

## *Executive Summary*

California is attempting to solve modern water pollution problems with an antiquated system.

Nearly four decades after the Legislature created the legal foundation to police water quality in the state, the governance structure surrounding the State Water Resources Control Board and the nine Regional Water Quality Control Boards is showing its age. The boards are overwhelmed and under-achieving, and have lost the confidence of a diverse array of water stakeholders.

The decentralized regulatory and permitting structure – with largely autonomous regional boards issuing permits, conducting enforcement and carrying out a wide array of other duties – has created a system that lacks consistency, accountability and transparency, and is unable to match resources to priorities. In fact, lack of prioritization is a fundamental weakness in state water quality regulation. The water boards’ broad and ambitious mandate – to protect all waters at all times – set by state and federal law, makes it difficult to set priorities. This mandate, coupled with a state board that does not exercise enough authority over regional boards and the boards’ failure to consistently consider the costs and benefits of various clean-water solutions, leaves California’s water quality system with dozens of priorities and, in effect, no clear, statewide priorities.

The state needs a smarter strategy to support the boards’ critically important mission: protecting and improving the state’s 7,800 square miles of surface water, as well as its ground water aquifers. Demand for water will grow in a state expecting a population boom. And as Governor Arnold Schwarzenegger’s drought declaration in summer 2008 underscored, water is a scarce resource. The boards’ work will have a profound impact on California’s future: Clean water is essential to the environment, the economy and the state’s well-being.

Despite the importance of water, there are ominous signs of water quality problems throughout the state. The ecological health of the Sacramento-San Joaquin River Delta, the country’s largest estuary and the key cog to the state’s daily efforts to deliver water from water-rich Northern California to parched Southern California, is

deteriorating, partially due to water quality problems. Fish that rely on the Bay Delta, from the Delta Smelt to the Chinook Salmon, are disappearing, due to a combination of factors, including water pollution. Beaches are closed due to water quality issues, and groundwater in parts of the Central Valley is tainted with contaminants.

As these problems indicate, the state and regional water boards face enormous challenges as they attempt to find and lessen the sources of pollution.

Urban stormwater is one of the biggest challenges the state faces. Stormwater pollution is essentially caused by modern city life, as rainwater sweeps metals, lawn fertilizer and other pollutants from city and suburban streets into nearby streams, lakes and the ocean. These sources of pollution are diffuse and difficult to control. For example, the San Francisco Bay regional board has been working for a decade to determine ways to reduce copper pollution in the Bay. The answer may lie in changing the composition of brake pads in cars, which leave copper residue on roads that is pushed into the Bay during storms.

No topic dominated the Commission's study like stormwater regulation. It is the area in which the boards' patchwork of permits has an effect on virtually everyone in California. More than 30,000 stormwater discharges are subject to permits (compared to about 2,200 permits for wastewater treatment) that regulate the behavior of large and small cities, construction sites and industry. A diverse group of water users – the military, small and large businesses, home builders, local governments and more – face enormous costs as they try and control and limit stormwater pollution. Regional boards issue many of the permits, and boards have differing philosophies and policies toward stormwater regulation in the absence of statewide policies and scientific consensus on causes and solutions. As a result, stormwater discharges are subject to significantly different levels of regulation depending upon the region. The costs of cleaning up stormwater are enormous, fueling the debate about who should pay. The costs of stormwater pollution, however, are far greater, as beach closures impact the state's economy and environmental damage threatens to impair wildlife.

Other problems are equally difficult. Agricultural runoff contaminates water throughout the Central Valley and other regions, and efforts are just getting underway to address it. Many regions are seeking to lower levels of salinity in water, which limits its use for drinking supplies or irrigation. So-called legacy pollutants, which

settled into waterways years, decades or even a century ago, remain harmful today. Mercury used to aid gold mining in the Sierra Nevada in the 1800s continues to pollute many northern California water bodies.

And while implementation of the federal Clean Water Act and the state's Porter-Cologne Water Quality Control Act, the two key laws governing water quality, have made profound improvements in wastewater treatment discharges, wastewater remains a critical statewide problem. Local governments, representing small, poor communities as well as larger, richer urban areas, are struggling to pay for upgrades needed to protect the state's waters and ensure they are safe to swim in, fish in or drink. An EPA report noted that California would need to spend more than \$18 billion to properly upgrade and expand wastewater treatment.

