**California Regional Water Quality Control Board,
San Diego Region**

Priority Opportunities for the San Diego Water Board

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Introduction

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) is charged with preserving and enhancing water quality from the international border with Mexico north to southern Orange County, and from the Pacific Ocean east to the Laguna Mountains. This region of well over 3 million people consists of a variety of landscapes and is home to more imperiled plants and animals than any other county in the nation. Such diversity presents challenges and opportunities for the San Diego Water Board to fulfill its mission to the people of California.

Challenges in the San Diego Water Board region include: dense urban populations that contribute vast amounts of non-point source pollution; historic loss of most wetlands to modified landscapes and hardscapes; a mixed-use back country that is home to over 6,000 mainly small agricultural operations that produce high-value crops requiring intensive demands on water, fertilizers and pesticides; and the last contiguous estuary in southern California that is not bisected by a major anthropogenic barrier. The stressors placed on water resources by such a large and concentrated human population demand a high-priority be placed on preserving and restoring wetlands to protect remaining beneficial uses. To do so, requires regulation of here-to-fore essentially unregulated agricultural practices and outreach and education throughout the region, extending to even south across the international border.

The San Diego Water Board has endorsed a Practical Vision to identify the highest water quality issues in order to guide work toward the most efficient use of resources. Without sufficient resources to address issues such as non-point sources of pollution like irrigated agriculture and to protect high value wetland resources like the Tijuana River Valley, there is only a vision. Vision alone does not preserve nor enhance the quality of California's water resources. Present and future generations of Californians deserve a San Diego Water Board that finds a way to make progress in these high priority issues.

Irrigated Lands

The Problem

The San Diego Water Board has historically waived the requirement to submit reports of waste discharge or obtain waste discharge requirements for discharges from irrigated farms and nursery operations. This has resulted in very little oversight of these waste streams even though they can contain harmful pesticides, herbicides, fertilizers, other salts, sediment, and bacteria. Agricultural operations are also exempt from federal regulation under the National Pollutant Discharge Elimination System. The extent of water bodies impaired by these pollutants in agricultural parts of the San Diego Region, however, has prompted the San Diego Water Board to begin developing waste discharge requirements (WDRs) for agricultural and nursery operations that will add updated requirements for protecting surface

and ground water. The WDRs, along with education and outreach, will be the Board's principal tools for restoring the health of impaired waters in agricultural and nursery areas of the region. Improving pollution control at agricultural and nursery operations will also decrease the overall loading of pollutants to fragile coastal estuaries and lagoons, many of which are impaired by eutrophic conditions linked to fertilizers. Likewise, decreasing pollutant loads to the Pacific Ocean will help protect the many sensitive and important habitats along the coast.

The WDRs are also needed to be fair to coastal storm water agencies, who have complained about the quality of water that enters their systems from upstream agricultural and nursery lands. Pollution control programs in agricultural and nursery areas would greatly assist downstream storm water agencies (cities and counties) in meeting the requirements of their storm-water discharge requirements.

Nursery products in San Diego County generated over $1 billion in revenue in 2013. Fruit and nut crops produced over $400 million in revenue, while vegetable and vine crops produced over $170 million. Agricultural crops in the San Jacinto/Temecula Valley area of Riverside County generated over $165 million in 2013.[1] Agricultural and nursery crop production in the Orange County area of the Region is not as significant in comparison to the San Diego and Riverside County areas. The total value of crops in the entirety of Orange County was just over $137 million in 2013, and only a fraction of this total was produced in the San Diego Region.[2] A rough estimate for the acreage-in-production for the San Diego Region is 300,000 acres.

Developing and implementing the board's irrigated lands program is no small undertaking considering the sheer number of farms and nurseries in the region that will need to be identified, contacted, educated, and enrolled in the WDRs. San Diego County alone has 5,732 farms, more than any county in the United States. Sixty-eight percent of the farms are less than 10 acres in size. The median size farm is just 4 acres. Add to that the farms of southwestern Riverside County and to a lesser extent, southern Orange County, and the number of new dischargers to introduce to this program is daunting.

