986 Safe Drinking Water Bond Acts, we addressed the following questions: (1) has the program met its statutory goals, (2) does the system for ranking projects for funding give greatest priority to projects posing the greatest health risk, (3) does the ranking system adequately consider the financial need of the water systems, (4) have the ceilings on grant and loan amounts prevented funding of projects, and (5) has the program been efficiently managed? In addition to our findings, we have made four recommendations for modifications in future safe drinking water bond acts, such as AB 1439 (O'Connell), which is now pending.

Effectiveness of Bond Program Unknown

The main goal of the Safe Drinking Water Bond program is to provide funding to water systems to "assure that all domestic water supplies at least meet minimum domestic water supply standards." Table 5 lists the substances and conditions for which there are drinking water standards. The standards are set by the DHS and are divided into primary (or minimum) standards, which are health-based, and secondary standards, which address the odor, taste, and appearance of water. Currently, there are 20 primary standards and 9 secondary standards. Primary standards are also called "maximum contaminant levels" (MCLs).

To determine the effect of the Safe Drinking Water Bond program on the drinking water quality in the state, we reviewed data from the Statewide Environmental Evaluation and Planning System (SWEEPS). The SWEEPS compiles county environmental data under direct contract with federal, state, and county agencies. These data indicate that between 1977-78 and 1986-87, the number of systems with primary violations had declined by 38 percent. A significant percentage of water systems, however, still are not meeting the primary standards. Specifically, in 1986-87, 14 percent of the very small water systems inspected were in violation of, or had a high potential for violating, the primary drinking water standards.

Without a more in-depth study, it is not possible to determine the extent to which the safe drinking water program is responsible for the decline in violations of primary water quality standards. The bond program clearly has not been able to address all the water system deficiencies due to the limitations on the availability of funds. For example, under

Chapter II

Table 5
California Safe Drinking Water Standards[a]

Primary Standards: Health Related

BACTERIOLOGICAL

CHEMICAL

• Arsenic	• Lead	• Silver	• Toxaphene
• Barium	• Mercury	• Endrin	• 2,4-D
• Cadmium	• Nitrate	• Lindane	• 2,4,5-TP Silvex
• Chromium	• Selenium	• Methoxychlor	• Trihalomethanes
			• Radioactivity

OTHER

Fluoride • Turbidity

Secondary Standards: Odor/Taste/Appearance

• Copper	• Iron	• Odor
• Color	• Manganese	• Total Dissolved Solids
• Corrosivity	• Zinc	• Foaming Agents

[a] *Source: California Administrative Code, Title 22, Chapter 15.*

the 1984 bond act, funding requests totaled $826 million, but only $75 million was available. We have no data on the extent to which water districts that did not receive funding made improvements using other funds. This information is not available because neither the DHS nor the DWR follow up on the fate of projects that do not receive bond funds.

Funding Priorities Emphasize Projects to Correct Bacteriological Contamination Rather Than Toxic Chemical Contamination

Under the 1984 bond act, water systems contaminated by toxic chemicals for which there were no standards were not eligible for funding. Under the 1986 bond act, the Legislature directed the DHS to address all toxic chemical contamination, not just violations of the established drinking water standard violations. In response the DHS broadened the scope of the program to include contamination by chemicals for which there are "action" levels. (An action level is a health advisory limit administratively set by the DHS pending adoption of a final drinking water standard through regulation.)

On a practical level, this change had very little effect because, at the same time, the DHS also changed its method for ranking projects for funding. The new method gives systems with bacteriological contamination a higher rank than systems with chemical contamination—chemicals that have either MCLs or action levels. Funding for the 1986 bond act has not been committed as yet, but it appears that funding will be allocated primarily to the higher-ranked systems with evidence of bacteriological contamination. According to the DHS, bacteriological contamination generally presents a more acute and immediate health risk than chemical contamination, which presents a chronic long-term health risk. Therefore, the majority of the applicants having chemical contamination problems probably will not be funded.