In its study of California's water boards, the Commission focused on the boards' role in water quality regulation, by design excluding the state water board's administration of water rights. Quality and supply and the rights to that supply are profoundly intertwined and worthy of broader analysis and discussion. The Commission urges the state to use this report as a guide to improving water quality regulation, as well as a starting point for the important discussion on the much larger water issues facing the state, a discussion that must embrace water rights, water supply and restoration of the Sacramento-San Joaquin River Delta. Clean water is essential to the state's water future, but clean water is an unattainable goal without clear policies on the state's other pressing water issues.

Through public hearings, meetings of two Commission-created advisory committees, extensive interviews with stakeholders and a review of available research, the Commission identified the following critical problems with California's efforts to regulate and improve water quality:

- ***The relationship between the state and regional boards is not well-defined, leading to inconsistencies and inefficiencies among boards, an inability to set statewide priorities and a lack of focus on holding regional boards accountable for clean-water outcomes.*** In statute, the state board has significant authority to steer regional board policies and provide statewide leadership. In practice, however, the state board does not provide enough oversight and regional boards have dramatically different approaches to similar problems, statewide priorities are unclear and there is not enough effort

to understand which regional boards are the most effective at implementing clean water laws.

- ***The state and regional boards lack mechanisms to collect and analyze data properly, use scientific research and cost-effectiveness reviews to drive decision-making and provide useful information to the public, policy-makers and other researchers.*** Regional boards acknowledge they do not always have sufficient data to make decisions, determine whether programs are effective, or analyze whether the costs of regulation are worth the incremental benefits to our water supplies. The state has struggled to implement an information technology system and coordinate scientific research so that it is applied in regulatory processes. Basin plans, the key regulatory document dictating most regional board processes, are out of date in most regions.
- ***An antiquated regional board structure limits candidates for regional boards, hinders transparent decision-making and asks volunteer board members to do too much.*** Regional boards face complex decisions that require water expertise that some board members do not have. Compounding that difficulty are ex parte rules that limit board members' ability to communicate with stakeholders, who in turn feel they are not able to work with boards in a collaborative manner. Federal and state conflict-of-interest provisions dramatically limit the pool of potential qualified candidates.
- ***The appeals process is broken.*** Few stakeholders expressed confidence in the appeals process, arguing it was unclear why the state board decided to hear an appeal or not, and that the state board often appeared unwilling to overturn regional board decisions. In addition, because of their role as an appellate, the state board is reluctant to intervene in regional board matters that could benefit from a state board perspective before appeals are needed.
- ***The state – both water boards and other state agencies – is struggling to adapt appropriate strategies to address non-point source pollution.*** Non-point source pollution provides enormous challenges to the state and will require multi-agency responses, but the state has no structures in place to address water quality problems that stem from land use, centuries-old pollution and air pollution. Urban stormwater is a vexing problem with costly solutions, yet the state has not developed an adequate system for assessing and prioritizing this problem and other non-point source pollution problems.

Inherent to the water boards' inability to achieve better results is the governance structure. Regional decision-making is a cornerstone of California water quality regulation, and it remains a sound structure, due to differing local conditions. But the boards have become too autonomous, and despite efforts by the state board to close the gulf between the boards, the structure creates in appearance and practice 10 different agencies instead of one. State board members, as co-equal gubernatorial appointees with regional board members, have been unable or unwilling to exercise authority over the regional boards. Examples abound of differing policies and processes at different regional boards that are incompatible with the goal of a coherent and cohesive state policy on water quality. Regional boards have had dramatically different policies on water recycling, a key statewide issue, for example. And boards have different methods of defining impaired water bodies, unduly complicating efforts to compare problems in different regions.