As with any new program, significant effort is needed now, at the outset, to get the program off to a strong start and ensure its long-term success. Identifying thousands of agricultural and nursery dischargers and convincing them to enroll in the WDRs will require a robust, and well planned and executed education and outreach effort. As learned when trying to enroll dischargers in the now expired agricultural waiver, there is no easy way to identify owners and operators of these facilities. First, there is the sheer number of operations to enroll. Second, many operators lease rather than own the land, or farm on a part-time basis and are difficult to identify and contact. Finally, as with any new class of dischargers being regulated for the first time, a low degree of cooperation is expected in the early stages of the

[1] The Temecula Valley is in Region 9. The San Jacinto Valley is in Region 8.
[2] All crop data came from the 2013 annual crop reports for the three counties.

program because most new dischargers don't embrace or understand the need for regulation. Based on the scope and importance of the Irrigated Lands Regulatory Program in the region, an entire unit of staff is likely needed to create, implement and oversee a successful program.

Although the State Water Board receives waste discharge permit fee revenue from irrigated lands regulatory programs throughout the State, the San Diego Water Board receives a zero allocation of these funds. All of the work in the San Diego Water Board's irrigated lands regulatory program comes from other resources; specifically the non-point source (NPS) and waste discharge permit programs. With the redirection of NPS and WDR program resources to the Irrigated Lands Regulatory Program, other NPS and WDR initiatives have to be indefinitely set aside. For example, there are no resources to address NPS pollution at boatyards and marinas, or to participate in the new statewide Grazing Lands Program. There are also no resources to address the WDR permitting backlog, so it has increased unabated. Nor are there resources to timely process new Reports of Waste Discharge for other individual and community wastewater and non-federal dredge and fill projects. The redirection of WDR Program resources to the Irrigated Lands Regulatory Program has also made it difficult to timely address recycled water program work, including permit writing and salt and nutrient management planning.

Enrollees in the WDRs, once adopted, will generate fee revenue for the waste discharge permit funds that support the statewide irrigated lands regulatory programs. Based on the enrollment threshold planned for the WDRs, it is expected that half of the agricultural and nursery lands in the region will enroll into the WDRs within 5 years of their adoption. Depending on enrollment patterns, and using the 2014-15 fee schedule, it is conservatively estimated that enrollments will generate between $150,000 and $200,000 in annual revenue.

Increased fee revenue does not automatically increase the San Diego Region's allocation of Personnel Years in the irrigated agriculture or other waste discharge permit programs. The Water Boards' fee revenue for the waste discharge permit program must match the Legislature's enacted budget. The Water Boards may request authorization to increase staffing levels to accommodate actual or anticipated increases in workload when programs expand. If the Legislature does not appropriate funds for additional Personnel Years, the State Water Board must reduce fees so that revenues match the budget.[3] In that case, the State Water Board must allocate existing Personnel Years statewide,[4] taking into account the increased workload in the San Diego Region as well as ongoing needs elsewhere.

[3] Wat. Code, §13260, subd. (f)(1). The Water Code does not require a precise match of each waste discharge permit program area with the fee revenue from that program area. The total fees for waste discharge requirements and waivers as a whole must match program needs, but the cost of the irrigated agriculture program need not precisely match fees paid by regulated growers as long as the allocation of fees is not unfair or unreasonable. Currently, there are eight general water quality fee categories: land disposal (landfills, waste piles, surface impoundments and mines); other non-NPDES discharges to land; sanitary sewer systems, dredge and fill operations; NPDES storm water; other NPDES; confined animal facilities (e.g., dairies and feedlots) and irrigated agriculture. The Water Boards endeavor to set fees for each program area that approximate the cost of that specific program area for policy reasons.
[4] Wat. Code, §13168.

The Need

As mentioned above, an entire unit is needed for the Irrigated Lands Regulatory Program, which breaks down to 1 senior supervisor and 4 technical staff. Work falls into four major areas: education and outreach, developing the WDRs, enrolling eligible operations, and providing compliance assistance and oversight. The greatest need of the program at this time is for effective education and outreach to facilitate the WDR adoption, and to ensure an effective and efficient enrollment process. The scope of the education and outreach program is broad reflecting the diversity, size, and sophistication of the discharger community. San Diego Region farms are diverse in terms of crops grown, range in size from less than 1 acre to hundreds of acres, and vary in sophistication with respect to on-farm pollution control. The discharger community is also very large, with thousands of operations under the Board's regulatory authority.

