

WATER QUALITY ACCOMPLISHMENTS

A Tale of Two Watersheds

The Regional Boards have been around for sixty years. What have we accomplished in our region? Rather than some kind of a program list (e.g., how many landfills have put in liners due to our requirements?), we have compiled examples of accomplishments over the years for just a couple of example watersheds. One is on the smaller side and one is our largest basin. Our vision is for Healthy Watersheds, so it makes sense to look at our accomplishments and goals on a watershed basis. We will take you on a virtual tour of these two example watersheds and point out the outcomes of Water Board work over the years. This tour points out accomplishments that are examples of some but not all the many accomplishments leveraged through the work of the Central Coast Regional Board in San Luis Obispo Creek and Salinas River Watersheds, and provides reminders of the type of accomplishments of the Water Board throughout the Central Coast Region. San Luis Obispo Creek Watershed is relatively small at 54,278 acres compared to Salinas Valley at 4,200 square miles or 2.69 million acres, which is our largest watershed (SLO is 2% of the size of Salinas). The Salinas Valley is twice the area of the entire state of Delaware, and more than half of the area of the state of New Jersey. These two watersheds are changed and improved due to Water Board work. This discussion also leads to work to be done, so we provide a discussion of recommendations we will be bringing to the Board to make continued progress in the highest priority aspects of watershed management and health, specifically recommendations for adding additional tools to our Basin Plan.

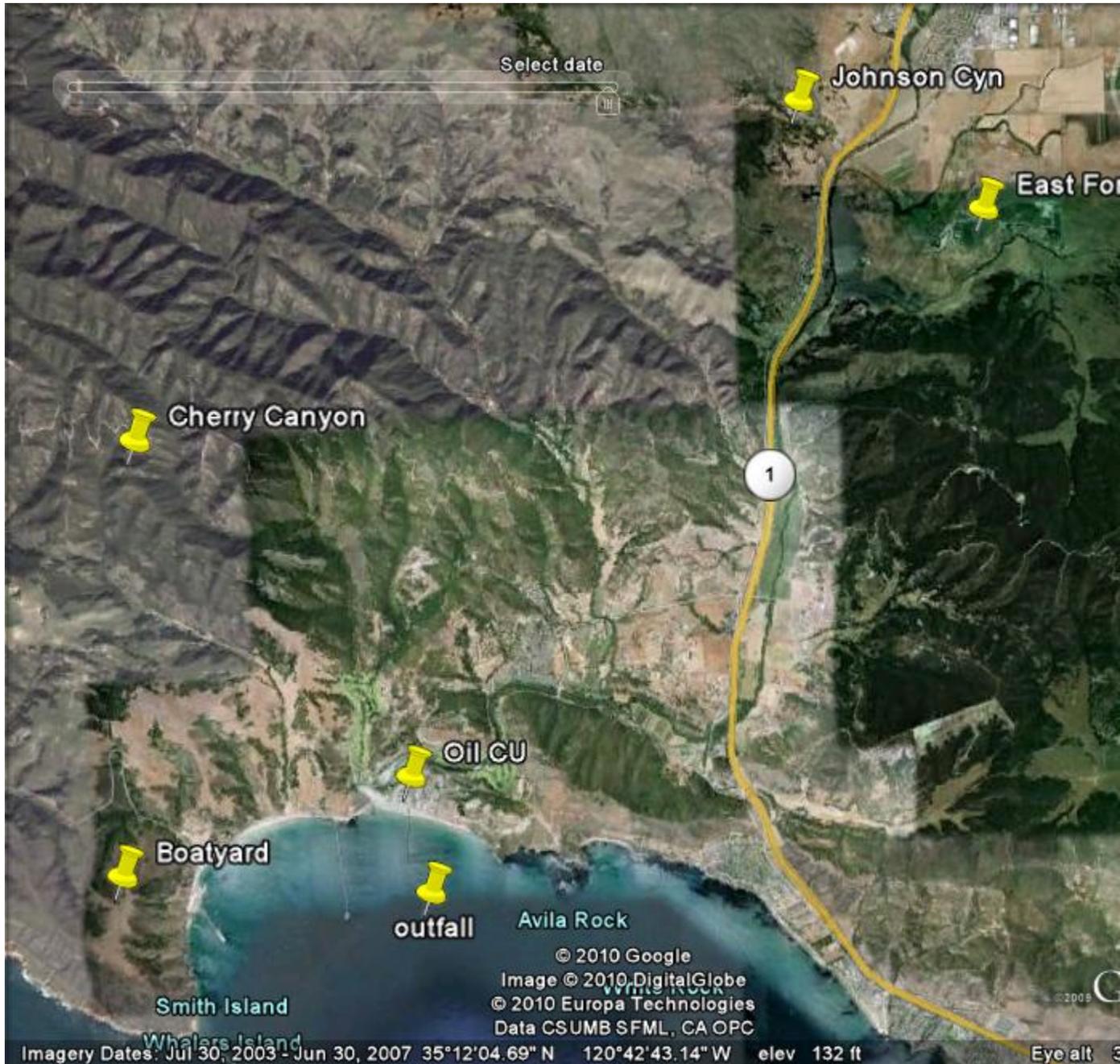
San Luis Obispo Creek Watershed and San Luis Obispo Bay

San Luis Creek Watershed includes the Cal Poly campus, the City of San Luis Obispo, agriculture areas (row crops, vineyards, orchards, grazing), open space, the 101 freeway and HW 1 and 227, and the town of Avila where the creek, which provides steelhead habitat, reaches the ocean.

San Luis Obispo Creek Nitrate TMDL

The Total Maximum Daily Load (TMDL) Order for Nitrate in San Luis Obispo Creek was adopted by the Water Board in December 2005, and subsequently approved by USEPA in October 2006. At the time of TMDL approval, over 426,000 pounds of nitrate were discharged annually to San Luis Obispo Creek, resulting in nitrate concentration exceeding 25 mg/L-N in San Luis Obispo Creek; the nitrate standard to protect municipal and domestic water supply is 10 mg/L-N. Agricultural discharges from the Prefumo Creek subwatershed were identified as one of the sources of nitrate in the TMDL. Since TMDL approval, land use changes from agriculture to urban in the Prefumo Creek subwatershed have resulted in attaining the TMDL of 10 mg/L NO₃-N in that subwatershed. The nitrate loading reduction in Prefumo Creek subwatershed is a positive step, not only for surface waters, but for underlying groundwater in the watershed as well. High groundwater in the Prefumo Creek subwatershed has been historically overloaded by nitrate, resulting in elevated nitrate concentration in

groundwater. This recent reduction of nitrate loading has, therefore, had a positive effect on groundwater, although groundwater was not addressed in TMDLs. Staff developed the TMDL to be protective of the municipal and domestic water supply beneficial use. At the time of TMDL development, staff was not prepared to develop a nutrient TMDL protective of more nutrient-sensitive beneficial uses, e.g., those associated with healthy aquatic habitat, due to the lack of scientific agreement of the environmental response to nutrient loading and the lack of regulatory direction in the Basin Plan. Staff has progressed in our understanding of protection of healthy aquatic habitat, but the Basin Plan still lacks clarity regarding how aquatic life protection should be accomplished, and the regulatory mechanisms for doing so.



Avila Beach Front Street Cleanup

The Avila Beach cleanup project, known as the Avila Front Street "Big Dig," was accomplished through the Water Board's Site Cleanup Program during the mid to late 1990s. Union Oil Company of California (Unocal) abated immediate threats to indoor air from petroleum hydrocarbons in groundwater and then proceeded to remove hydrocarbons from soil and groundwater to abate conditions of nuisance and groundwater pollution. Unocal's contractor's implemented the remediation by excavation, open pit groundwater extraction, and oil skimming. This cleanup had two steps, the first being the West End Beach cleanup, done as an emergency cleanup by order of the Executive Officer when creek meandering threatened to incise known petroleum contaminant areas. That smaller cleanup yielded a lot of valuable information about the nature of the petroleum and the feasibility of cleanup in the remainder of the beach and Front Street area. The remediation accomplished pollution reduction to a level protective of future groundwater beneficial uses and abatement of any future nuisances. The remedy was effective for protection of groundwater resources, and removal of nuisance conditions that had restricted property use in the town; however, this accomplishment came at a considerable expense to atmospheric pollutant loading, primarily from diesel fuel combustion emissions from equipment used during the remedy and partially from volatilization of pollutants during excavation (open exposure). Learning opportunities from the project resulted in highlighting the need for a regulatory framework to quantify net environmental impacts/benefits when the Water Board is considering remedial alternatives. Also, the entire town of Avila Beach now occupies what was once an estuary. Less than five percent of California's estuaries remain and opportunities for full or partial restoration occur infrequently. Such an opportunity may have been possible as part of the Avila Front Street demolition and redevelopment required by the Water Board's remedial action. If the Water Board had a regulatory framework in place, such as through its Basin Plan authority, it may have required consideration of opportunities to restore some watershed functions related to Avila Beach's historic estuary. However, the community itself prepared it's own Front Street Enhancement Project design well before the cleanup, and the Water Board's enforcement action and settlement requiring cleanup also prompted Unocal to provide funds as part of a settlement to actually build the Front Street Project.





Avila Tank Farm

In contrast, the Avila Tank Farm project is beginning the Water Board's cleanup process as part of the Site Cleanup Program. Chevron bought Unocal's holdings and is now the party responsible for site cleanup. Chevron is partnering with a private developer to consider various post-remediation land uses. The sources of pollution at the site relate to Unocal's previous operations including crude oil distribution, distribution of refined petroleum products by land and ocean routes (pipelines and oil tankers respectively), bulk storage of refined and unrefined petroleum hydrocarbons, and crude oil refining. The Water Board's accomplishments include requiring definition of the lateral and vertical extent of pollution at the site (one subarea investigation remaining) and determining that the extent of pollution is not affecting residences adjacent to the property, and not affecting the beneficial uses of surface water. Remediation will include a combination of approaches to address soil "hot spot" areas, dissolved phase groundwater pollution, and free-phase liquids pollution on groundwater. Chevron also plans to implement remedies commensurate with end-use site redevelopment scenarios currently under formulation. Given the site's prominence in the hilly area immediately east of Avila Beach and its significance as a Chumash Native American archeological area, there are many opportunities for achieving outcomes toward sustainable land uses

and preservation, coupled with implementation of low impact development. The Water Board could potentially create and promote/require these two latter outcomes through its Basin Plan authority by crafting and adopting amendments designed to enhance watershed functions for surface water runoff, groundwater recharge, and protection of coastal resources.

Unocal's Tank Farm Facility, 276 Tank Farm Road, San Luis Obispo

Unocal's Tank Farm Facility at 276 Tank Farm Road occupies approximately 350 acres in San Luis Obispo County in the flight path of the airport. Operations began in 1910 with crude oil storage and transport from the San Joaquin Valley to the coast at Avila Pier. Storage capacity consisted of six large capacity, concrete-lined earthen tanks and twenty-one 55,000-barrel steel above-ground storage tanks (AST).

