



Organizing State Government to Meet California's Environmental Protection Priorities

EXECUTIVE SUMMARY

For roughly a decade, the Legislature has been interested in reorganizing environmental programs in order to increase their efficiency and effectiveness. Currently, two legislative proposals — AB 1122 (Sher) and SB 51 (Torres) — propose to reorganize environmental programs. In addition, on May 17, 1991, Governor Wilson presented to the Legislature his Governor's Reorganization Plan Number One (GRP) regarding reorganization of environmental programs. The Legislature has 60 days to either reject or adopt the GRP in its entirety. While all three reorganization proposals create a state Environmental Protection Agency (Cal-EPA), the proposals differ in terms of the programs that are placed under the jurisdiction of the Cal-EPA.

The purpose of this issue paper is to assist the Legislature in understanding the organizational and policy issues surrounding the state's environmental programs, and in evaluating how the specific reorganization proposals address these issues. In this paper we discuss how to improve the efficiency and effectiveness of the state's environmental protection efforts through changes in the organization of environmental programs and through changes in the process for setting environmental protection priorities. Toward this end, we (1) describe California's current organization of environmental programs and how this would be changed by the three reorganization proposals, (2) discuss problems with and recommend an alternative to the current organization, and (3) discuss problems and make recommendations regarding the way the state currently determines environmental priorities.

Specifically, we recommend:

- *Creating a state agency to oversee the major environmental quality programs.*
- *Creating a new department for pesticide regulation and a new department for hazardous waste management and cleanup.*
- *Increasing oversight and control of human health risk assessment.*
- *Establishing an interagency environmental protection council to improve coordination, communication, and priority-setting.*
- *Directing the interagency council to (1) report to the Legislature on the steps the state needs to take to improve ecological risk assessment and (2) establish a process for determining environmental program priorities.*

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THE CURRENT AND PROPOSED ORGANIZATION OF ENVIRONMENTAL PROGRAMS IN CALIFORNIA

For the purpose of the following discussion, we have broadly defined environmental protection programs to include both natural resource protection programs and environmental quality programs. Natural resource protection programs are those that protect our natural resources from degradation. Environmental quality programs are those that focus primarily on protecting human health from environmental risks. Environmental quality programs consist of both traditional pollution control activities (such as air and water pollution) and regulation of other human exposures to hazardous substances (such as drinking water, food safety, and industrial and agricultural worker exposure programs).

Current Organization of Environmental Programs

California's environmental programs currently are organized under six different cabinet-level departments and agencies. As Figure 1 (page 3) shows, natural resource protection programs are centralized within the Resources Agency. Environmental quality programs are spread among the remaining five agencies and cabinet-level departments. Figures 2 through 4 (pages 4 through 6) provide a brief description of the responsibilities of each of the departments and agencies that focus wholly or in part on environmental issues. As the figures show, California currently supports a broad array of environmental efforts administered by diverse departments.

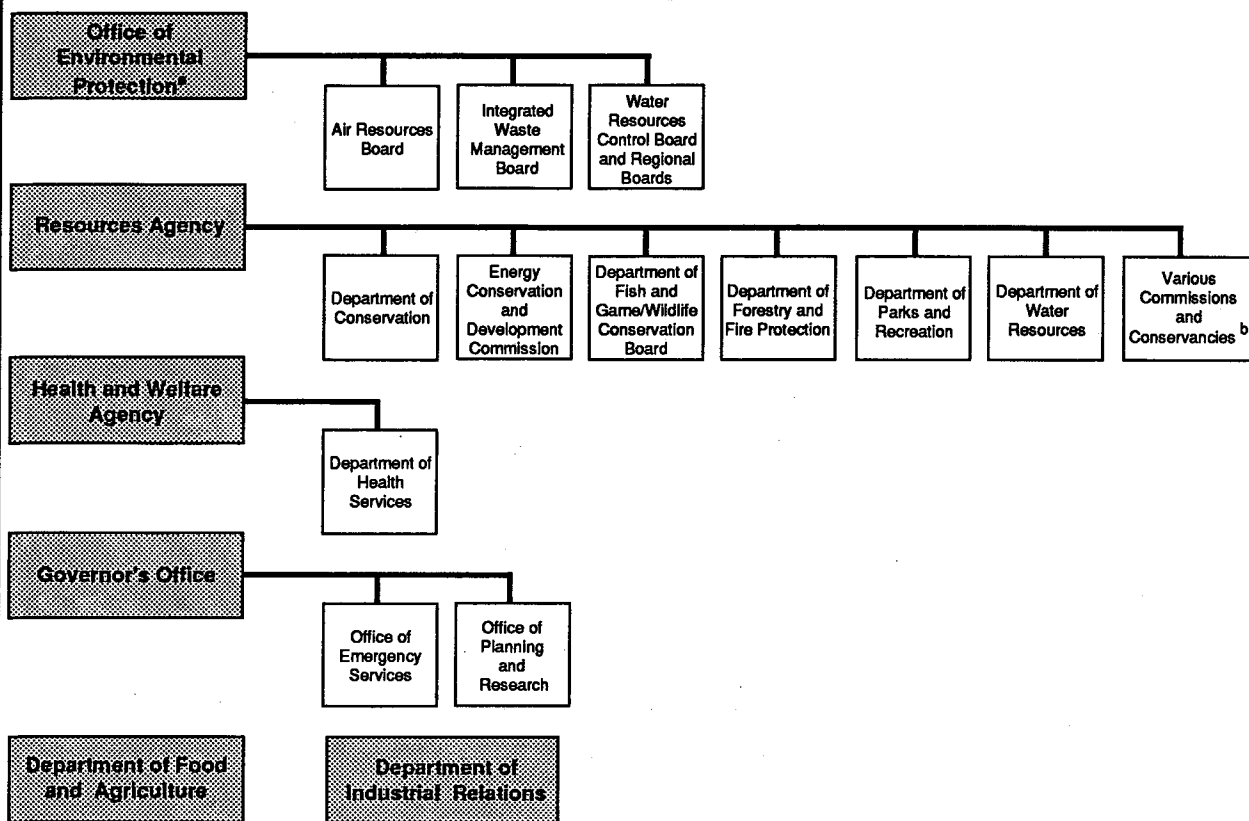
Since environmental problems first began to get significant attention roughly 20 years ago, state and federal governments have reacted by adopting a broad spectrum of laws as environmental problems were identified. Because environmental laws generally have been adopted on a case-by-case basis as problems arose, they often are single-purpose; and the decentralized organizational structures adopted at the state and federal levels reflect that single purpose. Thus, each environmental program tends to focus on the specific problems it is mandated to address without necessarily taking account of related problem areas and their interrelationships. It is this general shortcoming that the current proposals for reorganizing environmental programs seek to address.