In part due to this autonomous structure, there is little focus on clean-water outcomes or accountability. Regional boards admit they have difficulty in analyzing watersheds to determine whether their programs are protecting and improving water quality – the boards' focus on issuing permits and determining whether dischargers abide by permits leaves too few resources dedicated to analysis of whether anything is actually working. In addition, the state board has made little effort to understand why regional boards have dramatically different enforcement statistics, even accounting for size. While the state board does have the authority to set statewide policies, set budgets and hear appeals of regional decisions, a disconnect remains between the state board and the nine regional boards.

The boards also acknowledge they have difficulty prioritizing water quality problems. Seventy-four separate revenue streams, most of which must be spent on specific purposes, prevent the boards from shifting resources toward planning or enforcement, for example. During these dire economic times, it is unlikely that the boards will receive more state funding. But they should have more flexibility to match existing resources with priorities.

In addition to the difficulty in pointing resources toward the most pressing problems, the boards fail to use any type of cost-benefit analysis to help determine priorities. While full-scale cost-benefit analysis is costly and may not be warranted in many regulatory proceedings, the boards could do a better job of considering costs to find the quickest, cheapest solutions to improve and protect water quality. Simply ignoring the costs of compliance means that, too

often, the price is not worth the prize when the boards set tough standards.

Underlying many of the conflicts facing the boards is a lack of data and scientific research as well as poor information technology systems. This has led to continual conflict among boards and stakeholders over information, before even beginning the discussion on proper policy.

Data collection remains a key problem. Water quality monitoring is sporadic throughout the state, leaving water boards to regulate on the basis of incomplete information. A 2004 report noted that as much as 75 percent of the state's rivers, streams, lakes and reservoirs were unmonitored. The boards struggle to organize what data they do have, however. One analysis of the water boards' program to protect and enhance wetlands was hampered because more than 40 percent of the files for the program could not be located.

The state board has struggled to implement a new IT system, making it difficult for the public, policy-makers and even board staff to conduct basic analysis. Incredibly, many board programs still rely on paper records, rather than computerized data. Environmental groups, such as the California Coastkeeper Alliance and Heal the Bay, are much better at using water board data to provide valuable information to the public than the boards can themselves.

And while the boards conduct and fund scientific research, the state has thus far done a poor job of coordinating or consolidating that research or working to infuse it into regulatory programs. Much more research is needed – the boards face a difficult challenge in regulating non-point sources such as stormwater, as there remains a lack of knowledge regarding the best, most cost-effective methods for reducing this kind of pollution – but the boards have failed to use science available to them in an efficient, effective manner.

The lack of data and science mean that the core regulatory document for each region – the basin plan – often is decades out of date. As basin plans guide virtually all regulations in each region, this undermines the legitimacy of the state's regulatory efforts. Basin plans list the uses of water bodies and the limits on contaminants in each of the water bodies to support those uses. Despite this, the state has not committed the resources to update them: Less than 3 percent of the boards' nearly 1,600 employees are dedicated to updating basin plans. The boards' funding structure, which relies mostly on fees to support specific permitting programs and almost no

General Fund dollars, leaves little money available for this critical task. The state must give this task higher priority, commiserate with the role the plans play in ensuring and protecting water quality.

In addition to such basic information problems, the boards' appeals process undermines confidence in the board system. The state board is the appellate body, and acts when petitions are filed protesting a regional board action. The state board rarely overturns regional board decisions, however, and the state board does a poor job of explaining to stakeholders how it considers appeals and why appeals are denied. In addition, the appellate role prohibits the state board from taking a more active approach to regional board issues before conflicts lead to appeals and later, costly litigation. Stakeholders suggested there is a reluctance to launch an appeals process, for fear of reprisal.

Regional board members face an increasingly difficult job, particularly for a position that is essentially a volunteer post. Permits and other issues facing board members involve complex issues that are difficult for many board members who lack technical water backgrounds to understand.

Adding to the difficulty of the job are outdated ex parte rules that often prohibit board members from interacting with stakeholders outside of time-constrained public meetings. This works against the kind of communication between stakeholders and board members required for problem solving, and leaves water users and others in the water community with no avenue to discuss complex issues with board members.

A federal and state eligibility/conflict-of-interest rule, dubbed the 10 Percent Rule, eliminates many potential board members from consideration for an appointment, making it difficult for governors to fill 81 regional board positions. Five of the nine regional boards had one-third of their board positions unfilled during periods of the Commission's study. This high vacancy rate impairs boards' abilities to establish quorums and conduct important business.