Unocal's most significant crude oil discharge was initially caused by a lightning strike in 1926 that ignited one of the large reservoirs. The fire eventually spread to all the tanks onsite, with the exception of three steel AST's. Accounts of the event estimate that 168-264 million gallons were released. Much of the crude oil burned off, but some also flowed into adjacent streams and soaked into soils. According to historical reports, crude oil flowed all the way to Avila Beach. Intense heat and pressure head during the fire may have caused crude oil to be driven into relatively impermeable soils at greater depths than expected under normal conditions. Unocal rebuilt most of the tanks after the fire and spill, and operated the Tank Farm until approximately 1990. More recent tank and associated pipeline leaks are also a source of crude oil contamination. Based on current reports, crude oil remaining onsite is estimated in the millions of gallons.

Water Board involvement began in 1988 with the requirement for initial soil and groundwater assessment work. The work continues through present day, and significant progress has been made in understanding the site's ecology, hydrology, and remedial options. . The Water Board required interim netting (which has turned out to be long term) to prevent surfacing petroleum from affecting birds and other wildlife. Recently, the City of San Luis Obispo proposed to annex the property and develop the area for multiple uses including long-term conservation. Following this proposal, Chevron, which purchased Unocal, initiated a process to address both environmental contamination and future land use issues. The Water Board has been an active participant in that process through a collaborative regulatory agency group called the Surface Evaluation, Remediation, and Restoration Team (SERRT). The SERRT is currently providing support to the City and County of San Luis Obispo as they proceed through the CEQA process. Chevron hopes to complete the CEQA process and move forward with cleanup and restoration plans within the next year.

Avila Intertidal-Subtidal (a.k.a "Avila Pier")

The Avila Intertidal-Subtidal project is likely a remnant of soil pollution related to the Avila Front Street cleanup project. A body of subsurface petroleum hydrocarbon pollution (plume) remains under and adjacent to the Avila Beach Pier and occupies portions the intertidal and subtidal zones. Unocal, at the direction of the Water Board, a) previously defined the lateral and vertical extent of the plume, b) determined the thickness of sand covering the plume through monitoring and dynamic coastal model analyses, and c) provided partial funding for on-going monitoring of sand cover over the plume before and after significant wave events. The results from two investigations performed by contractors on behalf of Unocal showed the plume consisted of thick, heavily weathered petroleum hydrocarbons in sand—likened to asphaltic tar with no liquid mobile phase

component. The California Department of Fish and Game determined that a minimal risk to ecological receptors remains with incidental exposure of the plume, and the San Luis Obispo County Department of Public Health determined the remaining plume posed no risk to human health with potential, incidental exposure. A consortium of regulatory agencies, including the Water Board, collectively determined that the benefit of removing the remaining plume (more excavation plus dredging) did not outweigh the risks associated with potential acute exposure and disruption of the local habitat. The agencies opted for leaving the plume in place, given the low exposure risk, while implementing a monitoring program to verify the thickness of sand cover over the plume. The agencies also developed and implemented a Contingency Plan with triggers for specific actions if monitoring indicates less than one foot of sand cover over the plume.

TOSCO 76 Service Station, 1308 Monterey Street, San Luis Obispo

Underground storage tank (UST) cleanup cases are regularly closed even though soil and/or groundwater beneath the sites have not attained cleanup goals for one or more constituents of concern. These low risk closures are based on the knowledge that remaining contaminant concentrations are sufficiently low so as to not pose a threat to existing beneficial uses; contaminant sources have been removed to the extent practical and monitoring has indicated that the plumes are contracting in size and concentration. Water Board staff expects these residual levels of soil and groundwater contamination, and any associated risks, to reduce with time.

An example of a low risk closure is the 76 Service Station UST cleanup case that was closed after excavation and disposal of 220 tons of contaminated soil from the site. In addition, approximately 1,000 pounds of Oxygen Releasing Compounds™ (ORC-Advanced™) slurry were injected below the site to enhance biodegradation of the remaining petroleum hydrocarbons.

The Central Coast Water Board closed the UST case with residual tributyl alcohol (TBA) groundwater contamination and residual soil contamination of total petroleum hydrocarbons (TPH) greater than cleanup goals. Groundwater samples collected from one on-site monitoring well continued to exceed water quality goals. Therefore, although the case is a success in terms of case closure and pollutant removal, residual soil and water contamination remain, as is often the outcome with UST cleanup cases. Changes to the State-wide Geotracker database allow Water Board staff to enter site management requirements on closure of a case. This new feature can serve as an alert to land use agencies at the city and county level to the possibility that contaminants may be encountered during certain land use activities (grading, excavating, dewatering etc.). Geotracker notification along with our ongoing efforts to keep the public informed has been an effective way to influence land use after a low-risk closure. This type of notification allows land owners greater flexibility with lending institutions than deed restriction on sites with relatively low contaminant concentrations left in place, especially in cases where the land use is unlikely to change in the near future. Increased authority in UST facility placement, e.g., a prohibition within groundwater recharge areas or more at-risk basins, and other preventative measures, would alleviate lingering water quality issues resulting from UST failures in sensitive areas. Such regulation could be accomplished with more robust Basin Plan authority regarding ground water recharge area protection.

Former Madonna Plaza Cleaners, 227 Madonna Road, San Luis Obispo

This property is located in the Madonna Plaza shopping center in the City of San Luis Obispo. A dry cleaning facility utilizing tetrachloroethene (PCE) operated at the site from approximately 1969 until 1989 in the location currently operated as Kohl's department store. A Phase I environmental site assessment performed in January 2001 indicated the potential for PCE impacts to the subsurface. Subsequent subsurface investigations included collection of soil samples and the installation of five groundwater monitoring wells.

In May 2002, approximately 4,500 cubic yards of PCE-impacted soil were excavated from the site. However, not all impacted soil could be removed due to the presence of the Kohl's building. Water Board staff estimates that approximately 12,750 pounds or about 1,060 gallons of PCE were removed. Two more groundwater monitoring wells were installed at the site in July 2006, and approximately 10,000 gallons of potassium permanganate were injected into the subsurface to further remediate impacted soil and groundwater *in situ*. The property owner agreed to record a Covenant and Environmental Restriction on the Property and the Central Coast Water Board agreed to close the case on February 4, 2010.

The case is an accomplishment insofar as the site was remediated and the case closed. However, the existence of the contamination to soil and groundwater, and others like it, demonstrate that our regulatory authority is often reactive. Increased authority to prevent contamination, e.g., through greater Water Board involvement during development planning, could potentially reduce such cases. Current Water Board efforts for Basin Plan amendments leading to broader authority would result in the needed increased Water Board authority.

Stormwater and San Luis Obispo Creek Channelization

Heavy storms during 1993 and 1995 damaged many stream bank areas along San Luis Obispo Creek. Each repair project needed to be reviewed and approved by the US Army Corps of Engineers, the California Department of Fish and Game, and the Water Board before these regulatory agencies authorized local (City or County) agencies to make the repairs. Many of these repair projects were initially proposed as relatively small hard channel structures that individually were not considered significant impacts. However, in order to address potentially significant cumulative impacts from many projects, the City of San Luis Obispo spearheaded a multi-agency effort and developed a comprehensive, watershed-based management plan for San Luis Obispo Creek and tributary drainages. Completion of the San Luis Obispo Waterway Management Plan (Volume I) in 1997 and the Stream Management and Maintenance Program (Volume II) and Drainage Design Manual (Volume III) in 2003 were important accomplishments in establishing a framework for watershed protection. The City and the County refer to these documents for most flood management and stream improvement/repair-related projects in the watershed. However, the agencies are less strict in their adherence to controls on floodplain development (see related discussion of Section 401 Certification for Prefumo Creek Commons) throughout the watershed, allowing exemptions from conditions identified in the Waterway Management Plan. Furthermore, the Waterway Management Plan limits its focus to streams, stormwater conveyances, and floodplains, and provides no guidance on maintaining the desired conditions of healthy watersheds in upland areas, including conditions for groundwater recharge, hydrologic connectivity of headwaters, and sediment supply and transport. To address this lingering issue in part, the Water Board has required the City and the County through their stormwater

permits to develop explicit parcel-level requirements for preserving hydrologic processes that support watershed function. While parcel-level requirements are expected to reduce impacts, absent true watershed scale land use planning and management, additional cumulative watershed impacts can be reasonably expected to continue. The Water Board should therefore pursue Basin Plan Amendments that clarify Water Board expectations relative to local agencies' approval of land use development.

City of San Luis Obispo Stormwater Management Program

The Water Board's Executive Officer enrolled the City of San Luis Obispo (City) under the Phase II Small Municipal Separate Storm Sewer System General Permit (General Permit) and approved the City's Stormwater Management Plan (SWMP) in July 2009. The City is responsible for managing stormwater in two-thirds of the urbanized areas in the eighty-five square mile San Luis Obispo Creek watershed, equating to approximately ten square miles of coverage area. The City's SWMP describes how the City will participate in a Regional Water Board coordinated joint effort to develop hydromodification control criteria. The City will develop a strategy for measuring the individual best management practices and the overall stormwater program effectiveness, the City will also develop a wasteload allocation attainment plan for the San Luis Obispo Creek pathogen total maximum daily load (TMDL), as well as other practices to meet general permit requirements. To organize SWMP implementation, the City developed a stormwater core group, including representatives from every City division with stormwater program responsibilities. The group meets monthly and reports to the stormwater program manager with status updates. The City has made significant progress in SWMP implementation, specifically with enforcing the City's illicit discharge and grading ordinances, drafting a stormwater management ordinance, and developing a wasteload allocation attainment plan to identify future actions the City will implement through the City's Stormwater Program to meet the City's wasteload allocation for the pathogen TMDL. The City has already taken several steps to address fecal coliform in the tunnelized portion of San Luis Obispo Creek. For example, the City identified and required corrective actions for leaking sewer laterals within the tunnelized portion of San Luis Obispo Creek, the City mapped all storm drain systems that outfall into the tunnel, and the City regularly cleans the sewer lines in the downtown area. Furthermore, the City's SWMP states the City will tailor its stormwater management program to provide long-term watershed protection. A watershed protection basin plan amendment would clarify the Water Board's expectations for the City for integrating all stormwater management control measures into all aspects of land use planning and development, with the goal to attain and protect healthy watersheds. Additionally, a basin plan amendment describing and protecting healthy aquatic habitat would clarify the Water Board's expectations for the City for establishing site planning and design requirements at both the parcel scale and catchment scale level for protection of wetland and riparian habitats.