What Can Be Accomplished

The goals of the Irrigated Lands Regulatory Program align with the Practical Vision by ensuring that the staff, funding, authority, tools, and influence of the San Diego Water Board are put to the best possible use for the purpose of protecting and restoring the chemical, physical, and biological integrity (i.e., the health) of waters in the San Diego Region. The Irrigated Lands Regulatory Program will bring pollution control and monitoring to a large and heretofore largely unregulated part of the Region where impaired water bodies are the norm. Through implementation of the WDRs and the education and outreach program, significant progress will be made in restoring impaired water bodies and avoiding the need to develop and adopt costly and time consuming total maximum daily loads (TMDLs) that are likely to simply underscore the need for a more effective irrigated lands program.

The monitoring and reporting program linked to the WDRs will implement the *Framework for Monitoring and Assessment in the San Diego Region* by being question-driven, and for the most part coalition-based. As the program matures, agricultural monitoring will link with storm water and other monitoring programs to create comprehensive programs that are watershed-wide, that leverage resources among dischargers, that are flexible, and that lead to the identification and better control of the pollutant sources impairing water bodies. Water body health will improve.

Transparency and communication are two of the four values of the San Diego Water Board and the Practical Vision. Participation of the public in the decision making process of the Water Board is a hallmark of the board governmental structure in California and is essential to success. The Irrigated Lands Regulatory Program embraces this philosophy and recognizes that success depends on a strong education and outreach program. Accordingly, this program envisions community outreach and information sharing with stakeholders, community groups, governmental and non-governmental organizations, researchers in academia, news media, elected officials, and the general public.

Border Liaison

The Problem

There is serious chronic pollution and contamination in the Tijuana River Estuary and beach. Successful restoration requires a border liaison to coordinate and leverage local, State, and international partnerships.

The Tijuana River Estuary is the largest coastal wetland in Southern California and is a national and State reserve for endangered species, long-term research, and education. The Estuary is an essential breeding, feeding and nesting ground and key stopover point on the Pacific Flyway for over 370 species of migratory and native birds, including six endangered species. The river, estuary, and beach also support popular recreational activities. There are 35 miles of multi-use trails along the river valley, and adjacent beaches are enshrined in California surf culture.

The Water Board's mission to protect those beneficial uses is challenged because over 75 percent of the Tijuana River watershed is in Mexico. Sewage, sediment, trash, and chemicals flow downstream to California waters and the beach. Storm water flows bring nearly unimaginable volumes of sediment and trash into the valley and estuary. This smothers salt marsh wetlands, closes recreational activities, and costs public agencies significant resources to remove. Flood control is also an extremely expensive and difficult challenge because land development in Mexico and in the U.S. has significantly constrained river flows. Floods increasingly threaten property, public safety, border infrastructure, and the wetland reserve. Sewage from Mexico routinely closes beaches after storms and during frequent sewage spills. The Tijuana River mouth was a Heal-the-Bay "beach bummer" in 2012/13 and in 2013 received an "F" grade for dry-weather in the winter due to sewage spills.

The Need

The San Diego Water Board needs a full-time person to manage and sustain collaboration efforts in the Tijuana River Valley. For several years, the Water Board Executive Officer has led efforts to initiate collaboration and lead more than 30 organizations to craft a Recovery Strategy in the River Valley. The success of the Recovery Strategy is dependent upon continued and focused participation from the Water Board. Yet, continued progress is jeopardized by the lack of a person dedicated to the issue.

To achieve the San Diego Water Board mission in the Tijuana River Valley, a full-time border liaison is needed to:

- Provide leadership to address trans-border waste water, industrial pre-treatment, sediment and trash issues in the Tijuana River Valley.

- Coordinate and leverage partnerships with 30+ agencies and non-governmental organizations (NGOs). Restoration, education, monitoring, and planning require collaboration and participation of numerous parties.

- Communicate effectively to all stakeholders through multi-media, bilingual efforts.

Collaboration, rather than traditional regulation, is a more efficient and effective approach to deal with international sources of pollution and flooding. To achieve the collaboration necessary in this complex watershed, the Water Board needs a full-time position with scientific, leadership, and communication skills.

What Can Be Accomplished

A Border Liaison could implement a lasting Tijuana River Valley Recovery Strategy through collaboration rather than piecemeal cleanups through regulation. The existing Recovery Strategy identifies goals and actions needed to clean up the valley and restore beneficial uses of waters. The Tijuana River Valley Recovery Team, the multi-organizational group that wrote the Recovery Strategy, has potential for bringing parties together to identify, prioritize, and fund actions.

A border liaison would help achieve specific environmental outcomes including:

- Healthier ecosystems:
    - Restoration of riparian corridors from removal of fill at the Brown site.