1984 Ranking System Overemphasized Administrative Cleanup Orders

Under the 1984 ranking system (Table 6), applicants were placed into five categories based on the DHS's determination of health risk. The first priority for funding (Category A) included water systems under a county health department administrative order to carry out improvements. Such an order, however, does not necessarily indicate that a system has a critical health problem. These orders may require correction of a variety of

Table 6
Safe Drinking Water Bond Act of 1984
Funding Requests by Rank[a]

CATEGORY	NUMBER OF FUNDING REQUESTS	AMOUNT REQUESTED (IN MILLIONS)
A. Action is necessary to alleviate "significant and documented public health hazard; system is under a court-ordered compliance schedule, administrative order, or an administrative order is being prepared"	286	$142
B. Action is necessary to correct "documented violations of primary drinking water standards"	449	229
C. Action is necessary to correct "significant physical defects that affect the system's ability to meet primary standards"	304	205
D. Action is necessary to correct "secondary drinking water standard violations"	60	43
E. Action is necessary to correct "physical defects or waterworks deficiencies that do not result in violations of primary or secondary standards"	263	207
TOTALS	**1,362**	**$826**

[a] *Source: Department of Health Services.*

water system deficiencies, ranging from violations of water quality standards to water pressure problems. Based on discussions with DHS staff, it appears that some counties may have issued administrative orders to water systems in order to qualify them for bond funding. As a consequence, the DHS has eliminated this criterion from the 1986 ranking system (shown in Table 7).

Table 7
Safe Drinking Water Bond Act of 1986
Funding Requests by Rank[a]

CATEGORY	NUMBER OF FUNDING REQUESTS	AMOUNT REQUESTED (IN MILLIONS)
A. Significant and documented public health hazards involving illness with confirmed links to the water system or deficiencies addressed by a court-ordered compliance schedule	5	$11.7
B. Documented microbiological (bacteriological) contamination of water supply due to sewage	232	58.9
C. Untreated surface water without disinfection	114	28.7
D. Nitrate contamination exceeding the maximum contaminant level (MCL)	138	48.7
E. Chemical contamination greater than 10 times the action level or 10 times the MCL	16	3.5
F. Unfiltered surface water with disinfection only	134	92.5
G. Chemical contamination less than 10 times the action level or 10 times the MCL	102	63.5
H. Severe water outage (shortage) that is documented, frequent, and prolonged over a significant portion of the system due to facilities not meeting waterworks standards	52	32.5
I. Documented significant sanitary defect involving sewage	48	30.0
J. Inadequate surface water treatment or no pretreatment of a surface water source	71	44.3
K. Other sanitary defects involving primary standard violations	303	161.8
L. Secondary standard violations	103	64.6
M. Other water system deficiencies	659	399.1
TOTALS	**1,977**	**$1,039.8**

[a] *Source: Department of Health Services.*

1984 Ranking System Emphasizes the Number Rather Than the Seriousness of Violations

Within each of the five categories of the 1984 ranking system, the DHS ranked applicants on the basis of the *number* of deficiencies the water system was experiencing. This procedure did not consider the health risk associated with the deficiency. For example, a system causing serious illnesses but having no other deficiencies would receive a lower score than a system causing minor illnesses but with numerous non-health-related deficiencies, such as low water pressure.

The DHS addressed this problem in its 1986 ranking system (shown in Table 7) by eliminating the number of deficiencies as a criterion in its ranking of applicants. The ranking of applicants within each category is now based on the frequency of the violation and the population affected.

1986 Ranking System Does Not Reflect Varying Health Risks of Different Chemical Substances

The 1986 ranking system does not sufficiently discriminate among the varying health risks associated with chemical substances. It gives all chemical contamination equal weight, except for nitrate contamination, which is ranked higher than other types of chemical contamination. According to the DHS, the health risk associated with chemical contamination varies, depending on whether the chemical is a reproductive toxin, a carcinogen, or noncarcinogen. The ranking system does not reflect these distinctions.

This problem has had little practical effect because funding under the 1986 bond act appears insufficient to fund many projects involving chemical contamination. However, as bond funding becomes available for these types of projects in the future, we believe it is important for the DHS to develop a ranking methodology that is sensitive to the health risks posed by different chemicals and weighs such risks against the more traditional water system deficiencies. Historically, the DHS has used an internal advisory committee consisting primarily of sanitary engineers to develop the ranking systems. It appears, however, that an advisory committee with broader expertise would be useful in devising future ranking systems.

Accordingly, we recommend that any future safe drinking water bond acts require the DHS to establish an advisory committee for project selection consisting of sanitary engineers and public health specialists, both from within and outside the DHS, having expertise in bacteriological and toxic chemical contamination health problems. The committee should include a member from local government and present written recommendations on the components of a project ranking system to the Director of Health Services.