Prefumo Creek Commons, 401 Project

The Central Coast Water Board issued a 401 Water Quality Certification for Prefumo Creek Commons, including a Target store, located between Los Osos Valley Road and Prefumo Creek in the City of San Luis Obispo (City), in February 2010. The project includes annexation by the City of a 31-acre site, with 11.9 acres dedicated open space, and impacts to 0.23 acres of jurisdictional wetlands and waters. Prior to the applicant applying for the 401 Certification, Water Board staff provided comments on the initial project documents (i.e., draft Environmental Impact Report) and at a Planning Commission Meeting to inform the project applicant and City staff of project

insufficiencies (e.g., incomplete assessment of cumulative effects of full build-out along Prefumo Creek, inadequate assessment of hydromodification effects to Prefumo Creek, no proposed detention or retention of stormwater runoff, limited implementation of Low Impact Development features, etc.). Additionally, the City did not require strict adherence to conditions detailed in the San Luis Obispo Creek Waterway Management Plan – a plan the City prepared at the request of regulatory agencies including the Water Board, the Corps of Engineers, and the Department of Fish and Game. Prior to issuing the 401 Certification, Water Board staff required the applicant to revise the site plan to address the natural hydrologic processes to the extent possible. The final project design includes vegetated features to provide treatment and some retention for runoff from most drive surfaces. The original project design included no treatment for roof runoff; therefore, 4.3 acres of the impervious surfaces on site would not receive sufficient treatment. The final design includes treatment devices to treat runoff from 3.8 acres of rooftop. The final design also includes enhancement of two offsite City-owned swales to provide treatment and volume control for site run-on generated from small frequent storms. The City has required the applicant agree to maintain the swales after project completion so the features maintain their intended function. Water Board staff did not have the regulatory tools to require the project applicant incorporate design features on Prefumo Creek Commons to maintain the natural hydrologic functions of the site until the applicant applied for a 401 Certification. This was too late in the site planning and design process to most effectively incorporate design features to provide watershed protection, because all other site design components had already been defined. Furthermore, the Water Board lacks authority to ensure the City implements its Waterway Management Plan. A Watershed Protection Basin Plan Amendment would serve to clarify the Central Coast Water Board's expectations of project applicants and local agencies regarding site planning and design to maintain healthy watersheds.

Riparian Restoration and Conservation

The City of San Luis Obispo and the Land Conservancy have implemented a variety of riparian area restoration, mitigation and sensitive watershed area conservation projects throughout the San Luis Obispo Creek Watershed. Primarily funded through grants (some from the Water Board), Supplemental Environmental Projects through Regional Water Board enforcement actions, and volunteer efforts, these projects have provided improved and lasting protection of the riparian and wetland areas vital to healthy aquatic habitat. Projects that the Water Board has partnered with the Land Conservancy include: 1) the Stenner Creek Revegetation Project on Cheda Ranch, 2) the Filipponi Ecological Reserve Wetland Mitigation Projects (two separate projects on East Fork of San Luis Obispo Creek), 3) the Marre Weir Fish Passage Improvement Project, which improved fish-passage in San Luis Obispo Creek, 4) the Stenner Creek Restoration Project, which included revegetation and bank stabilization in Stenner Creek.

Staff cites these projects as water quality accomplishments, but also as indicators of the need for *prevention* of riparian and wetland habitat degradation. As beneficial as the projects described are, they are reactive. The needed prevention of riparian and wetland degradation could be accomplished through increased clarity and authority in the Basin Plan to prevent riparian and wetland degradation; such measures are being developed within the Basin Plan amendment regarding healthy aquatic habitat.

Johnson Canyon Open Space

The Water Board partnered with the City of San Luis Obispo to assist with funding for the City to be able acquire the Johnson Ranch Open Space, a 242 acre natural area

located about 1.5 miles south of the City of San Luis Obispo, on the west side of US Highway 101. As part of conservation practices, the City is controlling distribution and timing of use of the site by domestic livestock; encouraging or requiring the relocation of the easement road away from Dry Creek and Forbes Pond; discouraging access to the Forbes Pond area by trail location, signage, and fencing; restoring the riparian corridor of Dry Creek, and enhancing Forbes Pond and adjacent seasonal wetlands.



Cal Poly Water Quality Management

Waste discharges from the Cal Poly Campus were historically regulated individually by Waste Discharge Requirements, 401 Water Quality Certifications, or Stormwater Permits. The effectiveness of this approach was limited by the large number and rapidly changing personnel involved with each project and the planning and contracting procedures of the University. In 2002 staff encouraged and assisted Cal Poly in developing a campus-wide water quality management plan, addressing a myriad of monitoring, permitting and long-term management issues. This comprehensive campus-wide approach was the first of its kind and has since been implemented at several other campuses. Accomplishments of the approach include streamlined permitting in a manner that facilitates project planning (since requirements are known well in advance), which minimizes staff time responding to piecemeal requests. The approach also gives staff a living document to work with as we move forward with Basin Plan amendments aimed at increased Water Board involvement in planning.

Wineries

The Regional Water Board adopted a general order for wineries that provides targeted yet streamlined and consistent regulation for the several wineries in the San Luis Obispo Creek watershed (Edna Valley area) and throughout the region.

Country Club Estates septic system failures

Residential wastewater treatment and disposal in the vicinity of San Luis Obispo Country Club was historically performed by community onsite systems (large septic systems) and individual systems. Due to the soil characteristics and significant quantity of wastewater, disposal systems failed. Through coordinated efforts between the County of San Luis Obispo and Regional Water Board staff providing grant management and facilities planning review, the State Board awarded a Clean Water grant for the septic to sewer project. Despite many setbacks throughout the project development, the project was completed in 1988. Staff worked with San Luis Obispo County Services Area 18, and the residences were connected to the adjacent wastewater reclamation facility, where the new facility provides secondary and advanced treatment and water reuse for golf course irrigation. The project accomplished salt reduction and water conservation as well as protection of surface and groundwater quality, and public health,

City of San Luis Obispo Waste Water Treatment Facility



The City's treated effluent used to be deadly to fish due to high ammonia concentrations, and the creeks and public health were often threatened or impaired from frequent sewer system overflows. However, the Regional Water Board took enforcement actions and the City upgraded its Wastewater Treatment Facility (WWTF) and greatly improved the quality of its discharge to San Luis Obispo Creek. The WWTF has brought online: 1) a nitrification process, thereby eliminating toxicity from un-ionized ammonia discharges, 2) a de-chlorination process to reduce toxicity from chlorine discharges, 3) a cooling process to protect aquatic life, 4) a filtration process to improve water clarity, 5) an upgraded collection system to reduce infiltration and subsequent overflow, and 5) an increased flow capacity to reduce overflow. Effluent is now greatly improved for the fishery of San Luis Obispo Creek. Additionally, the Water Board encourages recycling at every opportunity. . The City's treatment plant provides tertiary treatment and an extensive distribution system to greenbelt areas for recycled water reuse of a significant

portion of the City's



effluent.

Avila CSD Outfall and Oil and Grease Filters

The Water Board awarded a grant from the Unocal settlement funds to the Avila Community Service District (CSD). The grant was used to replace an old and failing ocean-outfall diffuser and greatly extended (further from shore) the outfall to improve dilution of municipal wastewater discharge. The new outfall was completed in 2005 and provides for dilution of 151:1, terminating approximately 2,700-feet from shore. The Water Board also provided grant funding for oil and grease filters for Avila urban runoff and funded an Oil Spill Response project in Avila Bay. These projects improved water quality in San Luis Bay, thereby protecting very active beneficial uses in the Bay.

Port San Luis Harbor

This accomplishment stretches the boundaries of the watershed a bit, but Avila and San Luis Obispo Bay are part of the Port San Luis Harbor District patrol area. The Regional Water Board provided grant funds for a complete overhaul of the Port San Luis Boat Yard, providing treatment for runoff from the yard, which typically contains an array of serious contaminants. This project has eliminated the significant boat yard contaminants from discharging into the intertidal and subtidal habitat of Port San Luis.

Wild Cherry Canyon Conservation Easement

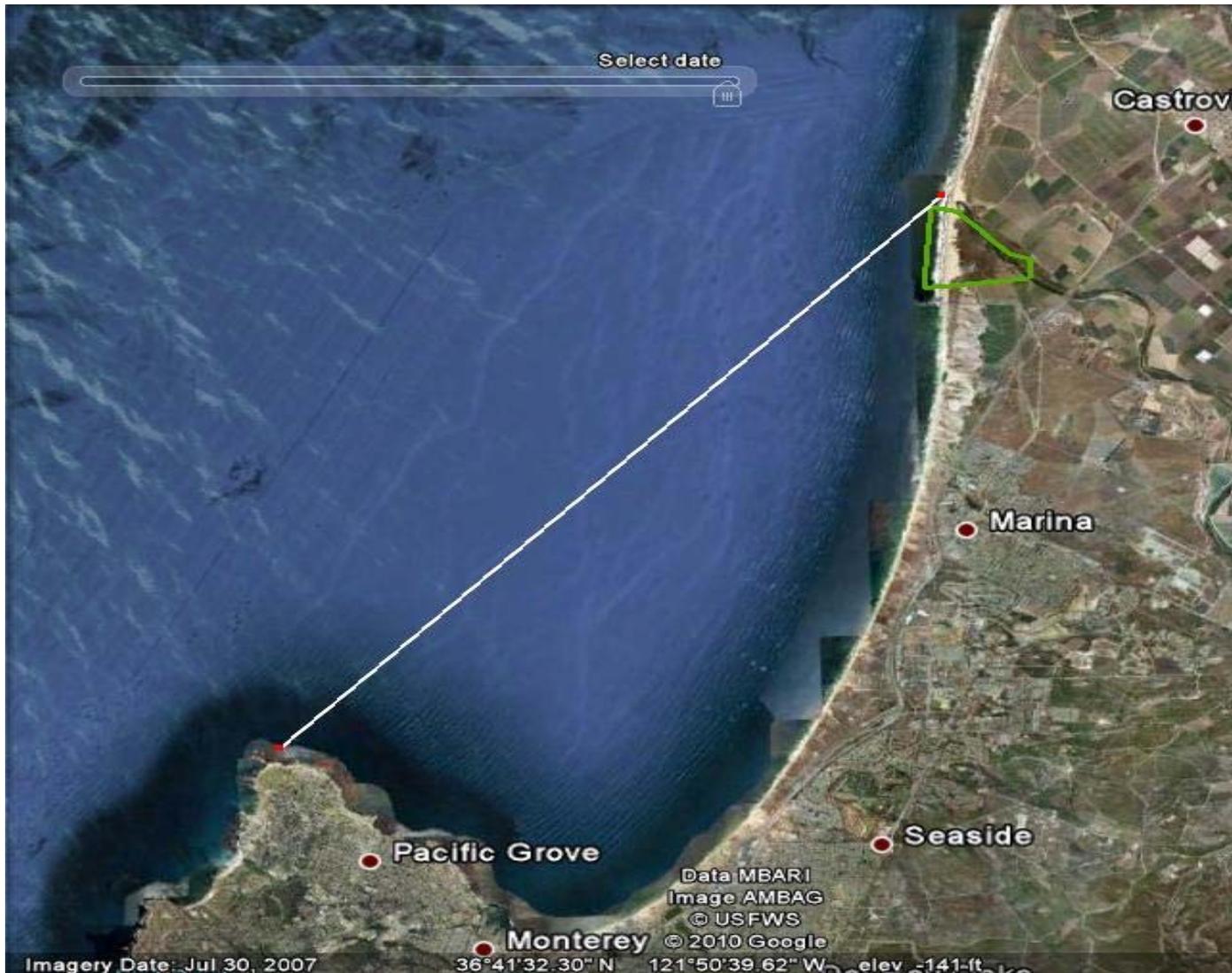
Between Port San Luis and the mouth of San Luis Obispo Creek lies the Wild Cherry Canyon watershed and its confluence with San Luis Obispo Bay. In July 2009, the Water Board approved a Resolution to allocate \$950,000 to the American Land Conservancy for the purpose of preserving Wild Cherry Canyon. This project would purchase the 190-year lease on about 2,400 acres of coastal watersheds, and transfer management of the land to State Parks, for multipurposes that include aquatic habitat and water quality protection.