- Better recreational opportunities:
    - Reduced flooding during storm events as restrictive fill is removed from the stream channel.
    - Less trash in the Estuary following storm events as source controls in Mexico and retention basins in the U.S. are improved.

- Safer water to swim:
    - Less beach closures following storms as sewage infrastructure in Mexico and the International Boundary and Water Commission wastewater treatment plans are better managed.

Following the roadmap of the San Diego Water Board's Practical Vision Chapters 3 and 4, a border liaison would provide leadership to accomplish restoration of key portions of the River Valley and help improve local and international relationships necessary for long-term sustainability of the Valley's beneficial uses.

Wetlands

The Problem

Southern California coastal wetlands and watersheds have been dramatically altered or destroyed by agricultural and urban development over the past 150 years. Rivers and creeks have been rerouted, dammed, channelized, and paved. Wetlands have been filled and riparian areas have been lost. Wetlands have been altered through land use changes leading to habitat losses in terms of biodiversity and functionality. Native wetland species have been displaced by proliferating non-native invasive species. All of these factors have led to a significant decline in the overall general health and integrity of Southern California's watersheds and wetland habitats.

Wetlands are essential in realizing the chemical, physical, biological, and other characteristics of the waters of the State. Wetlands improve water quality by filtering and assimilating waterborne sediment, pesticides, bacteria and other pollutants. Many important goals to restore and maintain water quality cannot be achieved if wetlands are not protected and restored. The loss of water quality functions in coastal wetlands for example has contributed to deteriorating water quality at Southern California beaches, coastal lagoons and bays, and off shore waters.

From a statewide perspective, from the 1780's to the 1980's, California lost approximately 91 percent of its wetlands. The State currently has approximately 2.9 million acres of wetlands, roughly a tenth of the wetland area that was present two centuries ago. Numerous reports indicate that Southern California, in particular, has experienced the greatest loss of coastal wetlands of any coastal region in the United States.

In response to these conditions, the California Wetlands Conservation Policy, established over twenty years ago and referred to as the "No Net Loss Policy," announced the intent to advance statewide efforts to ensure no overall net loss and a long-term net gain in the quantity, quality and sustainability of wetlands in California. California relies heavily on the federal regulatory program under Clean Water Act (CWA) section 404, and the State's related CWA section 401 water quality certification program, to protect and restore wetlands. To achieve no net loss of wetlands under these regulatory programs, permittees are expected to avoid deliberate discharges of materials into wetlands and then to minimize discharges that cannot be avoided. When damages are unavoidable, permittees are required to provide "compensatory mitigation" as a condition of issuing a permit.

Underlying wetland compensatory mitigation is the assumption that it is scientifically possible to re-create the structure and functions of a complex wetland, either by restoring a site that had previously been a wetland or by creating an entirely new wetland. Recent studies reveal that while many wetlands are re-created to compensate for wetland loss in other areas, many of these wetlands do not successfully replicate the same level of ecosystem functions and services provided by the natural wetland impacted through permitted activities. In many cases the physical scale of compensatory mitigation projects is

insufficient and incompatible with surrounding watershed land uses that exert control over ambient water quality and hydrology. As a result, the goal of no net loss of wetlands is not being met through compensatory mitigation.

Further degradation threatens as new stressors are affecting Southern California wetlands as population growth, land development, sea level rise, and climate change occur throughout the region. Population growth and related development pressures contribute to adverse transformation of wetlands from changes in hydrologic patterns and sediment flows, increased inputs of pollutants, channelization of stream corridors, and encroachment of urban development. Moreover, the world is entering a period of rapid uncertain climate change. If California's climate becomes drier and warmer, changes in the availability of water will cause wetlands to become smaller or more ephemeral; some seasonal wetlands may even disappear. Sea levels are also rising from the thermal expansion of ocean water and melting of glaciers and polar ice caps. Existing tidal wetlands may disappear if marshes and tidal flats are unable to migrate inland to offset sea level rise. This will have disastrous impacts on the associated plant, bird, fish, and recreational beneficial uses. Healthy wetlands could serve to mitigate many of these impacts.