Even the smoothest-running government agency, however, would struggle with the challenges facing the water boards. Modern water pollution problems are increasingly difficult and increasingly outside of the typical regulatory purview of the boards. Some studies, for example, suggest that mercury contamination in waters along the California coastline is caused by coal-burning power plants in China.

The state must understand that water pollution is a critical problem that will require creative, multi-agency responses. Aerial deposition, for example, creates water pollution, and will require a joint response from water and air regulators. Land-use planning has a profound impact on water quality, requiring more thought from the state and local governments on how to slow and capture fast-moving stormwater that collects pollutants and deposits them in our waters.

All of these problems require important structural and procedural changes.

## ***Toward a Reformed State Agency***

A new, ideal system should include the following characteristics:

- ***A unified state water quality agency.*** Completely distinct regional boards may have been appropriate in past decades, but current common problems – urban stormwater, for example, or impairments caused by the same contaminants – call for a more centralized regulatory approach unified by a common vision and common processes. A unified state agency can better identify key problems and priorities in the state and align resources to address those problems. Efficiencies gained by a stronger bond between the state and regions will lead to clean water outcomes faster and cheaper.
- ***Local input.*** The need for local input on water quality objectives remains important, as water bodies are unique, with their own problems and solutions. Water quality objectives should continue to be set at the regional level, with vigorous debate and discussion among local stakeholders, while still subject to state oversight.
- ***A focus on accountability and outcomes.*** The public, and policy-makers, have a right to clearer information from the boards as to the state of the state’s waters, and to which programs are effective – and which are not. Additionally, the boards must re-focus their mission, from ensuring that dischargers are abiding by their permits to this fundamental question: Are the state’s programs protecting and improving water quality?
- ***Integrated science, accessible data.*** As water pollution problems increase in complexity, there is a need for a stronger scientific presence within board programs. The state board needs scientific advisors to help guide and coordinate research and utilize that research in regulation. In addition, the boards’ dearth of water quality data must be rectified, and

it can be: There are numerous federal, state and local agencies, as well as other groups, collecting information. The state must pull that information into an integrated system that allows the boards and others to access and use the information that already has been gathered.

To increase efficiency, improve cohesiveness between the state and regional boards and to better develop statewide priorities, the state board and regional boards must be reformed. The Commission proposes creating a 9-member state board, with five of the board members representing statewide perspectives. The remaining four members would be chairpersons of regional boards, serving staggered, two-year terms on a rotating basis. Regional board chairs, as well as the five state board members would be full-time, appointed by the governor and confirmed by the Senate.

Regional boards should be reduced in size from nine to seven members, with the six part-time members – aside from the chairperson – paid a per diem. The six part-time regional board members should represent various constituencies, including local government, industry, agriculture and nongovernmental organizations, as well as one spot reserved for a scientist or engineer with a background in water issues. Regional boards' missions should focus on broad policy issues, such as updating basin plans and setting regional priorities.

Regional executive officers, and the executive director of the state board, would have expanded authority to issue permits, allowing the boards to focus on quasi-legislative actions such as developing up-to-date basin plans. Permits would continue to be issued in public hearings conducted by executive officers or the executive director. Regional executive officers would report to the executive director of the state water board.

This new model would allow a stronger tie between the state and regional boards, create a “strong chair” model at the regional boards that would create new board leadership in the regions and at the state level and focus the state regional boards on policy, not permits. The state board would have better understanding of regional issues, and vice versa. The model retains the idea of regional decision-making, however, allowing regional input on setting water quality standards and beneficial uses. By reducing the regional board size, governors should have an easier time filling all board positions.

Other changes also are needed.

Ex parte rules must be reformed to allow more communication between decision-makers and stakeholders. The regulated community should have greater opportunity to talk with board members who have such significant power to influence their activities. The boards should adopt rules similar to those used by other state regulatory boards such as the Integrated Waste Management Board, which allow communication between regulators and the regulated as long as it is disclosed at public meetings. These new rules should extend to executive officers if they are issuing permits.