Salinas River Watershed

The Regional Board's earliest actions in the Salinas Watershed included dealing with water quality problems in the Salinas River receiving waters of southern Monterey Bay. Nearly all the Monterey Bay cities and towns (and Fort Ord which was one of the bigger "cities") had short outfalls with poor treatment. Perhaps most severe was Pacific Grove's primary treatment with the end of the outfall exposed at low tide in the tourist popular Pacific Grove tide pools.



The Regional Board investigated incidents of sewer overflows and spills, inadequate treatment and poor circulation allowing accumulation of contaminants in the southern (and northern) bytes of Monterey Bay. The Board adopted discharge prohibition zones in these areas and required local agencies to come up with a plan for eliminating those discharges and improving effluent quality while evaluating recycling.



This Regional Board action spawned the creation of the Monterey Regional Water Pollution Control Agency. An additional benefit of this prohibition zone and resulting regionalization is that the City of Salinas joined with the other dischargers. The lower Salinas River and the Salinas River Lagoon were affected for years by discharges from two City of Salinas wastewater treatment plants. Areas that may have provided habitat for steelhead prior to their escape to the ocean experienced algal blooms and low dissolved oxygen levels that would have rendered the habitat unsuitable for steelhead.

Two wastewater treatment plants that serve the City of Salinas used to discharge directly to the Salinas River. Treatment Plant 1, which began operation in 1930, discharged to the Salinas River just downstream of Davis Road (river mile 10). Treatment Plant 2, which began operation in 1943, discharged to the Salinas River downstream of Spreckels (river mile 13).

During the 1960's, the Department of Water Resources conducted an investigation of the Lower Salinas River (DWR, 1965). The report's description of the river during low flow conditions is depressing at best. For 10 miles downstream of Treatment Plant 2, the

stream was impacted by the wastewater discharge. Close to the plants “dissolved oxygen is at a minimum often going down to zero. Hydrogen sulfide and other foul odors are continuously giving off and bottom sludge deposits are black, septic and under active decomposition” (DWR, 1965, p. 8). Further downstream conditions improved, but algal blooms were prevalent causing wide fluctuations in dissolved oxygen levels (at one site 13.3 ppm day, 1 ppm night).

The Salinas River Lagoon had similar problems. “During low flow conditions the lagoon reflects that quality of the Salinas River with the exception of the numerous periods when the lagoon is radically affected by the incursion of highly mineralized seawater.

“The appearance of the lagoon at low flow is distasteful. Algal blooms always are present, ranging in color from green to brown. Bottom deposits are black and smelly” (DWR, 1965, p. 29). Large fluctuations in diurnal dissolved oxygen values were also noted, with low values reaching 3.1 ppm. The Salinas plants’ discharges were diverted to the regional facility in 1990, and are longer discharge to the Salinas River, thanks to Regional Board enforcement action.



Regional Board staff worked on grants for this new agency to complete facilities planning, design, and construction of a new regional interceptor/pump system and regional treatment plant near Marina in the lower Salinas Valley, with an outfall extending outside the prohibition zone. This plant provides improved treatment and disposal for Pacific Grove, Monterey, Del Rey Oaks, Sand City, Seaside, Moss Landing, Castroville, Salinas, Boronda, and eventually Fort Ord and Marina.

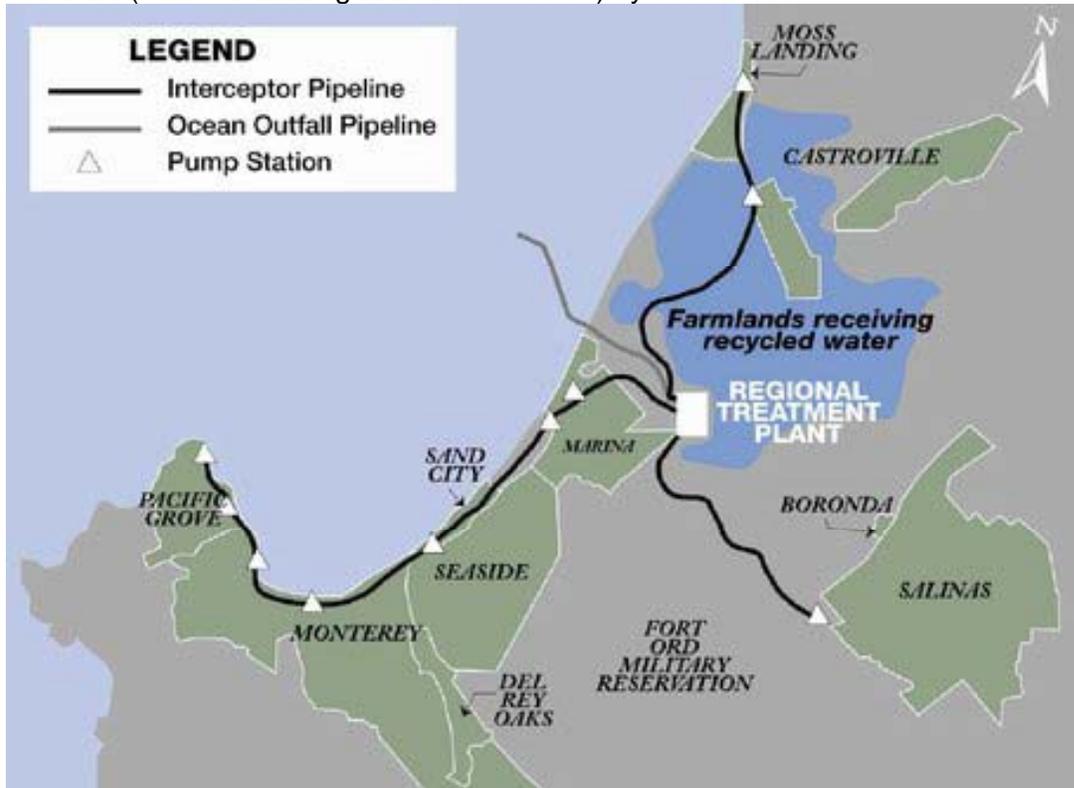


The Regional Board also took action in problem areas in the lower Salinas Valley and adopted septic tank prohibition zones due to failures and public health hazards in Boronda and Moss Landing. Regional Board staff worked as grant managers and project reviewers and worked closely with the local agencies and secured State Board grant funding for planning, design, and construction of sewer systems for these communities.

Seawater intrusion was legendary in the Salinas Valley and it was worsening rapidly. Once again, State Board grant funding with Regional Board staffing assistance fostered a seven year pilot study for providing tertiary treatment for the purpose of irrigating Castroville area crops. The pilot project was the most comprehensive study that had ever been done of the fate of pathogens, including extensive virus analyses, in the use of recycled water. It likely is still the most comprehensive analysis ever done.

With the success of the pilot plant, Regional Board staff worked with the State Board grants once again to provide funding for a full scale recycle tertiary treatment plant with distribution system to the seawater intruded Castroville area. This is the Castroville Seawater Intrusion Project (CSIP). The Regional Treatment Plant in Marina is capable of producing 29.6 millions gallons of recycled water per day. The CSIP consists of approximately 45 miles of distribution system piping and 22 supplemental wells. This

project has allowed nearly 75% of the total Monterey regional system flows to be recycled - approximately 12,000 acre-feet per year. The projects have been operational since 1997. . This percentage of recycled flow is remarkable considering the usual constraints on wet weather irrigation coupled with higher winter sewer flow due to infiltration and inflow. This large quantity of recycled water has reduced Salinas Valley overdraft (which is causing seawater intrusion) by about 40%.



More recently, MCWRA completed the Salinas Valley Water Project (SVWP) to augment the CSIP project. The SVWP included modifications to the Nacimiento Dam Spillway to increase the amount of water available for groundwater recharge and diversion during the irrigation season and a downstream surface water diversion facility on the Salinas River near Castroville to divert water into the CSIP distribution system. The diversion facility is designed to divert up to 25,000 acre-feet per year of water from the Salinas River to offset additional pumping from the CSIP supplemental wells during the growing season from April to November. The work that the Regional Board did to make the recycled water system with its distribution system a reality, have provided the infrastructure for this next step toward solving seawater intrusion.

The Carmel Area Wastewater District used to discharge all of its wastewater, after only secondary level treatment, to the Carmel Bay Area of Special Biological Significance. The Regional Board worked with the District on another recycle project and now virtually all Pebble Beach golf courses are irrigated with tertiary treated wastewater. CalAm Water Company takes water from the Carmel watershed (in excess of safe yields) and part of CalAm's service area is in the lower Salinas Valley. This Carmel recycling helps out with this Carmel /lower Salinas water imbalance problem.

Soledad Wastewater Treatment Plant

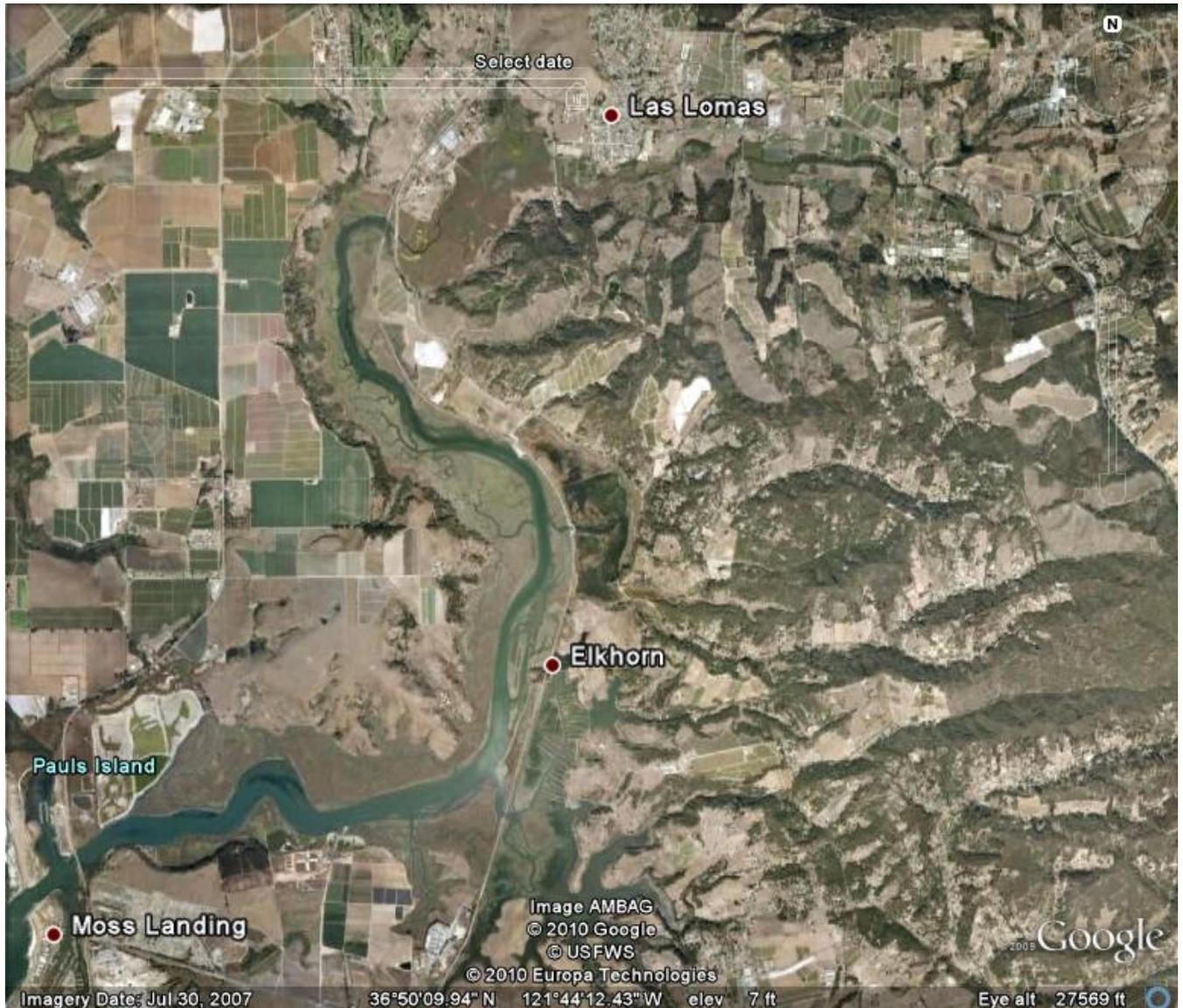
Regional Board staff worked on yet another grant project to upgrade and expand the capacity of the Soledad wastewater treatment plant in the 80's, which was in sorry shape and a threat to surface and groundwater prior to the upgrade. Regional Board staff has continued to work with the City on its next upgrade, which includes progressive recycled water use in residential areas of the City.