Current Reorganization Proposals

Figure 5 (page 7) outlines each of the three reorganization proposals. The three proposals all create an environmental agency (Cal-EPA) and many specific elements of the proposals are similar. The proposals differ primarily in (1) what environmental programs should be within the new agency and (2) whether the assessment of human health risks from chemicals should be in an environmental agency like the proposed Cal-EPA, or in a public health agency.

Figure 1

Current Organization of Environmental Programs In California



^a Formerly Office of Environmental Affairs.

^b Also includes Tahoe Regional Planning Agency.

KEY ENVIRONMENTAL PROGRAM ISSUES

In our review of California's environmental protection programs, we have identified two key issues that detract from effective program implementation and efficient targeting of resources:

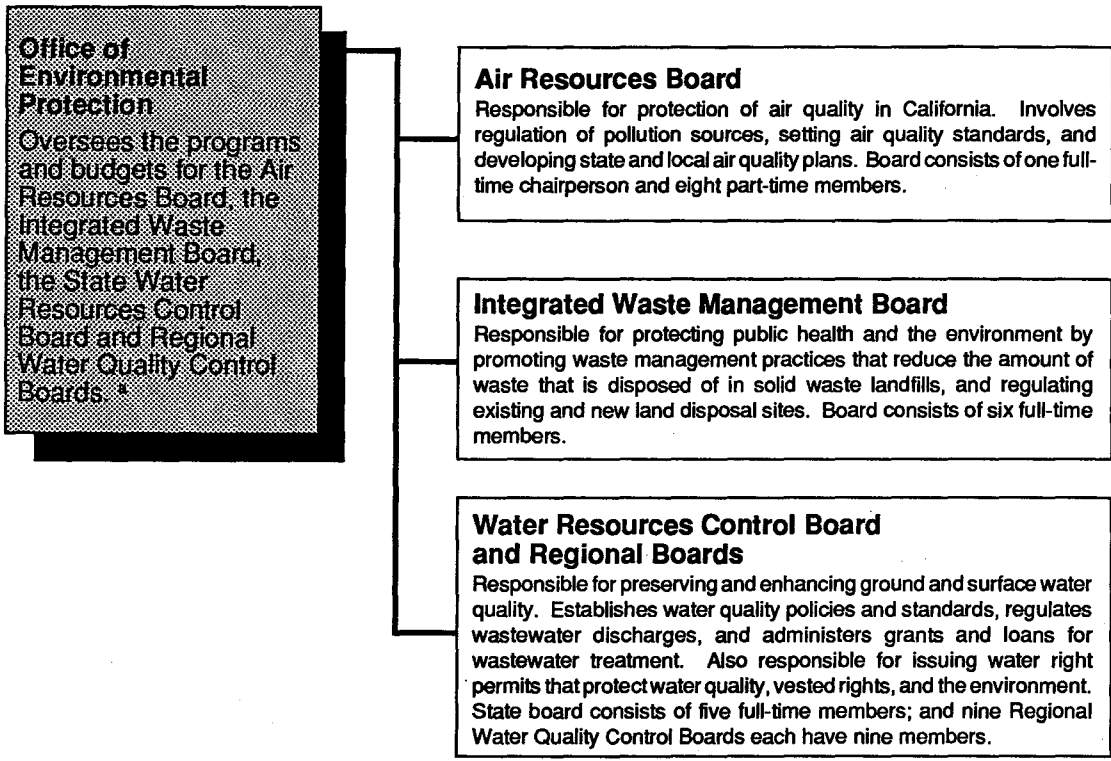
- Decentralized organization of environmental programs may reduce the effectiveness of environmental protection efforts.
- There is no state process for (1) identifying which environmental problems have the great-

est potential of responding to governmental efforts to reduce human health and ecological risk and (2) ensuring that the state's limited resources are targeted to these problems.

The need to address these issues argues in favor of some type of reorganization plan and a change in the state's environmental priority-setting process.

Figure 2

Current Responsibilities of Environmental Programs Under the Office of Environmental Protection^a



^a The three boards are under the jurisdiction of the Resources Agency, but receive program and budget review through the Office of Environmental Protection.

ORGANIZATIONAL PROBLEMS WITH CURRENT ENVIRONMENTAL QUALITY PROGRAMS

In reviewing the current organization of environmental quality programs, we have identified four major problems:

- *First*, the current organizational structure makes it difficult to coordinate environmental problems that cross agency jurisdictions.
- *Second*, health risk assessment and risk management often are housed together, which may compromise scientific objectivity.
- *Third*, the current structure of some environmental programs reduces accountability.

- *Fourth*, intergovernmental relations are hampered.

Each of these problems is discussed in more detail below.