Ranking Systems Too Subjective

The ranking criteria generally used under the 1984 bond act were vague and difficult to implement objectively. They consisted of phrases such as "high contamination potential," "inadequate treatment," and "moderate sewage hazard," none of which was defined. As a consequence, there was a high degree of subjectivity in determining how a project should be ranked.

The DHS corrected many of these problems in its 1986 ranking system. Still, certain categories in the system require clarification. Category B is the most poorly defined. Category B, as shown in Table 7, consists of water systems that have "documented microbiological (bacteriological) contamination of the water supply due to sewage." The required documentation includes a sanitary survey (survey of contamination sources in a watershed) supported by laboratory reports showing fecal material as the source of contamination. The scope and content of the sanitary survey, and the level and frequency of fecal contamination, however, are not defined. As a result, lower-priority projects could be placed in Category B and receive funding at the expense of higher-priority projects that have a greater health risk. Again, the DHS has recognized this problem and is in the process of developing clearer documentation criteria for Category B to be used in the next phase of applications under the 1986 bond act.

Funding Not Limited to Critical Health-Risk Problems Under 1984 Ranking Procedures

Another problem with the 1984 ranking system was its failure to restrict funding to only that portion of an applicant's project that corrected the highest-priority deficiencies. Instead, applicants that ranked high on the priority list because of a health threat also received funding to address relatively low-priority problems such as low water pressure, replacement of fire hydrants, or leaking water lines. As a result, less funding was available for other applicants with higher-priority problems. The DHS corrected this problem in the 1986 ranking system by limiting the scope of funded projects to only the most serious deficiencies.

Financial Need Not Considered in Providing Loans

In addition to health considerations, the 1984 and 1986 bond acts required that priority for loans be given to water systems with a "lesser capability to finance system improvements." Neither the DHS nor the DWR, however, considered financial need in approving loans. Only in the case of grants was financial need a requirement.

Making financial need a condition for loans would make the program more effective in reducing the public health threat caused by contaminated water systems. All water systems are required to comply with the safe drinking water standards, regardless of whether they receive state funds. To the extent that loans are made to systems with the capability to finance their own improvements, less money is available for loans or grants to correct problems at systems that have no other means of financing these projects.

In addition, the loans impose a substantial net cost on state taxpayers because the interest rate paid by the water systems is only one-half the rate paid the state to finance the bonds. In effect, the interest rate subsidy is equivalent to a grant of about one-third of the loan amount. Because loan recipients did not

have to demonstrate financial need, state taxpayers may have paid for unnecessary subsidies.

In our view, the Legislature should make financial need an explicit requirement for approving both loans and grants under any future safe drinking water bond act. One possible approach would be to fund applicants that could not meet generally recognized financing requirements, such as remaining under the maximum debt ratio (ratio of revenue to debt) allowed by most financial institutions, without raising rates to unreasonable levels (using standard guidelines). As another option, the Legislature could authorize a new program of loans at unsubsidized rates to systems that do not meet financial need requirements. Although this option could make less money available for water systems that have no other means of financing improvements, it would not impose a net cost on state taxpayers. This option would give local systems the benefit of the state bond interest rate and the economies of scale of a large bond issue.

In order to use bond funds more efficiently and to improve the quality and safety of the state's drinking water, we recommend that the Legislature specify in any future safe drinking water bond act that funding for loans be limited to water systems with a demonstrated financial need.

No Limit on Project Cost Per Service Connection

As part of its financial review, the DWR has a general *guideline* of limiting project costs to $5,000 per connection if possible. Of the 67 water systems receiving funds under the 1984 act, seven projects exceeded the $5,000 guideline. The water system with the highest cost per connection was the Rickwalt Service Area of the El Dorado Irrigation District, which had a cost of $22,000 per connection. This system received $420,000 ($400,000 grant and $20,000 loan), although it serves only 19 rural residential connections. The other six water systems had costs between $6,000 and $11,000 per connection.

The very high cost per connection of these projects raises the question of whether funding them is an efficient and equitable use of bond funds. The DWR's guideline of $5,000 may be an appropriate ceiling amount for the cost per connection, but we do not have an objective basis for recommending that or any other specific amount at this time.