Salinas River at San Ardo

Moss Landing Power Plant Permit

Moss Landing Harbor receives runoff from the lower Salinas Valley. The Moss Landing Power Plant intakes some of this drainage as well as Elkhorn Slough source water. The Regional Board worked extensively on this permit, to provide appropriate regulation for the vexing issue of once through cooling water (as well as thermal effects, although these effects were not nearly as critical as at Diablo Canyon). Regional Board staff organized a science based team of experts in marine biology to quantify entrainment problems with the cooling system. Staff further negotiated mitigation for those quantified problems. The Board approved staff's recommended \$7M in mitigation funds, to be used by the Elkhorn Slough Foundation, for watershed and slough improvements. The Elkhorn Slough Foundation has since leveraged the initial \$7 million into over \$30 million in the bank, and continues to raise additional funds for habitat acquisition, restoration, and stewardship. The Foundation has also leveraged their funds greatly on each project, so that for every dollar spent, they raise several dollars in matching funds. This has allowed the Foundation to acquire and manage over 3600 acres of habitat in the watershed, and they are working on acquiring several hundred more acres in key areas in the next few years. These improvements have reduced sedimentation, as well as reduced pesticides discharged to the slough and harbor. The Foundation also supports "working landscapes" and demonstrates best management practices that protect habitat and water quality.



Monterey Harbor

Lead slag from railroad operations was leaching lead into Monterey Harbor, causing elevated and problematic lead levels in sediments in the harbor area. The Regional Board required lead slag removal, eliminating the source.

Watershed Health Grants

Regional Board staff worked on many grants to improve various aspects of watershed health in the Salinas. A few examples are:

Salinas Valley Eastside Watershed Project; contract for \$102,000 with Monterey County Resource Conservation District (RCD) to remediate pollution caused by inefficient fertilizer and pesticide applications.

Salinas Sediment Study; TMDL contract for \$49,998 with Cal State University Monterey

Bay

Contract for \$49,998 with Monterey Bay Sanctuary Foundation (a public outreach/training for citizens' monitoring group within the Salinas Watershed).

Gabilan Watershed Identification of Toxic Pesticides; contract for \$190,000 with Monterey County RCD for determining effectiveness of Ag conservation practices and stream restoration in removing pesticides at three sites in Northern Salinas Valley

Watershed Management Initiative

In 1995 the State Water Resources Control Board and the nine Regional Boards initiated an assessment of the organization's overall effectiveness. The resulting Strategic Plan, issued in 1995, recommended that Regional Boards begin to look at water quality issues on a larger, more comprehensive "watershed" scale. As a result, the State adopted the Watershed Management Initiative and Regional Boards began to designate priority watersheds and define a watershed approach. In 1996, the Central Coast Water Board designated the Salinas River as one of its highest priority watersheds and formed a team of staff to begin the process of developing a pilot watershed approach to address water resource issues. The Salinas River watershed was (and is) a high priority because of its size and because of previously identified significant water quality problems, such as seawater intrusion, nitrates in ground water and numerous point and nonpoint source pollutant discharges to surface waters (e.g., nutrients, sediment, and pesticides).

Salinas Watershed Management Action Plan

Staff began by characterizing the watershed, identifying partners, and evaluating and prioritizing water resource issues. Initial tasks included development of a comprehensive stakeholder inventory describing the agencies, organizations, and groups active in the watershed along with their authority, interests, and current activities, and a preliminary assessment of water resource issues within the watershed. Staff produced a Salinas Watershed Management Action Plan in 1999. Staff efforts to develop a watershed management approach in the Salinas River watershed improved our understanding of water quality issues, increased partnerships with agencies and stakeholders working in the watershed and helped the Water Board focus resources and grant funding to address the highest priority water quality issues. As a result, staff targeted grants and settlement funds at agricultural water quality improvement projects and farmer education. Other grants funded riparian and wetland restoration in the lower Salinas, streamlined permitting for water quality protection practices, and promoted sustainable vineyard practices. The Salinas Watershed Management Action Plan also recommended a number of actions, many of which have since been funded by grants or incorporated into Water Board programs, including:

- Expanding outreach to cities, counties and urbanized areas regarding the Stormwater Program and Phase II requirements for municipal, industrial and construction stormwater permits in conjunction with the Sanctuary's Model Urban Runoff Program;
- Developing workshops on road maintenance and erosion control techniques and issues for improved water quality protection;
- Evaluating impacts from wine processing facilities and developing recommendations for consistent management;

- Encouraging and supporting expanded offerings and participation in the Ranch Water Quality Planning short courses as well as participating in the development and implementation of similar courses for vineyards and row crops;
- Reviewing sand and gravel mining operations and integrating them with TMDL development; and
- Consideration of watershed-level plans and monitoring, coordinated with TMDL development and the Central Coast Ambient Monitoring Program.

This work provided the foundation for the current Agricultural Regulatory Program by identifying the actions listed above and by identifying data gaps in both water quality conditions and status of nonpoint source pollution control implementation. We have developed a much greater understanding and data collection effort to fill these gaps and are now able to make better decisions with water quality data and information collected from the grant projects and regulatory program activities that grew from this initial effort. We are continuing to evaluate the data and information needs as we implement and improve our Agricultural Regulatory Program, as discussed further below.



Rainbow Trout -

Nacimiento River above Salinas River

Agricultural Regulatory Program

Quail Creek Inspections and Management Practice Implementation

In 2007 and 2008, Water Board staff conducted on-site farm inspections in the Quail Creek watershed, focusing on water toxicity to invertebrates associated with chlopyrifos and diazinon pesticide run-off into surface water. Quail Creek is small tributary of the Salinas River approximately one mile southeast of the City of Salinas. Quail Creek is a predominantly agricultural watershed and prior to field inspections, the pesticide use

records of operations farming in this watershed were analyzed to determine possible sources of chlorpyrifos and diazinon. Staff determined that the granular pre-plant soil applications of chlorpyrifos to cole crops were the likely source of chlorpyrifos and the spray applications of diazinon to spinach and lettuce crops were the likely source of diazinon. Staff analyzed rainfall records in the watershed and determined that pesticide applications and observed toxicity were primarily during the irrigation season. Staff inspected most all of the operations in the watershed that apply diazinon and chlorpyrifos. The inspections, along with outreach from the Central Coast Water Quality Preservation Inc. and Monterey County Farm Bureau, resulted in significant implementation of management practices and ultimately reductions in pesticide loadings to Quail Creek. Although loading has been significantly reduced in the watershed, an initial assessment of CCAMP data for the Quail Creek Watershed indicates a reduction in flow while water toxicity is still a problem.

Food Safety Issues

In recent years, food borne illnesses attributed to leafy green products grown in the Central Coast have led to increased pressures on growers to eliminate risks of E. coli contamination of crops by removing vegetation and potential wildlife habitat in or near the crop. As a result farmers are removing wetland and riparian plants in order to be able to sell their food products. Although the pathways of contamination causing the outbreaks have never been conclusively identified, many buyers and third party auditors are demanding elimination of vegetation around fields to discourage wildlife before they will purchase crops.

However, removal of vegetation may actually increase the threat to food safety since it increases pollution transport, including bacteria, from domestic animal sources to farms. Domestic animals, such as cattle, pose the greatest risk to food safety contamination, not wildlife. Increasingly, producers are caught between the requirements to safeguard water quality and efforts to ensure a safe food supply. This situation compels a venue for collaboration where entities can combine expertise and science to resolve these emerging conflicts between water quality and food safety practices. Central Coast Water Board staff have been actively involved in commenting on emerging federal and state food safety requirements and guidelines that may have an impact to water quality. Staff also continues to work with various partner agencies and organizations to increase awareness of the detrimental water quality impact of some food safety practices that have little scientific basis.

San Jerardo Housing Cooperative

The San Jerardo Housing Cooperative is a small rural community located in an agricultural area southeast of Salinas on 33 acres. It was the first housing cooperative in California developed to provide housing for low-income farmworker families. All surrounding properties are in agricultural production with some residential uses within two miles of the area. Residents rely on groundwater for drinking and have had water quality that does not meet health standards since at least 2001. Due to income levels and lack of community resources, the residents of San Jerardo are not able to afford necessary treatment to provide clean drinking water and complete necessary

improvements to the wastewater treatment system. The primary water quality contaminants are high levels of nitrate and 1,2,3 Trichloropropane (1,2,3-TCP) in groundwater. Long-term agricultural production on nearby and adjacent properties may have contributed to groundwater contamination. The existing drinking water well has been reported to produce water that is more than double the drinking water standard for nitrate (10 mg/l NO₃ as Nitrogen or 45 mg/l NO₃ as Nitrate) and approximately 13 times the California Department of Public Health drinking water notification level for 1,2,3-TCP (.005 micrograms per liter (µg/L)). In addition to being unable to use the untreated well water for drinking water purposes, residents have reported skin rashes and hair loss due to skin contact with the well water upon bathing or showering. The County of Monterey has received State Cleanup and Abatement Account funds of approximately \$542,826 to continue interim treatment of drinking water for residents of San Jerardo until long term plans for a new drinking water system can be completed in Fall 2010. The San Jerardo Housing Cooperative, Inc. has also received State Cleanup and Abatement Account funds in the amount of approximately \$630,500 to complete wastewater system repairs and improvements. Agricultural Regulatory Program staff has prioritized regulatory efforts in the San Jerardo area of the Salinas Watershed to address nitrate in groundwater due to current agricultural land uses. Staff will work with landowners and growers in the area to ensure the effective implementation of irrigation efficiency and nutrient management practices to reduce nitrate loading and protect beneficial uses from this pollution.