A separate appeals board, comprised of water experts and appointed by the governor, should be created to hear appeals of state and regional decisions. This would restore confidence in the appeals process and allow the state board to become more active in regional board decisions before they are made.

To increase regional board accountability and provide better information to the public, the state should create easy-to-understand report cards for major water bodies throughout the state. Modeled after the report card issued by the environmental group Heal the Bay for state beaches, the report cards would provide the public with clear information about whether waters were safe to use, and whether board regulatory programs were effective. The state would need to conduct a thorough, inclusive process to determine the criteria for issuing grades, and report cards could be produced by either the state board or an outside entity, such as a water research institute like the Southern California Coastal Water Research Project or the University of California.

The boards must improve their use of science and data. The state should create a water science advisory board to help the state board determine needed areas of research, coordinate various research projects going on across the state and help the water boards incorporate research into regulatory programs. No new bureaucracy is needed – the board would consist of experts in water science who would provide advice to the state water board during regular meetings staffed by the state board.

Along with creating these new avenues to increase the use of science at the boards, the state is in desperate need of a water quality data library. The state should create an independent water data institute that would serve as a link to various federal, state and local agencies, as well as other groups, that gather water quality data. An independent institute would provide a clearinghouse where the public and policy-makers could find and compare water data. This would

help the state leverage all of the water data that is gathered by various entities around the state but is currently not organized and analyzed.

Of critical importance to the water boards' effectiveness is updating basin plans in every region. The boards' reliance on out-of-date basin plans, of which many are simply unresponsive to the current, non-point water pollution issues the boards face, hinders many of their programs. The boards should emulate the model created by the Santa Ana Regional Water Quality Control Board, which created a stakeholder task force that led to robust research, consensus-building and a largely re-written basin plan in 2004. Stakeholders – not the cash-strapped state – funded the basin plan update. Authorizing regional board executive officers to issue permits and take other quasi-judicial actions will free up the board members to focus on modernizing basin plans.

The water boards, and other state agencies, must focus on solving water quality problems in creative and collaborative ways. The water boards must increase the use of public education programs, and stakeholder task forces to confront current and complex issues, as well as improving their use of regional monitoring to determine the overall effectiveness of problems and spot new trends. The boards should find ways to examine watersheds and develop solutions that increase watershed health. Water quality regulators and air quality regulators must work together to address air pollution's effects on water, and discussion must occur among state leaders regarding land use decisions that impact water quality.

Finally, the water boards should incorporate cost-effectiveness tests into their analysis of programs to help them prioritize and find the most cost-effective solutions to water quality problems. The goal is not simply to eliminate costly fixes, but to help the regulated and regulators find ways to improve water quality in the most cost-efficient manner possible and meet statutory requirements to balance water quality needs with other factors, such as economics.

Throughout its review of the water boards, the Commission met many board members and staff who were professional, dedicated and tireless in their mission of protecting water quality. Many were aware of the criticisms of the boards' structures and processes and working diligently to improve the boards. Efforts are underway at the state board to improve the information technology system, for example, and to adopt more statewide policies that provide direction to regional boards. The problems the Commission found were not due to a lack of passion or professionalism by board personnel, but rather

structural and systemic issues that can be and must be changed. This gives the Commission confidence that the water boards can improve their performance in the coming years.

***Recommendation 1: To move toward a more consistent, transparent and accountable governance structure that allows for both statewide policy and regional flexibility, reform the State Water Resources Control Board and the Regional Water Quality Control Boards by strengthening ties between the boards, refocusing the boards on broad policy-making and restoring confidence in the appeals process. Specifically, the state should:***