Difficulty in Coordinating the Operation of Environmental Programs

The current decentralized organization of environmental quality programs makes coordination between the programs difficult. Coordination is necessary to:

- *Identify and minimize intermedia impacts.* Intermedia impacts are those impacts that af-

Figure 3

Current Responsibilities of Environmental Programs in the Resources Agency

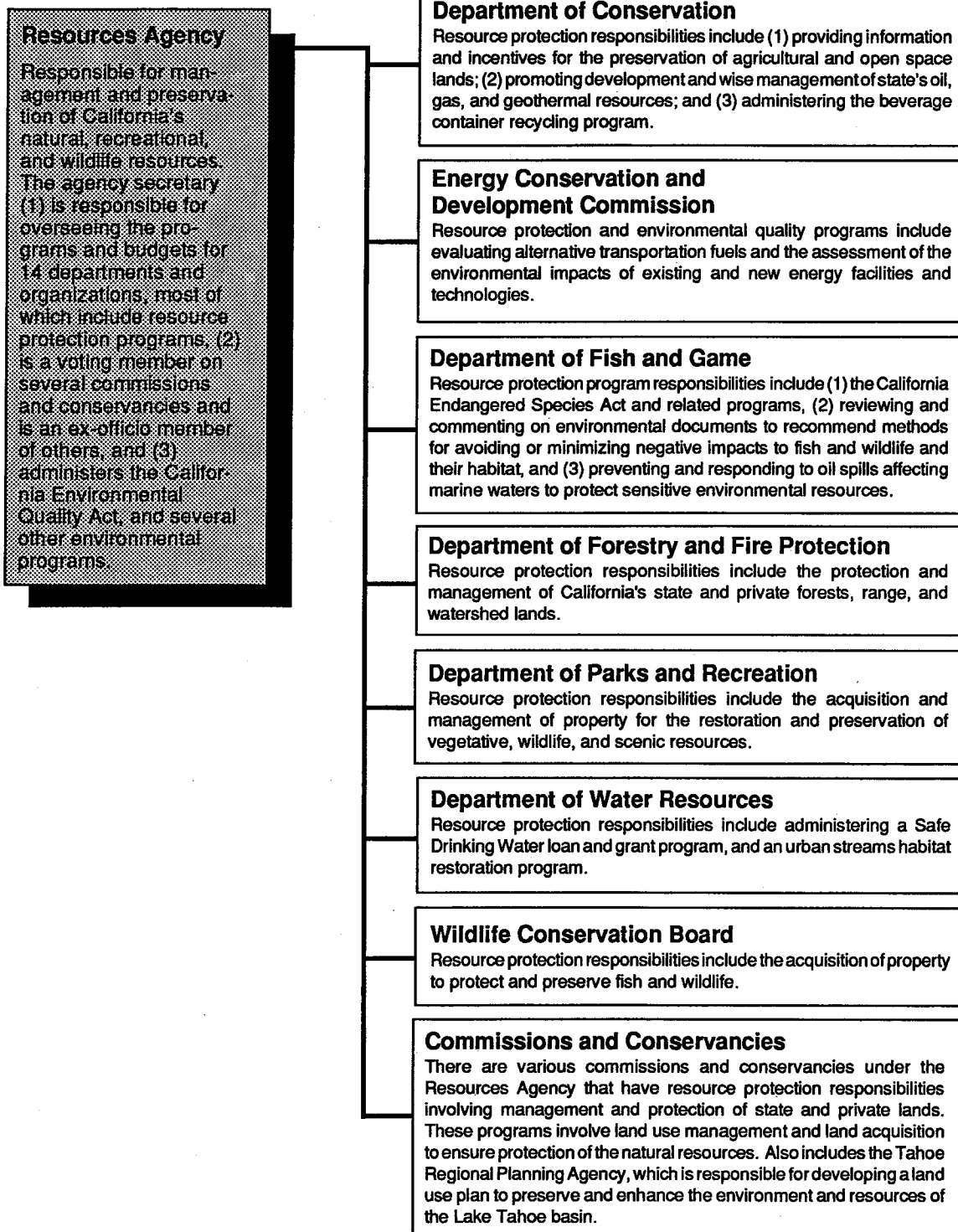


Figure 4

Current Responsibilities of Environmental Programs In Miscellaneous Agencies and Departments