Agricultural Pollution Control Projects via PG&E Settlement Funds

The Central Coast Regional Water Quality Control Board (Regional Board) and PG&E agreed to settle a dispute regarding alleged violations of the National Pollutant Discharge Elimination System Permits that were held by PG&E from 1974 through 1998, for the company's operation of the Moss Landing Power Plant in Monterey County. The alleged violations supported assessment of civil liability pursuant to Water Code Section 13385. PG&E and the Regional Board agreed to settle the alleged civil liability of the company pursuant to a consent judgment providing for the payment by PG&E in a total amount of \$3,800,000 to fund the following Supplemental Environmental Projects:

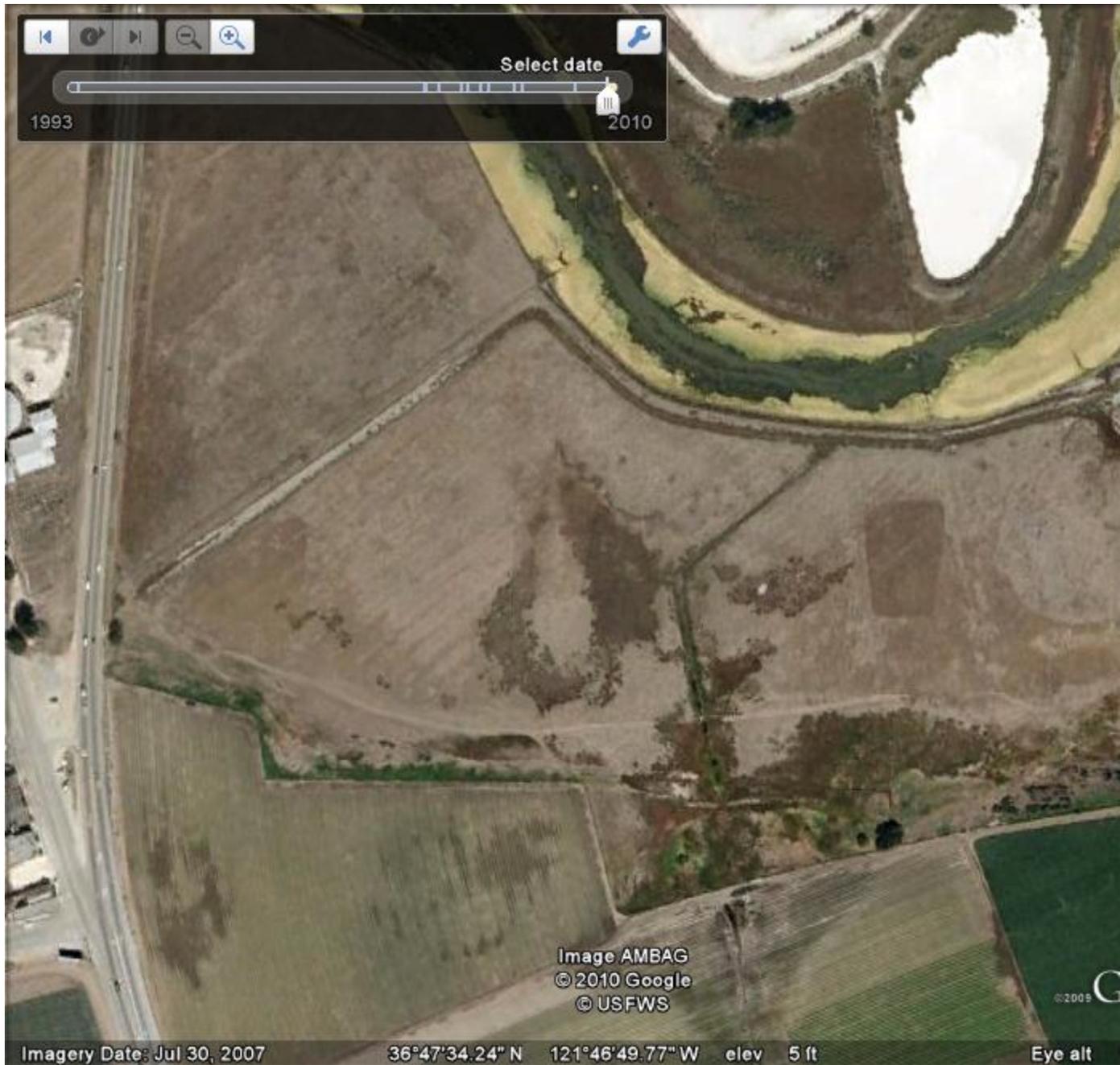
1. Payment of \$2,850,000 to establish a "Non-Point Source Projects Fund" through the Community Foundation for Monterey County. A portion of the funds is used to administer the funding program.
2. Payment of \$950,000 to establish a "Nonpoint Source Monitoring Fund" with the Community Foundation for Monterey County.

On July 11, 2003, the Central Coast Water Board approved criteria for evaluating supplemental environmental projects (SEPs) to be funded by PG&E. The purpose of these funds is primarily to improve water quality via projects that reduce pollution from agricultural sources and to monitor the effectiveness of these projects. In general, criteria specify that the settlement funds shall be used to fund projects to reduce sediment, nutrients, pesticides, and other pollutants primarily in Elkhorn Slough or Moss Landing Harbor and watersheds tributary to the Slough and Harbor including the Salinas River, Moro Cojo Slough and Tembladero Slough. Historically, the Board has funded projects to conduct agricultural water quality education and outreach, best management practice implementation and practice-effectiveness monitoring, and watershed-scale monitoring of agricultural water quality. Since July 2003, 33 grants have been awarded

and 25 of those grants have been completed. The remaining eight grants will be complete within the next three years. The current balance of the PG&E Settlement Fund is approximately \$314,000 and staff is evaluating priorities for the remaining PG&E Settlement Funds.

Wetland and Riparian Restoration Projects

The Central Coast Water Board supported several wetland restoration planning and implementation projects in the Lower Salinas watershed, beginning with a 205(j) project in 1994, entitled *North Salinas Valley Watershed Restoration Plan* (restoration plan). This plan laid out a comprehensive approach to protecting and improving water quality in the historical sloughs and wetlands of the area through restoration of “wet corridors” that would function to filter pollutants (nutrients, sediment and pesticides), increase groundwater recharge and improve wildlife habitat. The restoration plan covered creeks and sloughs that drained to Moss Landing Harbor, including Gabilan Creek, Natividad Creek, Alisal Creek, Tembladero Slough and Moro Cojo Slough. Moss Landing Marine Lab, the Watershed Institute at California State University at Monterey Bay and other partners subsequently implemented the plan with funding from 319(h) and Proposition 13. Approximately 120 acres of wetland and riparian habitat were restored, along with approximately 200 acres of upland habitat, on a combination of public and private lands.

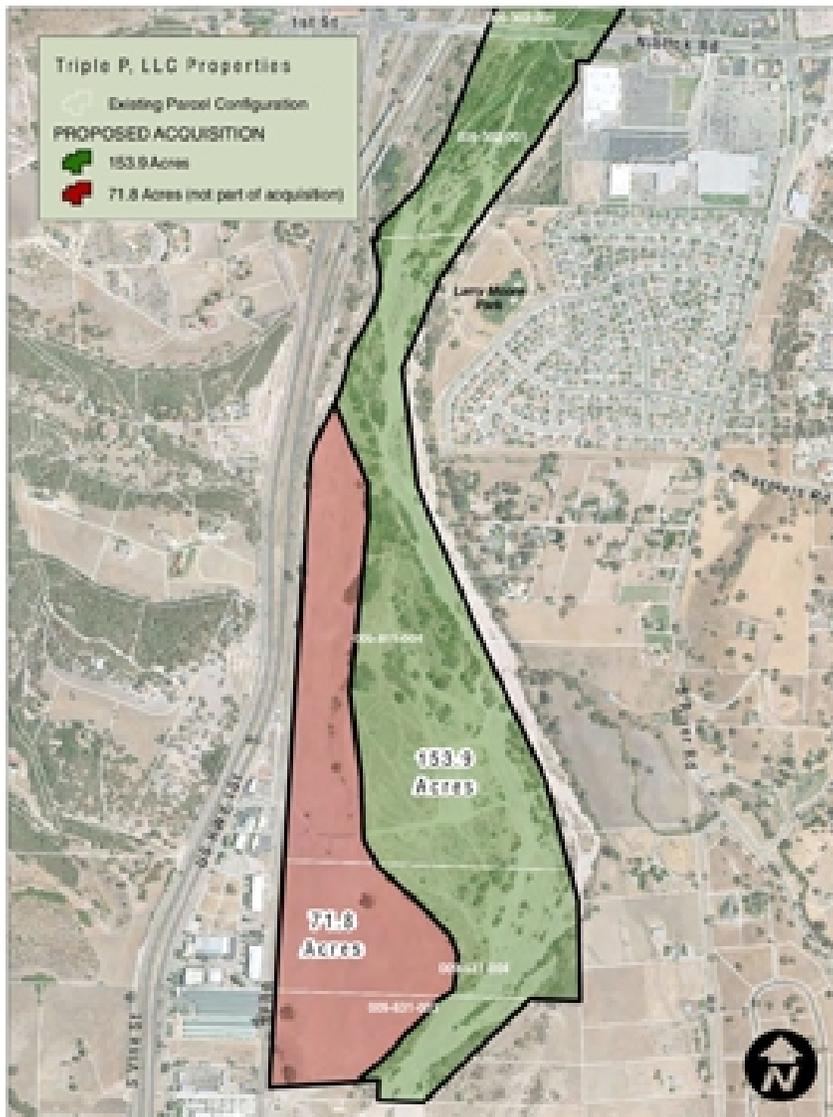


The grants incorporated water quality monitoring above and below the restored areas, as well as plant and animal surveys. Generally, the monitoring showed mixed results, with some but not all sites showing decreasing nitrate and turbidity levels. The sites also showed improved habitat value, including increased wetland and riparian vegetation and the presence of several endangered species. The Central Coast Water Board provided early funding for wetland planning and restoration; this work is continued today through the coordination of the Central Coast Wetlands Group (<http://ccwg.mlml.calstate.edu/>), thus providing a long term benefit for our investment by supporting the development of partnerships and continued restoration efforts that are necessary for reaching the goal of healthy watersheds.

Salinas River Parkway Project

In 2007, the state awarded the City of Paso Robles a Proposition 40 Integrated Watershed Management grant to acquire new property and restore city owned properties adjacent to the Salinas River within the City of Paso Robles. The City purchased 154 acres of river frontage for the purposes of preserving and improving water quality, riparian and aquatic habitat, flood control, and groundwater recharge. As part of the grant, the City also restored and enhanced riparian and aquatic habitat in four drainages to the Salinas River on publicly owned property contiguous with the newly acquired 154 acres.

The 154 acres are integral to the City's development of the Salinas River Parkway, a proposed four mile recreational and open space resource within the City of Paso Robles. The property acquisition will be managed to include recreational uses consistent and compatible with the primary purposes of the project funding. Property acquisition and restoration elements work together to address many of the primary water quality issues of the Salinas River and are integral parts of achieving the goals of the Upper Salinas River Watershed Action Plan. All restoration work is complete and escrow on the 154 acres closed May 19, 2010.