- ❑ Restructure the State Water Resources Control Board as a full-time, 9-member board charged with creating state policy, setting priorities and overseeing regional board activities. Members of the board should be appointed by the governor and confirmed by the state Senate. Five members of the state board would serve solely as state board members, including one person who would be chairperson of the state board, as named by the governor. These members should have the following backgrounds: One in engineering, one in water rights law, one in water quality, one in water-related science or resource economics, and another would represent the public. The position of regional chairperson would become full-time. Four regional chairpersons would serve on the state board for staggered, two-year terms, with membership rotating among all nine regional board chairpersons.
- ❑ Reconstitute the nine Regional Water Quality Control Boards as seven-member boards with six part-time members and a full-time chairperson, all appointed by the governor. The chairperson would be charged with monitoring statewide policies that are implemented at the regional level. Boards would continue to be stakeholder-boards, with six part-time members with the following backgrounds: experience in water supply, conservation or production; irrigated agriculture; industrial water use; local government; water science or engineering; and experience with a nongovernmental organization associated with recreation, fish or wildlife. Regional boards would focus on updating basin plans, adopting Total Maximum Daily Loads and other quasi-legislative functions.
- ❑ Empower the executive officers of each Regional Water Quality Control Board and the executive director of the State Water Resources Control Board to issue permits, allowing the boards to focus on updating basin plans, setting broad policy and focusing on upcoming water quality challenges. Executive

officers would become Career Executive Assignment positions and report to the executive director of the State Water Resources Control Board. Regional boards would conduct an annual evaluation of the executive officer that would be taken under advisement by the executive director.

- ❑ Exempt state and regional board members, regional board executive officers and the state board executive director from ex parte rules within the state Administrative Procedure Act that prohibit interaction with regulated entities. Instead, require board members and permit-issuing executives to disclose their contacts with regulated entities at public meetings, as is currently done by other boards such as the Integrated Waste Management Board.
- ❑ Create a new appeals board that would address appeals of quasi-adjudicative functions such as permits and enforcement actions. Removing the appeals process from state board jurisdiction would restore confidence in the process and allow the state board to take a more proactive approach in regional board issues. The members should have backgrounds in water issues and would be appointed by the governor to hear appeals. The board would follow Administrative Procedure Act policies in conducting hearings.

***Recommendation 2: The state must improve and increase its use of data, scientific research and planning to better inform the public, respond to current and future water quality problems and focus more on accountability. Specifically, the state should:***

- ❑ Create a Water Science Advisory Board for the State Water Resources Control Board. Members, appointed by the state board, should have backgrounds in environmental science and engineering. The board would help both the state and regional water boards and other state water agencies coordinate research, propose needed research, advise the boards on how to incorporate research into regulatory processes and increase the effectiveness of scientific peer review.
- ❑ Create an independent Water Data Institute that would act as a state library for water quality and supply data. The institute would pool information from various state agencies and other water monitoring groups to provide accessible information to the public, regulators and researchers.
- ❑ Develop report cards. Report cards for each major water body should allow the public easy access to information they can use and could act as a way to hold regional boards

accountable for their effectiveness. The report cards should be developed and published by regional science institutes or an independent entity, such as the University of California.

- ❑ Launch a statewide effort to ensure that all regions have up-to-date basin plans. Regional boards should propose stakeholder-financed efforts similar to the one conducted by the Santa Ana Regional Water Quality Control Board.

***Recommendation 3: The state must increase focus on clean-water outcomes and emphasize collaboration, creativity and problem-solving to address current water quality problems. Specifically, the state should:***

- ❑ Collaborate with other government agencies. Because land use, automobile emissions and other factors outside the traditional purview of the water boards are major contributors to non-point source pollution of water, the water boards must work with other government agencies on solutions. The state water and air boards should routinely meet to develop regulatory strategies to address air pollution's effects on water. The state should revive the Environmental Protection Council, which already exists in statute and consists of the heads of each of the boards and departments within Cal/EPA.
- ❑ Emphasize a watershed approach. To increase focus on outcomes and solving complex problems, the water boards should develop more processes aimed at watershed health.
- ❑ Use stakeholder task forces. As the Santa Ana Regional Water Quality Control Board has done, other regional boards should increase the use of stakeholder task forces to work through difficult regulatory issues.

***Recommendation 4: The water boards must develop standardized economic analysis procedures to help set priorities and determine the most effective and efficient means to improve water quality.***

- ❑ To fully implement Porter-Cologne's demand that water quality regulations be reasonable, given other economic and social factors, the boards must institute the use of economic analysis into decision-making. Cost-effectiveness analysis also would increase transparency of board decision-making and help the boards set priorities.