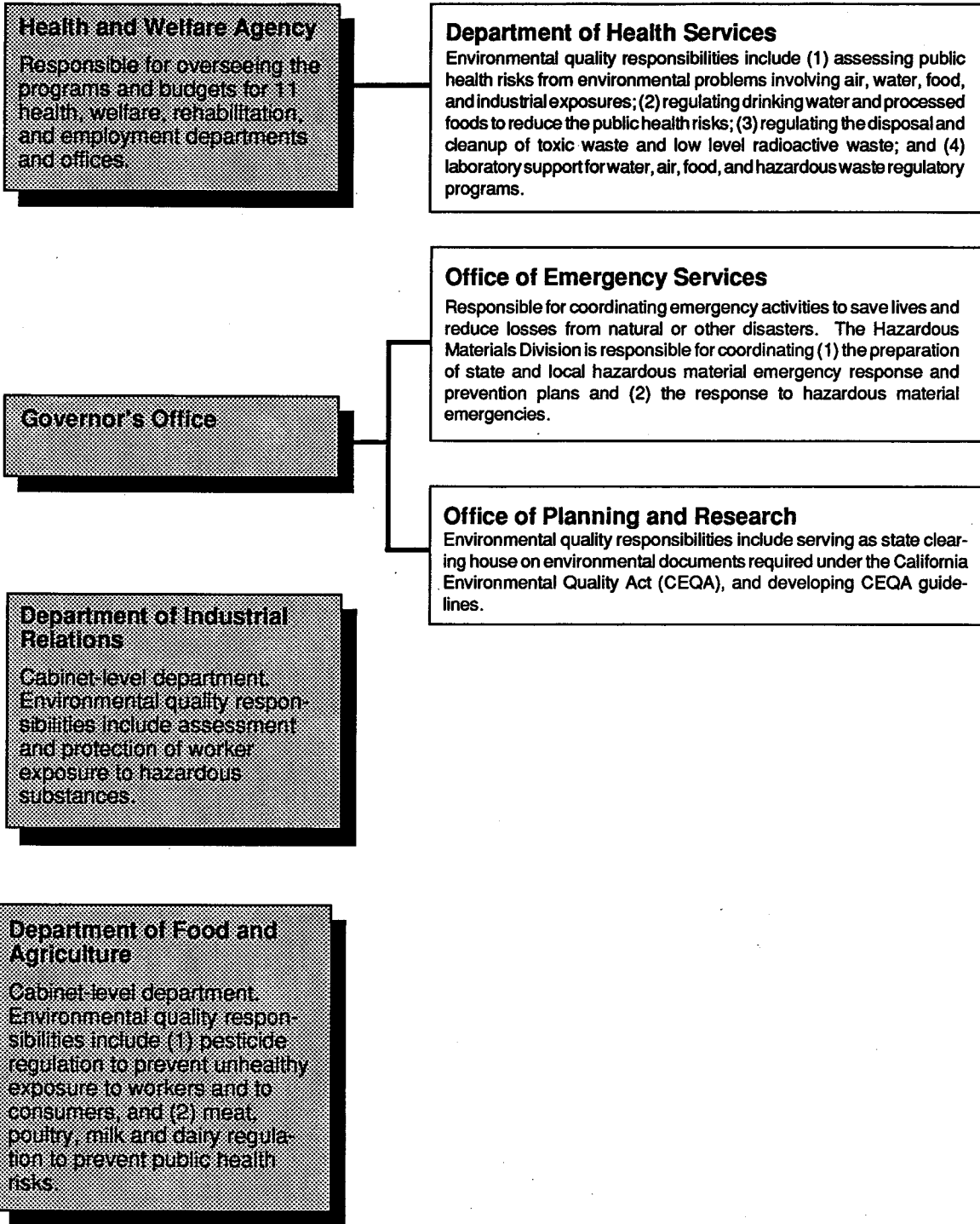


Figure 5

Comparison of Governor's Reorganization Plan with Legislative Proposals for Reorganizing Environmental Programs

Pending in Legislature, 1991

	Governor's Reorganization Plan	SB 51 (Torres) (April 10, 1991)	AB 1122(Sher) (May 15, 1991)
Creation of Environmental Protection Agency	<ol style="list-style-type: none"> Creates Environmental Protection Agency (EPA) with new Secretary of EPA EPA consists of: <ul style="list-style-type: none"> Air Resources Board State Water Resources Control Board and Regional Boards California Integrated Waste Management Board Toxic Substances Control Department (created by plan) Department of Pesticide Regulation (created by plan) Office of Environmental Health Hazard Assessment 	<ol style="list-style-type: none"> Creates Environmental Protection Agency (EPA) with new Secretary of EPA EPA consists of: <ul style="list-style-type: none"> Air Resources Board State Water Resources Control Board and Regional Boards California Integrated Waste Management Board Toxic Substances Control Department (created by bill) 	<ol style="list-style-type: none"> Creates Environmental Protection Agency (EPA) with new Secretary of EPA EPA consists of: <ul style="list-style-type: none"> Air Resources Board State Water Resources Control Board and Regional Boards California Integrated Waste Management Board Toxic Substances Control Department (created by bill) Energy Resources and Development Commission
Creation of Toxics Department	<ol style="list-style-type: none"> Creates Toxic Substances Control Department. Transfers the hazardous waste management and cleanup program currently in DHS to the new department. 	<ol style="list-style-type: none"> Creates Toxic Substances Control Department consisting of: <ul style="list-style-type: none"> Hazardous waste management and cleanup (DHS) Radioactive materials (DHS) Pesticide regulation (DFA) Hazardous materials emergency response (OES) Underground tank cleanup and regulation (SWRCB) Safe Drinking Water and Toxic Enforcement Act of 1986—lead agency role 	<ol style="list-style-type: none"> Creates Department of Toxic Substances Control consisting of: <ul style="list-style-type: none"> Hazardous waste management and cleanup (DHS) Radioactive materials (DHS) Pesticide regulation (DFA) (excluding worker health and safety, and risk assessment)
Creation of Department of Pesticide Regulation	<ol style="list-style-type: none"> Creates Department of Pesticide Regulation. Transfers the entire pesticide regulatory program (DFA) to the new department. 	<ol style="list-style-type: none"> Transfers the entire pesticide regulatory program (DFA) to the new Toxics Department. 	<ol style="list-style-type: none"> Transfers all of the pesticide regulatory program (DFA) to the new Toxics Department, except for worker health and safety, and risk assessment.
Creation of Advisory Council	<ol style="list-style-type: none"> Creates by executive order an Environmental Policy Council to coordinate implementation of environmental programs and make recommendations. 	<ol style="list-style-type: none"> No proposal 	<ol style="list-style-type: none"> Creates Council on Environmental Quality <ul style="list-style-type: none"> Required to report biannually on environmental priorities and recommendations
Reorganization of Risk Assessment and Other Public Environmental Health Programs	<ol style="list-style-type: none"> Creates Office of Health Hazard Assessment within the EPA. Transfers risk assessment functions from DHS to new office. 	<ol style="list-style-type: none"> No proposal 	<ol style="list-style-type: none"> Creates the Department of Public and Environmental Health consisting of: <ul style="list-style-type: none"> All public and environmental health programs currently in the DHS Agricultural worker health and safety and pesticide risk assessment (DFA)

fect more than one of the environmental media of air, water, and land. The choices made in solving a problem affecting one media often can result in worsening or creating another problem affecting another media. For example, groundwater contamination at a hazardous waste site or in a drinking water well often is cleaned up by a process involving technologies that can shift the pollution from the water to the air unless appropriate controls are used.