Low Impact Development

Water Board staff managed two Low Impact Development (LID) design and construction grant-funded projects located in, and implemented by the County of San Luis Obispo (County) in the Salinas watershed. The first project is located in Santa Margarita, which is largely situated in a natural floodplain and is frequently inundated by destructive winter floods. Floodwaters carried urban pollutants such as trash, petroleum waste, pesticides and herbicides into Santa Margarita Creek. The \$600,000 Santa Margarita project enhanced and enlarged seven acres of wetland, upslope of the town of Santa Margarita, and improved 2000 feet of storm-conveyance bioswale within the town. The second project is located on a residential street in Templeton. The runoff from the pavement and dirt paths along the street originally carried sediment, trash, and pollutants directly into Toad Creek, also a tributary to the Salinas River. The \$450,000 Templeton project replaced conventional pavement and dirt paths with permeable pavement, a subsurface

infiltration gallery, and 650 feet of vegetated bioswale. The two native-vegetated LID projects successfully increased stormwater capture, detention, and infiltration, resulting in removal of urban pollutants. Water quality in the receiving creeks is improved as the County removes trash accumulated in the LID systems, and the bioswale vegetation binds sediment, and allows natural degradation of pollutants. The LID projects demonstrated potential visual and construction drawbacks that should be factored into the decision making process. The projects have pointed out areas in the County's regulations which in some cases hinder, and in other cases promote LID projects. Finally, the grant-funded projects demonstrate that LID is successful at removing urban pollutants and sediments from receiving waters, and moderating stormwater runoff to reduce flooding and erosion, but is dependent upon proper maintenance. The County has realized and demonstrated the overall positive benefits of LID, and is proceeding with adding LID requirements to County development standards.

Clean Water Act, Section 401 Water Quality Certification Projects

Atascadero Creek Bank Stabilization Project

The City of Atascadero constructed the Atascadero Creek Bank Restoration project on July 19, 2006, authorized under US Army Corps of Engineers Nationwide Permits and Central Coast Water Board 401 Water Quality Certification. The project consisted of correcting severe erosion along the eastern bank of Atascadero Creek that undermined a large building complex that now serves as City Hall and restoring riparian habitat on both banks. The City created an engineered rock-slope protection to protect the 130 linear feet of streambank adjacent to and beneath the City Hall building. The Water Board also required mitigation for temporary and permanent impacts to 0.3 acres of wetlands and waters, and to stream channel and banks. Approximately 0.4 acres of riparian habitat was restored, enhanced or created on the western stream terrace and bank, and over the completed rock-slope protection on the eastern bank. After three years of monitoring, the Atascadero Creek Bank Restoration Project has met or exceeded success criteria for re-vegetation, development of scour pool/fish habitat, and downstream water quality/bank stability despite a second year of below normal rainfall. Pond turtles and fish were observed utilizing the newly formed scour pool and numerous birds were observed in the project area. Despite the success in this section of Atascadero Creek, urban pollution and hydro-modification of the creek persist because of urban discharges. The Central Coast Water Board has recently approved the City of Atascadero Storm Water Management Program and is working collectively with the City through the Central Coast Low Impact Development Initiative to develop methodologies and design criteria to control urban sources of pollution and hydrologic modification of urban creeks and streams. Central Coast Water Board staff is developing a Basin Plan Amendment to provide new Beneficial Uses for riparian and flood plain habitat that are fast diminishing resources needed to filter pollutants and stabilize channels.

Salinas River Channel Maintenance Program

Monterey County Water Resources Agency (MCWRA) applied for a Section 401 Water Quality Certification for the Salinas River Channel Maintenance Program for years 2009 – 2013. The program would perform vegetation management and sandbar removal along 92 miles of the Salinas River with the goal of reducing flood risk. MCWRA prepared a draft Initial Study with Proposed Mitigated Negative Declaration (IS/MND) as the CEQA document for the proposed program. Water Board staff reviewed the IS/MND and provided comments to MCWRA. The IS/MND did not adequately disclose potential environmental impacts and lacked proposed mitigation to reduce the adverse effects of

the proposed program to water quality and biological resources to less than significant levels. Water Board staff's preliminary review of Section 401 Water Quality Certification application indicated the project would not protect beneficial uses as proposed and staff issued a denial without prejudice for the application. Staff met with MCWRA to discuss the project's potential impact to beneficial uses. MCWRA has indicated they do not plan on finalizing the IS/MND but will instead be preparing an Environmental Impact Report. The proposed basin plan amendments could be valuable tools to help guide Water Board staff and Section 401 Water Quality Certification applicants. Additional policy statements for riparian protection would assist staff's review of projects and applicants understanding of how to condition their project to protect beneficial uses.

Lower Salinas River Watershed Fecal Coliform TMDL

The TMDLs for fecal coliform in the Lower Salinas River Watershed were developed by Water Board staff and considered by the Water Board on March 18, 2010. Central Coast Water Board staff developed an implementation plan to achieve the TMDLs that reflects staff's current understanding of fecal coliform loading in the Lower Salinas River Watershed. The Plan establishes that responsible parties must implement identified actions that will reduce fecal coliform loading, monitor fecal coliform source reductions, and report progress and results of monitoring to the Central Coast Water Board. In addition, during TMDL development, staff utilized analytical methods that previously have not been employed in Central Coast Region TMDL development. These methods – specifically, load duration analysis - allow for a higher degree of spatial, temporal and hydrologic resolution of pollutant loading as a consequence of variable flow conditions, seasonality, and sources. We anticipate that these types of analyses can and will be used to inform implementation priorities and strategies. At the March 18, 2010 Board Meeting, the Water Board considered adoption of the Basin Plan Amendments for discharges of fecal coliform in the Lower Salinas River watershed. At the meeting the Water Board recognized that the TMDL for fecal coliform is necessary and warranted to implement water quality standards and restore designated beneficial uses in accordance with the Water Quality Control Plan, Central Coast Basin (Basin Plan). Upon approval of the proposed basin plan amendments, this TMDL will have the potential to address multiple stream reach impairments, in one of the Central Coast Region's most bacteria impaired watersheds.

Buena Vista Mine and Klau Mine

The Buena Vista Mine and Klau Mine are historic mercury mines in the Adelaide region of San Luis Obispo County between Paso Robles and Cambria. They are on adjacent parcels owned by Buena Vista Mines Inc. (BVMI) and were significant mercury producers during various periods between the late 1800s and 1971. The Klau Mine has been essentially inactive for roughly 50 years or more, but the Buena Vista Mine was operated profitably by BVMI from approximately 1957 to 1971 and was one of the last mercury producers in the United States. The mines drain to Las Tablas Creek, which flows to Lake Nacimiento, which spills to the Nacimiento River, which flows to the Salinas River. Abundant acid-generating, metals-rich waste rock was disposed onsite. Exposed waste rock, mine workings and incidental release, combined with roughly 40 inches of rain per year, resulted in migration of so-called acid mine drainage, acidic water containing suspended and/or dissolved mercury and other metals, from the mines to Las Tablas Creek and downstream, and possibly to groundwater. Nacimiento Lake was our region's first impaired water "listing" on the federal 303d list, due to Mercury levels (including in fish). Since the late 1960s, the Regional Board regulated BVMI and the mines (with additional focus on the active Buena Vista Mine) by various forms of

permits and regulatory and enforcement actions. Despite these actions, including civil and criminal cases in state and federal courts, BVMI failed to remediate existing water contamination and prevent continued contamination from the mines. Therefore, in 2000, with considerable Regional Board support, USEPA commenced Comprehensive Environmental Resource Compensation Liability Act emergency removal actions to quickly and temporarily stabilize both mines, drastically reducing the sites' pollution of downstream waters. In 2006 the mines and impacted areas were included on the National Priority List to become San Luis Obispo County's first Superfund sites, allowing USEPA to conduct comprehensive and permanent investigation, characterization, control and remediation. USEPA, with Regional Board support and assistance, has improved and maintained emergency control measures, and is thoroughly investigating and characterizing the mines and associated environmental impacts in preparation for implementing permanent controls at the mines and remediating all impacted media and biota.

Groundwater Cleanup Sites

Jolon Road Closed Class III Landfill

The Jolon Road Closed Class III Landfill (Jolon Road Closed Landfill) is a 57-acre facility, located three and a half miles southwest of King City in Monterey County and owned by the Salinas Valley Solid Waste Authority (SVSWA). Disposed waste covers approximately 17 acres, (15.7 acres unlined and 1.3 acres lined) and although the facility is now closed to disposal, a transfer station is operated onsite where waste is organized and segregated, diverted or recycled, with residual waste being transported for disposal at the Johnson Canyon Landfill. Groundwater monitoring at the Jolon Road Closed Landfill continues to document VOCs at trace to just above practical quantitation limits. The VOCs are believed to result from groundwater contact with waste at the toe of the landfill. Water Board staff required the SVSWA to implement corrective actions to remedy groundwater contacting waste in the unlined portion of the wastefill. As such, the SVSWA implemented a phytoremediation effort immediately downgradient of the landfill to address the trace levels of VOCs and facilitate natural attenuation, while at the same time drawing down groundwater. The SVSWA also collects the water from a perennial spring (with low concentration VOCs) near the toe of the landfill and uses it for dust control. The Central Coast Water Board adopted revised WDRs for the Jolon Road Closed Landfill, which among other things, required final cover installation for the site. The SVSWA completed construction of the Jolon Road Closed Landfill's evapotranspirative final cover in 2008. Evapotranspirative covers include vegetation as an integral design component and vegetation can take several growing seasons to adequately establish. Based on inspections performed by Central Coast Water Board staff during 2009, the final cover at the Jolon Road Closed Landfill has adequate vegetative coverage. Central Coast Water Board staff expect the final cover to reduce percolation of water into the landfill and prevent the formation of landfill gas and leachate, which are the primary transport mechanisms for landfills to impact groundwater. These corrective actions should continue to reduce the VOC concentrations in groundwater beneath and downgradient of the landfill.

Former Firestone Tire & Rubber Company – Superfund Site in Salinas

The former Salinas facility of Firestone Tire & Rubber Company is located six miles southeast of downtown Salinas. A tire-manufacturing plant was operated at the site from 1963 to 1980. Solvent contamination, primarily 1,1-dichloroethylene (1,1-DCE) and

solvent associated volatile organic compounds, was discovered in soil and groundwater in 1983. The site was then listed on the National Priority List and became a Superfund site with the USEPA acting as the lead agency. Soil and groundwater investigation and remediation were conducted from 1983 to 1992. Contamination was found to have extended vertically into deep aquifers and laterally approximately three miles down-gradient to the edge of the City of Salinas. Contaminated soil was removed and groundwater remediation was conducted with soil vapor extraction and groundwater extraction and treatment. During the groundwater investigation and remediation, 181 monitoring and/or extraction wells were installed and 257 monitoring and supply wells were monitored. In 1992, groundwater cleanup goals were achieved and the treatment plant was shut down to observe the aquifers' response. Contaminant concentrations did not rebound by 1995 so the system was not restarted and subsequently dismantled. Because residual groundwater contamination was the main concern and only remaining work was post-remedial groundwater confirmation sampling at that time, USEPA delegated the case oversight and final decision of case closure to the Central Coast Water Board. After post-remediation sampling confirmed the remedial objectives were achieved and a small pocket of residual soil contamination existing above the normal water table would not impact the underlying regional aquifers, the Central Coast Water Board concurred with staff's recommendation to close the case on July 9, 1999. In 2003, the USEPA also closed this Superfund case and delisted this case from the National Priority List.