We recommend that the Legislature, for the reasons discussed above, consider placing a ceiling in future bond acts on the cost per connection of projects.

Financial Review Lacks Clear Procedures and Criteria

The DWR staff make the final determination of the applicant's ability to repay the requested loan amount, based on the analysis performed by the consultant and other department criteria. Some of the criteria the DWR uses to make the final determinations are subjective and thus may lack consistent application among staff. For example, the DWR determines whether loan repayments would result in "unreasonably high" water rates as part of the financial review. The DWR, however, has no clear criteria to determine whether a potential water rate is "reasonable." In addition, the DWR has not developed a manual to provide the guidance needed to ensure consistent recommenda-

tions. As a result, the DWR may be making inconsistent and inequitable determinations as to the ability of applicants to repay loans and the need for grants.

In order to minimize the possibility for inconsistent financial determinations by the DWR, we recommend that the Legislature require the DWR, in any future safe drinking water bond act, to develop and publish a manual to guide staff in conducting the financial review of the applications.

Caps on Grant and Loan Amounts Have Not Prevented Funding of Projects

Grant Program Cap. The 1984 bond act limited the total amount of grant funding to $25 million (33 percent) and the maximum grant per water system to $400,000. The DWR has currently committed $15.7 million for grants, which equals 31 percent of total funding committed. The DWR expects this ratio of grants to loans to continue as the remainder of the 1984 bond funds are distributed. Therefore, the overall $25 million ceiling on grants does not appear to be restricting the funding of projects since projects, on the average, are requiring grants of less than 33 percent of the available state funding.

The $400,000 individual grant cap also does not appear to have the effect of excluding projects. The DWR has made 48 funding commitments that have included a grant commitment (26 for grants only and 22 combined grants and loans). Of the 48 commitments, 43 percent are for the maximum grant amount of $400,000. While the large percentage of grants at the maximum level suggests that the $400,000 limit may need to be reexamined, DWR staff advise that all of the grant recipients have received sufficient funding to correct their most serious water system deficiencies. In addition, the DWR indicates that no applicant was denied funding as a result of the maximum grant amount being insufficient. Although the grant limit has not been increased since the program began in 1976, the need for outright grants has been reduced greatly since the subsidized interest rate on loans has been available. For example, on a loan of $5 million (the maximum amount), the interest rate subsidy has roughly the same effect as a grant of $1.7 million over a 30-year period.

Loan Program Cap. The 1984 bond act placed a cap of $5 million on each loan. Of the 41 loan commitments (totaling $34.3 million) made as of September 30, 1987, only 3 loans have been for the full $5 million: (1) El Dorado Irrigation District—Diamond Springs Service Area, (2) El Dorado Irrigation District—Pleasant Oak Service Area, and (3) Hesperia Water District, San Bernardino County. The average loan commitment was $797,000, significantly lower than the $5 million cap. In addition, according to the DWR, no applicant was denied funding due to the ceiling on the loan amount. Therefore, it appears that the $5 million cap on individual loans has not restricted project funding.

Distribution of Funds Significantly Delayed

As of November 1987, the DWR had received 98 approved applications from the DHS under the 1984 bond act. The DWR has taken over 6 months to review 71 of these applications (43 took more than 9 months and some took up to 18 months). According to the

DWR, the delays have been attributable to (1) slow performance by the consultant that performs the financial analyses and (2) the failure of many applicants to provide all of the information necessary to make a funding commitment in a timely manner. The DWR, however, does not know whether the delays were generally attributable to the applicant or to the consultant.

In the *Supplemental Report of the 1987-88 Budget Act*, the Legislature directed the DWR to report by September 15, 1987 on the steps it intended to take to reduce its application turnaround time. In its report, the DWR indicates that it has increased its consultant's annual contract for financial analyses of the Safe Drinking Water Bond program applications from $10,000 to $15,000 and is forwarding applications to the consultant on a more timely basis.

It is too early to determine whether these measures will be successful, although it appears unlikely that the delays will be significantly reduced because (1) the measures do not address the delays caused by the failure of applicants to submit adequate project information and (2) a $5,000 increase in the consultant's contract does not seem sufficient to reduce turnaround time significantly. Additional actions may be necessary, such as requiring the DWR to change consultants or perform the work in-house, if the DWR does not improve its turnaround time. ❖