- **Increase efficiency.** Many departments have overlapping jurisdictions, such as the Toxics Substances Control Division within the Department of Health Services (DHS) and the State Water Resources Control Board (SWRCB) regarding groundwater contamination from hazardous waste, or the Air Resources Board (ARB) and the Integrated Waste Management Board (IWMB) regarding air pollution impacts from solid waste landfills. The decentralized organization of these programs can reduce overall program effectiveness and efficiency by resulting in duplication of effort or by precluding the sharing of information and expertise.

Health Risk Assessment Organizational Problems

Solving environmental quality problems involves a two-step process: (1) identifying and assessing risks and (2) managing or regulating the identified risks. *Risk assessment* for environmental quality programs involves evaluating the human health and ecological risks of chemicals in the environment. In contrast, *risk management* or regulation is the process of adopting and enforcing control measures on chemicals released into the environment so as to limit risk to an acceptable level. Risk assessment information is scientifically based; that is, risk assessment seeks an objective scientific determination of the extent to which—and in what concentrations—chemicals are unsafe. In contrast, risk managers balance this information from the risk assessors with information on financial and technological feasibility, in order to adopt control

measures that can be both implemented and enforced at a reasonable cost.

The state currently places greater attention on human health risks than on ecological risks (for example, risks to ecological systems and natural resources). Our discussion here focuses on the organizational problems of human health risk assessment since this is where the state focuses most of its risk assessment efforts. Later in this analysis we briefly discuss our concerns with the limited attention the state currently gives to ecological risk assessment.

The current organization of human health risk assessment and risk management varies between programs. In some cases, risk assessment functions are located within a regulatory or risk management program. For example, the pesticide regulatory programs (within the Department of Food and Agriculture) and the hazardous waste regulatory programs (within the DHS) each perform their own risk assessments. Alternatively, in other programs, risk assessment and risk management are either within the same department but in different divisions, or in two different departments. For example, the DHS's Health Hazard Assessment Division performs risk assessments for various regulatory programs, both within the DHS (as in the case of drinking water, processed foods, and Proposition 65) and outside the department (as in the case of air pollution control).

We have identified several problems associated with the current organization of the state's human health risk assessment activities. In particular, as discussed below: (1) the placement of risk assessment responsibility within the same organization as risk management can influence, and potentially compromise, the risk assessment process; and (2) decentralized risk assessment can lead to inconsistent or uneven public health protection and policies.

Placement of Risk Assessment Within a Regulatory Program. Under the current organizational structure, risk assessments for hazardous waste cleanup and pesticides are located within the risk management regulatory programs. One undesirable consequence of having the risk assessment

function located organizationally within a risk management or regulatory program is that determinations of risk could be subject to a weighing of costs and benefits as occurs with risk management. Consequently, in some cases, regulatory feasibility could overshadow scientific objectivity. While it is appropriate, in our view, that risk managers balance human health risks with considerations of technical and financial constraints, it is essential for the sake of human health protection that the underlying risk assessments on which the regulatory decisions are based be determined on the basis of scientific evidence and expertise.

The potential for compromising the objectivity of scientific decisions is exacerbated with respect to the state's current pesticide regulatory program. This is because the pesticide program—both risk assessment and risk management aspects—is under the jurisdiction of the California Department of Food and Agriculture (DFA), which has a dual and conflicting mission: the DFA is responsible for both promoting agriculture and regulating agriculture's use of pesticides. This makes it potentially difficult for the department to advocate pesticide regulations that can have a negative economic impact on the industry that the department is charged with promoting.

Inconsistent or Uneven Public Health Protection. As stated earlier, risk assessment responsibilities currently are decentralized among several agencies. A consequence of this decentralized organization is that there is an increased chance that inconsistent health risk information will be provided to risk managers, and potentially result in

inconsistent or uneven levels of public health protection provided by the different environmental regulatory programs.

Currently, there are no statewide standards and procedures for risk assessment, although certain aspects of risk assessment are well-suited to the adoption of such standards and procedures. Rather, each of the three programs that perform risk assessments—pesticides within the DFA, toxic waste within the DHS, and the DHS Health Hazard Assessment Division—follow their own standards and procedures for performing these assessments. For example, according to both the DHS Health Hazard Assessment Division and the DFA pesticide regulatory program, the DHS generally uses a more stringent standard for public health protection than does the DFA pesticide program.

Reduced Accountability

The current structure of some environmental programs can reduce accountability. Specifically, our review indicates that whether the administering agency is a board or department can influence the implementation of the programs. Some environmental quality programs are administered by boards and others are administered by departments. There are three state environmental boards and nine regional boards: the Air Resources Board, the Integrated Waste Management Board, the State Water Resources Control Board, and nine regional water quality control boards. Each board is an independent body whose membership is appointed by the Governor and/or the Legislature. The

“A consequence of this decentralized organization is... potentially inconsistent or uneven levels of public health protection...”

members serve set terms, and the boards appoint the executive directors. The remaining environmental quality programs are within departments whose directors serve at the pleasure of the Governor and whose appointments are confirmed by the State Senate.

State Board Structure. The independent structure of a board is both an advantage and a disadvantage in terms of implementing an effective program. Each board has a particular environmental quality mandate. The independence of a board can ensure that the mandate is achieved, even when there are legislative or administration pressures to do otherwise. On the other hand, the lack of direct accountability of a board to an executive appointed by the Governor and approved by the Legislature can make it more difficult for the Legislature or the administration to set policy directions for environmental quality programs.