The Need

The regulatory approach of California's Regional Water Boards set forth above is essentially "*playing defense"* by following a protection-oriented strategy to ensure that all impacts to wetlands that occur as a result of permitted development are adequately offset. It is reactive and not proactive. An *"offense"* is also needed to provide a strategy component to better advance and promote *wetland restoration* to help stem losses and create a gain in natural wetlands and their associated functions. Wetland restoration is a broadly defined term that refers to the manipulation of a former or degraded wetland's physical, chemical, or biological characteristics to return its natural functions[5]. Based on these considerations a consensus was reached by the Water Quality Coordinating Committee (WQCC) at its October 2014 meeting for each Regional Water Board to identify three (3) specific wetland restoration projects of varying complexity, "*easy, medium and aspirational,*" and to develop a work plan for the funding, implementation and monitoring of those projects by October 2015.

Given the extent of historical loss and the limited opportunities remaining, restoration of wetlands in the San Diego Region must become a high priority. Wetlands are complex ecosystems that provide many services of exceptional value to society. Wetlands improve water quality by removing waterborne sediment, nutrients, pesticides, and bacteria. Many wetlands are prone to wet and dry periods that promote the recycling of nutrients back into wetland vegetation, the foundation of many food webs. Wetlands provide habitat for hundreds of fish and wildlife species, including feeding and nesting habitat for migratory birds on the Pacific Flyway and habitat and food chain support for commercial and

[5] Restoration practices include "Re-establishment," the rebuilding a former wetland; and "Rehabilitation," repairing the functions of a degraded wetland.

recreational fisheries. Wetlands provide abundant recreational opportunities to society for hunting, fishing, nature photography, outdoor environmental education, and the enjoyment of open spaces. Wetlands can also play an important role as buffers against rising sea levels and for sequestering carbon to control climate change. There is a strong public interest in both *protecting* and *restoring* wetlands to ensure these wetland services and functions are sustained.

Despite this mandate, the San Diego Water Board does not have staff dedicated exclusively to wetland restoration. Budgetary and workload considerations, as well as statutory constraints, restrict use of existing staff resources to administering the State's water quality certification program which is triggered by project permit applications and limited to offsetting impacts to wetlands from permitted development. Additional resources are needed so that the San Diego Region can dedicate staff exclusively to wetland restoration to increase the pace and ecological effectiveness of wetland recovery in the Southern California region.

What Can Be Accomplished

Dedicated wetlands restoration resources would allow progress toward many goals in line with the San Diego Water Board's Practical Vision. Work towards the projects of Chapter 3, Recovery of Stream, Wetlands, and Riparian Systems would be given highest priority. Initial efforts would implement the defined projects to improve and leverage the effectiveness of regulatory efforts to restore wetlands. This would start by coordinating with relevant agencies to build partnerships, share data and pool resources with agency, community, and nonprofit groups (e.g. **Southern California Wetlands Recovery Project**). Establishing restoration goals, strategies and time frames would come next. Strengthening the San Diego Water Board's regulatory program through collaborative efforts is also a likely outcome. For example, obtaining maps of vulnerable or rare wetland resources would allow permit applications in those areas to receive heightened review. Having pooled information to identify wetland areas prioritized for voluntary restoration as potential compensatory mitigation sites is also a goal.

The next step will be to identify candidate wetland restoration projects with a potential to increase the ecological function and/or value of a wetland site. An assessment of the extent the wetland project site is physically, ecologically or hydraulically connected to transitional/upland areas or coastal resources will occur. Next will be an assessment of the extent the project will restore functioning of natural processes (e.g., hydrology, sediment transport) or result in an increase in wetland acreage. Evaluation of the feasibility of the project, such as outside funding, site availability, and when the project could be undertaken, will also occur.

A work plan needs to be developed for the funding, implementation and monitoring of three ("*easy, medium and aspirational")* candidate wetland restoration projects by October 2015, as directed by the Water Quality Coordinating Committee in 2014. Implementation of the work plan will increase wetland acreage and improve wetland conditions and functions

through restoration. Monitoring and tracking progress over time, documenting results, and modifying practices as appropriate will guide the projects into the future. Results will regularly report on wetland restoration efforts to San Diego Water Board members and other relevant entities (other agencies, public, WQCC, etc.).

Conclusions

The mission of the San Diego Water Board is vital to the greater benefit of the State of California. Healthy waters lead to healthy people and to healthy communities that positively impact society. Yet, to accomplish such an important duty requires an investment of energy. The San Diego Water Board is not here to simply preside over the demise of water quality-related beneficial uses. Rather, the Board must progressively move into the areas of greatest need in order to achieve the most benefit to the region. This compelling task is too vital to the well-being of the San Diego region to not be provided the resources necessary to move forward in a realistic manner.