Summary of Watershed Stories

As stated before, these watersheds of the Salinas River and San Luis Obispo Creek are changed and improved in a multitude of tangible ways due to Water Board work. In several instances described above, we have pointed out situations where we could and should make more progress if we clarify and strengthen our Central Coast Region Basin Plan. In the following section, we will discuss our highest priority improvements to our Basin Plan to provide a preview of what staff is preparing for later presentation/recommendation to the Board.

NEED FOR BASIN PLAN AMENDMENTS

Our Vision and goals have focused our attention on our highest priority issues. We are increasingly aligning all our actions to achieve tangible results toward achieving our goals. This focus has helped us see how we can increase our authority through Basin Plan Amendments to improve resource protection, require changes in land use planning and land use practices, and enforce new policies and regulations. We have initiated Basin Plan Amendments to specifically establish or improve protection of watersheds, aquatic habitat and groundwater.

Watershed Protection Basin Plan Amendment

Our watersheds are degrading due to pollutant loading from urban development and intense agriculture operations, and the consumption of aquatic habitat. Coherent strategies for environmental protection that operate beyond the scale of individual projects will be necessary to guide growth in a manner that prevents degradation of the environment. While environmental protection is considered in land use planning and land development, rarely is it addressed in an integrative, coherent manner, and at a scale that ensures protection of watershed resources and processes. In California, enforceable landscape level frameworks for protecting the environment include planning

outcomes such as Habitat Conservation Plans and Special Area Management Plans – driven by requirements for endangered species protection – as well as rare institutional arrangements, such as the Tahoe Regional Planning Agency. However, such landscape level approaches are absent in the Central Coast Region.

Watersheds, as physical landscape features that link land and water resources, provide an appropriate frame for improving the integration of environmental protection into land use planning and development. Improving integration through watershed-based land use planning would result in preservation of watershed functional integrity in the face of inevitable land use intensification. The current regulatory and economic framework from which land use decisions emerge lacks the features necessary to ensure these decisions do not compromise watershed integrity. Identifying and introducing the necessary features into that framework – essentially reforming it – will be complex and will take many years, requiring action from many governmental and non-governmental entities.

The Water Board can play a critical role in achieving this reform by: setting new policy and water quality standards which clearly express the goals of watershed protection; identifying the measures by which those goals are evaluated; and administering the regulatory consequences for failing to achieve watershed protection.

The role of “setting new policy and regulation” includes drafting a watershed protection basin plan amendment to require local governments to design their growth, including infrastructure, to protect watershed functions and water resources. It will require more comprehensive local planning, zoning, and ordinances.

To write the basin plan amendment, we will research the technical requirements of the policy and regulation through review of current local agency planning and policy and engagement with the institutions who conduct the planning to determine opportunities for watershed protection and gaps in current framework/institutions that impact watersheds and leave them unprotected. We will also research and integrate watershed science by identifying watershed parameters that define watershed health, evaluating and describing watershed conditions, and determining appropriate regulatory performance measures. We will also consider the economic value of watershed resources, economic incentives for watershed protection, and economic forecasts of development pressures and risks to watershed health.

Aquatic Habitat Protection Basin Plan Amendment

California has lost an estimated 91 percent of its historic wetland acreage, the highest loss rate of any state. Similarly, California has lost between 85 and 98 percent of its historic riparian areas (State Water Resources Control Board, 2008)¹. Wetland and riparian areas are some of the most important ecosystems in a watershed. Ecologically intact wetland and riparian areas play an important role in protecting beneficial uses of Central Coast Region waters, including, but not limited to, Ground Water Recharge; Fresh Water Replenishment; Warm Fresh Water Habitat; Cold Fresh Water Habitat; Inland Saline Water Habitat; Estuarine Habitat; Marine Habitat; Wildlife Habitat; Preservation of Biological Habitats of Special Significance; Rare, Threatened or

¹ State Water Resources Control Board, 2008. Project Discussion Paper; Policy to Protect Wetland and Riparian Areas. July 18, 2008.

Endangered Species; Migration of Aquatic Organisms; Spawning, Reproduction and/or Early Development; and Areas of Special Biological Significance.



Adult Steelhead

The Water Code places responsibility on the Water Boards for protecting and restoring the beneficial uses of waters of the state and assigns Water Boards the authority to regulate “any activity or factor which may affect the quality of the waters of the state.” Additional regulatory attention of wetland and riparian areas is necessitated by the Policy for Maintaining High Quality Water (State Water Board Resolution No. 68-16), the Wetlands Conservation Policy (Executive Order W-59-93), also known as the state’s “No Net Loss Policy” for Wetlands, and other state policies.

Despite the various state regulatory authorities and policies, a state study (Ambrose et al 2007)² found that on average, the quality of created, restored and enhanced wetlands achieved through state permitted mitigation projects were of lower quality than intact California reference wetlands.

For many of these reasons the State Board is currently developing the Wetland and Riparian Area Protection Policy. This policy will:

1. call for more direct protection of wetland and riparian areas,
2. promote efficiency, effectiveness and consistency among Water Board programs in their protection of wetland and riparian areas, and
3. provide guidance for protecting state waters and wetland waters falling outside of federal jurisdiction.

Staff has determined that, with few exceptions, Region 3’s policies regarding protection of wetland and riparian areas are reactive and/or not as substantial as they should be. Permit requirements regarding wetland and riparian areas are either non-existent or are not applied consistently, due to staff inconsistencies in identification of wetland and riparian areas and interpretation of the requirements. We are not alone in this difficulty, as indicated by this very issue being one of the points of contention in the Los Osos Wastewater Project that prompted the Coastal Commission to conduct its recent de novo hearing. In that case, the County and the Commission committed very significant resources to the initial wetlands evaluation and then more resources to resolving the resulting questions – all for relatively small wetland areas (compared to our region).

² Ambrose, R.F., J.C. Callaway, and S.F. Lee. 2007. An evaluation of compensatory mitigation projects permitted under clean water act section 401 by the California state water resources control board, 1991–2002. Prepared for California State Water Resources Control Board under Contract 03-259-250-0. University of California, Los Angeles, and University of San Francisco.

Additionally, there is little required protection of flood water storage areas, watershed hydrologic connectivity, or maintenance of stream dynamic equilibrium; protecting these stream system and watershed functions and characteristics protects wetland and riparian areas.

The Water Board has an opportunity and responsibility to improve wetland and riparian protection in the Central Coast Region. The Water Board's Basin Plan and programs can respond to state policies protecting wetland and riparian areas by making regulation of activities affecting wetland and riparian areas more standardized, systematized, and protective. The Water Board can achieve these goals and conserve staff resources by closely duplicating a Basin Plan amendment for the protection of stream and wetland systems already in development by Water Quality Control Boards in Regions 1 and 2. The Region 1 and 2 Basin Plan amendment is a pilot, region-specific implementation plan of the Wetland and Riparian Area Protection Policy in development by the State Board.

Developing a Basin Plan Amendment similar to the Region 1 (North Coast) and 2 (SF Bay) proposed Basin Plan Amendment will provide:

1. a backdrop for formalizing and justifying more specific and easier to understand aquatic habitat requirements within the draft Agricultural Order,
2. a basis for prompting staff to make its actions in the stormwater, timber harvest, and Section 401 certification programs more wetland and riparian area protective,
3. a systematic and standardized approach to reviewing applications for 401 certifications and WDRs, and
4. new wetland and riparian area protective water quality standards that are broad enough to also protect other functions and characteristics of healthy aquatic habitat including watershed hydrologic function and groundwater quality preservation.

Staff is in the project plan development phase of this effort.

Recharge Protection Basin Plan Amendment

Our agency is responsible for protecting and maintaining the beneficial uses of waters of the state³, which include both surface water and groundwater as, in many cases; communicate through subterranean flows or infiltration. Groundwater is susceptible to contamination with unrestricted development (e.g., landfills, underground tanks, etc.) within critical groundwater recharge areas. Therefore, the Water Board must adequately protect critical groundwater recharge areas from land use activities in order to ensure abundant clean and usable groundwater in underlying aquifers. By maximizing high quality recharge, we will offset or dilute some of the large land use pollutant loading (e.g., nitrates and salts) discussed in the Groundwater Issues section above. Improved water quality in groundwater aquifers will minimize the need for expensive treatment for domestic, agricultural and industrial activities, as well as minimize the amount of surface water contamination through subterranean connectivity. The Central Coast Region contains 53 groundwater basins and subbasins, which collectively account for approximately 83 percent of the annual water supply used for agricultural and urban

³ Section 13050 of the CWC states "(e) "Waters of the state" means any surface water or groundwater, including saline waters, within the boundaries of the state.

needs⁴. Groundwater data available from various sources indicate that many basins are significantly degraded due to land use activities. We anticipate additional groundwater beneficial use impairments due to increases in population, urban use, and agricultural/ industrial activity without adequate management of these activities on a regional scale.

Central Coast Water Board staff will play a critical role in groundwater protection (as opposed to reacting to degradation) of groundwater beneficial uses for domestic, agricultural, and industrial use, specifically, by identifying, protecting, and maintaining critical groundwater recharge areas within the region. Protection of these groundwater recharge areas requires a myriad of actions based on two main goals. These goals include long-term protection of critical groundwater recharge areas from urbanization (i.e., imperviousness from buildings and roads) and protecting pollutants from entering protected groundwater recharge areas.

The basic approach of this Basin Plan amendment will be to:

- 1) Evaluate the need and opportunity for a groundwater recharge area protection (GWRAP) policy (e.g., What specifically are we protecting? What is our authority? What are our mechanisms/tools and leverage opportunities?),
- 2) Modify strategies in our existing programs to facilitate recharge area protection consistent with this policy,
- 3) Implement a GWRAP policy and execute modified existing program strategies, and
- 4) Develop performance measures and monitor the effectiveness of the GWRAP program.

Development and implementation of the GWRAP program will depend on internal (i.e., permitting development, TMDL development, conditions for 401 Water Quality Certifications, clean-up activities, etc) and external (e.g., salt and nutrient groundwater basin management plan efforts, other agencies level of cooperation, etc.) leveraging opportunities from both governmental and non-governmental entities. The GWRAP effort will rely on local agencies (i.e., Counties and Cities) to effectively implement land use management practices that protect critical recharge areas. Lastly, the Basin Plan amendment will also be developed in concert with the Watershed Protection and Aquatic Health Protection Basin Plan Amendments, as there are inherent benefits with a collaborative Basin Plan approach.

SUMMARY

We look forward to increasing our authority and ability to improve resource protection, require changes in landuse planning and landuse practices, and enforce new policies and regulations through these Basin Plan Amendments. We expect we will be able to measure more progress towards and achievement of our vision once we are able to complement our existing programs with these Basin Plan Amendments as together we will have increased our capacity to protect watersheds, aquatic habitat and groundwater.

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⁴ Department of Water Resources, 2003. California's Groundwater Bulletin 118 – Update 2003.