For example, if legislative priorities include intermedia problem solving and comparative risk assessment, these priorities may be difficult to achieve, because the boards are mandated only to address the environmental problems under their particular jurisdiction. Because their charge does not extend to other media, boards may be less concerned with the impacts of their decisions on other environmental problems, even if these other problems are of higher concern to the Legislature or the Governor.

Regional Board Structure. There are nine regional water quality control boards under the administration of the SWRCB. While the regional boards' budgets are controlled by the state board, each regional board is independent and adopts its own policies and water quality plans for its geographic area of responsibility. An advantage of the regional boards is that they enable the many differences between the hydrologic areas of the state to be taken into account by allowing for variations in the policies and water quality plans adopted. The disadvantage of the regional boards is that inconsistent levels of water quality protection exist between the regions, even when the water quality objectives of the regions are the same.

Department Structure. Although the department structure generally is more accountable to the administration and the Legislature than is a board structure, there often is less public accountability. In general, the primary form of public input into the risk management/regulatory decisions made by departments is through the public hearings for proposed regulations required by the Administrative Procedures Act (APA), and the public hearings and public review of environmental documents required by the California Environmental Quality Act (CEQA). However, many department actions are not subject to these processes. Consequently, there generally is less public input into departmental decisions than board decisions, where all substantive decisions are made at public hearings.

Intergovernmental Relations Hampered

The decentralized organization of environmental quality programs in California means that the state does not have a unified voice when working with federal or county governments. The federal EPA has begun to increase its attention on intermedia problem solving, risk-based environmental priorities, and ecological as well as human health risks from environmental problems. As this change in federal focus occurs it may become more difficult for California to work with the federal EPA, because the state does not have a centralized organizational structure to respond to new EPA directions or to give input to EPA decisions. In addition, the state may lose the benefit of federal assistance in instances where a central point of contact is necessary. For example, the federal EPA already declined to issue a grant to California for performing a comparative risk assessment of environmental problems because there is no single appropriate entity to receive the grant.

The counties play a large role in implementing many of the environmental programs. Some of the county responsibilities include hazardous waste generator inspections, controlling stationary

sources of air pollution, regulating drinking water quality of small water systems, and regulating solid waste disposal sites. From the county perspective, the decentralized organization of environmental quality programs makes it difficult to identify the lead state agency with whom to work, and to get a unified state voice on cross-agency jurisdictional issues. This problem was aggravated in the current year, when the unit in the DHS serving as the state liaison with county environmental health departments was significantly reduced due to funding cutbacks.

Criteria for Evaluating Reorganization of Environmental Programs

In this section of our analysis, we describe the criteria we believe should be used to evaluate the various options for reorganizing programs and, based on these criteria, we make recommendations for changing the current organization of environmental programs. These criteria are:

- Does the change in organizational structure result in an overall increase in program efficiency and effectiveness? And, do the benefits of the change outweigh the negative impacts of any program disruptions?

- Does the change in organizational structure correct an existing problem that impedes the effective implementation of environmental programs?
- Does the change in organizational structure need to occur now, or can it occur later and/or be phased in over time? Are there incremental changes that can be made to reduce any program disruptions but still allow for program improvement?

The overall goal for any reorganization should be to strive to increase program efficiency and effectiveness with as little disruption as possible to ongoing program functions.

Recommendations for Reorganizing Environmental Quality Programs

Figure 6 (page 12) summarizes the changes in organizational structure that we believe are warranted in order to increase environmental program effectiveness while minimizing program disruption. Specifically, *we recommend:*

- *Creating a state agency that oversees the major environmental quality programs.*

"The overall goal for any reorganization should be to strive to increase program efficiency and effectiveness with as little disruption as possible to ongoing program functions."

- *Creating a hazardous waste department and a pesticide regulatory department, and putting these departments under the jurisdiction of the environmental agency.*
- *Increasing the oversight and control of health risk assessment.*
- *Creating an interagency environmental protection council to provide increased coordination of and communication across environmental programs.*

Creating a State Agency for Environmental Quality. We recommend consolidating the major environmental quality programs under one agency to allow for increased coordination and communication in identifying and solving environmental problems that cross departmental lines of responsibility. The three environmental boards (air, water, and waste), the pesticides program currently within the DFA, and the hazardous waste regulatory program currently within the DHS, are the larger and more closely related environmental

Figure 6	
Recommendations for Reorganization of Environmental Programs	
Legislative Analyst Recommendations	
Creation of Environmental Protection Agency	<ol style="list-style-type: none"> 1. Create environmental protection agency 2. New environmental agency should consist of: <ul style="list-style-type: none"> • Air Resources Board • State Water Resources Control Board and Regional Boards • California Integrated Waste Management Board • New department for hazardous waste management and cleanup • New department for pesticide regulation
Creation of Toxics Department	<ol style="list-style-type: none"> 3. Create new department for hazardous waste management and cleanup consisting of: <ul style="list-style-type: none"> • Hazardous waste management and cleanup (DHS)
Creation of Department of Pesticide Regulation	<ol style="list-style-type: none"> 4. Create new department for pesticide regulation consisting of: <ul style="list-style-type: none"> • Pesticide regulatory program (DFA)
Creation of Advisory Council	<ol style="list-style-type: none"> 5. Create interagency Environmental Protection Council to: <ul style="list-style-type: none"> • Increase interagency coordination of environmental problem solving • Identify steps needed to enhance the state's assessment of ecological risks, and to effectively target environmental risk reduction efforts • Identify priorities for efficiently targeting environmental protection efforts to reduce human health and ecological risks
Reorganization of Risk Assessment and Other Public and Environmental Health Programs	<ol style="list-style-type: none"> 6. Maintain current human health risk assessment organization but increase authority of the DHS to: <ul style="list-style-type: none"> • Adopt state standards for risk assessment • Review risk assessment activities within and outside the DHS

quality programs. Consequently, these programs would benefit the most from being under the same agency jurisdiction. Each program should be moved in its entirety to the new agency to minimize the disruption of existing programs and activities.

Creating New Departments. The pesticide and hazardous waste regulatory programs currently operate under a department structure. While we have identified potential problems with departmental structures with regard to the level of public accountability, we were not, within the scope of this report, able to identify any particular problems with the public input processes within these two programs. Consequently, we recommend that the pesticide and toxic waste regulatory programs become departments under the new environmental agency.

These programs will work best as separate departments, rather than as one new department, because (1) the program responsibilities are sufficiently different that they would not benefit from being in one department, and (2) the pesticide program, which is significantly smaller than the hazardous waste program, could be overshadowed by being in the larger hazardous waste department.

Increase Oversight and Control of Risk Assessment. As discussed above, the current organizational structure of human health risk assessment can result in inconsistent and uneven levels of public health protection. To address these potential problems, we recommend the Legislature:

- Maintain the current health risk assessment organization within the DHS Health Hazard Assessment Division, the toxics program, and the pesticides program.
- Require health risk assessment activities in all environmental quality programs to follow risk assessment standards and guidelines adopted by the DHS Health Hazard Assessment Division.
- Designate the DHS Health Hazard Assessment Division as the lead agency on all health risk assessment decisions, with review and approval authority for health risk assessment activities within and outside the division.

These changes should increase the consistency of the risk assessments across the major environmental programs without causing significant program disruption. We also believe a consistent risk assessment approach, led by the DHS, could result in enhanced levels of public health protection.

We recommend maintaining current risk assessment responsibilities of the DHS within the DHS, because we believe the benefits of shifting DHS risk assessment responsibilities to a new environmental agency (as proposed by the Governor's Reorganization Plan) do not outweigh the potential disadvantages. Our analysis indicates that shifting the DHS risk assessment responsibilities to the new environmental agency is unnecessary because there are no significant problems with the current structure. Further, this shift (1) would result in significant program disruption and (2) could compromise the risk assessment process and reduce the level of public health protection by placing risk assessment within the same organizational structure as risk management programs.

In addition, we recommend maintaining current risk assessment functions within the pesticides and hazardous waste programs. This is because the combination of (1) shifting these programs to the new environmental agency and (2) increasing the oversight and control of risk assessment by the DHS, should provide for more consistent and potentially enhanced levels of public health protection. Moreover, the alternative—shifting pesticides and hazardous waste risk assessment out of the regulatory programs—would result in significant program disruptions. This is especially true with regard to the pesticide program where a large degree of interaction between risk managers and risk assessors is needed due to the high volume of pesticide registrations that are processed.

Establish Interagency Environmental Protection Council. Due to the large number of environmental protection programs, including both environmental quality and resource protection programs, that are located throughout state government (see Figures 2 through 4), no reorganization could effectively consolidate all environmental protection programs under one agency while

maintaining a reasonable span of control. In addition, many environmental protection activities in these departments are related to programs that do not have a specific environmental focus. Moving these programs to an environmental agency would create at least as many problems as it would solve.

This does not mean, however, that there are no benefits to be realized from enhancing communication and coordination among these disparate programs. To the contrary, our analysis indicates that improving coordination and communication among these programs is a necessary step in providing efficient and effective environmental protection.

Consequently, we recommend establishment of an interagency environmental protection council to provide for increased coordination and communication with the many other environmental quality (such as drinking water and occupational health) and resource protection programs outside a new environmental agency. The council also would provide a single point of contact for local and federal agencies on intermedia and interagency environmental issues.

Such a council should be chaired by the secretary of the new environmental agency proposed in each of the current reorganization proposals. The membership should include representatives from environmental quality programs and resource protection programs across state government. Specifically, the council should include, at a minimum, representatives from each board and department under the environmental agency's jurisdiction, the DHS, the Department of Industrial Relations, the Office of Planning and Research, the Resources Agency, and the major resource protection departments under the Resources Agency's jurisdiction (such as the Department of Fish and Game).

ENVIRONMENTAL PROGRAMS MAY NOT BE ADDRESSING HIGH PRIORITY PROBLEMS

We recommend the Legislature direct the interagency council on environmental protection (discussed previously) to report on the steps the state needs to take to improve its ability to assess ecological risks. We further recommend that the Legislature direct the council to establish a process for determining and periodically reviewing the human health and ecological risks in California that can be reduced most efficiently.

Over the last 20 years, federal laws have required state governments, including California, to adopt environmental laws that were at least as stringent as their federal counterparts. Consequently, California's environmental protection laws, priorities, and organizational structure in many cases mirror the decentralized and single-purpose approach of the federal government. Although California has often preceded the EPA and other states in the adoption and implementation of environmental laws, California's environmental priorities have, in most cases, been determined by public perception of risks, the availability of funding, and federal requirements. As a consequence of this approach, the state may be missing opportunities to target its environmental protection efforts on the areas with the greatest potential for reducing both human health and ecological risks. A related issue is whether the state has given sufficient attention to identifying and assessing ecological risks associated with environmental problems, given its nearly exclusive focus on human health risks.

*"We recommend establishment of
an interagency environmental
protection council..."*

California's Expenditures on Environmental Problems

As Figure 7 (page 16) shows, California currently spends over half a billion dollars annually to address a broad array of environmental problems. These expenditures range from \$95 million to address the cleanup of hazardous waste sites down to \$45,000 to report on issues related to global climate change.

Ideally, to appropriately direct California's environmental protection efforts, policymakers and regulators should ensure that each dollar spent on environmental problems is directed to the specific problem area where that dollar will yield the greatest reduction in risk. While expenditure decisions within individual environmental programs may be based in part on such potential for reduction of risk, currently California does not have a process by which environmental program expenditures can be targeted efficiently to result in the greatest *overall* reduction in risk across all environmental problems. Consequently, there is no way to evaluate the relative effectiveness of these expenditures. Because resources available to address environmental problems are scarce, the state should spend the dollars available to support environmental programs in those areas where these expenditures will result in the biggest "bang for the buck"—the highest public benefit for the lowest possible cost.

Ecological Risk Assessment

While the state has placed much attention on the assessment of human health risks from environmental problems, there has been limited effort to assess ecological risks. Ecological risk includes impacts on particular plant or animal species, as well as broader impacts on human health and welfare that could occur with overall degradation of the environment. Because of the potential long-run irreversibility of many of these impacts, their associated risks also should be considered when the state decides where to focus its environmental protection efforts. However, currently this is difficult, if not impossible, to do because the state lacks (1) sufficient information to make these determinations and (2) a process for incorporating ecological risk assessment into the environmental priority-setting process. In part, the lack of attention on ecological risks is because the methodologies and data to determine the long-term valuation of natural resources and ecosystems are in many cases deficient, and in other cases nonexistent. In our view, better information on ecological risk is necessary to improve the state's ability to set expenditure priorities across all environmental programs. There also needs to be an organizational framework to appropriately reflect ecological risks when the state targets risk reduction efforts.

"Currently California does not have a process by which environmental program expenditures can be targeted efficiently to result in the greatest overall reduction in risk across all environmental problems."

Figure 7

Estimated State Expenditures for Environmental Problems ^a 1990-91

(In thousands)

Environmental Problem	All Funds	Percentage of Total Expenditures	General Fund	Federal Funds	Special Funds	Bond Funds
Hazardous waste site cleanup	\$94,997	14.3%	\$6,799	\$20,835	\$67,363	—
Ozone air pollution	88,963	13.4	1,044	1,613	86,306	—
Habitat alteration and destruction	88,722	13.4	3,153	1,216	51,067	\$33,286
Drinking water	67,614	10.2	6,488	3,820	220	57,086
Industrial and municipal solid waste sites	54,557	8.2	5,366	—	49,191	—
Pesticides (excluding worker health)	41,783	6.3	17,142	971	23,257	413
Hazardous waste management (RCRA) ^b	40,654	6.1	975	5,560	34,119	—
Industrial and municipal wastewater discharges	32,093	4.8	10,620	8,887	5,363	7,223
Accidental releases of hazardous substances	27,809	4.2	2,226	3,411	22,172	—
Carbon monoxide air pollution	17,416	2.6	128	243	16,709	336
Nonpoint source discharges to water	15,555	2.3	2,347	4,616	7,145	1,447
Underground storage tanks	14,522	2.2	3,589	3,217	7,716	—
Worker exposure to hazardous substances in industry and agriculture	12,433	1.9	7,322	4,100	1,011	—
Toxic air contaminants	11,952	1.8	2,192	—	9,760	—
Species extinction and biological diversity loss	10,658	1.6	396	1,277	8,985	—
Radiation other than radon	7,953	1.2	6,570	243	1,140	—
Particulate matter air pollution	7,399	1.1	465	508	6,426	—
Groundwater pollution	5,724	0.9	3,856	262	—	1,606
Acid deposition	3,598	0.5	36	—	3,562	—
Indoor air (including radon)	2,607	0.4	697	1,085	825	—
Airborne lead	616	0.1	243	29	344	—
Global climate change	45	0.0	—	—	45	—
Stratospheric ozone depletion	0	0.0	—	—	—	—
Subtotals	\$647,670	97.8%	\$81,654	\$61,893	\$402,726	\$101,397
Uncategorized Amounts^c						
University of California	\$7,686	1.2	7,686	—	—	—
Department of Justice	\$6,662	1.0%	\$4,211	—	\$2,651	—
Total	\$662,218	100.0%	\$93,551	\$61,893	\$405,377	\$101,397

^a LAO estimates based on survey of various state agencies and departments.

^b Resource Conservation and Recovery Act.

^c Program funding could not be apportioned to individual environmental problem.

To improve the process by which the state targets risk reduction efforts, we recommend the Legislature direct the interagency council on environmental protection (discussed previously) to report on the steps the state needs to take to improve its ability to assess ecological risks. We

further recommend that the Legislature direct the council to establish a process for determining and periodically reviewing the human health and ecological risks in California that can be reduced most efficiently.

CONCLUSION

In the preceding analysis, we have focused on what needs to change in the current overall structure of environmental programs in order to enhance the efficiency and effectiveness of environmental problem solving. In our view, consolidating the major environmental quality regulatory programs within an environmental agency would enhance communication and coordination among these programs, thereby improving organizational efficiency, as well as strengthening the state's ability to tackle tough intermedia or cross-jurisdictional problems. In addition, establishing a process for targeting environmental protection spending to those issues and programs where the greatest reduction in risk is likely to occur at the least cost could ensure that California's efforts are as efficient and as effective as possible in reducing overall human health and ecological risk.

Comparing Figures 5 and 6 shows that the specific components of our recommendation for reor-

ganizing environmental programs is similar to the three reorganization proposals pending in the Legislature. We recommend consolidating the major environmental regulatory programs—including pesticide regulation and toxic substances regulation—within a new environmental agency. However, we recognize that no environmental agency with a reasonable span of control can directly oversee *all* programs in state government that deal with environmental protection. Moreover, there are many valid reasons why these programs currently are housed in other agencies. Consequently, we recommend enhancing the ability of an environmental agency to target the broad array of environmental protection problems by also establishing an interagency environmental protection council to advise the agency and the Legislature on how to address environmental priorities, and to act as a communication link between disparate and decentralized environmental programs across state government.